Impact of E-Banking on Operational Efficiency of Employees in Nepalese Commercial Banks

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Abstract

This study examines the impact of e-banking on operational efficiency of employees in Nepalese commercial banks. Operational efficiency of employees is the dependent variable. The selected independent variables are accessibility, ease of use, reliability, management support and training on e-banking tools. The primary source of data is used to assess the opinion of respondents regarding accessibility, ease of use, reliability, management support, training on e-banking tools and operational efficiency of employees. The study is based on primary data of 125 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation and multiple regression models are estimated to test the significance and importance of e-banking on operational efficiency of employees in Nepalese commercial banks.

The study showed a positive impact of accessibility on operational efficiency of employees. It indicates that easier access to e-banking platforms encourages individuals to adopt e-banking services that lead to increase an operational efficiency of employees. Similarly, the study showed a positive impact of ease of use on operational efficiency of employees. It indicates that user-friendly interfaces and simplified processes enhance the operational efficiency of employees. Likewise, the study showed a positive impact of reliability on operational efficiency of employees. It indicates that reliable systems build trust and motivate users to engage with e-banking services that leads to increase in operational efficiency of employees. Further, the study showed a positive impact of management support on operational efficiency. It indicates that encouragement and resources provided by management play a crucial role in enhancing operational efficiency of employees. In addition, the study showed a positive impact of training on e-banking tools on operational efficiency of employees. It indicates that adequate training provides by the organizations on e-banking services lead to increase in operational efficiency of employees.

Keywords: accessibility, ease of use, reliability, management support, training on e-banking tools, operational efficiency of employees

1. Introduction

The term electronic banking refers to the provision of information or services by a bank to its customers, via a computer or television (Allen *et al.,* 2001). Electronic banking was used mainly as information presentation medium in which banks marketed their products and services on their websites. Many internet banking services have been initiated such as e-banking centers, e-ATMS, e-phone banking, e-cash cards, and e-saving account etc. Internet bank has evolved into one stop service and information unit" that promises great benefit to both banks as well as consumers. Internet bank has evolved into a "one stop service and information unit" that promises great benefit to both banks as well as consumers (Margaret and Thompson, 2000). Ibrahim (2006) found six composite dimensions of electronic service quality, including the provision of convenient/accurate electronic banking operations; the accessibility and reliability of service provision; good queue management; service personalization; the provision of friendly and responsive customer service; and the provision of targeted customer service. Perceived usefulness, security and privacy are the most influencing factors to accept online banking (Qureshi *et al.,* 2008).

The banking industry has been rapidly developing the use of internet banking as an efficient and viable tool to create customer value. It is one of the popular services offered

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by the traditional banks to provide speedier and reliable services to online users. With the rapid development of computer technology, internet banking can be used to attract more customers to perform banking transactions in related banks. However, the main problem of internet banking faced by the providers is that a large number of the banks' customers are not willing to use the Internet banking services offered. This happened due to the services offered through Internet banking have yet to satisfy their customers. The development of e-banking in each country is dependent on the speed of internet access, the features of new online banking, and the frequency of e-banking usage (Nupur, 2010). In the banking industry, e-banking is formed when there is a combination between the information technology and the functions of banks and financial institutions (Ahanger, 2011). Through e-banking products, banks are able to provide customize services that create long term customer relationship. Electronic banking has become important weapon for competing with rivalries that ensure sustainable growth and profitability.

Indrasari *et al.* (2022) examined the impact of e-banking on the operational efficiency of employees in the banking sector during the Covid-19 pandemic. The study found that e-banking system reliability, ease of use, security features and customer service support have positive impact on operational efficiency of employees in the banking sector. Similarly, Riyadh *et al.* (2016) assessed the e-banking implementation and technology acceptance in the Rafidain and Rasheed Banks in Iraq: An employee perspective. The study showed that attitude toward e-banking system and intention to use e-banking system have positive impact on operational efficiency. Likewise, Oyewole *et al.* (2013) analyzed the e-banking and bank performance: Evidence from Nigeria. The study revealed that e-banking begins to contribute positively to bank performance after two years of adoption in terms of return on assets and net interest margin. Further, Ololade and Ogbeide (2017) assessed the e-banking in Nigeria: issues and challenges. The study stated that customer satisfaction has a positive relationship but weak with e-banking. In addition, Migdadi *et al.* (2012) investigated the impact of adopting e-banking on traditional banking operations in Jordan. The study concluded that e-banking practices traced are; degree of adopting ATMs, internet banking, telephone banking, mobile banking and e-banking channels.

Akbari (2012) examined the factors influence operational E-banking risks in Melli bank of Kermanshah. The study stated that employees in the banking sector benefit from the automation, speed and accuracy provided by e-banking systems which streamline their daily tasks. This improvement is driven by factors such as reduced manual processes, enhanced data management, and faster customer service. Moreover, operational efficiency is a critical element in achieving organizational goals and maintaining competitiveness in the banking industry. The integration of e-banking systems significantly affects employees' roles, productivity and overall performance. Similarly, Jalal *et al.* (2011) assessed the impact of selected factors on customers' intention to use internet banking in Bahrain. The study found that perceived usefulness and perceived ease of use have positive influence on customers' satisfaction and intention to use internet banking. Likewise, Hasandoust and Saravi (2017) examined the effect of successful e-banking factors on customers' satisfaction, trust, commitment and loyalty. The study revealed that the quality of e-banking websites and services significantly affects customer satisfaction, trust and loyalty.

Njoroge and Mugambi (2018) investigated the effect of electronic banking on financial performance in Kenyan. The result indicated that electronic banking including

mobile banking, debit card usage and internet banking significantly enhances the financial performance of banks by improving accessibility, reducing transaction costs and increasing profitability. In addition, Kim *et al.* (2024) explored the developing e-banking service value in the era of banking 5.0: Insights from Cambodian e-banking users. The study concluded that transaction convenience, access convenience and performance risk significantly influence perceived quality while financial risk does not. Toor *et al.* (2016) analyzed the impact of e-banking service quality on customer satisfaction in Pakistan. The study showed a significant relationship between service quality dimensions; reliability, responsiveness, assurance, tangibles, empathy and customer satisfaction in e-banking. Similarly, Prabodhi and Buddhika *et al.* (2022) assessed the impact of e-banking on commercial banks' operational performance in Sri Lanka. The study revealed that e-banking particularly internet banking has significantly improved the operational performance of commercial banks.

Odhiambo and Ngaba (2019) investigated the effect of e-banking strategies on financial performance of commercial banks in Kenya. The study found that e-banking strategies including mobile banking, agency banking, internet banking and ATMs significantly and positively influence the financial performance of commercial banks in Kenya. Further, Abdullai and Micheni *et al.* (2018) examined the effect of internet banking on operational performance of commercial banks in Nakuru County, Kenya. The study concluded that internet banking has a positive and significant impact on the operational performance of commercial banks in Nakuru County. Ghasemi *et al.* (2021) investigated the effect of electronic banking on the concentration degree of the Iranian banking industry. The study concluded that e-banking significantly reduced the concentration degree in Iran's banking sector, promoting competition and market equity. Similarly, Shirzadi *et al.* (2017) analyzed the impact of e-banking technology on job security in banks. The study revealed that the implementation of advanced banking technologies such as e-banking services, electronic money transfers and telephone banking have negative but significant impact on the job security of bank employees. Likewise, Asiyanbi and Ishola (2018) assessed the impact of e-banking services on customer satisfaction in Ibadan Metropolis. The study showed that high utilization rates of electronic banking products such as ATM, internet banking and electronic transfers have positive impact on operational efficiency of employees. Further, Nuskiya *et al.* (2018) analyzed the impact of information technology on employee performance in Sri Lanka's banking sector. The study showed that information technology significantly improves the employee performance by reducing workload and error rates.

Nwankwo and Agbo (2021) examined the impact of electronic banking on the performance of Nigerian commercial banks. The findings indicated that ATM transactions have positive and significant impact on bank performance while POS terminal and mobile banking transactions showed a negative impact. Similarly, Arshad and Alhumoudi (2022) investigated the impact of online payment and e-banking on customer satisfaction and retention in India. The study found that effects of efficiency, reliability and service quality have positive impact on customer satisfaction. Likewise, Usman *et al.* (2020) examined the measurement of e-banking technology adoption by customers in state banks using the UTAUT model. The study showed that factors such as performance expectancy, effort expectancy, social influence and facilitating conditions significantly influence customer behavioral intentions and usage of e-banking. In addition, Ngango and Shukla (2015) assessed the contribution of e-banking to the performance of banking Institutions in Rwanda. The study revealed that electronic banking systems such as ATMs, pay direct, electronic check conversion, mobile

banking and e-transact significantly enhance bank performance.

In the context of Nepal, Shrestha *et al.* (2019) analyzed the impact of bankers' experience on banking communication in commercial banks of Nepal. The study concluded that banking communication is crucial for enhancing relationships among customers, employees, stakeholders, and management, and it strengthens the overall banking system. Likewise, Mastran *et al.* (2021) investigated the challenges and opportunities of e-banking in the Nepalese banking sector. The study showed that Nepalese banks adopt e-banking services to remain competitive, stay updated with technological advancements, reduce transaction costs and enhance customer convenience. Further, Chhetri (2023*)* assessed the impact of electronic banking on customer satisfaction in Nepalese commercial banks. The study revealed that electronic banking has a positive impact on customer satisfaction.

The above discussion shows that empirical evidence vary greatly across the studies on the impact of e-banking on operational efficiency of employees in 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 major objective of the study is to examine the impact of e-banking on operational efficiency of employees in Nepalese commercial banks. Specifically, it examines the relationship of accessibility, ease of use, reliability, management support and training on e-banking tools with the operational efficiency employees 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 the final section provides the conclusion.

2. Methodological aspects

The study is based on the primary data which were collected from 125 respondents through questionnaire. The study employed convenience sampling method. The respondents' views were collected on accessibility, ease of use, reliability, management support, training on e-banking tools and operational efficiency of employees. This study is based on descriptive as well as causal comparative research designs.

The model

The model used in this study assumes that operational efficiency of employees depends upon e-banking. The dependent variable selected for the study is operational efficiency of employees. Similarly, the selected independent variables are accessibility, ease of use, reliability, management support and training on e-banking tools. Therefore, the model takes the following form:

Operational efficiency of employees = *f* (accessibility, ease of use, reliability, management support and training on e-banking tools).

More specifically,

$$OEE = \beta_0 + \beta_1 A + \beta_2 EU + \beta_3 R + \beta_4 MS + \beta_5 TEBT + e$$

Where,

OEE = Operational efficiency of employees

A = Accessibility

EU = Ease of use

R = Reliability

MS = Management support

TEBT = Training on e-banking tools

Operational efficiency of employees was measured using a 5-point Likert scale, where employees were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "Operational efficiency of employees improves with effective time management," "Access to adequate resources enhances the operational efficiency of employees," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.859$).

Accessibility was measured using a 5-point Likert scale, where respondents were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "Accessibility to resources significantly affects my ability to complete tasks efficiently," "Ease of access to necessary tools and facilities enhances productivity," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.847$).

Ease of use was measured using a 5-point Likert scale, where the respondents were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "The ease of use of a system significantly impacts my efficiency at work," "I find it important that tools and technologies are user-friendly to enhance productivity," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.834$).

Reliability was measured using a 5-point Likert scale, where the respondents were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "I rely on the consistency of systems to perform my tasks effectively," "Reliable tools and resources are essential for achieving desired outcomes," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.827$).

Management support was measured using a 5-point Likert scale, where the respondents were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "I feel encouraged to perform better when my manager provides regular feedback and guidance," "Support from management plays a significant role in overcoming workplace challenges," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.831$).

Training on e-banking tools was measured using a 5-point Likert scale, where the respondents were asked to indicate their responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include "Training on e-banking tools enhances my ability to perform tasks efficiently," "I feel more confident using e-banking tools after receiving proper training," and so on. The reliability of the items was measured by computing Cronbach's alpha ($\alpha = 0.842$).

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

Accessibility

Accessibility refers to the ease with which employees can access the resources, tools, and information they need to perform their tasks. According to Moraru and Duhnea (2018), customer satisfaction in the banking sector as the degree to which customers feel their expectations are met by the bank's products and services. Hussien and Abd El Aziz (2013) found that e-banking service quality has a significant impact on customer satisfaction. Similarly, Orji *et al.* (2018) revealed that the adoption of e-banking innovations including automated teller machines, mobile banking and point of sale transactions significantly contributed to the performance of banks in Nigeria. Likewise, Ofodum and Onyia (2021) showed that accessibility to electronic banking services has a significant impact on operational efficiency in the banking sector. Further, Mayanja (2020) found that accessibility to e-banking services has a significant impact on operational efficiency in the banking sector. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between accessibility and operational efficiency of employees.

Ease of use

Ease of use refers to the simplicity and user-friendliness of a system or tool that enables individuals to operate it with minimal effort and complexity. Solanki (2012) stated that ease of use is a critical factor in the adoption and success of new technologies, especially in banking. Similarly, Hamidianpour *et al.* (2016) explored the impact of e-banking on the operational efficiency of employees in commercial banks in Kenya. The study showed that easy to use has a positive impact on operational efficiency of employees. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between ease of use and operational efficiency of employees.

Reliability

Reliability refers to the consistency and dependability of a system or service over time (Faroughian *et al.*, 2012). According to Renu and Singh (2019), when banking systems are reliable, transactions can be completed smoothly and efficiently, enhancing both customer satisfaction and employee productivity. Similarly, Shoaee *et al.* (2022) found that IT governance based on the COBIT framework significantly improves productivity in the electronic banking system. Further, Huda *et al.* (2020) showed that e-banking has a positive impact on service quality in the Bangladesh banking sector. Based on it, this study develops the following hypothesis.

H_3: There is a positive relationship between reliability and operational efficiency of employees.

Management support

Management support refers to the assistance and backing provided by organizational leadership to employees in achieving their goals. Haq and Awan (2020) found that management support plays a crucial role in enhancing the operational efficiency of employees, as it provides the necessary resources, training, and motivation. Similarly, Mutlag *et al.* (2019) concluded that management support significantly affects the operational efficiency of employees, particularly in the context of electronic banking services in Iraq. Likewise, Rahman and Qi

(2016) found that management support is a crucial factor in the successful implementation and upgrading of Core Banking Software (CBS) in commercial banks in Bangladesh. Based on it, this study develops the following hypothesis:

H_4: There is a positive relationship between management support and operational efficiency of employees.

Training on e-banking tools

Training on e-banking tools refers to the process of equipping individuals with the necessary skills and knowledge to effectively use electronic banking systems. Adepoju and Adeniji (2020) found that perceived usefulness of e-banking tools significantly influenced customers' usage of e-banking services. Similarly, Ibrahim and Daniel (2019) showed that an electronic banking has significantly improved service delivery in the Nigerian banking sector leading to increase operational efficiency. Likewise, Regin *et al.* (2022) stated that adoption of e-banking services significantly enhanced customer convenience and bank productivity. Further, Alamgir *et al.* (2023) revealed that factors such as perceived ease of use, performance expectancy, security and privacy and social influence significantly impact the use of electronic banking technology. In addition, Najaf *et al.* (2014) found that electronic banking has significantly transformed the banking system in Pakistan, offering low-cost and time-saving benefits. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between training on e-banking tools and operational efficiency of employees.

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 has been computed and the results are presented in Table 1.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau coefficients between dependent variable and independent variables. The correlation coefficients are based on 125 observations. The dependent variable is OEE (Operational efficiency of employees). The independent variables are A (Accessibility), EU (Ease of use), R (Reliability), MS (Management support) and TEBT (Training on e-banking tools).

Variables	Mean	S.D.	OEE	A	EU	R	MS	TEBT
OEE	3.866	0.857	1					
A	3.766	1.029	0.334**	1				
EU	3.750	0.873	0.365**	0.426**	1			
R	3.741	0.893	0.332**	0.342**	0.381**	1		
MS	3.800	0.868	0.325**	0.354**	0.333**	0.316**	1	
TEBT	3.811	0.848	0.310**	0.381**	0.335**	0.286**	0.434**	1

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

Table 1 shows the Kendall's Tau correlation coefficients of dependent and independent

variables. The study shows that accessibility is positively correlated to operational efficiency of employees. It indicates that easier access to e-banking platforms encourages individuals to adopt e-banking services that lead to increase an operational efficiency of employees. Similarly, ease of use is positively correlated to operational efficiency of employees. It indicates that user-friendly interfaces and simplified processes enhance the operational efficiency of employees. Likewise, reliability is positively correlated to operational efficiency of employees. It indicates that reliable systems build trust and motivate users to engage with e-banking services that leads to increase in operational efficiency of employees. Further, management support is positively correlated to operational efficiency. It indicates that encouragement and resources provided by management play a crucial role in enhancing operational efficiency of employees. In addition, training on e-banking tools is positively correlated to operational efficiency of employees. It indicates that adequate training provides by the organizations on e-banking services lead to increase in operational efficiency of employees.

Regression analysis

Having indicated the Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it shows the regression results of accessibility, ease of use, reliability, management support and training on e-banking tools on operational efficiency of employees.

Table 2

Estimated regression results of accessibility, ease of use, reliability, management support and training on e-banking tools on operational efficiency of employees

The results are based on 125 observations using linear regression model. The model is $OEE = \beta_0 + \beta_1 A + \beta_2 EU + \beta_3 R + \beta_4 MS + \beta_5 TEBT + e$ where the dependent variable is OEE (Operational efficiency of employees). The independent variables are A (Accessibility), EU (Ease of use), R (Reliability), MS (Management support) and TEBT (Training on e-banking tools).

Models	Intercepts	Regression coefficients of					Adj. R_bar^2	SEE	F- Value
		A	EU	R	MS	TEBT			
1	2.121 (6.854)**	0.522 (7.215)**					0.336	0.7602	52.062
2	1.984 (6.388)**		0.556 (7.634)**				0.362	0.7451	58.282
3	1.863 (5.797)**			0.586 (7.747)**			0.369	0.7411	60.021
4	1.643 (4.918)**				0.63 (8.100)**		0.39	0.7285	65.606
5	1.679 (4.874)**					0.618 (7.749)**	0.369	0.741	60.04
6	1.970 (6.292)**	0.102 (0.474)	0.457 (2.070)*				0.357	0.748	29.027
7	1.779 (5.505)**	0.073 (0.319)	0.324 (1.421)	0.355 (1.978)			0.375	0.7373	21.226
8	1.600 (4.760)**	0.081 (0.356)	0.224 (0.962)	0.153 (0.719)	0.349 (1.746)		0.388	0.7297	17.013
9	1.560 (4.513)**	0.105 (0.450)	0.225 (0.964)	0.133 (0.614)	0.277 (1.146)	0.123 (0.532)	0.384	0.7324	13.567

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. Operational efficiency of employees is the dependent variable.

Table 2 show that the beta coefficients for accessibility are positive with operational efficiency of employees. It indicates that accessibility has a positive impact on operational

efficiency of employees. This finding is consistent with the findings of Hussien *et al.* (2013). Similarly, the beta coefficients for ease of use are positive with operational efficiency of employees. It indicates that ease of use has a positive impact on operational efficiency of employees. This finding is consistent with the findings of Hamidianpour *et al.* (2016). Likewise, the beta coefficients for reliability are positive with operational efficiency of employees. It indicates that reliability has a positive impact on operational efficiency of employees. This finding is consistent with the findings of Shoaee *et al.* (2022). Further, the beta coefficients for management support are positive with operational efficiency of employees. It indicates that management support has a positive impact on operational efficiency of employees. This finding is consistent with the findings of Haq *et al.* (2020). In addition, the beta coefficients for training on e-banking tools are positive with operational efficiency of employees. It indicates that training on e-banking tools have positive impact on operational efficiency of employees. This finding is consistent with the findings of Adepoju *et al.* (2020).

4. Summary and conclusion

The adoption of e-banking is a transformative shift for financial institutions, significantly influencing the operational efficiency of employees. As employees engage with e-banking systems, they face challenges in aligning their technical capabilities with the demands of digital banking platforms. Operational efficiency is defined as the ability of employees to complete their tasks effectively while minimizing time and resource wastage. The implementation of e-banking has automated routine operations, enhanced accuracy, and improved service delivery. Exploring the extent to which e-banking systems impact employee performance is essential, as it directly affects organizational productivity and long-term success.

This study attempts to examine the impact of e-banking on operational efficiency of employees in Nepalese commercial banks. The study is based on primary data of 125 respondents.

The major conclusion of the study is that accessibility, ease of use, reliability, management support and training on e-banking tools have positive impact on operational efficiency of employees. The study also concludes that management support is the most significant factor followed by management support that influence the operational efficiency of employees in the context of Nepalese commercial banks.

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