Effect of innovation and technology on productivity and profitability in Nepalese commercial banks

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Abstract

This study examines the effect of innovation and technology on productivity and profitability of Nepalese commercial banks. Bank productivity and profitability are the dependent variables. The independent variables are mobile banking, e- payment, internet banking, ATM banking, and POS banking. The primary source of data is used to assess the opinions of respondents regarding innovation and technology in Nepalese commercial banks. The study is based on 160 respondents from 25 commercial banks of Nepal. To achieve the purpose of the study, structured questionnaire is prepared. The multiple regression models are estimated to test the relationship and importance of innovation and technology on productivity and profitability in Nepalese commercial banks.

The study showed that internet banking has a positive impact on bank productivity and profitability. It indicates that increase in internet banking leads to increase in the bank productivity and profitability. Similarly, ATM service has a positive impact on bank productivity and profitability. It means that better ATM service leads to increase in bank productivity and profitability. The result also shows that mobile banking has a positive impact on bank productivity and profitability. It means that better mobile banking services leads to increase in bank productivity and profitability. Likewise, point of sale has a positive impact on bank productivity and profitability. It indicates that increase in point of sale services in retail stores leads to increase in bank productivity and profitability. Similarly, e-payment technology has a positive impact on bank productivity and profitability. It means that better e-payment technology leads to increase in bank productivity and profitability.

Keywords: Productivity, profitability, mobile banking, e- payment, internet banking, ATM banking, and POS banking.

1. Introduction

Employee performance is vital to any organization as it is a form of measurement of a company's success. There are various methods or approaches to enhance employee performance and one of them is through innovation. Innovation activities improve administrative process, increase efficiencies and make work management more effective (Benner and Tushman, 2002). Employee performance improves firm performance

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indirectly through innovation as employee generates ideas for new products or services to improve competitiveness of the firm. The competition is fierce in the economy and particularly in banking sector. Consumer is shifting from tradition channels to digital ones and the multichannel model now is the popular trend in the banking industry. Internet banking is an innovative service in the banking industry. Internet banking is a service with great potential. It would become a decent source of profits for banks; reduce bank's operating expenses so ultimately enhance bank performance. To date, internet banking is not just an element to compete for market share but becomes an essential service to provide, if not banks would face the chance of losing their market share or bad effects to their brand. The banks should focus on improving the productivity through operational efficiency, adopting efficient banking system, and efficient resource generation and allocation to survive in such a competitive market. This could eventually contribute positively to financial performance. Banks that sustain continuous improvements in performance show better ratio of human capital efficacy (Singh and Kamlesh, 2013).

The applications of technology and internet banking have brought great changes in the banking industry. Agboola (2006) emphasized that banks have to invest in technology, modernize their systems to improve quality, efficiency and speed in delivering services; otherwise they may lose their positions in the competitive race with the rivals. Customer expectations are changing and shifting due to advances in technology. To satisfy those subtle needs, multichannel delivery model is applied and proven to be a success. Such a system employs a unified interface across all channels. Customer's preferences and activities are transferred across mediums and thus ensure functionality remains reliable regardless of the customer's preferred device. This forms and enhances customer's trust and loyalty to the banks which is increasingly important to banks in the integration trend. Besides from those indirect impacts, a modern service such as Internet banking can have direct impacts on banks' performance such as bank income, operating costs, and in turn bank profitability. Employees are directly related to banking activities and are crucial in the development, productivity enhancement, and success of banking institutions. Devising technology-driven strategies that facilitate knowledge discovery and enhance the skill sets of employees is vital because the success of banking institutions and the realization of their objectives depend largely on human resources. Improvements in the skills and competence of employees influence employee productivity that manifests in service offering responsiveness and customer satisfaction (Singh and Kaur, 2011).

In the banking industry, providing high-quality innovative outputs improve the satisfaction level of employees that eventually increases the productivity of these employees (Obeng and Mkhize, 2017). Efficient use of information technologies increases labour productivity levels (Sabherwal

and Chan, 2001). Complementing information technology and innovation activities could lead to higher improvements in employee productivity than applying them individually since technology can only contribute to increased productivity when used with other resources effectively (Dauda and Akingbade, 2011). Banking institutions must play a significant role to develop technological innovation-driven economy. The financial services institutions among the industries are most affected by the technological revolution. The financial services industry relies on the exchange of information, which itself depends heavily on communications technology and information (ICT) in order to obtain, analyze and provide data for all users concerned. Financial institutions continuously update their marketing strategies and technologies in order to satisfy the desires and demands of their clients in a safe environment (Rust and Kannon, 2003).

Dzombo *et al.* (2017) found that branchless banking such as automated teller machines banking, phone banking, internet banking (IB) and point of sale banking have significant positive effect on financial performance of commercial banks. In addition, the availability of automated teller machines (ATM), cards, telephone banking, personal computer banking and internet banking have positive impact on financial performance of banking system (Narteh, 2014). Mahdi and Mehrdad (2010) determined the impact of e-banking in Iran. The study showed that there is a positive correlation between e-banking and profitability of banks. Similarly, Rafael and Francisco (2007) investigated the impact of various regional banking sector developments and innovations during 1986-2001 in Spain. The study found out that product and service delivery innovations contribute positively to regional gross domestic product, investment and gross savings growth. In addition, Simpson (2002) revealed that electronic banking is motivated largely by the prospects of operating costs minimization and operating revenues maximization. The adoption of internet banking leads to cost reduction and hence likely to increase banks' profitability.

Polatoglu and Ekin (2001) concluded that online banking has a positive impact on the profits of Turkish banks. Online banking has changed the dimensions of competition in the retail banking sector. It has also provided opportunities for emerging a gradual process. DeYoung *et al*. (2007) observed the change in financial performance of internet community banks in U.S. during 1999-2001. The results showed that internet adoption improved community banks' profitability, particularly through increased revenues from deposit service charges. Internet adoption was also associated with movements of deposits from checking accounts to money market deposit accounts, increased use of brokered deposits and higher average wage rates for bank employees. The findings suggested that internet adoption was associated with an economically and statistically significant improvement

in bank profitability. Cashless payment is a form of financial exchange that takes place between the buyer and seller facilitated by means of electronic communication.

According to Cobb (2004), electronic payments can lower transaction costs stimulate higher consumption and GDP, increase government efficiency, boost financial intermediation and improve financial transparency. Similarly, electronic payments enable customers to handle their daily financial transactions without having to visit their local bank branch. Electronic payments products could save merchants time and expense in handling cash (Appiah and Agyemang, 2006). Kiplangat and Tibbs (2018) found a significant positive influence of mobile banking on financial performance of commercial banks. According to Koivu (2002), uptake of mobile phone in Kenya influences the performance of organization, behavior and decision making of the entire economy. Similarly, Jayawardhena and Foley (2000) showed that internet and mobile banking results in cost and efficiency gains for banks.

In the context of Nepal, Joshi (2019) analyzed the impact of ATM service quality on the customer satisfaction, productivity, profitability in Nepalese banking sector. The study found that the ATM services have positive impact on the productivity and profitability. Further, Sapkota *et al.* (2018) explored the prevailing status of the use of POS banking in commercial banking services in Nepal. The study found that the bank has been providing different services like debit card, ATM card, mobile banking, mobile cash, utility bill payment and internet banking services in the country. Banstola (2007) found that the ATM is the most popular electronic delivery channel for banking services in Nepal. Only few customers are using internet banking facilities. Nepalese financial institutions till date have not faced any kind of electronic fraud or risk.

The above discussion reveals that there is no consistency in the findings of various studies concerning the effect of innovation and technology on productivity and profitability of banks.

The major objective of this study is to examine the effect of innovation and technology on productivity and profitability of Nepalese commercial banks. More specifically, it examines the relationship of independent variables (i.e., mobile banking, e- payment, internet banking, ATM banking, and POS banking) with productivity and profitability in 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 final section draws the conclusion and discuss the implication of the study findings.

2. Methodological aspects

The study is based on the primary data. The data were gathered from 160 respondents through questionnaire. The respondents' views were collected on mobile banking, e-payment, internet banking, ATM banking and POS banking of Nepalese commercial banks. The study is based on descriptive and causal-comparative research designs. Table 1 shows the list of commercial banks along with the number of the respondents selected for the study.

Table 1: Number of commercial banks selected for the study along with number of respondents

S.N	Name of the banks	No. of respondents
1	Bank of Kathmandu Limited	5
2	Century Bank Limited	5
3	Citizens Bank International Limited	7
4	Civil Bank Limited	6
5	Everest Bank Limited	5
6	Global IME Bank Limited	9
7	Himalayan Bank Limited	6
8	Kumari Bank Limited	5
9	Laxmi Bank Limited	6
10	Machhapuchchhre Bank Limited	6
11	Mega Bank Nepal Limited	8
12	Nabil Bank Limited	6
13	Nepal Bangladesh Bank Limited	5
14	Nepal Bank Limited	9
15	Nepal Credit and Commerce Bank Limited	7
16	Nepal Investment Bank	4
17	NIC Asia Bank Limited	5
18	NMB Bank Limited	8
19	Prabhu Bank Limited	5
20	Rastriya Banijya Bank Limited	12
21	Sanima Bank Limited	6
22	Nepal SBI Bank Limited	5
23	Siddhartha Bank Limited	6
24	Standard Chartered Bank Limited Nepal	7
25	Sunrise Bank Limited	7
Total number of respondents		160

Thus, the study is based on the 160 observations.

The Model

The study assumes that the bank productivity and profitability depend upon different factors. The dependent variables selected for the study are productivity and profitability. Similarly, the selected independent variables are mobile banking, e-payment, internet banking, ATM banking and POS banking. Therefore, the model takes the following form:

$$PD = \beta_0 + \beta_1 MB + \beta_2 EP + \beta_3 IB + \beta_4 ATM + \beta_5 POS + e$$

$$PF = \beta_0 + \beta_1 MB + \beta_2 EP + \beta_3 IB + \beta_4 ATM + \beta_5 POS + e$$

Where,

PD = Productivity

PF = Profitability

MB = Mobile banking

EP = E- payment

IB = Internet banking

ATM = Automated teller machine

POS= Point of sales

Mobile banking was measured using a 5-point Likert scale where the 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 "I can carry out my banking operations easily using mobile banking", "I trust the network connectivity while doing a transaction using mobile banking" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.737$).

E-payment was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 4 items and sample items include "E-payment system is better than cash and saves time", "E-payment offers a greater choice for consumer and merchant in the way they sent and receive payments" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.714$).

Internet banking was measured using a 5-point Likert scale where the 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 saves time and money", "Internet banking is more reliable

and secured than traditional banking" and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.760).

ATM banking was measured using a 5-point Likert scale where the 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 "ATM banking provides the customers with facility of withdrawing the money 24 hours a day, 7days a week through their debit cards", "My bank has located ATM machines in such place where customer can have easy access to it" and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.733).

Point of sales was measured using a 5-point Likert scale where the 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 in my bank manages employees, and offer customer rewards programs", "POS system maintains much needed accuracy by generating accurate reports in the banks" and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.769).

Productivity was measured using a 5-point Likert scale where the 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 "Proper implementation of e-banking facilities will help to increase productivity", "E-payment technology offers cost saving opportunity to banks which helps to increase productivity" and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.820).

Profitability was measured using a 5-point Likert scale where the 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 provides competitive advantage and increase profitability of bank", "New innovation in the bank helps to retain customers and gain long term profitability" and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.830).

The following section describes the variables used in this study.

Mobile banking

Mobile banking refers to provision of banking and bank related financial services with the help of mobile telecommunication devices. Amin *et al*. (2008) examined the adoption of mobile banking in Malaysia. The study showed that adoption of mobile banking by financial institutions is

very important in improvement of financial adequacy of commercial banks as well as improving operations, reducing costs in the long run hence increase in earnings. Similarly, Ijeoma (2018) determined the impact of the mobile banking on the financial performance of commercial banks in Kenya. The study found a positive relationship between mobile banking and bank's profitability and productivity. Moreover, Kiplangat and Tibbs (2018) found a positive influence of mobile banking on financial performance of commercial banks. Based on it, this study develops following hypothesis:

H_1: There is a positive relationship of mobile banking technology with bank productivity and profitability.

E-payment technology

Electronic payment is also referred as a financial exchange that takes place online between buyers and sellers. Frank and Binaebi (2019) concluded that the adoption of electronic payment improved the returns on equity of Nigerian banks. Similarly, Mustapha (2018) revealed that introduction of electronic payment systems into the financial sector leads to increase in the profitability and productivity of banks. Likewise, Jayawardhena and Foley (2000) showed that internet and mobile banking and electronic payment results in cost and efficiency gains for banks. Based on it, this study develops following hypothesis:

H_2: There is a positive relationship of electronic payment system with bank productivity and profitability.

Internet banking

Kim *et al.* (2006) defined internet banking as the process whereby the customer is able to access, control and use his or her account over the internet. Murat and Isaac (2019) found that the effect of internet banking on the bank performance is positive and significant. Likewise, Noah *et al*. (2019) found that internet banking has a significant and positive influence on productivity through efficiency and profitability. The study concluded that internet banking leads to strategic advantage against competitors and increases the likelihood of customer loyalty. Similarly, Mateka *et al*. (2016) found that internet banking has a positive impact on bank's productivity and profitability i.e. incomes, operating costs, and loan book and customer deposits. Based on it, this study develops following hypothesis:

H_3: There is a positive relationship of internet banking with bank productivity and profitability.

ATM banking

Mwai *et al.* (2018) found that online banking has a significant influence on the financial deepening of commercial banks in Kenya. The study found that ATM banking has positive influence on financial performance of the banks. Likewise, Dhungel *et al*. (2012) found that ATM has a positive influence on productivity, profitability and customer satisfaction. Similarly, Abdullai and Nyaoga (2017) concluded that ATMs usage is highly related to the operational efficiency of commercial banks in Kenya. The study showed that the adoption of automated teller machine has a positive influence on operational performance. Based on it, this study develops following hypothesis:

H_4: There is a positive relationship of ATM banking with bank productivity and profitability.

POS banking

Saleem *et al.* (2019) revealed that due to cashless banking like POS, the profitability of the banking sector results in better economic activity and growth of Pakistan's banking industry. Likewise, Njoroge and Mugambi (2018) revealed that increase in POS leads to an increase in the bank performance in Kenya. Further, the study showed that increase in debit card usage enhances the profitability of banking industry in form of ROA. Increased usage of debit cards has significantly reduced transaction costs and enhanced convenience among credit and debit card users. Furthermore, Okon and Amaegberi (2018) revealed that there is a positive and statistically significant relationship between point of sale banking service and bank productivity in Nigeria. The study indicated that point of sale is a major factor that contributes to the bank profitability and productivity in Nigeria. Based on it, this study develops following hypothesis:

H_5: There is a positive relationship of POS banking with bank productivity and profitability.

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 mean and standard deviation have been computed and the results are presented in Table 2.

Table 2: 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 on 160 observations. The dependent variables are PRD (Productivity) and PF (Profitability). The independent variables are MB (Mobile Banking), EP (E-Payment), IB (Internet Banking), ATM (Automated Teller Machine), and POS (Point of Sales).

Variables	Mean	SD	PRD	PF	MB	EP	IB	ATM	POS
PRD	4.249	0.466	1						
PF	4.258	0.442	0.565**	1					
MB	4.284	0.425	0.438**	0.415**	1				
EP	4.128	0.543	0.372*	0.343**	0.443**	1			
IB	4.288	0.422	0.490**	0.410*	0.415**	0.462**	1		
ATM	4.287	0.428	0.392*	0.387**	0.470**	0.372**	0.425**	1	
POS	4.157	0.522	0.428**	0.377*	0.311**	0.342**	0.435**	0.439**	1

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

The result shows that internet banking is positively related to bank productivity indicating that increase in internet banking leads to increase in the bank productivity. Similarly, ATM services are positively related to bank productivity. It means that better ATM services leads to increase in bank productivity. The result also shows that mobile banking is positively related to bank productivity. It means that better mobile banking services leads to increase in bank productivity. Likewise, point of sale is positively correlated to bank productivity. It indicates that increase in point of sale services in retail stores leads to increase in bank productivity. Similarly, e-payment technology has a positive relationship with bank productivity. It means that better e-payment technology leads to increase in bank productivity.

On the other hand, internet banking is positively related to bank profitability indicating that increase in internet banking leads to increase in the bank profitability. Similarly, ATM services are positively related to bank profitability. It means that better ATM services leads to increase in bank profitability. The result also shows that mobile banking is positively related to bank profitability. It means that better mobile banking services leads to increase in bank profitability. Likewise, point of sale is positively correlated to bank profitability. It indicates that increase in point of sale services in retail stores leads to increase in bank profitability. Similarly, e-payment technology has a positive relationship with bank profitability. It means that better e-payment technology leads to increase in bank profitability.

Regression analysis

Having indicated the Kendall's Tau correlation coefficients, the

regression analysis has been carried out and the results are presented in Table 3. More specifically, it shows the regression results of mobile banking, e-payment banking, internet banking, ATM banking and POS banking on productivity in Nepalese commercial banks.

Table 3: Estimated regressions of mobile banking, e-payment banking, internet banking, ATM banking and POS banking on bank productivity

The results are based on 160 observations using linear regression model. The model is PD= $\beta_0 + \beta_1 MB + \beta_2 EB + \beta_3 IB + \beta_4 ATM + \beta_5 POS + \varepsilon$, where the dependent variable is PD is productivity. The independent variables are MB (Mobile Banking), EP (E-Payment), IB (Internet Banking), ATM (Automated Teller Machine), and POS (Point of Sales).

Model	Intercept	Regression coefficients of					Adj. R_bar2	SEE	F-value
		MB	EP	IB	ATM	POS			
1	1.937 (6.190)**	0.540 (8.286)**					0.299	0.347	68.663
2	2.420 (8.625)**		0.443 (6.555)*				0.209	0.368	42.970
3	1.647 (5.850)**			0.607 (9.285)**			0. 349	0.335	86.210
4	2.221 (8.935)**				0.473 (8.206)*		0.249	0.348	67.345
5	1.792 (6.209)**					0.592 (8.554)**	0.312	0.344	73.175
6	1.550 (5.127)**	0.416 (5.496)**	0.222 (2.997)**				0.332	0.339	40.557
7	0.954 (3.145)**	0.308 (4.211)**	0.054 (0.715)	0.408 (5.157)**			0.426	0.314	40.312
8	0.806 (2.700)**	0.218 (2.842)**	0.027 (0.368)	0.354 (4.501)**	0.204 (3.164) **		0.457	0.305	34.482
9	0.389 (1.272)	0.255 (3.439)**	0.017 (0.231)	0.263 (3.324)**	0.116 (1.758)	0.292 (3.853)*	0.502	0.293	33.018

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 of significance respectively.

iii. Productivity is dependent variable.

Table 3 shows that the beta coefficients for mobile banking are positive with productivity. It indicates that mobile banking has a positive impact on bank productivity. This finding is similar to the findings of Ijeoma (2018). Likewise, the beta coefficients for e-payment technology are positive with bank productivity. It indicates that e-payment technology has a positive impact on bank productivity. This finding is consistent with the findings of Mustapha (2018). Similarly, the beta coefficients for internet banking are positive with bank productivity. It indicates that internet banking has a positive impact on bank productivity. This result is consistent with the findings of Murat and Isaac (2019). Further, the beta coefficients for ATM are positive with bank productivity. It indicates that ATM has a positive impact on bank productivity. This finding is consistent with the findings of Mwai *et al.* (2018). In addition, the beta coefficients for point of sales are positive with bank productivity. It

indicates that point of sales has positive impact on bank productivity. This finding is similar to the findings of Okon and Amaegberi (2018).

Table 4 shows the regression results of mobile banking, e-payment banking, internet banking, ATM banking and POS banking on profitability in Nepalese commercial banks.

Table 4: Regression results of mobile banking, e-payment banking, internet banking, ATM banking and POS banking on bank profitability

The results are based on 160 observations using linear regression model. The model is PR= $\beta_0 + \beta_1 MB + \beta_2 EB + \beta_3 IB + \beta_4 ATM + \beta_5 POS + \varepsilon$, where the dependent variable is PR is profitability. The independent variables are MB (Mobile Banking), EP (E-Payment), IB (Internet Banking), ATM (Automated Teller Machine), and POS (Point of Sales).

Model	Intercept	Regression coefficients of					Adj. R_bar2	SEE	F-value
		MB	EP	IB	ATM	POS			
1	2.142 (7.127)**	0.494 (7.078)**					0.236	0.372	50.092
2	2.636 (8.846)**		0.393 (5.477)**				0.154	0.392	29.999
3	1.994 (6.420)**			0.528 (7.324)*			0. 249	0.369	53.640
4	2.510 (9.265)**				0.408 (6.492)**		0.206	0.379	42.146
5	2.306 (7.145)**					0.470 (6.077)*	0.184	0.385	36.928
6	1.819 (5.548)**	0.319 (4.763)**	0.185 (2.310)*				0.256	0.367	28.400
7	1.325 (3.894)**	0.302 (3.673)**	0.047 (0.548)	0.338 (3.804)**			0.315	0.353	25.381
8	1.212 (3.558)**	0.233 (2.657)**	0.026 (0.037)	0.297 (3.301)**	0.156 (2.123) *		0.330	0.349	20.591
9	0.946 (2.625)**	0.256 (2.932)**	0.002 (0.024)	0.238 (2.555)*	0.100 (1.288)	0.186 (2.088)*	0.344	0.345	17.702

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. Profitability is dependent variable.

The regression results show that the beta coefficients for mobile banking are positive with profitability. It indicates that mobile banking has a positive impact on profitability. This finding is similar to the findings of Amin et al. (2008). Likewise, the beta coefficients for e-payment technology are positive with profitability. It indicates that e-payment technology has a positive impact on profitability. This finding is consistent with the findings of Frank and Binaebi (2019). Similarly, the beta coefficients for internet banking are positive with profitability. It indicates that internet banking has a positive impact on profitability. This result is consistent with the findings of Mateka *et al*. (2016). Further, the beta coefficients for ATM are positive

with profitability. It indicates that ATM has a positive impact on profitability. This finding is consistent with the findings of Abdullai and Nyaoga (2017). In addition, the beta coefficients for point of sales are positive with profitability. It indicates that point of sale has positive impact profitability. This finding is similar to the findings of Njoroge and Mugambi (2018).

4. Summary and conclusion

Today's every organizations are in need of good technology and innovations for the achievement of goal. There has been high competition among banking sectors to provide better quality services to customers. Banks discretionary devise technology-driven core strategies to leverage trends in information technology to pursue technological innovation in order to improve the productivity of employees. Employee productivity is a considerable unit of measure of a firm's performance and a source of sustaining competition.

This study attempts to examine the effect of innovation and technology on productivity and profitability in Nepalese commercial banks. The study is based on primary data which were collected from 160 respondents from 25 Nepalese commercial banks.

The study showed that mobile banking, e- payment, internet banking, ATM banking, and POS banking have positive impact on productivity and profitability in Nepalese commercial banks. The study also concluded that internet banking followed by POS banking is the most influencing factor that explains the bank productivity. Similarly, the study also concluded that internet banking followed by mobile banking is the most influencing factor that explain the changes in profitability of Nepalese commercial banks.

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