E-BANKING AND IT 'S IMPACT ON PROFITABILITY OF NEPALESE COMMERCIAL BANKS

A Thesis

Submitted

By

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In Partial Fulfillment of the Requirements for the Degree of

Master of Business Studies (MBS Semester)

In the

Faculty of Management Tribhuwan University

Kirtipur, Kathmandu

Certification of Authorship

I certify that the work in this thesis has not previously been submitted for a degree not has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of thesis.

Rajan Timilsina Date:-

RECOMMENDATION LETTER

It is certify that thesis entitled "E-banking and its impact on Profitability of Nepalese Commercial Banks" submitted Rajan Timilsina carries out an original piece of research work by the candidate under my supervision. Literary presentation is satisfactory and thesis is in a form suitable for publication. Work evinces the capacity of the candidate for critical examination and independent judgment. Candidate has put in at least 60 days after registering the proposal. The thesis is forwarded for examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled "E-banking and it's impact on Profitability of Nepalese Commercial Banks" presented by Rajan Timilsina a candidate for the degree of Masters of Business Studies (MBS Semester) and conducted the viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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ACKNOWLEDGEMENTS

This study entitled **"E Banking And Its Impact on Profitability of Commercial Banks"** has been conducted to satisfy the partial requirements for the degree of Master of Business Studies, Tribhuvan University.

A study of this kind would not have been possible without the help of all those who contributed in diverse ways towards its success. Without the continued emotional support provided by my family, I may have not reached the end of this journey. During my studies, there were times when work commitments and intermittent stress made me believe that I would not be able to see this journey through. It was during those times, and many others, that their words of encouragement and confidence in my ability gave me the motivation to persist. No words of thanks can adequately express the depth of my appreciation.

I would like to extend my immense gratitude to my supervisor Prof. Dr.Ramji Gautam for his valuable supervision and guidance in completing this study. I cannot express the extent to which his mutual support and understanding allowed me to reach the end of this journey. His encouragement, support, and, above all, his prompt, constructive and greatly appreciated criticism and feedback, were invaluable to the research, writing, and completion of this study.

I wish to acknowledge the chairperson of research committee, all lecturers and facilitators of Central Department of Management for the various roles each one of them played towards the successful completion of this thesis. I am grateful to Prof. Dr. Dhruba Pandey and Prof. Dr.Sanjaya Kumar Shrestha Research Committee Head, for timely supervision and guidance to complete this work.

Finally, I would also like to thank my friend Surya Balami, who always encouraged and helped me to conduct this study with betterment.

Rajan Timilsina

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ABBREVIATIONS

EBL	:	Everest Bank Limited
SEBON	:	Securities Exchange Board of Nepal
FY	:	Fiscal Year
r	:	Correlation
Avg	:	Average
no	:	Number
SPSS	:	Statistical Package for the Social Science
ROE	:	Return on Equity
ROA	:	Return on Assets
ATM	:	Automated Teller Machine
CC	:	Credit Card
IB	:	Internet Banking

ABSTRACT

The introduction of electronic banking has revolutionized and redefined the ways banks were operating. PC banking, mobile banking, ATM, electronic funds transfer, account-to-account transfer, paying bills online, online statements and credit cards etc. technology is now consider as the main contribution for the organizations' success and as 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 thesis shows the data of five commercial banks from fiscal year 2011/12 to fiscal year 2017/18. The present research uses mix of tools in the analysis. The study use financial ratios since the objective of the study is to determine whether e-banking has significantly improved the profitability performance of banks in Nepal with regards to the returns on equity (ROE) and returns on assets (ROA) and Different quantitative methods of statistical tools have been used for driving essence of the research data and interpret them in meaningful way; Statistical tool to measure correlation and regression analysis by using SPSS version 23. The topic of e-banking and its impact on Nepalese commercial banks is very crucial and important to those who are interested on it such as researcher, scholar investor etc.

It shows the independent variables; ATM, Internet Banking, and Credit Card used in this study, no one variable has significant impact on profitability of Nepalese commercial banks in terms of ROA. It also shows that independent variables; ATM, Internet Banking, and Credit Card used in this study, no one variable has significant impact on profitability of Nepalese commercial banks in terms of ROE. Besides this various macroeconomic factors such as monetary policy, fiscal policy, Technologytransfer policy, IT policy, Electric Transaction act political factors etc. are also the cause of profit growth in Nepal. Finally, the report shows macroeconomic environment is good in Nepal but IT infrastructure situation, technological readiness, and inefficient labour market are the main issue which should be addressed to make Nepalese banking environment more innovative, technology driven and competitive.

CHAPTER: I

INTRODUCTION

1.1 Background of the Study

As our world has become like a small village with the worldwide connectivity by information and communication technology innovation. Banks of 21st century have become much more efficient, faster and convenient in providing financial services to wide range of consumers with quick adoption technology. Computer network driven automated system has made it possible for banks to provide banking services 24 hours a day and 365 days a year. Today's banks seem ready to provide any kind of financial services at anytime and anywhere in the world through internet technology. Now as one important step ahead towards the e-commerce, online banking or E-banking is becoming very popular in the developed countries. Modern techno-savvy banks are already using plastic money or e-money like credit, debit cards and ATM's since more than decade. Using computer networks and SWIFT to exchange financial information across branches and banks for internal banking processing is not a new practice for most of the modern banks with the popularity of personal computers as consumer goods of durable nature, internet and world wide web as sources of exchanging information those banks are now gradually going to use this internet/global networks as channel of providing banking service. Many new virtual banks have entered the banking industry, and this has enabled customers to have access to financial services over the internet. The cost savings have helped Internet-based banks offer lower or no service fees and higher interest rates on interest-bearing accounts than traditional banks.(Kiragu, Michael 2019).

The revolution of information technology has influenced almost every facet of life, among them is the banking sector. The introduction of electronic banking has revolutionized and redefined the ways banks were operating. As technology is now consider as the main contribution for the organizations' success and as their core competencies. Therefore, the banks, be it domestic or foreign are investing more on providing on the customers with the new technologies through e banking. PC banking, mobile banking, ATM, electronic funds transfer, account-to-account transfer, paying bills online, online statements and credit cards etc. are the services provided by banks. In addition, the feature, which is commonly unique to internet banking, includes

importing data into personal accounting software. Some online banking platforms support account aggregation to allow the customers to monitor all of their accounts in one place whether they are with their main bank or with other institutions. Banking through internet is considered as a complimentary delivery channel for the services rather than a substitute for the brick and mortar banking branches. Online banking was first offered in 1995, when 16 of the largest banks, including Compass Bank, Chase and Nations Bank, began the services through Intuit Inc.'s Quicken financial software (Maharjan, M.J & Shakya, S. 2015). Prior to 1998, there had been concern over the slow rate at which consumers were adopting online banking, so the burst of activity in the past year has surprised most industry observers. Two factors are responsible for driving the explosive growth in online banking. One is the rise in the number of Nepalese people with access to the internet, the second is the "built it and they will come" approach taken by financial institutions. Internet banking generally means that a home user direct dials the bank via a modem, logging onto the internet via an internet service provider and then going to the banks web page before accessing the secure site via a password. Banking industry of Nepal has been taking rapid stride in the advancement of technology and aggressive infusion of information technology in the functioning of the banks. The industry has not only kept pace with technological developments but has also forced the computer industry to continuously keep pace and innovative products to suit its needs. Banks are using information technology to gain competitive advantage. The Internet banking is much faster, convenient and economic than the traditional "brick-to-mortar" banking as this banking service channel is able to provide all financial services with computer mouse clicks at comfort of consumers own room through internet connected personal computer. It is easy to do internet-banking; sit down, boot up your computer and dial up into banking center. You can balance your checkbook, invest in certificates of deposit and pay your mortgage and more, all from home. You can even pay your credit cards right online. No need to jump in the car and fight traffic to get to the bank before it closes. Moreover, you can do your banking whenever you want. You are not limited to lobby hours.

1.2 Statement of Problems

The most important goals of profit entities are to maximize shareholder's wealth and company profit. Increasing number of private banks and privatization of governmental banks has increased competition among various bank and banks are offering different electronic services with the focus on the consideration of increasing prompt banking services and minimizing administrative burden and increasing profit share, which has helped banks to attract more clients and generate more profit. However, all of these achievements could only attained by using new technologies, which are very popular at present. Information and communication technology plays great role in providing different e-services. Providing prompt services, reduces in service costs and management costs, ultimately adds more profit.

Internet technology is rapidly changing. Therefore, banks are focusing on the way the personal financial services are being designed and delivered. Now, commercial banks in Nepal are trying to introduce internet based e-banking systems to improve their operations and reduce costs. Nepalese commercial banks are generally found to have been adopting the e-banking as competitive tools and as a step towards innovative services. However, Nepal is yet a very least developed country; there are many ambiguities and difficulties about the application of e-banking. Each bank in Nepal is using e-banking as a tool to gain competitive advantage. However, the impact of e-banking on banks' profitability in Nepal is yet to be established. So there is need to study how commercial banks are practicing e-banking to increase profitability Therefore, in this research I am going to do the research study about the profitability performance of Nepalese commercial banks following the adoption of e-banking system.

This study is conducted to find out the answers of the following research questions:

- 1. What is the position of services and facilities provided by banks under ebanking in Nepal ?
- 2. What is the position of profitability of commercial bank?
- 3. What are the impacts of e-banking on bank's profitability?

1.3 Objectives of the Study

Understanding the link between e-banking and its impact on profitability is an important issue. Therefore, the primary objective of this study is to examine and analyze the contribution of e-banking on profitability of Nepalese commercial banks. This research aim to examine the relationship between e-banking tools and their impact on profitability. Therefore, the study has following objectives.

- 1. To assess the position of facilities provided by the bank under e-banking service facility.
- 2. To assess the position of profitability with the use of e-banking on sampled Banks.
- 3. To examine the impact of e-banking on the bank's profitability.

1.4 Conceptual framework

Under conceptual framework attempts have made to review the theoretical concepts on Internet Banking. Adoption of e-banking technology, tool and system is important and inevitable which influences on profitability of any banks.

This includes conceptual framework about dependent variable and independent variables.

Automated Teller Machine (ATM)

An ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records, 24 hours a day. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period than human tellers do. Therefore, ATM helps to increase the bank productivity.

Credit card

Credit card is instrument of electronic banking. It provide facility and freedom to rent cars, reserve hotels, book vacations, pay bills and shop everywhere the card is accepted without checks and currencies. The Credit Card holder is empowered to spend wherever and whenever he wants with his Credit Card within the limits fixed by his bank. Credit Card is a postpaid card. Every time a person uses this card, the E-Banking house gets money transferred to its account from the bank of the buyer. It helps to increase the bank productivity.

Internet Banking

Internet Banking, which is described as "the provision of traditional (banking) services over the internet, by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking". Service

delivery is informational (informing customers on bank's products, etc) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Tele banking and Personal Computer-Banking. Moreover, it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers.



1.5 Significance of the study

Now days the area and scope of commercial banks are broad because of the development of advance technology and incremental penetration of electronic banking operations in Nepal and around the world. The rapid development of the technology infrastructure has increased quality of Internet connections, the more widespread use of the Internet in both homes and businesses, and the significant reduction in both the fixed and variable costs of the Internet connections in Nepal. The study of e-banking of Nepalese commercial banks enable the various groups to know about internet banking and its impact on profitability. The issues discussed under this study are relatively current issues for Nepalese banking industry. The recentness of this topic makes it relevant from both the academic and practical point of view. The study will be use as a source of reference material besides suggesting areas where future research can be conducted. Similarly, this study will be useful as a reference to those students who want to conduct their academic thesis on e- banking.

The study will help scholars understand the various forms of electronic banking and its effects on the financial performance of Nepalese commercial bank. Banks will be able to provide quality services to its customers and even encourage more people to invest in it, and other financial institutions. The banking organizations in Nepal will also have a benchmark for measuring their electronic banking services and their financial performance. Bank customers will be able to carry out their transactions from the comfort of their homes or workplace hence saving on time and resources; they will also gain a better understanding of how to carry out bank services using electronic banking. Researchers will be able to add to their research work about electronic banking and gain a better understanding on this field. The findings can also be used in future as reference material. The finding will be important for the further researches and scholars who are related to this field.

1.6 Limitation of the Study

No study is free of limitations, so as this study does have its own limitations. The following are the limitations of this study:

1. The study is mainly concentrated on the use of e-banking tools and its impact on the profitability of commercial banks. This study does not cover all the 28 commercial banks, which includes only five commercial banks because banks have not prepared their latest financial statements and have just merged with some development banks, finance companies, and some are in process of merger.

2. The topic "E-banking and its impact on profitability (analysis of selected banks) is much more dynamic and it takes huge resources including human and financial to cover the whole aspects of the research but the research has focused on the e-banking and its impact on profitability due to the use of in ATM, CC, IB, as independent variable.

3. This study includes the observation period of 7 years from 2013 to 2019 of 5 commercial banks.

4. The data has been taken from secondary source; therefore, authenticity of the data is dependent on the accuracy of the information used.

5. The result is strictly based on information provided by the company's website, SEBON, NEPSE, NRB etc.

1.7 Chapter plan

This study is mainly focus on e-banking service and its impact on profitability of Nepalese commercial banks. To accomplish this research, the study will be organized and decorated in five chapters. Each chapter and unit will be on a prescribed format of thesis writing to the partial fulfillment of MBS program. Each unit gives the clear picture or roadmap of the study. Chapter plan of this research work is as follows.

Chapter 1: Introduction

This chapter describes the basic concept with Introduction of The Study. In this chapter, background of the study, statement of the problem, purpose of the study, Significance of study and limitation of the study has mentioned.

Chapter 2: Review of Literature

This chapter focused Review of Literature in related topic, which assured readers that they are familiar with important research that has been carried out in similar areas. In this chapter conceptual review, review of previous work, (such as different book, journals, article and previous thesis), research gap are included.

Chapter 3: Research Methodology

Research methodology includes the various sequential steps to be adopted by a researcher studying a problem with certain objectives in view. This chapter includes Research design, population and sample, sources of data, data collection procedures, data processing procedures and data analysis tools and techniques.

Chapter 4: Results

This chapter will comprise the main part of the study. It deals with the presentation and analysis of the data and information collected from secondary sources and scoring the empirical findings of the study through definite course of the research methodology.

Chapter 5: Summary, Conclusions and Implications

This chapter will state the summary of the whole study. After the summary, it will be followed by the basic conclusions of the study based on the fourth chapter and lastly, the implication will be presented for considerations based on the conclusions.

CHAPTER: II

LITERATURE REVIEW

Literature review is a process of finding previously uncovered facts on research topic. For finding basic information about the Internet banking and its impact on banks' profitability of Nepalese commercial banks .various resources, which are related to the study has been reviewed. It is separate into two parts – Theoretical and Research Reviews. The first section presents the theoretical concept on Internet banking and customer satisfaction. The second part presents the review of relevant dissertations and concerned reports.

2.1 Conceptual review

2.1.1 Concept and Historical Background of Bank

The word bank derived from the Italian' word banco' that signifies the exchange of money by sitting on the bench. In the olden days, European moneylenders or moneychangers used to display coins of different countries in big heaps (quantity) on benches or tables for the purpose of lending or exchanging. A bank is a financial institution, which deals with deposits and advances and other related services. It receives money from those who want to save in the form of Deposits and lend this money to those who need it. In other words, Bank can be understood as an authorized financial institution, which is established to accept deposits, pay interest, clear checks, make loans, act as intermediaries in financial transactions, and provides other banking services to its customers. Bank conducts the business activity, of accepting and safeguarding money owned by other individuals and entities, and then lending out this money in order to earn profit. Bank is an institution, which processes credit and lending operations, as well as accepting deposits and making advances. It also allows for the issuance of money and facilitates payment processing including automatic payment. It facilitates all forms of electronic banking services internally and externally (Nyangosi, R., Arora, J.S., & Singh, S.2009). Bank also can be defined in two aspects as:

1. Functional Aspects: According to functional aspect, a bank is an institute that keeps lends and exchange money.

2. Legal Aspect: According to legal aspect, a bank can be defined as a business, which accepts, deposits as a saving according to a different account and in turn advances loan as credit.

2.1.2 IT and the Banking Sector

IT revolution in the banking industry will help to cope with the explosive growth in the number of transactions and to provide improved customer service. In the process, decision-making in banks would get immensely facilitated. We have been witnessing since about the early eighties the phenomenon of widespread use of computers and communication technology in most of the industrialized and emerging market economics. This has resulted in faster funds movement across nations and borders.

Globalization of economies and financial liberalization within the economic has opened new opportunities of growth for techno-savvy institutions, while for the others these have resulted in shrinkage of revenues. The use of IT in the banking industry in our country has however been somewhat limited and has as a result, restricted our presence in international operations. Even in critical spheres such as those involving funds transfer, and MIS based decision-making, there has been little evidence of proactive movement towards wholesale computerization (Gupta,S.,& Yadav, A.2019).In Nepal, we have such a large reservoir of human capital trained and skilled in Information Technology, and we are aware of the fact that a number of countries have developed their financial sector through an extensive use of IT as the medium of growth. It is only with the growing recognition of the need for having in place financial reforms, has the interest in IT application in the banking sector in Nepal increased. Perhaps the Globalization has in a way contributed to the growing technology adaptations in the banks. The sharp growth of computer use in new consumer goods of durable nature has also given rise to the need for use of computers in the service sectors as well banking industry, as a service provider cannot naturally lag behind in this movement toward the new techno-age.

2.1.3 Information and Communication Technology (ICT)

IT is any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources (Gupta & Joshi 2014).

ICT is the technology of computers, telecommunications, and other devices that integrate data, equipment, personal and problem solving method in planning and controlling business activities, information technology provides the means for collecting, storing, encoding, processing, analyzing, transmitting, receiving and printing text, audio and video information.

Information Technology (IT) or information and communication technology (ICT) is the technology required for information processing. In particular, the use of electronic computers and computer software to convert, store, protect, process, and transmit and retrieve information from anywhere and anytime.

Hardware: In the context of information technology, the computer and its peripherals, equipment used for transmission of information and information security all constitute the hardware.

Software: It is the computer programmed language written in the high level or machine level language to made the instructions of computer users understandable by the computer system and execute the processing as per the instruction of the user and bring desired output. There are different types of software that helps the computer run smoothly. System software helps the computer system constituting hardware peripherals and other application software in a coordinated way. Application software is the software developed to apply in different sectors of work processing. Different kinds of financial software and banking software can be regarded as example of application software.

Internet: It is sometimes called the "Information superhighway", is a worldwide, publicly accessible series of interconnected computer networks that transmit data by packet switching using the standard Internet Protocol (IP). It is "network of networks" that consists of millions of smaller domestic, academic, business and government networks, which together carry various information and services such as electronic mail, online chat, file transfer and interlinked web pages other resources of the World Wide Web (WWW).World Wide Web and Internet are not synonymous. The Internet is a collection of interconnected computer networks, linked by copper wires, fiber optic cable, wireless connections etc. In contrast, the web is a collection of

interconnected documents and other resources linked by hyperlinks and URLs. Now a day's, the most easily accessible sources of information is becoming the websites, we are already experiencing the convenience of using email instead of post mail. According to the study of "Dreams and Ideas" an ICT company, there are more than 2500 sites in the net with Nepalese domain and information (Bastola, 2007). This is indicating that our presence in the virtual world is also growing. Netcraft.com, a website portal specially working on the study and research of WWW world, has reported that there are 1.50 billion websites on the same organization it was found that more than 4000 websites has got SSL certificates indicating that they are completely secure to conduct all kinds of electronic payments and e-transactions. Websites. Statistic websites is only informational and not used interactive features whereas dynamic website is that type of website, which provides information as well as has user interactive features.

2.1.4 Information and Communication Technology (ICT) in Nepal

Our modern life today is hard to imagine without information and communication technology as it has changed our daily life dramatically. Innovations and developments in the information and communication technology have made our world like a small village. The revolution of IT and effects of globalization process are getting more apparent even in our country. After the introduction of first computer in 1972 and sound development in telecommunication sector, Nepal also has experienced a lot of cyber activities and IT is showing that Nepal is also gradually moving towards the online world with growing number of ISPs which reached 36 till this year, around 1,000,000 internet users and visitors in CAN InfoTech reached around 400,000 last year. There were hundreds of institution and colleges providing education related to IT and in school level also computer education has been incorporated in the basic curriculum. All this statistics indicates that IT is growing in Nepal and more people are getting used to with the technology (Wikipedia, Information technology).

2.1.5 Computerization in Banks

With the changing technological environment, banks in future cannot survive without the support of Information Technology is merely stating the obvious. The point to ponder over is whether the industry is now poised for the challenges that arises as result. From all indications; banks seem to be prepared to exploit the opportunities that globalization and financial liberalization provides. Computerization of branch operations, controlling offices and Head offices has been going to get very popular in the modern banking practice sharply. In recent times, since that is the only way by which senior managements in banks can gain information on the size of operations on a daily basis. The banking industry is clearly cognizant of the imperatives of financial liberalization and has therefore attempted to computerize branches that are located in commercial important centers across the country.

The large functional and geographical spread of banks has led to sharp growth in the number of accounts and in the area as of operation of banks. This has necessitated switchover from hard cash to paper based instruments. This has been facilitated to extend the Internet Technology to coming year. Computerization of service branch operations serves as vital fulcrum point for all clearing of drawn on it, are routed through the service branch, where the relevant accounting entries are passed for interbranch reconciliation. Banks have had to therefore computerize the operations of nearly 90 percent of the service branches (Pradhan, 2009).

The development and use of communication networks has also helped the banking industry to gain in terms of improved banking services. Other important developments in the payments area have a bearing on the speed of computerization in banks. Electronic payment products such as Electronic Clearing Service (Credit and Debit) are becoming increasingly popular with corporate. Nepalese commercial Bank responding to the needs of business entities has been offering different computerized products. Any Branch Banking System is available in most of the commercial banks of Nepal. The number of corporate institutions availing the ABBS service has been increased. The scopes of widening its coverage further seems be very substantial.

2.1.6 Internet Banking

Internet Banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar institution. The following terms all refer to one form or another of electronic banking; personal computer banking (PC) banking, Internet Banking, virtual banking, online banking, home banking, remote electronic banking and phone banking. PC banking and Internet or online banking is the most frequently used designations. It should be noted; however, that the terms used to describe the various types of electronic banking are often is used interchangeably.

2.1.6.1 Channels of Internet Banking

According to the current electronic banking service availability, the channels of electronic banking are as following.

- 1. Automated Teller Machines (ATM)
- 2. Point of Sales (POS)
- 3. Telephone banking (Tele Banking)
- 4. Internet Banking
- 5. Mobile banking (SMS Banking)

Automated Teller Machines (ATM):

An automated teller machine (ATM) is a computerized telecommunication device that provides the customer of a financial institution with access to financial transaction in a public space without the need for a human clerk of bank teller. On most modern ATMs, the customer are identified inserting the plastic ATM care with the magnetic stripe or a plastic smart card with a chip that contains unique card number and some security information. Security is provided to the customer giving personal identification number (PIN). (Wikipedia, Automated teller machine)

Point of Sales:

POS mean a retail shop, a checkout counter in shop, or the location where a transaction occurs. More, specifically, the point of sale often refers to the hardware and software used for checkouts the equivalent of electronic cash register. Points of sales systems are used in supermarkets, restaurants, hotels, stadiums and casinos as well as almost any type retail establishments (Wikipedia, Point of Sales).

Telephone Banking (Tele Banking):

It is service provide by a financial institution, which allows customers to perform transactions over the telephone. Most telephone banking use as automated phone answering machine system with phone keypad response or voice recognition capability. To guarantee security, the customer must first authenticate through a numeric or verbal password or through security questions asked by live representative. With obvious exception of cash withdrawals and deposits, it offers virtually all the features of an ATM.: account balance information list of latest transactions, electronic bill payments, and funds transfer between customer's accounts etc.

Mobile Banking (SMS Banking):

Mobile banking refers to provision and accessibility of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities of performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking today is most often performed via, SMS or the Mobile Internet but can also use special program downloaded to mobile device.

Internet Banking:

Internet banking also is a channel of providing banking services through the Internet facilities. It allows customers to conduct financial transactions on secure website operated by their retail or virtual Bank and credit unions. Online banking solutions have many features and capabilities. Such as account-to-account, transfer of funds, paying a bill wire transfer and applications, apply for loan, new account etc. and non-transactional facilities like getting Bank statements over the Internet. In the developed countries like US and other European countries, Internet Banking has become so popular that nearly half of the banking consumers are now using Internet for their banking transactions and the trend is slowly appearing even in the south Asian nations. Furthermore, the development of Internet and World Wide Web pages have made it possible for the operation of virtual banks.

2.1.6.2 Instruments used in Internet Banking

Credit Card:

Credit card provide facility and freedom to rent cars, reserve hotels, book vacations, pay bills and shop everywhere the card is accepted without checks and currencies.

Visa and Master cards are the commonly used credit cards in Nepal. These cards are used for making transactions in various outlets in the country. Credit cards are accepted for payments by merchant outlets concentrated mostly in the Kathmandu valley, the capital of Nepal, along with some big cities like Biratnagar, Birgunj and Pokhara.

Wired Plastic Cards:

It lets you set your own limits by pre-funding the amount your need to spend. Unlike other cards there are no annual fees, no transactions fees, no interest charges of debt to repay, no reload fees. Get the prestige and purchasing power of your own-wired plastic card (Wikipedia, Visa Electron).

Plastic Master Card:

This card is not available in Nepal. Master Card is one of the most popular instruments of online banking as it can be used in most of the online payment all round the world.

Advanta Computer Card:

Business can apply for the Advanta Platinum Business MasterCard and earn rebates on computer equipment and other electronics products. Some features of this card are great introductory rate, high credit limit and a customized card with the consumer's business name. This card is not available in Nepal and has a great opportunity to the growing IT markets (Wikipedia, Visa Electron).

Visa Electron Debit Card:

Nepal Investment Bank Ltd. Nepal introduced this card. It is different from Credit Card, to use a card you have to open an account with the Bank and you use the card up to your minimum balance imposed by the Bank (Wikipedia, Visa Electron).

2.1.6.3 History of Electronic Banking in Nepal

Bastola (2007) outlined history of electronic banking in Nepal as follows:

Evolution of Banking

1. Banking started in Nepal in 1937 by "Nepal Bank Limited" (Government Sector)

Evolution of Joint Venture (JV) Banks and e-Banking

1. Establishment of first Joint Venture Bank, Nepal Arab Bank Limited (now NABIL Bank), in 1984.

2. Introduction of Credit Cards in Nepal in early 1990 (NABIL bank)

3. Automated Teller Machine (ATM) was first introduced by another JV Bank, Himalayan Bank Ltd, in 1995

4. Himalayan Bank Ltd. was also the first bank to introduce Tele-banking (Telephone Banking) in Nepal.

Major milestones

Khanal (2008) has summarized the major milestones of e-banking services as follow:

1. Evolution of Joint Venture Bank in Nepal (NABIL Bank) in 1984

2. Introduction of Credit Cards in 1980

3. Establishment of first ISP I 1994 (Mercantile Office System)

- 4. First ATM lunched by Himalayan Bank Ltd, in 1995
- 5. Himalayan Bank Ltd introduced Tele-Banking facility in 1997
- 6. Formulation of IT policy in 2000
- 7. Evolution of private Sector Bank (Kumari Bank) in Nepal, in 2001
- 8. Kumari Bank first introduced Internet Banking in 2002
- 9. SMS-Banking (mobile banking) was launched by Kumari Bank in 2004

2.1.6.4 E-commerce

This is the 21st century world where we are able to work from our room for people living in another corner of the world just staying ahead of the net connected computer with salable skills all around the world. Integration of economies has already begun with the more free and barrier less trade and commerce. Information and communication technology has made the globe like a small village and globalization process is on. Traditional social inter relation process, mediums, trading process and system are also being replaced by the virtual world created by vast network of information and communication technology. This is how new medium of trade and commercial practice has emerged and this new phenomenon is called E-commerce.

E-commerce is nothing but such a value added act of buying and selling of goods and services through electronic channels, especially by using the Internet. The scope of ecommerce is such that, huge percent of the total sales in the world will be electronically processed this year as projected by Forester research Inc. and Nepal cannot afford to sit back and watch this opportunity go by. However, development of e-commerce rests on the e-readiness. E-readiness refers to a country's ability to take advantage of Internet as an engine of economic growth and human development. It also takes account of how a prevalent e-business practice is in each country and is ready to automate its traditional business practices through the Internet. However, in the context of Nepal, most Internet businesses are confined to Kathmandu valley. Nepal's information communication and technologies (ICT) status to some extent stands with the tele density of about 7.77 percent according to Nepal Telecom's statistics and data (Yadav, 2004). Nonetheless, the country's present sluggish business environment bleak-socio cultural status and poor e-literacy have not contributed much to the e-readiness of the country. This affects e-business, which depends on the technical skill of the workforce. Now notable practice of e-business has increased and most of the ICT companies registered by commercial houses with the introduction of .np domain name. The new practices of 'e-gifting' and "e-remittance" are the latest in e-business. Such practices of business to consumer through e-commerce illustrate growing comfort among consumers. However, the e-market size is still very limited. The banking industry that is booming every year is looking forward to implementing e-banking to provide swift services. Despite such interests, the biggest constraint for a full-fledged e-commerce operation is lack of strong cyber-law and other supporting laws (Wikipedia, Electronic commerce). First ever cyber law of Nepal was enacted recently. The act itself is a landmark of its kind and opens the door for wider ecommerce activities to take off officially in the near future. Whether the act reflects the framework of "model Law on e-commerce" adopted by the "UN commission on International Trade Law" will also determine future e-commerce growth, as we want to explore e-market internationally without complications. For e-commerce to contribute to the country's economy, all the laws regulating the e-commerce activities should comply international monetary and regulations via net. The threat of cyber crime is another immediate and imminent concern though quite a few cases in Nepal. The repercussion of this will be noticed while dealing with digital signatures involving cryptography that we need to carry out homework before we jump into ecommerce. E-commerce and e-readiness complement each other in the development process of a country's e-economy. Despite of Nepal's e-readiness being very low at the scale of 0-9 according to ITC, the enthusiasm and willingness to use ICT as a tool to explore business as whole will prove to be a significant step towards modernization

of economic reforms in the country. The challenges today are how best optimize the sub-standard, yet promising e-readiness to the country to prosperous e-commerce market in the future. With so-called Information Technology (IT) revolution in the globe, Nepal is also witnessing a myriad of cyber activities both at private and government levels. Nepal entered in the cyber world in the late 70s. Private sector and joint ventures took a lead role to the development of IT. The government formulated IT policy eight years ago, putting forth its various agenda to develop IT and manipulate the latest IT discoveries for the overall development endeavors. However, the government has not introduced the supporting act and regulations essential to boost e-commerce and e-governance. After a repeated call by the IT entrepreneurs, professionals and planners to introduce the Cyber Act, the government finally decided to introduce Electronic Transactions Digital Signature Act-2063, also known as Cyber Law.

2.2 Empirical Review

Simpson (2002) investigated the risk, efficiency and rate of progress in the implementation of electronic commerce (e-commerce) in a sample of banks from a developed country (the US), and a sample of banks from developing and emerging markets. The results of the study confirmed that the US is very advanced in its electronic-banking (e-banking) actuation. There is evidence suggesting that e banking is driven largely by the prospects of operating costs minimization and operating revenue maximization. Costs are lower and revenues are higher when banking services are delivered through a branch network.

Hernando and Nieto (2006) found that the impact of adopting internet on the performance of banks as a delivery channel of e banking takes time to appear. They hold the view that the adoption of a transactional website has a positive impact on profitability, which becomes significant in terms of ROA and ROE three years after adoption. This finding actually conveys that there is a lag period for positive profitability impact to manifest on adoption of electronic banking. However, their study revealed some weaker evidence of an earlier positive impact on adoption of e-banking particularly in terms of ROA.

Heng & khrawish (2006) examined the impact of e-banking on Jordanian banks and concluded that the majority of the banks are providing services on the Internet

through their websites and his findings showed that the attention is more on satisfying and fulfilling customers' needs through e-banking. He also concluded that there should be a well-articulated strategy to achieve success and profits in the end. Results revealed that electronic banking services have a negative effect on banks profitability in the short run due to the capital investment by the banks on infrastructure and training but will be positive in the long run.

DeYoung et al. (2007) tried to compare two different waves of adoption of internet banking to find out how the internet can change the performance of banks. The first wave of US banks to adopt transactional banking web sites in the late-1990s, and compare the change in their 1999–2001. Finding of the study shows that Internet adoption has improved the community bank profitability, chiefly through increased revenues from deposit service charges. Internet adoption was also associated with movements of deposits from checking accounts to money market deposit accounts. This is also responsible for the increased use of brokered deposits, and higher average wage rates for bank employees. The result shows little evidence of changes in the loan portfolio. Findings suggested that the initial click-and-mortar banks (and their customers) used the Internet channel as a complement to, rather than a substitute for, physical branches.

Onay et al. (2008) investigated on the impact of internet banking on bank profitability. Their analysis covered thirteen banks that have adopted online banking in Turkey between 1996 and 2005. Using specific and macroeconomics control variables they investigated the impact of Internet banking on Return on Assets (ROA) and Return on Equity (ROE). Their results showed that Internet banking starts contributing to banks ROE with a time lag of two years, negative impact is observed for one year lagged dummy. According to their study, the Internet has changed the dimensions of competition in the retail-banking sector. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure. Investment in e-banking is a gradual process. The Internet banking variable has had a positive effect on the performance of the banking system in Turkey.

Malhotra and Singh (2009) study analysis indicated that Internet banks are larger banks and have better operating efficiency ratios and profitability as compared to non-Internet banks. Internet banks rely more heavily on core deposits for funding than non-Internet banks. Further, the multiple regression results reveal on one hand that the profitability and offering of Internet banking does not have any significant association, while on the other hand, Internet banking has a significant and negative association with risk profile of the banks. Found that there is no significant relationship between the adoption of internet banking and the performance of public sector banks in India in terms of ROA & ROE. They found that I-banking has negative impact on the profitability of private sector banks in terms of ROA and a positive impact on the performance of foreign banks in terms of ROE.

Khrawish and Al-sa'di (2011) found that there was no significant effect of these electronic services on the return of assets and the returns on equity. The study however, showed that such services made significant impact on the profit margin of the concerned banks. They also found that there was no significant effect of these services on banks profitability after two years of applying it in Jordan.

Alsmadi and Al-wabel (2011) found that the adoption of e banking affects bank performance negatively. In their opinion, they hold that e banking may eventually become a very important factor affecting performance for many banks.

Sumra et al. (2011) in their work entitled " The impact of e banking on the profitability of Banks: A study of Pakistani Banks", analyzed twelve banks across Pakistan. The study identified that e banking has increased the profitability of banks. It has enabled the banks to meet their costs and earn profits even in the short span of time. For banks in Pakistan, the main motive to adopt e banking according to study is to increase their clientage and to retain their customers and the profitability of banks has augmented in transitioning to e-banking medium.

Meihami et al. (2013) found that there is a positive and strong relationship between electronic banking and its five components (i.e. automated teller machines, bankcard, internet bank, telephone bank, point of sale) with bank incomes. The research finding show automated teller machine (ATM) has the maximum influence on bank incomes.

Oyewole et al. (2013) examined the impact of electronic banking on banks' performance in Nigeria. Macroeconomic control variables were employed to investigate the impact of e banking on return on asset (ROA), return on equity (ROE) and net interest margin (NIM). In their research, the impact of e banking on the performance of Nigerian banks was analyzed. By using panel data from eight

commercial banks that retained their brand name and have adopted e-banking between 1999 and 2012, estimations were done on the impact of e-banking on bank performance in terms of return on asset, return on equity and net interest margin. The result of the study indicates that e-banking begins to contribute positively to bank performance after two years of adoption in terms of ROA and NIM while a negative impact was observed in first year of adoption.

Abaenewe et al. (2013) Studied about Electronic Banking and Bank Performance In Nigeria. This study investigated the returns on equity and returns on assets of Nigerian banks following the adoption of electronic banking in Nigeria. The results reveal that there is significant difference between pre and post returns on equity on adoption of electronic banking, results is that adoption of e-banking in Nigeria has significantly improved Nigerian banks performance in terms of returns on equity (ROE) only. On the other hand, the results also reveal that there is no significant difference between pre- and post- returns on assets (ROA) of Nigeria banks on adoption of e-banking. Here, the implication of this result is that electronic banking adoption has not significantly improved the returns on assets of Nigerian banks. These tests for difference of means applied to test pre - and post returns on adoption of the e-banking technology showed no positive impact of the e-banking technology on the profitability performance indicator measured as ROA.

Muiruri & Ngari (2014) study indicates that e-banking channels has great impact on the financial performance of the banks. The study concluded that banks use internet banking to improve accuracy and efficiency and to increase speed and reliability of the banking system. This is because the process runs automated and is less prone to human errors.

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. In Vietnam, not only the effect on operating cost is not statistically significant, the increase in income is also relatively small. It indicates that

Internet banking is a delivery channel more than a source of profit, banks can benefit greatly from. In addition, Internet banking function currently is a complement not a substitute for traditional distribution channels such as bank's branch. Banks would further earn profit from the increase in profit to the extent that the Internet delivery channel acts as a substitute for traditional distribution channels. The results from the regression model showed that internet banking had an impact on bank profitability through an increase of income from service activities.

Joseph M.Vekya (2017) studied the impacts of electronic banking on the profitability of commercial banks in Kenya. The study indicates that there is positive significant relationship between ATM transactions POS transaction and bank profitability.

From the research evidence so far, there has not been a research output of related study from Nepal on electronic banking and banks profitability performance since the adoption of electronic banking. This study therefore makes an insight in this direction to close.

2.3 Research Gap

Different researchers have completed research in e-banking practices but very few researches have been found on the e-banking impact on banks 'profitability. This paper attempts to fill this gap by identifying and estimating the impact of e-banking as a delivery channel on the financial performance of commercial banks in Nepal. Researchers have not given much attention to this revolution occasioned by electronic banking with regard to profitability performance of banks. This study tries to fill the gap on previous literature available on electronic and internet banking and its impact on banks profitability in Nepal. Although, there has been some study on the use and challenges of the banks on adoption of electronic banking, however, there is less research output in the area of returns on assets and returns on equity to investors. This study therefore investigates the pattern of returns on equity and assets of Nepalese commercial banks in this era of e-banking. Thus, this study tries to fill this gap.

CHAPTER: III

RESEARCH METHODOLOGY

This section consists of the methods and procedures are applied during the research work. The basic objectives of the study are to determine e-banking impacts on profitability of selected commercial bank. Hence, appropriate research method have been followed as demanded by the study.

3.1 Research Design

This study will be based on descriptive and analytical research design. This study describes about status of e-banking and its impact on bank's profitability. Correlation multiple linear regression models are used to assess whether financial performance (profitability) is a function of the variables indicated on the specific objectives.

3.2 Population and Sample

All the 28 commercial banks of the Nepal, which are listed as "A" class bank, are the population for the study of impacts of e-banking on profitability. Among the 28 commercial banks, five banks are used as a sample banks.

3.3 Sources of the Data

This study is based on secondary data. During the research study, secondary data is used for the collection of required data as per requirement of the study. Therefore, relevant financial and operational data for the banks of the sample is collected based on their annual reports and their websites. All the information are collected from these secondary sources.

3.4 Data Analysis Tools and Techniques

Relevant tools and techniques are used to find out the best appropriate outcomes as per designed objectives of the study. Since the objective of the study is to determine whether e-banking has significantly improved the profitability performance of banks in Nepal with regards to the returns on equity (ROE) and returns on assets (ROA). The present research uses mix of following tools in the analysis. Different quantitative methods of statistical tools have been used for driving essence of the research data and interpret them in meaningful way. With the secondary data collection, Return on equity and Return on assets for relevant years has been computed:

3.4.1 Correlation Analysis

It is statistical tool for measuring the magnitude of liner relationship between the two variables. Karl person's measure, known as Karl person correlation coefficient between two variables series x and y, denoted by r(x, y) r can be obtained as:

$$\mathbf{r} = \frac{n\Sigma xy - \Sigma x.\Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

Where, r = correlation coefficient

- n = no. of years
- $\sum x =$ Sum of series X
- $\sum y =$ Sum of series Y
- $\sum XY =$ Sum of the product X and Y variables
- $(\sum x)^2$ = Sum of squares of series X
- $(\Sigma y)^2$ = Sum of squares of series Y

The value of coefficient of correlation always lies between +1 & -1. When coefficient of correlation (r) = +1, it means there is perfect positive correlation between the variables, when (r) = -1, it means there is perfect positive correlation between the variables and (r) = 0 refers that there is no relationship between the variables. The coefficient of correlation finds not only the magnitude of correlation but also its direction. The closer the value of 'r' to 1 or -1, the strong will be relationship between variables and the closer the 'r' to 0, weak will be the relationship (Chaudhary & Sharma, 2071).

3.4.2 Multiple Regression Analysis

The mathematical measure of average relationship between two or more variables in forms of original units of data is known as regression. The regression is the estimation or prediction of unknown variable from known variable. The unknown variable is known as dependent variable and known variable is known as independent variable. The main objective of multiple regressions is to predict the value of dependent variables (Profitability) from known value of the multiple variables (ATM, CC and IB).

Regression equation of Y (Profitability) on ATM, CC and IB

Model 1

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

 $ROA = a + b1 ATM + b2 CC + b3 IB + \dots ei$ Eqn. 1

Model 2

It has used to test the relationship between independent variables and ROE;

ROE = a + b1 ATM + b2 CC + b3 IB + ...ei Eqn. 2

Where,

a	= Constant
b1-b3	=Intercept of independent variables
ATM	= Automated Teller Machine 9
CC	= Credit cards
IB	= Internet Banking
ei	= error term
CHAPTER: IV

RESULTS

This chapter provides the systematic presentation and analysis of data to deal with various issues associated with determinants of profitability of commercial banks in the context of Nepal. This chapter also presents the results of data analysis obtained by applying the SPSS and various methodologies described in chapter three - Research Methodology.

4.1 Data Presentation

4.1.1 Positions of e-banking service

Table 4.1

YEAR	ATM	CC	IB
2013	20	160000	73520
2014	23	181233	83456
2015	25	195210	93456
2016	32	200000	102345
2017	35	210300	124566
2018	38	220000	133457
2019	42	234556	140334

Janata Bank Limited

Based on the result shown above table, the position of e-banking facilities (ATM, Credit card & internet banking) and users is growing up. In 2013 and 2014, no of ATM is 20 and 23 respectively. Similarly, in 2015, it has 25 ATM, the extension of ATM facilities has increased, and there are 42 ATM facilities coming to the year 2019. The credit card services users in 2013 and 2014 are 160000 and 181233 respectively. Similarly in 2015, it has 195210 and the credit card facilities users has been increased every year and there are 234556 facilities users in 2019. The internet banking services users in 2013 and 2014 are 73520 and 83456 respectively. Coming to the year 2019 there are 140334 users. This result defines the importance about the use of e-banking at Janata bank.

Table 4.2

Year	ATM	СС	IB
2013	25	180000	78310
2014	27	185100	88231
2015	29	193100	95320
2016	31	200000	105431
2017	35	204335	115430
2018	37	210000	130210
2019	39	215000	166567

Everest Bank Limited

Based on the result shown above table, the position of e-banking facilities (ATM, Credit card & internet banking) and users is growing up. In 2013 and 2014, no of ATM is 25 and 27 respectively. Similarly in 2015, it has 29 ATM and the extension of ATM facilities has increased and there are 39 ATM facilities coming to the year 2019. The credit card services users in 2013 and 2014 are 180000 and 185100 respectively. Similarly in 2015, it has 193100 and the credit card facilities users has been increased every year and there are 210000 facilities users in 2019. The internet banking services users in 2013 and 2014 are 78310 and 88231 respectively. Coming to the year 2019 there are 166567 users. This result shows the Everest Bank Limited's achievement in expanding e-banking services and its importance in attracting more customers in this computerized world.

Table 4.3

Year	ATM	CC	IB	
2013	16	164450	68996	
2014	19	177780	78667	
2015	22	188432	97668	
2016	25	215334	134566	
2017	28	225678	156778	
2018	31	245798	168910	
2019	35	265778	187678	

Investment Bank Limited

Based on the result shown above table, the position of e-banking facilities (ATM, Credit card & internet banking) and users is growing up. In 2013 and 2014, no of ATM is 16 and 19 respectively. Similarly, in 2015, it has 22 ATM and the extension of ATM facilities has increased, and there are 35 ATM facilities coming to the year 2019. The credit card services users in 2013 and 2014 are 164450 and 177780 respectively. Similarly in 2015, it has 188432 and the credit card facilities users has been increased every year and there are 265778 facilities users in 2019. The internet banking services users in 2013 and 2014 are 68996 and 78667 respectively. Coming to the year 2019 there are 187678 users. The result shows the investment bank achievement in expanding e-banking services and its importance in this globalized world of banking.

Table 4.4

Year	ATM	CC	IB
2013	13	150000	55678
2014	17	155366	77887
2015	19	163366	93467
2016	22	168250	105678
2017	22	170000	110345
2018	23	178678	125434
2019	25	188456	145788

Standard Chartered Bank

Based on the result shown above table, the position of e-banking facilities (ATM, Credit card & internet banking) and users is growing up. In 2013 and 2014, no of ATM is 13 and 17 respectively. Similarly, in 2015, it has 19 ATM, the extension of ATM facilities has increased, and there are 25 ATM facilities coming to the year 2019. The credit card services users in 2013 and 2014 are 150000 and 155366 respectively. Similarly in 2015, it has 163366 and the credit card facilities users has been increased every year and there are 188456 facilities users in 2019. The internet banking services users in 2013 and 2014 are 55678 and 77887 respectively. Coming to the year 2019 there are 145788 users. The result explains the importance about the

use of e-banking services and facilities at Standard Chartered Bank Limited for its further growth and development.

Table 4.5

Year	ATM	CC	IB
2013	19	174330	78943
2014	23	180567	83567
2015	27	193333	97879
2016	30	205667	126775
2017	32	243310	156798
2018	35	253518	166778
2019	37	278988	178665

Himalayan Bank Limited

Based on the result shown above table, the position of e-banking facilities (ATM, Credit card & internet banking) and users is growing up. In 2013 and 2014, no of ATM is 19 and 23 respectively. Similarly, in 2015, it has 27 ATM, the extension of ATM facilities has increased, and there are 37 ATM facilities coming to the year 2019. The credit card services users in 2013 and 2014 are 174330 and 180567 respectively. Similarly in 2015, it has 193333 and the credit card facilities users has been increased every year and there are 278988 facilities users in 2019. The internet banking services users in 2014 are 78943 and 83567 respectively. Coming to the year 2019 there are 178665 users. The data defines importance of e-banking at Himalayan Bank Limited, which helps in increasing ease and comfort on banking product and services and attracting more customers through reliable banking services.

YEAR	ROA	ROE
2013	2.1	35.83
2014	2.11	35.83
2015	2.39	36.62
2016	2.25	32.98
2017	2.02	29.83
2018	1.61	25.56
2019	1.72	25.74

Table 4.6Everest Bank Limited

Based on the result shown above table, the position of profitability with the use of ebanking tools (ATM, Credit card & internet banking) and users is mixed up and fluctuations makes ununiformed result too. The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. In 2013 and 2014, ROA is 2.1 and 2.11 and ROE is 35.83 and 35.83 respectively. Similarly, in 2015, it has ROA 2.39 and ROE 36.62. Coming to the years, 2018 and 2019, ROA is 1.61 and 1.72 and ROE is 25.56 and 25.74 respectively. This result shows the Everest Bank Limited's 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 ratio usually indicates an upward profit trend as well.

Table 4.7
Standard Chartered Bank Limited

Year	ROA	ROE
2013	2.1	33.52
2014	2.11	35.83
2015	1.84	29.5
2016	2.25	32.98
2017	1.84	29.5
2018	1.79	24.12
2019	1.72	23.5

Based on the result shown above table, the position of profitability with the use of ebanking tools (ATM, Credit card & internet banking) and users are mixed up and maintaining fluctuations too. The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. In 2013 and 2014, ROA is 2.1 and 2.11 and ROE is 35.52 and 35.83 respectively. Similarly, in 2015, it has ROA 1.84 and ROE 29.5. Coming to the years, 2018 and 2019, ROA is 1.79 and 1.72 and ROE is 24.12 and 23.5 respectively, which is less than the previous years 'return. This result shows the Everest Bank Limited's 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 ratio usually indicates an upward profit trend as well.

Table 4.8

Himalayan Bank Limited

Year	ROA	ROE
2013	1.74	19.91
2014	1.74	19.91
2015	1.6	18.85
2016	1.37	16.53
2017	2.06	24.2
2018	2.09	21.24
2019	2.12	21.3

Based on the result shown above table, the position of profitability with the use of ebanking tools (ATM, Credit card & internet banking) users are mixed up and maintaining fluctuations too. ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. In 2013 and 2014, ROA is 1.74 and 1.74 and ROE is 19.91 and 19.91 respectively. Similarly, in 2015, it has ROA 1.6 and ROE 18.85.In 2016 ROA is 1.37 and ROE is 16.53. Coming to the years, 2018 and 2019, ROA is 2.09 and 21.24 and ROE is 2.12 and 21.13 respectively, which is higher than the previous years 'return except in 2016. This result shows the Everest Bank Limited's 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 ratio usually indicates an upward profit trend as well.

Table 4.9

Year	ROA	ROE
2013	1.65	18.10
2014	1.58	17.18
2015	1.96	15.66
2016	2.57	19.10
2017	2.13	16.65
2018	2.25	16.88
2019	2.73	19.47

Investment Bank Limited

Based on the result shown above table, the position of profitability with the use of ebanking tools (ATM, Credit card & internet banking) and users is growing up and maintaining fluctuations too. The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. In 2013 and 2014, ROA is 1.65 and 1.58 and ROE is 18.10 and 17.18 respectively. Similarly, in 2015, it has ROA 1.96 and ROE 15.66. In 2016, ROA is 2.57 and ROE is 19.10. Coming to the years, 2018 and 2019, ROA is 2.25 and 2.73 and ROE is 16.88 and 19.47 respectively, which is higher than the previous years 'return except in 2016. This result shows the Everest Bank Limited's 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 ratio usually indicates an upward profit trend as well.

Table 4.10

Year	ROA	ROE
2013	0.52	5.48
2014	0.59	6.38
2015	0.50	5.39
2016	1.09	7.19
2017	1.40	9.99
2018	1.84	13.30
2019	1.94	13.37

Janata Bank Limited

Based on the result shown above table, the position of profitability with the use of ebanking tools (ATM, Credit card & internet banking) and users is growing up and maintaining fluctuations too. The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. In 2013 and 2014, ROA is 0.52 and 0.59 and ROE is 5.48 and 6.38 respectively. Similarly, in 2015, it has ROA 0.50 and ROE 5.39. In 2016, ROA is 1.09 and ROE is 7.19. Coming to the years, 2018 and 2019, ROA is 1.84 and 1.94 and ROE is 13.30 and 13.37 respectively, which is higher than the previous years 'return except in 2016. This result shows the Everest Bank Limited's 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 ratio usually indicates an upward profit trend as well.

4.1.2 Relationship between E-banking Channels and Financial Performance

The study sought to test the relationship between e-banking channels and the financial performance. This was done through Correlation and regression analysis. A Pearson correlation was run to establish how the variables were related to each other. Table 4.9 shows the correlation results of the study on the variables.

Table 4.11

	ROA	ROE	ATM	CC	IB
ROA	1				
ROE	.787**	1			
ATM	149	216	1		
CC	014	300	.767**	1	
IB	.113	163	.769**	.815**	1

Correlation analysis

**. Correlation is significant at the 0.01 level (2-tailed).

According to the correlation, the range of the output is between -1 to 1. A positive value indicates that the variables are positively related while a negative value indicates that the variables are negatively related.

Correlation Analysis shows that ATM is negatively related with ROA(r=-0.149). This relationship is insignificant since p-value (p=0.40) is greater than 0.05. Credit card is negatively related with ROA(r=-0.014). This relationship is insignificant since p-value (p=0.936) is greater than 0.05. Internet banking is positively related with ROA(r=0.113). This relationship is insignificant since p-value (p=0.524) is greater than 0.05.

4.1.3 Multiple Regression Analysis

Regression analysis models have been used to explain the relationship among the dependent variables of bank profitability (ROA and ROE) and explanatory variables such as ATM, Credit Card and Internet banking. The regression results obtained using the regressive procedure in SPSS version 20.

Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable's level of influence on the dependent variable. P-value or significance value indicates at what percentage or precession level of each variable is significant. R^2 values indicate the explanatory power of the model and in this study adjusted R^2 value, which takes into account the loss of degrees of freedom, associated with adding extra variables were inferred to see the explanatory powers of the models.

Empirical model:

As presented in the third chapter the empirical model used in the study in order to identify the factors that can affect Nepalese banks profitability was provided as follows:

Model 1

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

ROA = a + b1 ATM + b2 CC + b3 IB + ... ei

Table 4.12

Model summary of regression analysis on ROA

				Std. Error of the
Model	R	R Square	Adjusted R Square	Estimate
1	0.389	.152	.067	.53337

a. Predictors: (Constant), IB, ATM, CC

b. Dependent Variable: ROA

From table 4.12 the R-squared statistics and the adjusted-R squared statistics of the model shows 15.2% and 6.7 % respectively. The result indicates that the changes in the independent variables explain 6.7 % of the changes in the dependent variable. That is Internet banking, ATM, Credit card explain 6.7 % of the changes in ROA. The remaining 92.3 % of changes was explained by other factors, which are not included in the model. Thus, these variables collectively, are not good explanatory variables of the profitability of commercial banks in Nepal in terms of ROA.

Table 4.13 Analysis of variance

Mc	odel	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.524	3	.508	1.786	.171 ^b
	Residual	8.534	30	.284		
	Total	10.059	33			

a. Dependent Variable: ROA

b. Predictors: (Constant), IB, ATM, CC

The results in Table 4.13 shows that the independent variables are statistically insignificant in predicting the profits or affecting the profits of the banks. The study established value of p=0.171 that indicates statistical insignificance relationship.

Table 4.14

Regression	results of	f ROA o	n ATM, (Credit (Card and	l Internet	Banking
			,				

		Unstandardized Coefficients		Standardized Coefficients		
			Std.			
Model		В	Error	Beta	t	Sig.
1 (Co	nstant)	1.962	.428		4.585	.000
ATI	М	041	.021	548	-1.926	.064
CC		-1.104E-06	.000	089	284	.779
IB		9.548E-06	.000	.607	1.927	.064

a. Dependent Variable: ROA

Based on the results shown in table 4.14, all bank-specific independent variables have statistically insignificant impact on ROA. This indicates that independent variables used in this study, no one variable has significant impact on profitability of Nepalese commercial banks in terms of ROA.

The findings show the coefficients of the regression. According to the findings, credit cards (P=0.779), ATM (p=0.064), internet banking (p=0.064) were all no significant in predicting the profits of the banks since all the p values were more than 0.05. Since a low value indicates, high significance of the variable and high value indicates no any significance of the variables on the dependent variable. The aggregate of the values were therefore not coming out as strongly as the rest of the factors, which were almost in all the banks.

The resulting regression equation was:

ROA = 1.962+ (-0.041) ATM + (-0.000001104) CC + (0.000009548) IB

This 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. ATM and Credit cards has found to negative impact on the profitability of the banks.

Model 2

It has used to test the relationship between independent variables and ROE;

 $ROE = a + b1 ATM + b2 CC + b3 IB + \dots ei$

Table 4.15

Model Summary of Regression Analysis on ROE

				Std. Error
			Adjusted R	of the
Model	R	R Square	Square	Estimate
2	0.334	.111	.022	9.93956

a. Predictors: (Constant), IB, ATM, CC

b. Dependent Variable: ROE

The estimation result of the linear regression model used in this study presented in table 4.15 shows the R-squared statistics and the adjusted-R squared statistics of the model was 11.1 % and 2.2 % respectively. The result indicates that the changes in the independent variables explain 2.2 % of the changes in the dependent variable. That is internet banking, ATM, Credit card explain 2.2 % of the changes in ROE. The remaining 97.8 % of changes was explained by other factors, which are not included in the model. Thus, these variables collectively, are not good explanatory variables of the profitability of commercial banks in Nepal in terms of ROE.

Table 4.16 Analysis of Variance

Mo	odel	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	371.129	3	123.710	1.252	0.308
	Residual	2963.843	30	98.795		
	Total	3334.972	33			

a. Dependent Variable: ROE

b. Predictors: (Constant), IB, ATM, CC

The results in Table 4.16 shows that the independent variables are statistically insignificant in predicting the profits or affecting the profits of the banks. This study has established a significant value of p=0.308 showing a statistical insignificance relationship.

Table 4.17

		Unstanda Coeffic	ardized cients	Standardized Coefficients		
Mo	odel	В	Std. Error	Beta	t	Sig.
1	(Constant)	35.187	7.976		4.412	.000
	ATM	083	.393	061	211	.835
	CC	.000	.000	473	-1.475	.151
	IB	7.746E-05	.000	.270	.839	.408

Regression results of ROE on ATM, Credit Card and Internet Banking

a. Dependent Variable: ROE

Based on the results shown in table 4.17, all bank-specific independent variables had statistically insignificant impact on ROE. This indicates that independent variables used in this study, no one variable has significant impact on profitability of Nepalese commercial banks in terms of ROE.

The findings show the coefficients of the regression. According to the findings, credit cards (P=0.151), ATM (p=0.835), internet banking (p=0.408) were all no significant in predicting the profits of the banks since all the p values were more than 0.05. Since a low value indicates, high significance of the variable and high value indicates no any significance of the variables on the dependent variable. The aggregate of the values were therefore not coming out as strongly as the rest of the factors, which were almost in all the banks.

The resulting regression equation was:

ROE= 35.187+ (-0.083) ATM+ (0.000) CC + (0.00007746) IB

The result shows that adoption of e-banking does not seem to have a significant impact on the performance of Nepalese banks measured in terms of ROA and ROE. The results of the constructed regression model shows that only Internet banking has positive impacts on banks' performance. The research results indicated the new channel has not affected the operating expenses. Added to the low impact of internet banking on banks' income, these results suggest that Internet banking functions as a complement not a substitute for traditional distribution channels such as complement not a substitute for traditional distribution channels such as branch.

4.2 Major Findings

In the research, the following findings computed:

- Many banks are expanding their services through e-banking channels (i.e. ATM, Point of sales, Card services, Mobile banking, Telephone banking, Internet banking etc.) in Nepal and Banks are managing assets efficiently to gain more return with the use of e- banking tools..
- 2. No one of the e-banking channels (ATM, Internet Banking, and Credit Card) have a statistically significant correlation with the performance of the banks.
- E-banking channels of internet banking have insignificant impacts on the financial performance of the commercial banks in terms of ROA and ROE. ATM and Credit cards affect negatively and insignificantly in the profitability of the banks.

CHAPTER: V

CONCLUSION

This chapter summarizes the whole study. This chapter is divided into three sections – summary, conclusions and implications. The first section deals with summary. The second one contains the major facts of the study, and the third one presents the implications of the E- banking in Nepal.

5.1 Summary

Internet has changed the dimensions of competition in the retail-banking sector by adding a new distribution channel to retail banking. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure through the leapfrogging effect as recent literature has argued. Electronic banking has brought about a paradigm shift in banking operations to the extent that banks embrace internet technology to enhance effective and extensive delivery of wide range of value added products and services.

As now the scope is transferring to plastic money, the electronic banking is gaining more importance by the passing time. The electronic banking services provided by the banks include ATM, credit cards, funds transfer, cheque payment, funds deposit, balance enquiry, utility bills payment, statement of account, remittance, draft, pay order, phone banking, mobile banking, PC banking etc. Among them, this study used only three electronic variables (i.e. ATM Credit card and internet banking) that can influence the bank profitability.

This study is guided by the following specific objectives; analyze position of facilities provided by the bank under e-banking service facility, its importance and examine the impact of e-banking on the bank's profitability.

In this study, we also examine credit cards affect the financial performance of commercial banks in Nepal; examine the effects of ATM on the financial performance of commercial banks in Nepal; determine the influence of internet banking in financial performance of banks in Nepal by using correlation and regression analysis.

In this study, randomly sampling method was adopted by utilizing data collected from five Nepalese commercial banks. The impact of e-banking on the performance of Nepalese banks was analyzed by using panel data from five commercial banks that have adopted e-banking between 2013/14 and 2018/2019. During the research study, secondary data were used for the collection of required data as per requirement of the study. Therefore, relevant financial and operational data for the banks of the sample are collected based on their annual reports and their websites for 7 years period. All the information collected from these secondary sources.

Estimations were done on the impact of e-banking on bank performance in terms of return on asset and return on equity. The profitability performance of these banks was measured in terms of returns on equity (ROE) and returns on assets (ROA). To examine the the impact of e-banking on the bank's profitability, coefficient of determination is measured.

5.2 Conclusion

The estimation result of the linear regression model shows that the R squared statistics of the model is 15.2% in terms of ROA. The result indicates that the changes in the independent variables explain 15.2% of the changes in the dependent variable. The remaining 84.80% of changes are explained by other factors, which are not included in the model. Moreover, the R squared statistics of the model is 11.1 % in terms of ROE. The result indicates that the changes in the independent variables explain 11.1 % of the changes in the dependent variable. The remaining 89.90 % of changes are explained by other factors, which are not included in the model in the dependent variable. The remaining 89.90 % of changes are explained by other factors, which are not included in the model in terms of ROE.

The result is similar to Mohammad et al. (2013) and Khrawish and Al-Sa'di (2013), all e-banking channels independent variable internet banking had statistically positive impact on ROA. On the other hand, among the two e-banking channels (ATM and CC) independent variables used in this study, no one variable has significant impact on ROA of Nepalese commercial banks. Moreover among the e-banking channels independent variables, only internet banking had statistically significant impact on ROE. On the other hand, among the two e-banking channels independent variables, only internet banking had statistically significant impact on ROE. On the other hand, among the two e-banking channels independent variables used in this study, no one variable has significant impact on ROE.

Our results provide some evidence that investment in e-banking is a gradual process. The internet-banking variable has had a negative impact on the performance of the banking system in Nepal in terms of returns to equity and returns of assets of five years. Yet, our results suffer from lack of data. We believe the field is going to benefit from further research on the topic to confirm the findings.

5.3 Implications

Findings of the study have following Implications:

- 1. Banks can rationalize the investment decision on electronic banking instruments. Banks should investment in e-banking channels selectively so that cost and resulting revenue can be justified.
- 2. Nepalese banks can maximize the number of users using Internet banking over existing customer base.
- 3. Customers' awareness regarding e banking should be considered while lunching electronic banking instruments.
- 4. More skilled labor force is needed to run the more sophisticated delivery system.
- 5. The research field is going to benefit from further research on the topic to confirm the findings.as the research findings provide some evidence that investment in e-banking is a gradual process; the internet-banking variable has had a negative impact on the performance of the banking system in Nepal in terms of returns to equity and returns of assets of five years. Yet, our results suffer from lack of data.
- Future students will get insightful ideas and reference to conduct research in the thesis topic to partial fulfill the requirements for the degree of Master of Business Studies.
- 7. Many future researchers enthusiastic can further conduct rigorous study following this research finding; taking multiple samples and time periods and it will open new pathway for new justification and relevancy of raised topic.
- I would include more samples and long time period to confirm the findings if I conducted similar research in the future.

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Appendix 1

Janata Bank Limited

YEAR	ATM	СС	IB
2011	20	160000	73520
2012	23	181233	83456
2013	25	195210	93456
2014	32	200000	102345
2015	35	210300	124566
2016	38	220000	133457
2017	42	234556	140334

Source: Annual Report of Janata Bank Ltd.

Everest Bank Limited

Year	ATM	CC	IB
2011	25	180000	78310
2012	27	185100	88231
2013	29	193100	95320
2014	31	200000	105431
2015	35	204335	115430
2016	37	210000	130210
2017	39	215000	166567

Source: Annual Report of Everest Bank Ltd.

Investment Bank Limited

Year	ATM	CC	IB
2011	16	164450	68996
2012	19	177780	78667
2013	22	188432	97668
2014	25	215334	134566
2015	28	225678	156778
2016	31	245798	168910
2017	35	265778	187678

Source: Annual Report of Investment Bank Ltd.

Standard Chartered Bank

Year	ATM	CC	IB
2011	13	150000	55678
2012	17	155366	77887
2013	19	163366	93467
2014	22	168250	105678
2015	22	170000	110345
2016	23	178678	125434
2017	25	188456	145788

Source: Annual Report of Standard Chartered Bank Ltd.

Himalayan Bank Limited

Year	ATM	СС	IB
2011	19	174330	78943
2012	23	180567	83567
2013	27	193333	97879
2014	30	205667	126775
2015	32	243310	156798
2016	35	253518	166778
2017	37	278988	178665

Source: Annual Report of Himalayan Bank Ltd.

Everest Bank Limited

YEAR	ROA	ROE
2013	2.1	35.83
2014	2.11	35.83
2015	2.39	36.62
2016	2.25	32.98
2017	2.02	29.83
2018	1.61	25.56
2019	1.72	25.74

Source: Annual Report Everest Bank Limited

Year	ROA	ROE
2013	2.1	33.52
2014	2.11	35.83
2015	1.84	29.5
2016	2.25	32.98
2017	1.84	29.5
2018	1.79	24.12
2019	1.72	23.5

Source: Annual Repstalnarancena Peerkd-BaitkdLimited

Source: Annual Report of Standard Chartered Bank Limited

Himalayan Bank Limited

Year	ROA	ROE
2013	1.74	19.91
2014	1.74	19.91
2015	1.6	18.85
2016	1.37	16.53
2017	2.06	24.2
2018	2.09	21.24
2019	2.12	21.3

Source: Annual Report Himalayan Bank Limited

Investment Bank Limited

Year	ROA	ROE
2013	1.65	18.10
2014	1.58	17.18
2015	1.96	15.66
2016	2.57	19.10
2017	2.13	16.65
2018	2.25	16.88
2019	2.73	19.47

Source: Annual Report Investment Bank Limited

Janata Bank Limited

Year	ROA	ROE
2013	0.52	5.48
2014	0.59	6.38
2015	0.50	5.39
2016	1.09	7.19
2017	1.40	9.99
2018	1.84	13.30
2019	1.94	13.37

Source: Annual Report Janata Bank Limited

Appendix 2

	ROA	ROE	ATM	CC	IB
ROA	1				
ROE	.787**	1			
ATM	149	216	1		
CC	014	300	.767**	1	
IB	.113	163	.769**	.815**	1

Correlation analysis

**. Correlation is significant at the 0.01 level (2-tailed).

Model summary of regression analysis on ROA

				Std. Error of the
Model	R	R Square	Adjusted R Square	Estimate
1	0.389	.152	.067	.53337

a. Predictors: (Constant), IB, ATM, CC

b. Dependent Variable: ROA

Regression results of ROA on ATM, Credit Card and Internet Banking

		Unstandardized		Standardized		
		Coefficients		Coefficients		
			Std.			
M	odel	В	Error	Beta	t	Sig.
1	(Constant)	1.795	.236		7.596	.000
	ATM	002	.007	085	236	.815
	Credit card	-1.806E-06	.000	601	892	.379
	Internet	8.695E-06	.000	.7	1.556	.129
	banking					

a. Dependent Variable: ROA

Model	R	R Square	Adjusted R	Std. Error of the
			Square	Estimate
2	0.268ª	0.072	-0.010	4.72962493

Model Summary of Regression Analysis on ROE

a. Predictors: (Constant), Internet banking, ATM, Credit card

Analysis of Variance

Μ	odel	Sum of	df	Mean Square	F	Sig.
		Squares				
2	Regression	58.984	3	19.661	.879	.462
	Residual	760.558	34	22.369		
	Total	819.542	37			

a. Dependent Variable: ROE

b. Predictors: (Constant), Internet banking, ATM, Credit card

Regression	results of	f ROE on	ATM.	Credit	Card an	d Internet	Banking
			,	010410			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
2	(Constant)	23.711	2.583		9.180	.000
	ATM	049	.079	222	612	.544
	Credit card	-1.155E-05	.000	355	522	.605
	Internet banking	6.819E-05	.000	.559	1.116	.272

a. Dependent Variable: ROE

b. Predictors: (Constant), Internet banking, ATM, Credit card

E-BANKING AND ITS IMPACT ON PROFITABILITY OF NEPALESE COMMERCIAL BANKS

A proposal

Submitted

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In Partial Fulfillment of the Requirements for the Degree of

Master of Business Studies (MBS Semester)

In the

Faculty of Management

Tribhuwan University

Kirtipur, Kathmandu

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ABBREVIATIONS

ICT	:	Information Communication Technology
ATM	:	Automated Teller Machine
CC	:	Credit Card
IB	:	Internet Banking
IT	:	Information Technology
ROA	:	Return on Assets
ROE	:	Return on Equity
MIS	:	Management Information System
ISP	:	Internet Service Provider
r	:	Correlation

1. Background of the Study

As our world has become like a small village with the worldwide connectivity by information and communication technology innovation. Banks of 21st century have become much more efficient, faster and convenient in providing financial services to wide range of consumers with quick adoption technology. Computer network driven automated system has made it possible for banks to provide banking services 24 hours a day and 365 days a year. Today's banks seem ready to provide any kind of financial services at anytime and anywhere in the world through internet technology. Now as one important step ahead towards the e-commerce, online banking or E-banking is becoming very popular in the developed countries. Modern techno-savvy banks are already using plastic money or e-money like credit, debit cards and ATM's since more than decade. Using computer networks and SWIFT to exchange financial information across branches and banks for internal banking processing is not a new practice for most of the modern banks with the popularity of personal computers as consumer goods of durable nature, internet and world wide web as sources of exchanging information those banks are now gradually going to use this internet/global networks as channel of providing banking service. Many new virtual banks have entered the banking industry, and this has enabled customers to have access to financial services over the internet. The cost savings have helped Internet-based banks offer lower or no service fees and higher interest interest-bearing traditional rates on accounts than banks.(Kiragu, Michael 2019).

The revolution of information technology has influenced almost every facet of life, among them is the banking sector. The introduction of electronic banking has revolutionized and redefined the ways banks were operating. As technology is now consider as the main contribution for the organizations' success and as their core competencies. Therefore, the banks, be it domestic or foreign are investing more on providing on the customers with the new technologies through e banking. PC banking, mobile banking, ATM, electronic funds transfer, account-to-account transfer, paying bills online, online statements and credit cards etc. are the services provided by banks. In addition, the feature, which is commonly unique to internet banking, includes importing data into personal accounting software. Some online banking platforms support account aggregation to allow the customers to monitor all of their accounts in one place whether they are with their main bank or with other institutions. Banking through internet is considered as a complimentary delivery channel for the services rather than a substitute for the brick and mortar banking branches. Online banking was first offered in 1995, when 16 of the largest banks, including Compass Bank, Chase and Nations Bank, began the services through Intuit Inc.'s Quicken financial software (Maharjan, M.J & Shakya, S. 2015). Prior to 1998, there had been concern over the slow rate at which consumers were adopting online banking, so the burst of activity in the past year has surprised most industry observers. Two factors are responsible for driving the explosive growth in online banking. One is the rise in the number of Nepalese people with access to the internet, the second is the "built it and they will come" approach taken by financial institutions. Internet banking generally means that a home user direct dials the bank via a modem, logging onto the internet via an internet service provider and then going to the banks web page before accessing the secure site via a password. Banking industry of Nepal has been taking rapid stride in the advancement of technology and aggressive infusion of information technology in the functioning of the banks. The industry has not only kept pace with technological developments but has also forced the computer industry to continuously keep pace and innovative products to suit its needs. Banks are using information technology to gain competitive advantage. The Internet banking is much faster, convenient and economic than the traditional "brick-to-mortar" banking as this banking service channel is able to provide all financial services with computer mouse clicks at comfort of consumers own room through internet connected personal computer. It is easy to do internet-banking; sit down, boot up your computer and dial up into banking center. You can balance your checkbook, invest in certificates of deposit and pay your mortgage and more, all from home. You can even pay your credit cards right online. No need to jump in the car and fight traffic to get to the bank before it closes. Moreover, you can do your banking whenever you want. You are not limited to lobby hours.

2. Statement of Problems

The most important goals of profit entities are to maximize shareholder's wealth and company profit. Increasing number of private banks and privatization of governmental banks has increased competition among various bank and banks are offering different electronic services with the focus on the consideration of increasing prompt banking services and minimizing administrative burden and increasing profit share, which has helped banks to attract more clients and generate more profit. However, all of these achievements could only attained by using new technologies, which are very popular at present. Information and communication technology plays great role in providing different e-services. Providing prompt services, reduces in service costs and management costs, ultimately adds more profit.

Internet technology is rapidly changing. Therefore, banks are focusing on the way the personal financial services are being designed and delivered. Now, commercial banks in Nepal are trying to introduce internet based e-banking systems to improve their operations and reduce costs. Nepalese commercial banks are generally found to have been adopting the e-banking as competitive tools and as a step towards innovative services. However, Nepal is yet a very least developed country; there are many ambiguities and difficulties about the application of e-banking. Each bank in Nepal is using e-banking as a tool to gain competitive advantage. However, the impact of e-banking on banks' profitability in Nepal is yet to be established. So there is need to study how commercial banks are practicing e-banking to increase profitability Therefore, in this research I am going to do the research study about the profitability performance of Nepalese commercial banks following the adoption of e-banking system.

This study is conducted to find out the answers of the following research questions:

1. What is the position of services and facilities provided by banks under e-banking in Nepal?

- 2. What is the position of profitability of commercial bank?
- 3. What are the impacts of e-banking on bank's profitability?

3. Objectives of the Study

Understanding the link between e-banking and its impact on profitability is an important issue. Therefore, the primary objective of this study is to examine and analyze the contribution of e-banking on profitability of Nepalese commercial banks. This research aim to examine the relationship between e-banking tools and their impact on profitability. Therefore, the study has following objectives.

1. To assess the position of facilities provided by the bank under e-banking service facility.

- To assess the position of profitability with the use of e-banking on sampled Banks.
- 3. To examine the impact of e-banking on the bank's profitability.

4. Conceptual framework

Under conceptual framework attempts have made to review the theoretical concepts on Internet Banking. Adoption of e-banking technology, tool and system is important and inevitable which influences on profitability of any banks.

This includes conceptual framework about dependent variable and independent variables.



Relationship Between dependent and independent variable

Automated Teller Machine (ATM)

An ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records, 24 hours a day. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period than human tellers do. Therefore, ATM helps to increase the bank productivity.

Credit card

Credit card is instrument of electronic banking. It provide facility and freedom to rent cars, reserve hotels, book vacations, pay bills and shop everywhere the card is accepted without checks and currencies. The Credit Card holder is empowered to spend wherever and whenever he wants with his Credit Card within the limits fixed by his bank. Credit Card is a postpaid card. Every time a person uses this card, the E-Banking house gets money transferred to its account from the bank of the buyer. It helps to increase the bank productivity.

Internet Banking

Internet Banking, which is described as "the provision of traditional (banking) services over the internet, by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking". Service delivery is informational (informing customers on bank's products, etc) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Tele banking and Personal Computer-Banking. Moreover, it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers.

5 Significance of the study

Now days the area and scope of commercial banks are broad because of the development of advance technology and incremental penetration of electronic banking operations in Nepal and around the world. The rapid development of the technology infrastructure has increased quality of Internet connections, the more widespread use of the Internet in both homes and businesses, and the significant reduction in both the fixed and variable costs of the Internet connections in Nepal. The study of e-banking of Nepalese commercial banks enable the various groups to know about internet banking and its impact on profitability. The issues discussed under this study are relatively current issues for Nepalese banking industry. The recentness of this topic makes it relevant from both the academic and practical point of view. The study will be use as a source of reference material besides suggesting areas where future research can be conducted. Similarly, this study will be useful as a reference to those students who want to conduct their academic thesis on e- banking.

The study will help scholars understand the various forms of electronic banking and its effects on the financial performance of Nepalese commercial bank. Banks will be able to provide quality services to its customers and even encourage more people to invest in it, and other financial institutions. The banking organizations in Nepal will also have a benchmark for measuring their electronic banking services and their financial performance.Bank customers will be able to carry out their transactions from the comfort of their homes or workplace hence saving on time and resources; they will also gain a better understanding of how to carry out bank services using electronic banking. Researchers will be able to add to their research work about electronic banking and gain a better understanding on this field. The findings can also be used in future as reference material. The finding will be important for the further researches and scholars who are related to this field.

6 Limitation of the Study

No study is free of limitations, so as this study does have its own limitations. The following are the limitations of this study:

- The study is mainly concentrated on the use of e-banking tools and its impact on the profitability of commercial banks. This study does not cover all the 28 commercial banks, which includes only five commercial banks because banks have not prepared their latest financial statements and have just merged with some development banks, finance companies, and some are in process of merger.
- 2. The topic "E-banking and its impact on profitability (analysis of selected banks) is much more dynamic and it takes huge resources including human and financial to cover the whole aspects of the research but the research has focused on the ebanking and its impact on profitability due to the use of in ATM, CC, IB, as independent variable.
- 3. This study includes the observation period of 7 years from 2013 to 2019 of 5 commercial banks.
- 4. The data has been taken from secondary source; therefore, authenticity of the data is dependent on the accuracy of the information used.
- 5. The result is strictly based on information provided by the company's website, SEBON, NEPSE, NRB etc.

7. Literature Review

Literature review is a process of finding previously uncovered facts on research topic. For finding basic information about the Internet banking and its impact on banks' profitability of Nepalese commercial banks .various resources, which are related to the study has been reviewed. It is separate into two parts – Theoretical and Research Reviews. The first section presents the theoretical concept on Internet banking and customer satisfaction. The second part presents the review of relevant dissertations and concerned reports.

7.1 Conceptual review

Concept and Historical Background of Bank

The word bank derived from the Italian' word banco' that signifies the exchange of money by sitting on the bench. In the olden days, European moneylenders or moneychangers used to display coins of different countries in big heaps (quantity) on benches or tables for the purpose of lending or exchanging. A bank is a financial institution, which deals with deposits and advances and other related services. It receives money from those who want to save in the form of Deposits and lend this money to those who need it. In other words, Bank can be understood as an authorized financial institution, which is established to accept deposits, pay interest, clear checks, make loans, act as intermediaries in financial transactions, and provides other banking services to its customers. Bank conducts the business activity, of accepting and safeguarding money owned by other individuals and entities, and then lending out this money in order to earn profit. Bank is an institution, which processes credit and lending operations, as well as accepting deposits and making advances. It also allows for the issuance of money and facilitates payment processing including automatic payment. It facilitates all forms of electronic banking services internally and externally (Nyangosi, R., Arora, J.S., & Singh, S.2009). Bank also can be defined in two aspects as:

1. Functional Aspects: According to functional aspect, a bank is an institute that keeps lends and exchange money.

2. Legal Aspect: According to legal aspect, a bank can be defined as a business, which accepts, deposits as a saving according to a different account and in turn advances loan as credit.

IT and the Banking Sector

IT revolution in the banking industry will help to cope with the explosive growth in the number of transactions and to provide improved customer service. In the process, decision-making in banks would get immensely facilitated. We have been witnessing since about the early eighties the phenomenon of widespread use of computers and communication technology in most of the industrialized and emerging market economics. This has resulted in faster funds movement across nations and borders.

Globalization of economies and financial liberalization within the economic has opened new opportunities of growth for techno-savvy institutions, while for the others these have resulted in shrinkage of revenues. The use of IT in the banking industry in our country has however been somewhat limited and has as a result, restricted our presence in international operations. Even in critical spheres such as those involving funds transfer, and MIS based decision-making, there has been little evidence of proactive movement towards wholesale computerization (Gupta, S., & Yadav, A.2019). In Nepal, we have such a large reservoir of human capital trained and skilled in Information Technology, and we are aware of the fact that a number of countries have developed their financial sector through an extensive use of IT as the medium of growth. It is only with the growing recognition of the need for having in place financial reforms, has the interest in IT application in the banking sector in Nepal increased. Perhaps the Globalization has in a way contributed to the growing technology adaptations in the banks. The sharp growth of computer use in new consumer goods of durable nature has also given rise to the need for use of computers in the service sectors as well banking industry, as a service provider cannot naturally lag behind in this movement toward the new techno-age.

Information and Communication Technology (ICT)

IT is any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources (Gupta & Joshi 2014).
ICT is the technology of computers, telecommunications, and other devices that integrate data, equipment, personal and problem solving method in planning and controlling business activities, information technology provides the means for collecting, storing, encoding, processing, analyzing, transmitting, receiving and printing text, audio and video information.

Information Technology (IT) or information and communication technology (ICT) is the technology required for information processing. In particular, the use of electronic computers and computer software to convert, store, protect, process, and transmit and retrieve information from anywhere and anytime.

Hardware: In the context of information technology, the computer and its peripherals, equipment used for transmission of information and information security all constitute the hardware.

Software: It is the computer programmed language written in the high level or machine level language to made the instructions of computer users understandable by the computer system and execute the processing as per the instruction of the user and bring desired output. There are different types of software that helps the computer run smoothly. System software helps the computer system constituting hardware peripherals and other application software in a coordinated way. Application software is the software developed to apply in different sectors of work processing. Different kinds of financial software and banking software can be regarded as example of application software.

Internet: It is sometimes called the "Information superhighway", is a worldwide, publicly accessible series of interconnected computer networks that transmit data by packet switching using the standard Internet Protocol (IP). It is "network of networks" that consists of millions of smaller domestic, academic, business and government networks, which together carry various information and services such as electronic mail, online chat, file transfer and interlinked web pages other resources of the World Wide Web (WWW).World Wide Web and Internet are not synonymous. The Internet is a collection of interconnected computer networks, linked by copper wires, fiber optic cable, wireless connections etc. In contrast, the web is a collection of interconnected documents and other resources linked by hyperlinks and URLs. Now a day's, the most easily accessible sources of information is becoming the websites, we are already

experiencing the convenience of using email instead of post mail. According to the study of "Dreams and Ideas" an ICT company, there are more than 2500 sites in the net with Nepalese domain and information (Bastola, 2007). This is indicating that our presence in the virtual world is also growing. Netcraft.com, a website portal specially working on the study and research of WWW world, has reported that there are 1.50 billion websites on the same organization it was found that more than 4000 websites has got SSL certificates indicating that they are completely secure to conduct all kinds of electronic payments and e-transactions. Websites can be broadly all kinds of electronic payments and static and dynamic websites. Statistic websites is only informational and not used interactive features whereas dynamic website is that type of website, which provides information as well as has user interactive features.

Information and Communication Technology (ICT) in Nepal

Our modern life today is hard to imagine without information and communication technology as it has changed our daily life dramatically. Innovations and developments in the information and communication technology have made our world like a small village. The revolution of IT and effects of globalization process are getting more apparent even in our country. After the introduction of first computer in 1972 and sound development in telecommunication sector, Nepal also has experienced a lot of cyber activities and IT is showing that Nepal is also gradually moving towards the online world with growing number of ISPs which reached 36 till this year, around 1,000,000 internet users and visitors in CAN InfoTech reached around 400,000 last year. There were hundreds of institution and colleges providing education related to IT and in school level also computer education has been incorporated in the basic curriculum. All this statistics indicates that IT is growing in Nepal and more people are getting used to with the technology (Wikipedia, Information technology).

Computerization in Banks

With the changing technological environment, banks in future cannot survive without the support of Information Technology is merely stating the obvious. The point to ponder over is whether the industry is now poised for the challenges that arises as result. From all indications; banks seem to be prepared to exploit the opportunities that globalization and financial liberalization provides. Computerization of branch operations, controlling offices and Head offices has been going to get very popular in the modern banking practice sharply. In recent times, since that is the only way by which senior managements in banks can gain information on the size of operations on a daily basis. The banking industry is clearly cognizant of the imperatives of financial liberalization and has therefore attempted to computerize branches that are located in commercial important centers across the country.

The large functional and geographical spread of banks has led to sharp growth in the number of accounts and in the area as of operation of banks. This has necessitated switchover from hard cash to paper based instruments. This has been facilitated to extend the Internet Technology to coming year. Computerization of service branch operations serves as vital fulcrum point for all clearing of drawn on it, are routed through the service branch, where the relevant accounting entries are passed for interbranch reconciliation. Banks have had to therefore computerize the operations of nearly 90 percent of the service branches (Pradhan, 2009).

The development and use of communication networks has also helped the banking industry to gain in terms of improved banking services. Other important developments in the payments area have a bearing on the speed of computerization in banks. Electronic payment products such as Electronic Clearing Service (Credit and Debit) are becoming increasingly popular with corporate. Nepalese commercial Bank responding to the needs of business entities has been offering different computerized products. Any Branch Banking System is available in most of the commercial banks of Nepal. The number of corporate institutions availing the ABBS service has been increased. The scopes of widening its coverage further seems be very substantial.

Internet Banking

Internet Banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar institution. The following terms all refer to one form or another of electronic banking; personal computer banking (PC) banking, Internet Banking, virtual banking, online banking, home banking, remote electronic banking and phone banking. PC banking and Internet or online banking is the most frequently used designations. It should be noted; however, that the terms used to describe the various types of electronic banking are often is used interchangeably.

Channels of Internet Banking

According to the current electronic banking service availability, the channels of electronic banking are as following.

- 1. Automated Teller Machines (ATM)
- 2. Point of Sales (POS)
- 3. Telephone banking (Tele Banking)
- 4. Internet Banking
- 5. Mobile banking (SMS Banking)

Automated Teller Machines (ATM):

An automated teller machine (ATM) is a computerized telecommunication device that provides the customer of a financial institution with access to financial transaction in a public space without the need for a human clerk of bank teller. On most modern ATMs, the customer are identified inserting the plastic ATM care with the magnetic stripe or a plastic smart card with a chip that contains unique card number and some security information. Security is provided to the customer giving personal identification number (PIN). (Wikipedia, Automated teller machine)

Point of Sales:

POS mean a retail shop, a checkout counter in shop, or the location where a transaction occurs. More, specifically, the point of sale often refers to the hardware and software used for checkouts the equivalent of electronic cash register. Points of sales systems are used in supermarkets, restaurants, hotels, stadiums and casinos as well as almost any type retail establishments (Wikipedia, Point of Sales).

Telephone Banking (Tele Banking):

It is service provide by a financial institution, which allows customers to perform transactions over the telephone. Most telephone banking use as automated phone answering machine system with phone keypad response or voice recognition capability. To guarantee security, the customer must first authenticate through a numeric or verbal password or through security questions asked by live representative. With obvious exception of cash withdrawals and deposits, it offers virtually all the features of an ATM.: account balance information list of latest transactions, electronic bill payments, and funds transfer between customer's accounts etc.

Mobile Banking (SMS Banking):

Mobile banking refers to provision and accessibility of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities of performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking today is most often performed via, SMS or the Mobile Internet but can also use special program downloaded to mobile device.

Internet Banking:

Internet banking also is a channel of providing banking services through the Internet facilities. It allows customers to conduct financial transactions on secure website operated by their retail or virtual Bank and credit unions. Online banking solutions have many features and capabilities. Such as account-to-account, transfer of funds, paying a bill wire transfer and applications, apply for loan, new account etc. and non-transactional facilities like getting Bank statements over the Internet. In the developed countries like US and other European countries, Internet Banking has become so popular that nearly half of the banking consumers are now using Internet for their banking transactions and the trend is slowly appearing even in the south Asian nations. Furthermore, the development of Internet and World Wide Web pages have made it possible for the operation of virtual banks.

Instruments used in Internet Banking

Credit Card:

Credit card provide facility and freedom to rent cars, reserve hotels, book vacations, pay bills and shop everywhere the card is accepted without checks and currencies.

Visa and Master cards are the commonly used credit cards in Nepal. These cards are used for making transactions in various outlets in the country. Credit cards are accepted for payments by merchant outlets concentrated mostly in the Kathmandu valley, the capital of Nepal, along with some big cities like Biratnagar, Birgunj and Pokhara.

Wired Plastic Cards:

It lets you set your own limits by pre-funding the amount your need to spend. Unlike other cards there are no annual fees, no transactions fees, no interest charges of debt to repay, no reload fees. Get the prestige and purchasing power of your own-wired plastic card (Wikipedia, Visa Electron).

Plastic Master Card:

This card is not available in Nepal. Master Card is one of the most popular instruments of online banking as it can be used in most of the online payment all round the world.

Advanta Computer Card:

Business can apply for the Advanta Platinum Business MasterCard and earn rebates on computer equipment and other electronics products. Some features of this card are great introductory rate, high credit limit and a customized card with the consumer's business name. This card is not available in Nepal and has a great opportunity to the growing IT markets (Wikipedia, Visa Electron).

Visa Electron Debit Card:

Nepal Investment Bank Ltd. Nepal introduced this card. It is different from Credit Card, to use a card you have to open an account with the Bank and you use the card up to your minimum balance imposed by the Bank (Wikipedia, Visa Electron).

History of Electronic Banking in Nepal

Bastola (2007) outlined history of electronic banking in Nepal as follows:

Evolution of Banking

1. Banking started in Nepal in 1937 by "Nepal Bank Limited" (Government Sector)

Evolution of Joint Venture (JV) Banks and e-Banking

- Establishment of first Joint Venture Bank, Nepal Arab Bank Limited (now NABIL Bank), in 1984.
- 2. Introduction of Credit Cards in Nepal in early 1990 (NABIL bank)
- 3. Automated Teller Machine (ATM) was first introduced by another JV Bank, Himalayan Bank Ltd, in 1995

4. Himalayan Bank Ltd. was also the first bank to introduce Tele-banking (Telephone Banking) in Nepal.

Major milestones

Khanal (2008) has summarized the major milestones of e-banking services as follow:

- 1. Evolution of Joint Venture Bank in Nepal (NABIL Bank) in 1984
- 2. Introduction of Credit Cards in 1980
- 3. Establishment of first ISP I 1994 (Mercantile Office System)
- 4. First ATM lunched by Himalayan Bank Ltd, in 1995
- 5. Himalayan Bank Ltd introduced Tele-Banking facility in 1997
- 6. Formulation of IT policy in 2000
- 7. Evolution of private Sector Bank (Kumari Bank) in Nepal, in 2001
- 8. Kumari Bank first introduced Internet Banking in 2002
- 9. SMS-Banking (mobile banking) was launched by Kumari Bank in 2004

E-commerce

This is the 21st century world where we are able to work from our room for people living in another corner of the world just staying ahead of the net connected computer with salable skills all around the world. Integration of economies has already begun with the more free and barrier less trade and commerce. Information and communication technology has made the globe like a small village and globalization process is on. Traditional social inter relation process, mediums, trading process and system are also being replaced by the virtual world created by vast network of information and communication technology. This is how new medium of trade and commercial practice has emerged and this new phenomenon is called E-commerce.

E-commerce is nothing but such a value added act of buying and selling of goods and services through electronic channels, especially by using the Internet. The scope of ecommerce is such that, huge percent of the total sales in the world will be electronically processed this year as projected by Forester research Inc. and Nepal cannot afford to sit back and watch this opportunity go by. However, development of e-commerce rests on the e-readiness. E-readiness refers to a country's ability to take advantage of Internet as an engine of economic growth and human development. It also takes account of how a prevalent e-business practice is in each country and is ready to automate its traditional business practices through the Internet. However, in the context of Nepal, most Internet businesses are confined to Kathmandu valley. Nepal's information communication and technologies (ICT) status to some extent stands with the tele density of about 7.77 percent according to Nepal Telecom's statistics and data (Yadav, 2004). Nonetheless, the country's present sluggish business environment bleak-socio cultural status and poor e-literacy have not contributed much to the e-readiness of the country. This affects ebusiness, which depends on the technical skill of the workforce. Now notable practice of e-business has increased and most of the ICT companies registered by commercial houses with the introduction of .np domain name. The new practices of 'e-gifting' and "e-remittance" are the latest in e-business. Such practices of business to consumer through e-commerce illustrate growing comfort among consumers. However, the emarket size is still very limited. The banking industry that is booming every year is looking forward to implementing e-banking to provide swift services. Despite such interests, the biggest constraint for a full-fledged e-commerce operation is lack of strong cyber-law and other supporting laws (Wikipedia, Electronic commerce).First ever cyber law of Nepal was enacted recently. The act itself is a landmark of its kind and opens the door for wider e-commerce activities to take off officially in the near future. Whether the act reflects the framework of "model Law on e-commerce" adopted by the "UN commission on International Trade Law" will also determine future e-commerce growth, as we want to explore e-market internationally without complications. For ecommerce to contribute to the country's economy, all the laws regulating the ecommerce activities should comply international monetary and regulations via net. The threat of cyber crime is another immediate and imminent concern though quite a few cases in Nepal. The repercussion of this will be noticed while dealing with digital signatures involving cryptography that we need to carry out homework before we jump into e-commerce. E-commerce and e-readiness complement each other in the development process of a country's e-economy. Despite of Nepal's e-readiness being very low at the scale of 0-9 according to ITC, the enthusiasm and willingness to use ICT as a tool to explore business as whole will prove to be a significant step towards modernization of economic reforms in the country. The challenges today are how best optimize the sub-standard, yet promising e-readiness to the country to prosperous ecommerce market in the future. With so-called Information Technology (IT) revolution in the globe, Nepal is also witnessing a myriad of cyber activities both at private and government levels. Nepal entered in the cyber world in the late 70s. Private sector and joint ventures took a lead role to the development of IT. The government formulated IT policy eight years ago, putting forth its various agenda to develop IT and manipulate the latest IT discoveries for the overall development endeavors. However, the government has not introduced the supporting act and regulations essential to boost ecommerce and e-governance. After a repeated call by the IT entrepreneurs, professionals and planners to introduce the Cyber Act, the government finally decided to introduce Electronic Transactions Digital Signature Act-2063, also known as Cyber Law .

7.2 Empirical Review

Simpson (2002) investigated the risk, efficiency and rate of progress in the implementation of electronic commerce (e-commerce) in a sample of banks from a developed country (the US), and a sample of banks from developing and emerging markets. The results of the study confirmed that the US is very advanced in its electronic-banking (e-banking) actuation. There is evidence suggesting that e-banking is driven largely by the prospects of operating costs minimization and operating revenue maximization. Costs are lower and revenues are higher when banking services are delivered through a branch network.

Hernando and Nieto (2006) found that the impact of adopting internet on the performance of banks as a delivery channel of e banking takes time to appear. They hold the view that the adoption of a transactional website has a positive impact on profitability, which becomes significant in terms of ROA and ROE three years after adoption. This finding actually conveys that there is a lag period for positive profitability impact to manifest on adoption of electronic banking. However, their study revealed some weaker evidence of an earlier positive impact on adoption of e-banking particularly in terms of ROA.

profitability in the short run due to the capital investment by the banks on infrastructure and training but will be positive in the long run.

Onay et al. (2008) investigated on the impact of internet banking on bank profitability. Their analysis covered thirteen banks that have adopted online banking in Turkey between 1996 and 2005. Using specific and macroeconomics control variables they investigated the impact of Internet banking on Return on Assets (ROA) and Return on Equity (ROE). Their results showed that Internet banking starts contributing to banks ROE with a time lag of two years, negative impact is observed for one year lagged dummy. According to their study, the Internet has changed the dimensions of competition in the retail-banking sector. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure. Investment in e-banking is a gradual process. The Internet banking variable has had a positive effect on the performance of the banking system in Turkey.

Khrawish and Al-sa'di (2011) found that there was no significant effect of these electronic services on the return of assets and the returns on equity. The study however, showed that such services made significant impact on the profit margin of the concerned banks. They also found that there was no significant effect of these services on banks profitability after two years of applying it in Jordan.

Abaenewe et al. (2013) Studied about Electronic Banking and Bank Performance In Nigeria. This study investigated the returns on equity and returns on assets of Nigerian banks following the adoption of electronic banking in Nigeria. The results reveal that there is significant difference between pre and post returns on equity on adoption of electronic banking, results is that adoption of e-banking in Nigeria has significantly improved Nigerian banks performance in terms of returns on equity (ROE) only. On the other hand, the results also reveal that there is no significant difference between pre- and post- returns on assets (ROA) of Nigeria banks on adoption of e-banking. Here, the implication of this result is that electronic banking adoption has not significantly improved the returns on assets of Nigerian banks. These tests for difference of means applied to test pre - and post returns on adoption of the e-banking technology on the profitability performance indicator measured as ROA.

Meihami, et al.(2013)study indicates that e-banking channels has great impact on the financial performance of the banks. The study concluded that banks use internet banking to improve accuracy and efficiency and to increase speed and reliability of the banking system. This is because the process runs automated and is less prone to human errors.

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. In Vietnam, not only the effect on operating cost is not statistically significant, the increase in income is also relatively small. It indicates that Internet banking is a delivery channel more than a source of profit, banks can benefit greatly from. In addition, Internet banking function currently is a complement not a substitute for traditional distribution channels such as bank's branch. Banks would further earn profit from the increase in profit to the extent that the Internet delivery channel acts as a substitute for traditional distribution channels. The results from the regression model showed that internet banking had an impact on bank profitability through an increase of income from service activities.

Joseph M.Vekya (2017) studied the impacts of electronic banking on the profitability of commercial banks in kenya. The study indicates that there is positive significant relationship between ATM transactions POS transaction and bank profitability.

From the research evidence so far, there has not been a research output of related study from Nepal on electronic banking and banks profitability performance since the adoption of electronic banking. This study therefore makes an insight in this direction to close.

8. Research Gap

Different researchers have completed research in e-banking practices but very few researches have been found on the e-banking impact on banks 'profitability. This paper attempts to fill this gap by identifying and estimating the impact of e-banking as a delivery channel on the financial performance of commercial banks in Nepal. Researchers have not given much attention to this revolution occasioned by electronic banking with regard to profitability performance of banks. This study tries to fill the gap on previous literature available on electronic and internet banking and its impact on banks profitability in Nepal. Although, there has been some study on the use and

challenges of the banks on adoption of electronic banking, however, there is less research output in the area of returns on assets and returns on equity to investors. This study therefore investigates the pattern of returns on equity and assets of Nepalese commercial banks in this era of e-banking. Thus, this study tries to fill this gap.

9. Research Methodology

This section consists of the methods and procedures are applied during the research work. The basic objectives of the study are to determine e-banking impacts on profitability of selected commercial bank. Hence, appropriate research method have been followed as demanded by the study.

9.1 Research Design

This study will be based on descriptive and analytical research design. This study describes about status of e-banking and its impact on bank's profitability. Correlation multiple linear regression models are used to assess whether financial performance (profitability) is a function of the variables indicated on the specific objectives.

9.2 Population and Sample

All the 28 commercial banks of the Nepal which are listed as "A" class bank are the population for the study of impacts of e-banking on profitability. Among the 28 commercial banks, five banks are used as a sample banks.

9.3 Sources of the Data

This study is based on secondary data. During the research study, secondary data is used for the collection of required data as per requirement of the study. Therefore, relevant financial and operational data for the banks of the sample is collected based on their annual reports and their websites. All the information are collected from these secondary sources.

9.4 Data Analysis Tools and Techniques

Relevant tools and techniques are used to find out the best appropriate outcomes as per designed objectives of the study. Since the objective of the study is to determine whether e-banking has significantly improved the profitability performance of banks in Nepal with regards to the returns on equity (ROE) and returns on assets (ROA). The present research uses mix of following tools in the analysis. Different quantitative

methods of statistical tools have been used for driving essence of the research data and interpret them in meaningful way.

With the secondary data collection, Return on equity and Return on assets for relevant years has been computed:

Correlation Analysis

It is statistical tool for measuring the magnitude of liner relationship between the two variables. Karl person's measure, known as Karl person correlation coefficient between two variables series x and y, denoted by r(x, y) r can be obtained as:

$$r = \frac{n\sum xy - \sum x \cdot \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} \sqrt{n\sum y^2 - (\sum y)^2}}$$

Where, r = correlation coefficient

- n = no. of years
- $\sum x =$ Sum of series X

 $\sum y =$ Sum of series Y

 $\sum XY =$ Sum of the product X and Y variables

 $(\sum x)^2$ = Sum of squares of series X

 $(\sum y)^2$ = Sum of squares of series Y

The value of coefficient of correlation always lies between +1 & -1. When coefficient of correlation (r) = +1, it means there is perfect positive correlation between the variables, when (r) = -1, it means there is perfect positive correlation between the variables and (r) = 0 refers that there is no relationship between the variables. The coefficient of correlation finds not only the magnitude of correlation but also its direction. The closer the value of 'r' to 1 or -1, the strong will be relationship between variables and the closer the 'r' to 0, weak will be the relationship (Chaudhary & Sharma, 2071).

Multiple Regression Analysis

The mathematical measure of average relationship between two or more variables in forms of original units of data is known as regression. The regression is the estimation

or prediction of unknown variable from known variable. The unknown variable is known as dependent variable and known variable is known as independent variable. The main objective of multiple regressions is to predict the value of dependent variables (Profitability) from known value of the multiple variables (ATM, CC and IB).

Regression equation of Y (Profitability) on ATM, CC and IB

Model 1

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

ROA = a + b1 ATM + b2 CC + b3 IB + ... ei Eqn. 1

Model 2

It has used to test the relationship between independent variables and ROE;

ROE = a + b1 ATM + b2 CC + b3 IB + ...ei Eqn. 2

Where,

a	= Constant
b1-b3	=Intercept of independent variables
ATM	= Automated Teller Machine 9
CC	= Credit cards
IB	= Internet Banking
ei	= error term

10. Chapter Plan

The study will be organized into five chapters, as per the standard rule of thesis writing of Tribhuvan University, which is as follows:

Chapter I: Introduction

This Chapter will include the background of the study, focus of the study, statement of the problems, objectives of the study, significance of the study, limitations of the study, and organization of the study.

Chapter II: Review of Literature

This chapter includes the reviews of the relevant previous writing and the studies to find the existing gaps. So, the past studies in relation to the concerned topic will be reviewed to examine what new can be contributed to make the study more relevant. Reviews of the journals, books, newspapers, annual reports are also going to be included.

Chapter III: Research Methodology

This chapter deals with the methodology used in the study. It briefly explains about the statistical tools which will be used to evaluate the risk and return analysis for the concerned topic. It will consist of the research design, population and sample, sources of data, data collection procedure, data analysis tools and methods of data analysis.

Chapter IV: Results

This chapter will comprise the main part of the study. It deals with the presentation and analysis of the data and information collected from primary as well as secondary sources and scoring the empirical findings of the study through definite course of the research methodology.

Chapter V: Summary, Conclusions and Implications

This chapter will state the summary of the whole study. After the summary it will be followed by the basic conclusions of the study based on the fourth chapter and lastly, the recommendations will also be presented for considerations on the basis of the conclusions.

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