

EFFECT OF ELECTRONIC BANKING ON CUSTOMER SATISFACTION IN NEPALESE COMMERCIAL BANKS

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial
fulfillment of the requirements for the Master's Degree

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **“Effect of Electronic Banking on Customer Satisfaction in Nepalese Commercial Banks”**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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REPORT OF RESEARCH COMMITTEE

Ms. Sushila Thapa has defended research proposal entitled “**Effect of Electronic Banking on Customer Satisfaction in Nepalese Commercial Banks**” successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidelines of supervisor Bhoj Raj Ojha and submit the thesis for evaluation and viva-voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled “**Effect of Electronic Banking on Customer Satisfaction in Nepalese Commercial Banks**” presented by Sushila Thapa, a candidate for the degree of Master 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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This study entitled “**Effect of Electronic Banking on Customer Satisfaction in Nepalese Commercial Banks**” has been prepared in partial fulfillment for the Degree of Master of Business Studies (MBS) under the Faculty of Management, Tribhuvan University is based on research models involving the use of qualitative aspect of electronic banking and customer satisfaction of commercial banks in Nepal.

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Sushila Thapa

Date:

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ABBREVIATIONS

%	:	Percentage
&	:	And
ATM	:	Automated Teller Machine
CS	:	Customer Satisfaction
e.g.	:	Example
EFT	:	Electronic Fund Transfer
i.e.	:	That is
IB	:	Internet Banking
IBM	:	International Business Machine Corporation
MB	:	Mobile Banking
MS. DO	:	Microsoft Disk Operating System
No.	:	Number
Res	:	Respondents
SEM	:	Structural Equation Modeling
SPSS	:	Statistical Package for Social Sciences
T.U.	:	Tribhuvan University
WHO	:	World Health Organization
www	:	World Wide Web

ABSTRACT

The main purpose of the study is to investigate effect of electronic banking on customer satisfaction in Nepalese commercial banks. The study is used descriptive and casual research design. This study used descriptive statistic, correlation analysis and regression analysis to analyze the data. The study shows that the Nepalese commercial banks offer electronic funds transfers, automated teller machines, mobile banking, and online banking services. The vast majority of respondents concurred that the satisfaction of banking clients is much impacted by mobile and ATM banking, and they also felt that their own satisfaction was high. The correlation analysis reveals that internet banking has significant positive relationship with customer satisfaction. At the same time, mobile banking has significant positive relationship with customer satisfaction. Further, ATM banking has significant positive association with customer satisfaction. Finally, electronic fund transfer has significant positive relationship with customer satisfaction. The regression result concluded that automated internet banking, mobile banking, automated teller machine and electronic fund transfer had significant positive impact on customers satisfaction in banking industry of Kathmandu Valley. Therefore, this study concluded that the effect of electronic banking on customer satisfaction is significant.

Keywords: *Customer satisfaction, internet banking, mobile banking, automated teller machine and electronic fund transfer.*

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

The modern world has been greatly influenced by technology. The global community that the internet has created also transformed the financial sector. The banking industry now has a new facet as a result of the transition from manual ledger systems to systemized procedures and the introduction of internet-based facilities. Over the past few years, the competition in the banking industry has increased. In order to remain competitive, banks are embracing cutting-edge tools and approaches to increase client happiness and retention. Karjaluoto et al. (2002) stated time and geographic restrictions no longer apply to banking. E-banking is of utmost importance in satisfying consumer expectations. Delivering high-quality services can result in satisfied consumers who become devoted supporters (Gronroos, 2000). Asian customers are embracing digital banking as quickly as the rest of the world. And there's no denying that the automation of banking processes has opened up new opportunities for the Nepalese banking industry (Joshi, 2021).

E-banking has grown significantly in the twenty-first century and will undoubtedly have an effect. One significant advancement in the banking sector is the use of information and communication technology (ICT) to provide banking goods and services. ICT-based products include things like internet banking, mobile banking, point of sale (POS) systems, and automated teller machine (ATM) transactions. Prior to the development of electronic banking, conducting business in the financial and productive sectors had been challenging and stressful. Ledgers, folio numbers, and postcards similar to data sheets which contain the customer's name, signature, and photo are the primary tools used by banks. Nigerian banks performed incredibly slowly and inefficiently as a result of their manual processes. The performance of every Nigerian bank in the past has been impacted by technology. This century has been marked by increased regulation, strong profitability, and the availability of dynamic clients with a focus on financial services (Ijeoma et al., 2020).

Electronic banking is financial institution device which gives banking clients an edge to carry out banking transactions, either through financial or non-financial banks website. More advanced tools that facilitate the simpler approach to interact with financial institutions in the present day without having to visit the banks premises are born out of the technological revolution. The structure of electronic banking services should be determined by the requirements, preferences, expectations, and experience of the customers in accordance with the following standards: (1) Electronic banking services must be easy to use for customers; (2) It must process customer requests extremely quickly; and (3) It must be highly credible and compatible with other technical services (Buddhika, 2021)

E-banking is the term used to describe the electronic way that banks provide their customers with financial services and products. Information and communication technology (ICT) is another tool that banks employ to manage customer interactions and provide services more quickly and efficiently. E-banking includes both phone and internet banking. Offering e-banking services helps banks better serve their customers and build stronger relationships with them, as many banks have discovered. The use of e-banking is seen as a new way to increase the customer base and counteract the aggressive actions done by traditional banks. Customers using e-banking can use the internet to request information and perform the majority of banking functions, including checking account balances, paying bills, and transferring funds between accounts. Thus, systems that allow financial institutions, clients, individuals, and companies to access accounts, conduct business, and get information on financial goods and services via public or private networks are included in the category of e-banking (Addai et al., 2015).

Customer satisfaction can also be described as the conclusion reached once a consumer learns if the specific service they are receiving matches their expectations. Oliver (1997) defined satisfaction as a person's subjective assessment of happiness or discontent stemming from evaluating a product or service's apparent performance against their own expectations. Contentment may be associated with emotions that a person had after using a specific good or service at a specific moment in time. The majority of studies confirm that the satisfaction element is pre-consumption expectation evidence. This explains why a consumer previously reported a product's

performance rate prior to use. When it comes to consumption, customers' familiarity with the product aids in assessing the expected performance level of the product, and conclusions are reached through satisfaction comparisons.

Customer satisfaction is considered as a major differentiator and increasingly has become a crucial aspect of corporate strategy in a competitive market where organizations fight for consumers (Gitman & Carl, 2005). It is helpful to think of banks as firms and use the broad concepts of microeconomics, which determine the surroundings of all firms, in order to comprehend the economic issues and decisions they face. Nonetheless, banks are unique kinds of businesses not just because of the services they offer but also because of the manner and personnel in which those services are rendered (John, 2003). Customers now have a lot of issues with the satisfaction and services that banks offer. Research has indicated that a large number of global internet users exhibit comparable habits and inclinations between countries (Masukujjaman & Akter, 2010). Other scholars have examined the internet within conventional cultural contexts, but within national boundaries. Some researchers have looked into e-banking user preferences. Some have looked at the problems with the development of online banking and the elements that contribute to the success of different e-delivery channels in the banking environment (Sohail & Shanmugham, 2003).

Consequently, e-banking technologies have become vital by working with customers to demand online additions to the registry at any time. Kashif et al. (2021) removed antiquated section boundaries, increased productivity, and suggested an age to pay, among other powerful and complex components of IT administration. In order to meet customer satisfaction, management must be able to supply goods and make educated decisions about various transportation routes through the use of IT tools.

In the present competitive financial environment, Nepalese banks are making an effort to provide their patrons greater advantages. Customer satisfaction is influenced by electronic banking, its technological capabilities, the productivity of its workforce, and its customer service protocols. The banking industry is enhancing these elements to draw in and keep customers. The objectives of this study are to examine the effects

of e-banking services on customer satisfaction in the banking sector of Nepal as well as the relationship between e-banking service and customer satisfaction.

1.2 Problem Statement

Concerns around electronic banking have increased over time as a result of the industry's growth into phone and internet banking. However, even with its benefits, e-banking has certain challenges in Nepal. Despite the fact that banks and other financial institutions in Nepal are offering an increasing number of online banking products and services, e-banking services are not widely embraced by bank customers. This could result from a customer's lack of confidence, inexperience with technology, or sense of danger associated with the services (Joshi, 2021).

The environment in which banks operate today is rapidly changing due to factors such as fiercer competition, quick innovation in financial instruments, goods, and services, shifting customer preferences, and the explosive rise of information technology. A period of informative commoditization of financial services has been ushered in by technological innovation, and banks who perform well on all fronts will survive. Customers can easily access banking products through technology, circumventing the need for large capital investments needed to address internal difficulties. The main problem, though, is that banks have to provide clients with what they want, when they want it, and how they want it. However, in these conditions, particularly in Nepal, customers' expectations are not met by the banks' perceived level of service quality. The issue of the lack of professionally qualified and well-trained banking staff serves as proof that this is true for all overall services as well as for all metrics of service quality in general. Insensitive and unprofessional conduct displayed by bank employees when interacting with current and prospective clients, Inadequate infrastructure and tools needed to deliver contemporary financial services; excessively drawn-out procedures in meeting client demands; Poor branch locations and a lack of infrastructure have been cited as issues at both public and commercial banks (Tigineh et al., 2012). Finding the variables that affect customer happiness therefore depends on keeping up to date information on the degree of customer satisfaction with regard to the caliber of services provided by banks generally and Abyssinia bank specifically.

Addai et al. (2015) stated that there is proof of a favorable correlation between consumer satisfaction and the availability, dependability, and convenience of e-banking. Simon and Thomas (2016) found that the usability and friendliness of online banking have little bearing on customer satisfaction. The poll also discovered that customer satisfaction is significantly impacted by the ease of mobile banking. The poll also revealed that easily accessible, private, and user-friendly ATMs had a major impact on customer satisfaction. There is a correlation between e-banking and demographic characteristics, e-banking is currently only available to current account holders and savers, and e-banking has increased customer satisfaction. Worku, Tilahun, and Tafa (2016) suggested that the majority of e-banking users are young, educated, salaried, and students. Business men and women are not actively using the service.

Toor et al. (2016) found there was a significant association between e-banking service quality characteristics and customer satisfaction. Janahi and Mubarak (2017) showed that all hypotheses were accepted and statistically significant, indicating that customer e-banking service quality had a favorable influence on customer satisfaction

Ijeoma, Akujor, and Mbah (2020) observed that consumer satisfaction and automated teller machine and mobile banking had a good association. Additionally, the analysis demonstrated that in all three banks, there was a negative correlation between point of sale and customer happiness. Kashif et al. (2021) concluded there is a significant positive impact on customer satisfaction that may be observed with internet, ATM, and mobile banking. Buddhika (2021) mentioned that there was a positive association between ATM banking and customer satisfaction, but there was a negative correlation between online and mobile banking.

Claude (2022) came to the conclusion that financial policies, electronic banking transactions, electronic mobile devices, and information technology all had a significant impact on customer satisfaction. Belbase and Paudel (2023) found a favorable correlation between four attributes and customer satisfaction. The results demonstrated that security was the element that most affected consumers' satisfaction with internet banking. Ayer (2023) found that perceived advantage, dependability, convenience, and simplicity all had a favorable effect on customer satisfaction. Most

of the studies were done in countries other than Nepal and the model was validated in those countries. It is therefore, not clear whether the findings from the referred studies in other countries can also be applicable to the context of Nepal, particularly in the Kathmandu valley. Thus, this study endeavoured to fill the gap by borrowing factors from electronic banking and customer satisfaction by accommodating independent variables of the model on customer satisfaction. Moreover, the available research, however cover a very limited respondent but this research intends to fulfill this gap by taking large number of 384 respondents. So, the study aims at answering the following research questions;

- i. How is the status of electronic banking and customer satisfaction in Nepalese commercial banks?
- ii. Is there any relationship between electronic banking and customer satisfaction of commercial banks in Nepal?
- iii. What is the impact of internet banking, mobile banking, ATM banking, and electronic fund transfer on customer satisfaction in Nepalese commercial banks?

1.3 Objective of the Study

The main purpose of the study is to analyze the impact electronic banking on customer satisfaction of commercial banks in Nepal. The other specific objectives are as follows;

- i. To analyze the status of electronic banking and customer satisfaction in Nepalese commercial banks.
- ii. To evaluate the relationship between electronic banking and customer satisfaction of commercial banks in Nepal.
- iii. To examine the impact of internet banking, mobile banking, ATM banking, and electronic fund transfer on customer satisfaction in Nepalese commercial banks.

1.4 Research Hypothesis

Based on the objectives of the study, theoretical and empirical literature review of the impact of e-banking service on customer satisfaction following hypothesis are developed.

1. H₁: Internet banking has significant impact on customer satisfaction in Nepalese commercial banks.
2. H₂: Mobile banking has significant impact on customer satisfaction in Nepalese commercial banks.
3. H₃: ATM banking has significant impact on customer satisfaction in Nepalese commercial banks.
4. H₄: Electronic fund transfer has significant impact on customer satisfaction in Nepalese commercial banks.

1.5 Rationale of the Study

Since Nepalese commercial banks currently provide excellent domestic, international, and specialty banking services to their esteemed and valued clients, this kind of research will be carried out to support the bank's various goals by providing the information that will be most useful in making decisions regarding the improvement of service quality. Furthermore, the study will provide other researchers a head start on their in-depth assessment of the factors impacting customer satisfaction in Nepal's commercial banks. It also helps the bank make required improvements based on suggestions.

Trade and businesses grow faster when satisfied clients recommend them. As a result, satisfying the clientele is essential. When consumers are unhappy, bankers and marketers should try to ascertain the cause of their dissatisfaction before taking appropriate action. Employees of the bank are required to assist customers who bring grievances to the bank. Each and every customer complaint needs to be carefully considered and addressed in order to meet the needs of the consumer. In this particular scenario, it is also vital for lenders and consumers.

1.6 Limitations of the Study

The major limitations of the study are as follows;

- The study focuses on customer satisfaction with internet banking in Nepali commercial banks, ignoring other marketing considerations.

- The fact that this study only included the Kathmandu Metropolitan City and areas where accurate replies could be gathered means that it may not accurately represent how the general public views Nepal.
- The majority of the data came from the primary sources listed in the data analysis section, and the veracity of the respondents' claims dictates the data's validity.
- The strategy for sampling is convenience. Hence, due to the sampling method, it can contain some errors.

CHAPTER - II

LITERATURE REVIEW

This chapter attempts to assess the relevant body of knowledge in order to grasp the concept of customer satisfaction with the quality of online banking service from an academic viewpoint. First and foremost, the literature relates the research questions and objectives. There is a review of several books on the subject under discussion. This chapter includes a theoretical review, an empirical review, and a research gap.

2.1 Theoretical Review

2.1.1 Theories of Electronic Banking and Customer Satisfaction

This chapter discusses a few of the theories which are as follows;

2.1.1.1 Theory of Reasoned Action

The purpose of the Theory of Reasoned Action (TRA) is to enhance comprehension of the connections between intentions, behaviors, and attitudes. Among the most significant ideas proposed to explain human behavior is this one. Behavioral intents to utilize technology are explained by people's perceptions of such activity and subjective standards. Delivering top-notch services has been linked to success in several fields. Due to deregulation and heightened rivalry, a large number of retail and service businesses are looking for lucrative methods to set themselves apart from the competitors (Caruana, 2011). Because of these factors better revenues, higher cross-sell ratios, improved customer retention, purchasing patterns, and increased market share service quality has therefore gained attention as a research issue throughout the past 10 years (Kaynak, 2015). In order to compete in a market-driven world, the banking industry realized how important providing excellent customer service was. All things considered, the service industry is highly diverse; what is true for one service industry may not apply to another. Services in this field cannot be standardized as a result of this differentiation; also, these services are intangible and cannot be seen or compared. There is a connection between the ideas of service quality and client satisfaction.

The degree of customer satisfaction is altering the technical environment along with the prevalence of electronic banking and the level of customer service delivery. Digital banking, an example of information technology, is a major contributor to better services at reduced costs. A stronger sense of mutual understanding, customer loyalty, and trust between the consumer and the bank are all correlated with increased pleasure. Customers have a higher opinion of the banks that offer these services to a greater extent because of their reputation. Since customer happiness is determined by the organization's service quality and customer expectation levels, e-banking is essential to providing customers with satisfaction since it bridges the gap between perceived and expected service quality.

2.1.1.2 Contrast Theory

Contrast theory was initially created by Hovland et al. in 1987. Dawes (1972) defined contrast theory as the inclination to highlight the distinctions between one's own attitudes and the attitudes stated in opinion statements. In contrast to assimilation theory, contrast theory provides a different viewpoint on the post-use assessment process by consumers since assessments made after consumption yield varying expectations of how pleasure will be affected. Automated teller machines give customers more easy, anytime access to their account funds, as opposed to the prior technique that only allowed cash withdrawals at the counter. A bank must join pre-existing local or international networks, such as Mastercard or Visa, or make large expenditures in ATM networks in order to increase customer satisfaction.

Assimilation theory proposes that consumers would try to minimize the discrepancy between expectations and performance; contrast theory, on the other hand, maintains that a surprise effect occurs, intensifying or magnifying the mismatch. The contrast hypothesis states that any discrepancy between experience and expectations was amplified in the direction of the difference. If the company's marketing establishes high expectations and a customer's experience is not up to par, then the good or service will be written off as wholly unsatisfactory. Conversely, advertising that overpromises and underdelivers will cause positive disconfirmation to be overstated. According to this principle, commercial banks should always be launching new products that satisfy consumer needs and increase customer satisfaction.

2.1.1.3 Innovation Diffusion Theory

This Roger (1983) thoughts describes people's purpose to use technology to execute a conventional task in a new way. The following are important variables that impact an innovation's broad adoption: relative advantage, compatibility, complexity, trialability, and observability. Several banks have discovered that integrating ICT into their operations may boost productivity. This is accomplished by creating mobile applications and websites that are tailored to the needs of the user. Because of this, users can access their accounts from any location as long as they have an internet connection. The way that a new technological concept, item, technique, or a fresh application of an existing one moves from invention to use is the focus of this theory. IDT states that throughout time, participants of a social system transmit technological innovation through certain channels.

A technological innovation goes through the following stages: knowledge (being made aware of its existence and its functions); persuasion (creating a positive attitude); decision (committing to its adoption); implementation (using it); and confirmation (reinforcement based on positive outcomes from it) (Arnaboldi & Claeys, 2008). In the same way, fraud and cyberthreats have improved online banking. Early adopters typically have greater levels of education, a higher social position, are more receptive to interpersonal and mass media communication, and interact with change agents more frequently. While interpersonal channels are more significant during the persuasion stage, mass media channels are more significant during the knowledge stage.

Innovators, early adopters, early majority, late majority, and laggards are the different types of adopters. Diffusion may take several forms and is heavily influenced by the kind of adopters and the innovation-decision-making process. Innovativeness, which is characterized as the extent to which a person accepts a novel concept, serves as the classification criterion for adopters. This theory, which Roger developed in 1983, reveals people's desire to use technology as a means of carrying out a routine task. The following fundamental components—relative advantageous position, similarity, complexity, trial ability, and perceptibility focus the appropriation of progress at the general level. It is concerned with how a new and creative idea, an antiquated method or technique, or a new application of an old one moves from conception to use.

According to the idea put forth by (IDT), mechanical growth is eventually transferred through particular channels among members of a social framework. A mechanical advancement goes through the following stages: information (presentation of its existence and understanding of its capabilities); influence (creation of a positive mental attitude toward it); choice (duty to its selection); execution (using it); and affirmation (supporting positive outcomes from it).

Generally speaking, early adopters are more educated, more financially secure, more receptive to interpersonal and wide communications, and more likely to interact with change agents. While interpersonal channels are more crucial during the influence stage, broad communications channels are more crucial at the information stage. Development decisions can be made in three ways: aggregately (where a decision is made by consensus among the participants from a framework), discretionary (where the person or organization has a real chance to accept or reject the idea), or power-based (where a decision is imposed by someone else or an organization that has essential force, status, or specialized ability).

Important characteristics of a development are: trial ability (the degree to which it can be used to try different things on a limited basis); observe ability (the perceive ability of its outcomes); multifaceted nature (difficulty of comprehension and utilization); similarity (consistency with existing qualities, past encounters and needs); and relative advantage (the degree to which it is seen to be superior to anything what it supersedes). Different categories of adopters are identified as follows: early adopters (respectable); pioneers (enterprising); late lions (incredulous); slow pokes (customary).

Instead of seeming older, prior adopters tend to be more educated, economically secure, and socially adaptable. They also tend to work in larger organizations, exhibit strong empathy, exhibit low dogmatism, and have a notable ability to manage abstractions, noticeable rationality, prominent intelligence, a notable ability to adapt to uncertainty and risk, higher goals, more interpersonal interactions, and a noteworthy presentation to both broad and interpersonal correspondences.

Opinion leaders, who typically have a more casual influence on others' behavior, change operators, who strongly influence advancement decisions by stepping in between the change organization and the relevant social framework, and change associates, who support change specialists by having more focused interactions with customers and possessing less skill believability but more accuracy or reliability validity, are all essential components of the development process.

The capacities of the change operator include: creating a customer-specific change requirement; establishing a data exchange relationship; analyzing customer issues; motivating the customer to change; eloquently interpreting this expectation; balancing reception and preventing discontinuance; and transferring the customer from reliance on the change specialists to confidence.

2.1.1.4 Assimilation Theory

Dissonance theory is the foundation of assimilation theory (Ahasanul, 2009). According to the dissonance hypothesis, customers mentally compare their expectations for a product to how well it performs as it is viewed. Assimilation theory brought this perspective of the customer post-usage evaluation to the literature on satisfaction. Al-Sukkar (2005) asserted that consumers try to prevent cognitive dissonance by changing their opinions about a particular product to make it more consistent with their expectations. By manipulating expectations to match perceived product performance or by reducing the relative significance of the disconfirmation experienced, consumers can also lessen the tension that arises from a discrepancy between expectations and product performance.

2.1.1.5 The Comparison Level Theory

Several scholars have criticized the Expectancy-Disconfirmation paradigm for assuming that the primary elements impacting consumer satisfaction are predictive expectations created by manufacturers, business reports, or unidentifiable sources (Yi, 1990). For example, La Tour and Peat (1979) argued that the EDP ignores other sources of expectations, such as the individual's past experiences and the experiences of other individuals with similar concepts. They recommended making changes to the Comparison Level Theory (Thibaut & Kelley, 1959). According to the Comparison Level Theory, there are three main factors that determine a product's comparison

level: (1) consumers' prior experiences with comparable products; (2) situationally produced expectations, which are expectations brought about by marketing and promotion; and (3) the experiences of other consumers who act as referents. In contrast, the Expectancy-Disconfirmation paradigm sets the comparison standard as situationally-produced or predictive expectations.

LaTour and Peat (1979) applied the Comparison Level Theory to the confirmation/disconfirmation process, they discovered that experience-based norms or standards provided a basis for comparisons in the assessments of customer satisfaction. They discovered that expectations based on past experiences had the biggest influence on consumer satisfaction, whereas situationally driven expectations had the least effect. According to this study, if customers are aware of relevant information about other customers' experiences in addition to their own, they could give manufacturer-provided information less weight (Yi, 1990).

2.1.2 Concept of Electronic Banking

E-banking has multiple definitions, but they all convey the same concept. The section that follows provides examples of some of these definitions. Using an electronic signal exchanged through e-banking, payments are sent between financial institutions in place of exchanging cash, checks, or other negotiable instruments E-banking or electronic financial transfers (EFT). All it is is the process of moving money directly, without the need of cheques or cash, between accounts using electronic means. "E-banking" is the term used to describe online or internet banking, which employs the internet as a remote delivery route for financial services (Addai et al., 2015).

Pikkarainen et al. (2004) defined online banking is a "internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments". Customers may almost conduct any kind of financial transaction with just a mouse click when using internet banking, with the exception of cash withdrawals. In fact, with the onset of globalization and more intense competition, using the internet as a new alternative channel for the distribution of financial services has evolved from being a means to gain a competitive advantage to

a necessity. Since internet banking is one of the least expensive ways to supply financial goods, banks employ it.

E-banking is becoming more and more significant since it can make or break electronic commerce. It also gives customers a more interactive information flow experience, which is transforming the way business is done (Kumbhar, 2011). In this type of banking, funds are transferred electronically between financial institutions rather than being physically exchanged for cash, checks, or other negotiable instruments. Customers can access bank services through safe intermediaries who are not physically present. It is the use of new technologies to provide a variety of banking services directly to customers around the clock.

Electronic banking (PC) is the process by which banks offer their clients information and services via a variety of delivery platforms that can be used with a range of terminal devices, including a personal computer, a mobile phone banking app with a browser or desktop software, a digital television, or a phone. Electronic banking is the primary substitute channel that provides convenience, accessibility, savings in terms of money and time, global access, information transparency, options for selection and comparison, and customized services for individual customers (Lee & Chung, 2009). Customers using electronic banking find it easier to access their accounts and complete transactions online by visiting the bank websites whenever it's convenient for them.

2.1.3 Components of E-Banking

A range of electronic banking distribution mechanisms are available for customers to obtain banking services. The most widely used ones are POS systems, ATMs, mobile banking, and internet banking, in that order.

2.1.3.1 Mobile Banking

The term "mobile banking," or "M-Banking," refers to the process of checking account balances, making payments, applying for credit, and doing other banking tasks using a mobile device, such as a smartphone or personal digital assistant (PDA). SMS banking, or text message banking, was the original kind of mobile banking.

Many undeveloped or underdeveloped areas of the world, particularly distant and rural ones, employ mobile banking. This particular facet of mobile commerce is particularly well-liked in nations where clients must travel several kilometers to the closest bank and banks are only located in large cities. The range of services provided could encompass tools for managing accounts, conducting stock market and bank transactions, and gaining access to personalized data (Tiwari & Buse, 2007).

Through mobile banking, users can send and receive short text messages (SMS) to carry out various banking tasks, including account queries and cash transactions. The term "mobile banking," sometimes known as "M-Banking," describes the practice of utilizing a mobile device, such as a smartphone or personal digital assistant (PDA), to check account balances, make payments, apply for credit, and perform other financial functions. The first form of mobile banking was SMS banking, or text message banking. With "anytime, anywhere" access to financial services, mobile banking is a wireless channel for service delivery that improves user value (Lee & Chung, 2009).

2.1.3.2 ATM

An automated teller machine (ATM) is a public electronic device that is linked to a data system and associated hardware. Bank customers can use ATMs to get banking services without entering the banking hall. Customers can use it to access banking services such transfers, withdrawals, checks, balance inquiries, account statements, cheque books, direct deposits, foreign exchange, and more (Fenuga, 2010). An ATM card and a pass code, often known as a PIN (Personal Identification Number), are needed in order to use an ATM.

The Automated Teller Machine (ATM) is a cutting-edge method of delivering financial services through an electronic terminal. It provides a variety of services, including cash withdrawal, funds transfers, cash deposits, payment of credit card and utility bills, requests for checkbooks, and other financial inquiries. Customers can access banking services virtually any time (Khan, 2010). A personal identification number (PIN) and an ATM card are required for online banking. Khan (2010) states that perceived convenience/ease of use/presence at any time and place, efficiency, security and privacy, dependability, and responsiveness are the primary elements of

ATM service quality. Automated Teller Machines, often known as 24-hour Tellers, are computerized terminals that allow users to bank almost anywhere, at any time: for cash withdrawals, small-scale statement/balance inquiries, money transfers, pin adjustments, bill payments, foreign exchange, deposits, and other uses.

2.1.3.3 Internet Banking

The initial step in the online banking process is to go directly to the bank's website. Physical banks are allowed to remain open later than normal since customers of internet banking can now access a range of services online. Customers of financial institutions can use internet banking to transact money on a secure website managed by the financial institution. A computer or a phone with internet access can be used to access the internet for online banking (Alabar & Timothy, 2012).

Through this web-based electronic home banking system, bank customers can conduct business transactions with the bank from personal computers at home, at work, or anywhere else with a network connection. Customers can access the bank's website by using their identity and personal identification number (PIN), which has been granted by the bank. The banking system verifies the user's identity and provides access to the requested services; the substance of the goods and services that each online bank provides varies widely. With Internet banking, users may access almost all financial transactions with a single mouse click, with the exception of cash withdrawals (Pikkarainen et al., 2004).

2.1.3.4 Electronic Fund Transfer at Point of Sale

The point of sale, often known as the point of purchase (POP) checkout, is where a transaction takes place. As the equivalent of an electronic cash register, a "checkout" is defined as a point-of-sale (POS) terminal, or more broadly, the hardware and software used for checkouts. Using an interface that salespeople may access, a point-of-sale terminal oversees the selling process. The receipt may be created and printed using the same system (Okoro, 2014).

Customers can use check cards, which are just debit cards with a different name, to pay at the point of sale for retail items. This card and a credit card differ in a few

important ways. The money for the purchase is immediately transferred to the debit card holder's account and the store's account (Saravanan & Leelavathi, 2020). A transaction happens at the point of sale (POS), often referred to as the checkout or point of purchase (POP). The term "checkout" refers to the process of using a point-of-sale (POS) terminal, or more generally, the hardware and software used at checkouts; it is similar to registering for online banking or using an electronic cash register. Through an interface that salespeople can use, a point-of-sale (POS) terminal controls the selling process.

2.1.4 Relationship between Electronic Banking and Customer Satisfactions

Regardless of the fundamental methodology, the importance of technology and banks' adoption of it cannot be disputed. While some see it as a way to improve the quality of services, others see it as a new, reasonably priced tool for service delivery. Furthermore, it's imperative to assess how effectively different technologies from ATMs to the Internet, mobile devices, and point-of-sale terminals can meet the demands of real clients.

According to Hasan et al. (2013), the majority of the factors were good predictors of overall satisfaction with e-banking. The trial was designed to assess the influence of multiple dimension soft service quality in customer satisfaction. Nonetheless, a principal component analysis result shows that crucial variables in consumer satisfaction in digital banking include perceived value, brand perception, cost effectiveness, ease of use, convenience, problem solving, security/assurance, and responsiveness. In e-banking and efficient fulfillment, responsiveness, ease of use, cost effectiveness, and remuneration are predictors of brand perception. Perceived value in e-banking may be predicted by factors such as security assurance, responsiveness, convenience, cost effectiveness, issue solving, and remuneration. In order to adjust e-banking services to consumers' expectations and current needs, bankers and designers of e-banking services should consider these factors. It will contribute to raising the standard of e-banking customer satisfaction and service quality.

Saha and Siddiqui's (2006) study also showed that there is a low level of overall senior client satisfaction, which the bank can address by raising the caliber of its IT-based services. The investigation revealed a relationship between the demographics of customers who use electronic banking and IT-based services in the banking industry. Specifically, the more early adopters of technology were educated, well-off, and had a stable job. The study also found that customers' evaluations of digital banking services are influenced by their experience using modern banking technology. In addition, banks can get greater client satisfaction levels with the use of contemporary technologies. Success cannot be assured just by technology, as customer happiness is mostly determined by how well services operate in comparison to expectations.

Polotoglu and Ekin (2010) claim that because internet banking works similarly to an electronic brochure promotional and institutional information, bank contact information, special offers, job announcements, and so forth—it is especially advantageous for banks as well as clients. On the other hand, several factors were included in a 2011 Kumbhar study on the E-banking services and customer satisfaction of ICICT Bank in Chennai City, India. An empirical study of aims service found that the cost-effectiveness of ATM service was a key component of service quality and that it had a major impact on customers' overall satisfaction with commercial banks' ATM services. The findings of the factors study, however, show that customer satisfaction was also influenced by cost effectiveness, ease of use, security, and responsiveness. In order to satisfy their clients and provide better ATM service in the future, banks should focus their efforts on those aspects.

2.2 Empirical Review

Addai et al. (2015) analyzed electronic banking and customer satisfaction: empirical evidence from Ghana. The primary aim of the research was to investigate the impact of electronic banking (e-banking) services on customer satisfaction in Ghana. 150 e-banking customers of Trust Bank Ghana Limited, Ecobank Ghana Limited, and Barclays Bank Ghana Limited (50 from each bank) were selected as the sample size using a purposive non-probability sampling technique. SPSS Statistics version 21 was used to analyze the source data. Multiple regression analysis was used to determine the impact of e-banking service delivery on customer satisfaction in the selected

institutions. This study reveals a positive relationship between customer satisfaction and the accessibility, reliability, and convenience of e-banking. Banks are recommended to provide consistent, trustworthy, and user-friendly online banking services in order to satisfy and retain customers.

Simon and Thomas (2016) examined effect of electronic banking on customer satisfaction in selected commercial banks, Kenya. The main objective of the study was to investigate how customer satisfaction at Nairobi's leading banks is impacted by electronic banking. The sample size consisted of 225 respondents using a stratified sampling technique. To get primary data, people were requested to fill out organized questionnaires. The researcher used descriptive statistical methods to conduct a preliminary analysis of the data. Regression analysis was also performed to determine the link between the research variables. Based on the data, the study indicated that the flexibility of online banking has a substantial influence on consumer happiness. Furthermore, many consumers utilize online banking because it was simple to use, and tailored internet banking has a significant impact on customer satisfaction. The study also showed that customer satisfaction was only little impacted by the ease of use and friendliness of online banking. The poll also revealed that customer satisfaction is significantly impacted by how simple mobile banking is. In addition, the poll found that customer satisfaction was significantly impacted by ATM privacy, accessibility, and user-friendliness. Moreover, the use of ATM cards at supermarkets and the reasonableness of ATM rates have little effect on consumer satisfaction. Customer satisfaction is significantly impacted by the point of sale system's performance, according to the study. Ultimately, it was evident that internet banking had the least influence on consumer satisfaction, while mobile banking had the biggest, followed by automated teller machines and point-of-sale systems. Banking institutions should enhance their online banking to make it easier to use, faster, and more versatile. To increase customer happiness, financial institution management should enhance the mobile banking application.

Worku et al. (2016) analyzed the Impact of electronic banking on customers' satisfaction in Ethiopian banking industry. This study set out to find out how electronic banking affected customer satisfaction in comparison to traditional brick and mortar banking services; how it related to age, occupation, and education; how it

affected branch visits; how well-informed customers were about e-banking; and what opportunities and drawbacks it presented. The study made use of tables, percentages, regression analysis tests to explain the variables that determine customers' satisfaction with e-banking, independence t-tests to determine whether or not customer visits to branches before and after e-banking are significant, and chi-square independence tests to determine the relationship between demographic characteristics and e-banking. The majority of e-banking users are young, educated, salaried, and students, according to the study's findings. Business men and women do not actively use e-banking, there is a correlation between e-banking and demographic characteristics, e-banking is currently only available to current account holders and savers, and e-banking has improved customer satisfaction, decreased the frequency of bank halls for banking services, and shortened customer wait times. In a similar vein, some customers had no idea that using e-banking would cost them money; bank customers reported feeling happier after using e-banking; users could monitor the activities of their accounts; and there is a good probability that e-banking services will expand in the city.

Paul et al. (2016) analyzed impact of service quality on customer satisfaction in private and public sector banks. The goal of this study was to compare private and public sector banks in India and investigate the influence of several service quality characteristics on overall customer satisfaction. The authors demonstrate how a number of variables influence customer satisfaction both negatively and favorably using forward stepwise regression. The authors gathered information from 500 Indian respondents, 250 of whom were users of private sector banks and 250 of whom were customers of public sector banks. The writers received a 65 percent response rate. According to the findings of this study, in the case of private sector banks, understanding of products, reaction to need, query resolution, rapid service, quick connection to the proper person, and attempts to decrease queue time are the aspects that were positively related with overall satisfaction. Customer assistance, appearance, and follow-up are all adversely related with customer satisfaction. In the case of public sector banks, however, understanding of the product and quick service are favorably related, whereas appearance is the sole aspect that is adversely associated. The service quality components that were positively related were not the same in public and private sector banks.

Toor et al. (2016) examined the impact of E-Banking on customer satisfaction: Evidence from banking sector of Pakistan. The purpose of this study was to investigate the effects of E-banking factors on customer satisfaction in Pakistan. Quantitative research design is employed in this study. 264 E-banking customers in various Pakistani cities were surveyed using a pre-tested questionnaire to provide information. The study's findings demonstrated a strong correlation between service quality characteristics and customer satisfaction in Pakistani online banking, with responsiveness, assurance, and dependability receiving higher rankings than the other three criteria. This study suggests that satisfied consumers are the result of high-quality e-banking services, and that banks can obtain a competitive advantage by offering their clients better services in the current competitive landscape.

Janahi and Mubarak (2017) examined the impact of customer service quality on customer satisfaction in Islamic banking. The primary aim of this research was to make a contribution to the literature on Islamic banking by examining the impact of several customer service quality metrics on customer satisfaction. Multiple regression analysis was performed in this study to examine the data. The results demonstrated that all hypotheses were supported and statistically significant, suggesting that customer satisfaction with Islamic banks was positively impacted by the caliber of customer service provided. In the context of Islamic banking transactions, all operationalized elements in this study—Compliance, Assurance, Reliability, Tangibility, Empathy, and Responsiveness showed how important it is to incorporate service quality components in order to attain a high degree of customer satisfaction.

Asiyanbia and Ishola (2018) analyzed e-banking services impact and customer satisfaction in selected bank branches in Ibadanmetropolis, Oyo state, Nigeria. The main objective of the research was to determine how E-banking services affected the level of customer satisfaction among a sample of bank customers at bank branches in the Ibadan metropolitan areas of Challenge, Dugbe, Agbeni, Gbagi, Ojoo, and Secretariat. Convenience sample and a cross-sectional survey methodology were used in the study. We used an elf-report questionnaire to interview one hundred (100) bank customers. Using a t-test for independence and Pearson correlation analysis, four research topics and two hypotheses were examined. The findings showed that ATMs, online banking, and electronic transfers were heavily used. Among the obstacles

encountered include bank fraud, internet network outages, and company losses as a result of unsuccessful e-transactions. Due to its cashless features, cash accessibility, time savings from bank visits, and smooth transactions, customers were pleased with e-banking. The survey showed that users of e-banking products expressed satisfaction with them. To promote electronic banking services, more money should be invested in e-banking infrastructure and customer segmentation.

Iluno et al. (2018) analyzed impact of the electronic banking products and services on the customers' satisfaction: a case study of Kaduna State, Nigeria. The main objective of the study was to investigate the relationship between electronic banking (EB) and customers' satisfaction (CS) in Kaduna State, Nigeria. The study focuses on the relationship between online banking services (EBS) and products (EBP) and customers' satisfaction (CS). A survey research design is employed in this work. A sample of 400 respondents in the research regions were given a structured questionnaire; 360 of them successfully completed and returned the 360 sets of questionnaires. Both quantitative and qualitative data were collected through focus groups, organized questionnaire administration, and informal interviews. Multiple regression analysis and a frequency distribution table were utilized to present and analyze the respondents' data. The findings indicated that in Kaduna State, Nigeria, electronic banking services (EBS) and products (EBP) significantly improve customers' satisfaction (CS). The Central Bank of Nigeria (CBN) is advised to create a policy framework that will improve E-banking operations by emphasizing customer satisfaction through customer-oriented policies, in light of the findings. Furthermore, to improve customer satisfaction, information technology providers and banks should collaborate to create more user-friendly, risk-free, simple, and effective service delivery technology.

Lamichhane (2018) investigated service quality on customer satisfaction in Nepalese commercial banks. This study examined bank customers' perceptions of service quality elements that explain customer satisfaction. This study used a descriptive and regression research design with the SERVQUAL technique to examine service quality parameters that influence customer satisfaction. In 2017, a study was done in Kathmandu valley to obtain data from bank clients using a structured questionnaire. In all, 250 surveys were issued to bank clients, with only 175 returned in acceptable

condition, representing a 70 percent response rate. According to the study's findings, bank service quality parameters influence customer satisfaction. Finally, this study indicated that the reliability, assurance, palpable, empathy, and responsiveness of bank service quality aspects impact the level of customer satisfaction. In Nepalese commercial banks, tangible, assurance, and empathy are strong and have greater explanatory power of customer satisfaction.

Uchechukwu and Stella (2019) examined impact of electronic banking on customer satisfaction. The main objective of the study was to determine if the use of electronic banking services and products had resulted in a notable increase in consumer satisfaction. The researcher used the chi-square test to evaluate the significance of the replies from GTBPlc's credit officers (respondent). This study showed that the use of electronic banking services and products had greatly increased client satisfaction. The bulk of participants expressed satisfaction with the electronic banking system's service delivery level. Lastly, there was a great deal of disagreement among respondents on the drawbacks of electronic banking.

Wilson and Christella (2019) analyzed an empirical research of factors affecting customer satisfaction: a case of the Indonesian e-commerce industry. The goal of this research was to examine the impact of website design, dependability, time saved, product diversity, and delivery performance on consumer satisfaction in the Indonesian e-commerce business. The questionnaire is used as the data collection instrument. The number of samples acquired in this study was 200, of which 15 should be excluded since the questionnaires were not completely filled out, resulting in a total of 185 samples being declared useable and utilized for this investigation. The PLS-SEM Method was used to evaluate the data. According to the findings of this study, dependability, time saved, product variety, and delivery performance all have a positive and substantial influence on customer satisfaction, with product variety having the greatest effect among the other categories. This study, however, discovered that there was no substantial relationship between website design and consumer happiness. This study also advises that companies specialized in the e-commerce business should always improve their products and services to their clients, which will increase their likelihood of repeating their purchase experience with the firm in the future.

Saravanan and Leelavathi (2020) analyzed Impact of E- Banking services with customer attitude and satisfaction with special reference to Chennai district. This study set out to investigate consumer attitudes and satisfaction with three financial service technologies: online and mobile banking, automated teller machines (ATMs), and mobile banking. Valid responses from a convenience sample of bank clients were analyzed using regression and correlation in the initial stages of the investigation. The study's conclusions showed a strong correlation between customer satisfaction in Chennai District e-banking and service quality metrics. This study demonstrated how customer demands and wants are met by high-quality e-banking services, and how banks can gain a competitive advantage in the modern banking market by offering superior services to their clientele. The results showed that consumer satisfaction with online banking was significantly impacted by the factors measuring the quality of the online banking service. Efficiency, system availability, fulfillment, privacy, contact, responsiveness, and interaction are the factors that account for 70% of the total customer satisfaction in online banking. Since all of the qualities of high-quality online banking services are positively correlated with customer happiness, the study uses empirical data to show that these traits are crucial to meeting customer needs.

Ijeoma, Akujor and Mbah (2020) investigated electronic banking and customer satisfaction in Imo State: A study of selected commercial banks in Imo State. The aim of this study was to find out how electronic banking affects customer satisfaction in commercial banks in Imo State. The goal is to determine the relationship between electronic banking and customer satisfaction in a few commercial banks in Imo State. The core data for the inquiry were gathered via the questionnaire. The statistical instrument of analysis is the Pearson Product Moment Correlation Techniques. The results demonstrated a positive relationship between customer happiness and electronic banking at United Bank for Africa Plc, Access Bank Ltd, and Keystone Bank Ltd. Additionally, it showed that customer happiness at United Bank for Africa Plc, Access Bank Ltd, and Keystone Bank Ltd. positively correlated with automated teller machines and mobile banking. Furthermore, the analysis demonstrated that in all three banks, there is a negative correlation between point of sale and customer happiness. This suggests that higher fees assessed on certain online banking platforms would result in lower consumer satisfaction and vice versa.

Kashif et al. (2021) investigated impacts of internet banking on customer satisfactions in Rawalpindi & Islamabad. The aim of this research study was to investigate and evaluate if Pakistan's banking industry's recent technology advancements and methods are meeting the needs of its clientele. Reliability analysis, descriptive statistics, correlation, and multiple regression analysis are the statistical techniques used in this investigation. According to this study, there was a favorable correlation between all the factors, including customer satisfaction, ATM, mobile, and online banking. Additionally, this study discovered that there is a favorable, considerable influence on consumer satisfaction from online, ATM, and mobile banking.

Gazi et al. (2021) investigated an empirical study of determinants of customer satisfaction of banking. The purpose of this study was to identify the elements that influence customer satisfaction in Bangladesh's banking industry, because a country's economic progress and stability are dependent on the soundness of its banking sector. The study attempts to explore and measure the impact of service quality on customer satisfaction in the banking industry. Data were obtained as a sample from 382 respondents who were clients of 32 chosen commercial banks in Bangladesh. To obtain the necessary data and information, a pre-structured questionnaire was employed. Data was analyzed using the OLS regression model and descriptive statistical methods. The findings of this study showed that service quality (e.g., tangibility, dependability, and empathy) has a statistically significant influence on customer satisfaction. The findings also demonstrate a favorable relationship between customer satisfaction and service quality parameters in Bangladesh's banking industry. The current study discovered that the service quality aspects (tangibility, dependability, and empathy) had a considerable beneficial influence on customer satisfaction in the domestic banking market. The current study's findings recommend that the Bank Supervisory Authority, the Central Bank of Bangladesh, and bank management should place special attention on ensuring maximum customer satisfaction.

Buddhika (2021) examined the impact of ATM, internet banking and mobile banking on customer satisfaction. The purpose of this study was to find out how happy Sri Lankan consumers were with mobile, online, and ATM banking. The researcher first identified six service quality metrics that assess customer satisfaction and three

aspects of electronic banking that are frequently used in the Sri Lankan context after conducting a thorough examination of the literature. Data are collected by means of purposeful sampling. Following revision, the measuring model showed good reliability, convergent validity, and discriminant validity. The findings indicated that although online and mobile banking had a negative influence on consumer satisfaction, ATM banking had a favorable effect. This study can serve as a guide for researchers doing similar studies in the future in environments such as banks and digital banking procedures.

Claude (2022) conducted a research on effect of electronic banking on customer satisfaction in Rwanda: Case of bank of Kigali Headquarter. The primary goal of the current study was to examine how electronic banking affects consumer satisfaction in Rwanda, especially at the Bank of Kigali. To find out how customer satisfaction levels were impacted by electronic banking, descriptive statistics and correlation analysis were utilized. To investigate the linear relationship between predictor and result variables, regression analysis was employed. As a result, the research came to the conclusion that the regression model could forecast the outcomes based on the study variables and was statistically significant. The R-value showed some basic correlations between our variables, as the findings demonstrated on the side of the model summary. This showed a stronger degree of connection between the study's independent and dependent variables. In the same way, the R square demonstrated the relationship between the overall variance across all dependent variables and customer satisfaction. This led us to the conclusion that financial policies, electronic banking transactions, electronic mobile devices, and information technology all had a significant impact on consumer satisfaction.

Belbase and Paudel (2023) investigated impact of e-banking on customer satisfaction. The primary objective of the research was to investigate how e-banking impacted customer satisfaction at a commercial bank in Nepal. Primary data for the study came from 200 respondents who use financial services and were gathered using standardized questionnaire procedures. A descriptive and cause-and-effect study design are both used. The data in this study were examined using regression analysis and correlation. Four attributes and customer satisfaction were shown to be positively

associated in this study. The results demonstrated that security was the element that most affected consumers' satisfaction with internet banking.

Ayer (2023) investigated e-banking services and its impact on customer satisfaction in Nepalese commercial banks. The main objective of the study was to look at how e-banking services affected customer satisfaction in Nepalese commercial banks. 120 respondents' main data were used in the study. To determine the significance and impact of e-banking services on customer satisfaction in Nepalese commercial banks, regression models and correlation coefficients are estimated. The study's findings showed that convenience had a favorable effect on customer satisfaction. Dependability also had a favorable effect on customer satisfaction. In a similar vein, ease of use has a favorable effect on customer satisfaction. In a similar line, security improved client pleasure. Likewise, time savings increase client pleasure. Perceived advantage also has a favorable effect on customer satisfaction.

Table 1

Summary of Empirical Review

S.N.	Authors	Title	Objective	Methodology	Findings
1	Addai et al. (2015)	Electronic banking and customer satisfaction : Empirical evidence from Ghana.	This study investigated into the impact of electronic banking (e-banking) service delivery on customer satisfaction in Ghana.	Multiple regression analysis was performed to determine the impact of e-banking service delivery on satisfaction of customers.	This study found that availability, dependability, and convenience of e-banking had positively correlated with consumer satisfaction. In order to please and keep consumers, banks are advised to offer consistent, dependable, and user-friendly online banking services.
2	Simon and Thomas (2016)	Effect of electronic banking on customer satisfaction in selected commercial banks, Kenya.	The general aim of the study was to determine the effect of electronic banking and customer satisfaction among first tier bank in Nairobi Town.	The study also conducted a regression analysis to establish the relationship between the study variables.	Based on the data, the study found that the flexibility of online banking has a significant impact on consumer happiness. Furthermore, many consumers utilize online banking because it was simple to use, and tailored internet banking has a significant impact on customer happiness. Furthermore, the survey revealed that user-friendly ATMs, convenience of access to ATMs, and ATM privacy all had a significant impact on consumer satisfaction.
3	Worku	The Impact	This study	The study used	The study's findings indicate that

	et al. (2016)	of electronic banking on customers' satisfaction in Ethiopian banking industry	aimed to examine what impact electronic banking has on customer satisfaction.	tables, percentages, chi-square independency test and multiple regression analysis.	the majority of e-banking users are young, educated, employed, and students. Business men and women do not actively use the e-banking service, and there is a correlation between e-banking and demographic traits. Currently, e-banking is only available to current account holders and savers. Additionally, e-banking has increased customer satisfaction.
4	Paul et al. (2016)	Impact of service quality on customer satisfaction in private and public sector banks	The main objective of the study was to investigate the influence of several service quality characteristics on overall customer satisfaction.	This study has applied descriptive and regression analysis to analyze the data.	This study concluded that when it comes to private sector banks, customer satisfaction is positively correlated with product comprehension, responsiveness to needs, problem solving, prompt service, expeditious connection to the appropriate individual, and efforts to shorten wait times. Customer satisfaction is negatively correlated with follow-up, appearance, and customer help.
5	Toor et al. (2016)	The impact of E-Banking on customer satisfaction : Evidence from banking sector of Pakistan.	This research work intends to investigate the impact of E-banking variables on customer satisfaction in Pakistan.	Data collected were analyzed and hypotheses were tested using multiple regression.	This study found that there was a significant association between service quality characteristics and customer satisfaction in Pakistani E-banking, with higher importance given to dependability, responsiveness, and assurance among the five aspects. According to the findings of this study, service quality in E-banking leads to happy clients.
6	Janahi and Mubarak (2017)	The impact of customer service quality on customer satisfaction in Islamic banking.	The purpose of this study was to contribute to the Islamic banking literature by examining the impact of different factors of customer service quality on customer satisfaction.	Data collected were analyzed and hypotheses were tested using multiple regression.	The results showed that all hypotheses were supported and statistically significant, suggesting that customer satisfaction with Islamic banks was positively impacted by the caliber of customer service provided. In order to attain a high degree of customer satisfaction, all operationalized aspects in this study namely, compliance, assurance, reliability, tangibility, empathy, and responsiveness showed how important it is to integrate service quality features.
7	Asiyanb	E-banking	This study	Four research	The findings showed that ATMs,

	ia and Ishola (2018)	services impact and customer satisfaction in selected bank branches in Ibadan metropolis, Oyo state, Nigeria.	perused the impact of E-banking services on customer satisfaction.	questions and two hypotheses were tested using Pearson correlation analysis and, t-test for independence.	online banking, and electronic transfers were heavily used. Among the obstacles encountered include bank fraud, internet network outages, and company losses as a result of unsuccessful e-transactions. Due to its cashless features, cash accessibility, time savings from bank visits, and smooth transactions, customers were pleased with e-banking.
8	Iluno et al. (2018)	Impact of social media on consumer behavior.	This study examined the impact of electronic banking (EB) on customers' satisfaction (CS) in Kaduna State, Nigeria.	To present and analyze the data from the respondents, frequency distribution table and multiple regression analysis were used.	The findings indicated that in Kaduna State, Nigeria, electronic banking services (EBS) and products (EBP) significantly improve customers' satisfaction (CS). The Central Bank of Nigeria (CBN) is advised to create a policy framework that will improve E-banking operations by emphasizing customer satisfaction through customer-oriented policies, in light of the findings.
9	Lamichhane (2018)	Service quality on customer satisfaction in Nepalese commercial banks.	This study analyzed bank customers' perception in relation to the service quality factors explaining customer satisfaction.	This study has applied descriptive and regression research design using SERVQUAL approach to analyze service quality factors affecting customer satisfaction.	The results of the study show that customer satisfaction is influenced by bank service quality factors. Ultimately, this study demonstrated that the degree of customer satisfaction is influenced by the tangible, empathetic, responsive, and reliable components of bank service quality. Tangible, assurance, and empathy were strong and had a better explanatory power for client pleasure in Nepalese commercial banks.
10	Uchechukwu and Stella (2019)	Impact of electronic banking on customer satisfaction .	The objective of the study was to know if electronic banking products and services have significantly improved customer satisfaction.	The chi-square test was employed by the researcher to test the significance of the responses from the credit officers of GTBPlc (respondent).	This study showed that the use of electronic banking services and products had greatly increased client satisfaction. The bulk of participants expressed satisfaction with the electronic banking system's service delivery level. Lastly, there was a great deal of disagreement among respondents on the drawbacks of electronic banking.
11	Wilson and Christell	Effect of social media on Nepal	This study examines the effect of website design,	The data were analyzed using PLS-SEM Method.	According to the findings of this study, dependability, time saved, product variety, and delivery performance all have a positive

	a (2019)	consumer purchase decision.	reliability, time saved, product variety, and delivery performance towards customer satisfaction		and substantial influence on customer satisfaction, with product variety having the greatest effect among the other categories. This study, however, discovered that there was no substantial relationship between website design and consumer happiness.
12	Saravanan and Leelavathi (2020)	Impact of E- Banking services with customer attitude and satisfaction with special reference to Chennai district.	The purpose of this study was to give an examination of client attitudes and satisfaction with three financial service technologies: ATMs, mobile banking, and internet banking.	The study began with a correlation and regression analysis of valid replies from a convenience sample of bank clients.	The study's findings demonstrated a significant association between service quality parameters and customer satisfaction in E-banking in the Chennai District. This study showed that service quality in E-banking leads to fulfilled customer demands and wants, and that banks may acquire a competitive edge in today's world by providing better-quality services to their consumers.
13	Ijeoma, Akujor and Mbah (2020)	Electronic banking and customer satisfaction in Imo State: A study of selected commercial banks in Imo State.	The purpose of this study was to investigate how customer satisfaction in Imo State's commercial banks is affected by electronic banking.	The Pearson Product Moment Correlation Techniques are the statistical tool of analysis.	The findings showed that at United Bank for Africa Plc, Access Bank Ltd, and Keystone Bank Ltd., there was a favorable correlation between electronic banking and customer satisfaction. Additionally, it showed that customer happiness at United Bank for Africa Plc, Access Bank Ltd, and Keystone Bank Ltd. positively correlated with automated teller machines and mobile banking.
14	Kashif et al. (2021)	Impacts of internet banking on customer satisfaction in Rawalpindi & Islamabad.	The aim of this research study was to investigate if Pakistan's banking industry's recent technology advancements and methods are meeting the needs of its clientele.	Reliability analysis, descriptive statistics, correlation, and multiple regression analysis are the statistical techniques used in this investigation	This study found that all of the variables including customer satisfaction, ATM, mobile, and online banking correlated favorably. This survey also found that internet, ATM, and mobile banking have a positive, significant impact on customer satisfaction.
15	Gazi et al. (2021)	An empirical study of determinants of	The aim of this study was to determine the factors that affect customer	OLS regression model and descriptive statistical tools were used to	The results of this study reveal that the quality of service (e.g., tangibility, reliability, and empathy) has a statistically significant impact on customer

		customer satisfaction of banking.	satisfaction in the banking sector of Bangladesh.	analyze data.	satisfaction. The results also show that there is a positive correlation between the customer satisfaction and service quality dimensions in the banking sector of Bangladesh.
16	Buddhika (2021)	The impact of ATM, internet banking and mobile banking on customer satisfaction .	The purpose of this study was to find out how happy Sri Lankan consumers were with mobile, online, and ATM banking.	This study used descriptive statistic and multiple regression analysis to analyze the data.	The findings indicated that although online and mobile banking had a negative influence on consumer satisfaction, ATM banking had a favorable effect.
17	Claude (2022)	Effect of electronic banking on customer satisfaction in Rwanda: Case of bank of Kigali Headquarter.	The main objective of the current study was to investigate the effect of electronic banking on customer satisfaction in Rwanda	To test the linear relationship between predictor variables and outcome variables regression analysis was used.	Therefore, the study concluded that the regression model was statistically significant and predict the results from the study variables. This demonstrated a higher degree of correlation between the dependent and independent variables from the study. This led us to conclude that there was a strong relationship between Information Technology, Electronic Mobile devices, Electronic Banking transactions, and financial policies with their influences on customer satisfaction.
18	Belbase and Paudel (2023)	Impact of e-banking on customer satisfaction .	The primary objective of the study was to examine at how customer satisfaction was affected by e-banking.	Correlation and regression analysis were used to examine the data in this investigation.	This study found that four characteristics and customer satisfaction were positively correlated. The findings showed that the factor that had the most impact on customers' happiness with online banking was security.
19	Ayer (2023)	E-banking services and its impact on customer satisfaction in Nepalese commercial banks.	The main objective of the study was to examine how customer satisfaction was affected by e-banking services.	Regression models and correlation coefficients are estimated.	The results of the study indicated that customer satisfaction was positively impacted by convenience. Customer satisfaction was positively impacted by dependability as well. Similarly, consumer satisfaction is positively impacted by simplicity of use. In a similar vein, client satisfaction benefited from security.

Source: Author's Construct

2.3 Research Gap

Research gap refers to the gap between previous research and this research. There is gap between the present research and previous researches in terms of data, time and method. This study has analyzed current or recent year data. Now, trend of electronic banking are increasing day by day and customer has given more priority to electronic banking. So, this study may be more useful than previous studies. Then, this study used huge respondents of 384 respondents which is also differ in data. This study has included important explanatory variables such as internet banking, mobile banking, ATM banking, and electronic fund transfer which variables were not included in previous study to analyze the impact of e- banking on customer satisfaction in Nepalese commercial banks. Further, Uchechukwu and Stella (2019) concluded that a mobile banking has positive and significant relationship with customer satisfaction whereas Ijeoma, Akujor and Mbah (2020) found that mobile banking had negative relationship with customer satisfaction. Asiyanbia and Ishola (2018) which observed that there was a positive association between electronic fund transfer and customers' satisfaction but opposite to the finding of Ijeoma, Akujor and Mbah (2020). Likewise, Simon and Thomas (2016) mentioned that internet banking has significant positive effect on customer satisfaction but Buddhika (2021) mentioned that there was no effect of internet banking on customer satisfaction. Simon and Thomas (2016); Kashif et al. (2021) mentioned that mobile banking has significant positive influence on customers' satisfaction. However, it contradicts with the finding of Buddhika (2021) concluded that mobile banking has negative impact on customer satisfaction. Given these conflicting results, it is, therefore, not clear what factors and to what extent they influence customer satisfaction in the banking industry such as in Kathmandu valley. The current study therefore, investigated the effect of electronic banking on customer satisfaction in Nepalese commercial banks. Descriptive analysis, correlation analysis and multiple regression analysis are the major tools in this study which are not used on this topic in previous studies and they only used mean, percentage frequency etc. That's why, this study is quite different to compare previous researchers' studies.

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology is the disciplined process of addressing a problem by the systematic collection, documentation, analysis, interpretation, and reporting of data pertaining to the various facets of a phenomenon being studied. This study's research methodology describes the steps and methods applied to each stage of the inquiry. This chapter describes research design, population and sample, and sampling design, nature and sources of data, and instrument of data collection, method of analysis and research framework and definition of variables.

3.1 Research Design

The study is based on descriptive and casual research design. To describe the components of electronic banking descriptive research design is used. Similarly, casual design helps to determine the relationship between dependent (customer satisfaction) and independent variable (electronic banking). Further casual research design is used to examine the impact of electronic banking delivery on customer satisfaction of banking industry in Nepal.

3.2 Population and Sample and Sampling Design

The survey includes all 20 commercial banks currently in operation in Nepal. Thus, the population represents all of these banks' customers. A sample is a portion of the overall population, or a subset of it. The study's sample strategy used convenience sampling, which is a non-probability sampling technique. Hands-on distribution of survey questions was done throughout the Kathmandu Valley to gather answers from a range of respondent groups. The participants offered their consent to participate in answering the questionnaire after being requested to do so when they entered the banking hall on business.

Sample size and sampling design

The formula has been used by the researcher to determine the sample size when the population is unknown. Cochran (1977) provides the following formula for sample size in an infinite population.

$$n = \frac{Z^2 p(1-p)}{e^2}$$

n = sample size, $Z=1.96$ from the normal area table, if there is population infinite then put the value of $p=0.50$, and e = error which is 5 percent so the value of e is 0.05.

$$\begin{aligned} n &= \frac{Z^2 p(1-p)}{e^2} \\ &= 1.962 \times 0.50(1-0.50)0.052 \\ &= 384.1458821 \end{aligned}$$

So, the sample size of the study is 384.

The convenience sampling strategy was used to contact the study's sample respondent. It is a rapid, low-cost, user-friendly instrument that generates qualitative data, making it appropriate for students. Convenience sampling data analysis is simpler than those of other techniques.

3.3 Nature and Sources of Data, and Instrument of Data Collection

Primary sources of data were used to collect and analyze the impact of electronic banking and customer satisfaction. The study research is based on the primary source of data for research questions. Primary data are the first hand data collected by the researcher to test the working of hypothesis and then used as evidence to support a researcher's claim. For the purpose of primary data the researcher used questionnaire method to collect the data. The respondents were requested to fill the questionnaire and were made fully aware about for what purpose the research was being carried out and the main objective of the study. This method of collecting data made a better understanding of customer regarding e-banking and customer satisfaction of banking industry in Nepal. The questionnaire were distributed and collected during any flexible time of respondent and researcher.

3.4 Method of Analysis

The frequency tables that report the percentage of each of the categories and frequency that are easy to understand and interpret were used. Other than the descriptive analysis, correlation and regression analysis were conducted to validate the hypothesis.

3.4.1 Descriptive Statistic

Descriptive statistics were used to explain the demographic characteristics of the respondents along with electronic banking and customer satisfaction. Frequencies, percentages, mean and standard deviation was calculated to describe the variables.

Mean

The mean, which is obtained by dividing the total number of values by the number of values, is the arithmetic mean of a range of values or quantities. It alludes to the average that is examined or utilized to determine the data's central tendency. A widely used and easily understood metric of central tendency is the arithmetic mean. To find it, tally up all of the population's data points, then divide the total by the number point. The mean is computed in this study to determine the average of the respondents' answers to the various variables in the Likert scale question. On all samples, the mean value of the answers to the Likert scale question is computed.

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n}$$

Where,

$\sum X$ = Value of responses of each independent or dependent variable

n = No. of statements

Standard Deviation

The standard deviation, which measures dispersion, is used to express how much a collection of data values vary or are dispersed. The positive square root of variance is one way to describe it. One helpful characteristic of the standard deviation is that, in contrast to variance, it has the same units of measurement as the data. There is a larger deviation within the data set if the data points deviate further from the mean. Therefore, the standard deviation increases with data dispersion. The standard deviation is computed for each sample in this study based on the Likert scale responses.

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}$$

Where,

X = Value of responses of each dependent or independent variable

\bar{X} = Mean value of responses of each dependent or independent variable

n = No. of responses

3.4.2 Inferential Statistics

Correlation Analysis

The relationship between an independent variable and another dependent variable is known as the correlation coefficient. It is a technique for ascertaining how these two variables are related to one another. A correlation coefficient is present when there is a strong relationship between the two variables, meaning that changes in the independent variable's value also affect the dependent variable's value. To determine the degree of relationship between independent and dependent variables for each sample in this study, correlation is computed for the responses given on a Likert scale. The relationship between electronic banking and client satisfaction was shown using the correlation coefficient.

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma XY - \Sigma X \Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2} \sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

X = Value of independent variable

Y = Value of dependent variable

n = Number of responses

Regression Analysis

Regression is one statistical method used to evaluate the degree of a relationship between one dependent variable and one or more independent variables. It covers a wide range of techniques for analyzing and modeling several variables to find their relationships. Based on responses on a Likert scale, regression analysis is utilized in this study to ascertain the direction of the relationship between the independent and dependent variables for each sample. The relationship's theoretical model is represented by the equation below:

$$CS = \beta_0 + \beta_1 IB + \beta_2 MB + \beta_3 ATM + \beta_4 EFT + e_{it} \quad (1)$$

Where,

CS = Customer Satisfaction

IB = Internet Banking

MB = Mobile Banking

ATM = ATM Banking

EFT = Electronic Fund transfer

β_0 = The intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4$, = The slope which represents the degree with which electronic banking quality and customer satisfaction changes as the independent variable changes by one unit variable.

e = error component

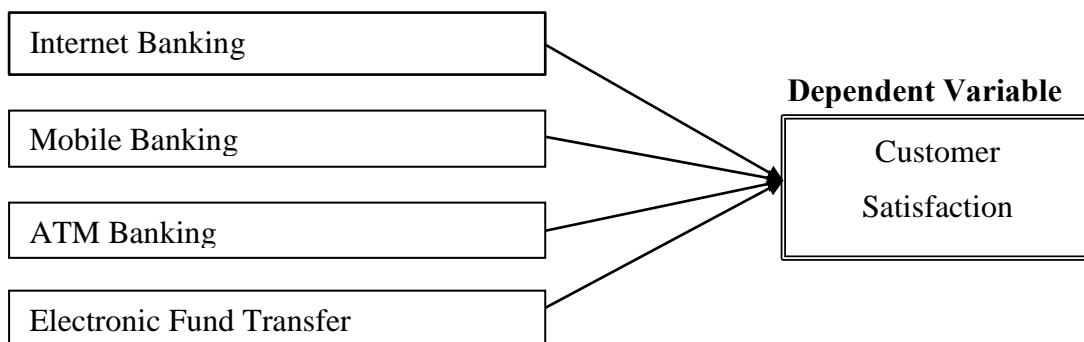
3.5 Research Framework and Definition of Variables

The research is based upon the analysis and interpretation of dependent (customer satisfaction) and independent variables (ATM banking, Internet banking, Mobile banking and Electronic Fund Transfer).

Figure 1

Research Framework of the Study

Independent Variables



Simon and Thomas (2016); Worku, Tilahun and Tafa (2016); Ijeoma, Akujor and Mbah (2020); Kashif et al. (2021) and Buddhika (2021)

Dependent Variable

Customer Satisfaction

In this study, customer satisfaction is an emotional response to experience associated with the services of banking in comparison to customer's expectation (Simon & Thomas, 2016). Customer satisfaction can be measured by positive impressions, repeat business, recommendations, and contentment with the bank's services.

Independent Variables

Internet Banking

Internet banking is the term used to describe the use of the internet as a delivery channel for all common banking services, such as charge payments, electronic bill presentations, trust transfers to other records, balance checks, statement of records requests, and payment processing without physically visiting a bank (Nath, 2003). It removes time and location limits and enables the bank to maintain steady output for clients who live unimaginable far away. Simon and Thomas (2016) mentioned that internet banking services has significant positive effect on customer satisfaction. Likewise, Buddhika (2021) found that internet banking had positive impact on customer satisfaction.

Mobile Banking

Mobile banking is the availability and use of banking and financial services using mobile devices for communication. Among the services offered may include the capacity to do account transactions, payments, and balance checks via a mobile device, such as a phone. While some programs may also be downloaded to a mobile device, SMS and mobile internet access are currently the most popular methods for doing mobile banking. It is therefore crucial to increasing bank productivity. Thomas (2016); Kashif et al. (2021) concluded that mobile banking services had significant positive influence on customers' satisfaction. However, Buddhika (2021) found that mobile banking had insignificant negative impact on customer satisfaction.

ATM Banking

Automated tellers suggest that the bank will be more productive during regular business hours. An automated teller machine (ATM) is a device provided by a bank or other financial institution that allows users to take out cash, make inquiries, obtain bank statements, and more. Instead of waiting in line at bank halls, it saves consumers time during service delivery, which they can use for other worthwhile endeavors. Simon and Thomas (2016) stated that significant positive effect of ATM services on customer satisfaction. Likely, Uchechukwu and Stella (2019) and Kashif et al. (2021) found that ATM banking had significant positive effect electronic banking on customer satisfaction.

Electronic Fund Transfer

According to the POS technology, customers can conduct retail transactions using their check cards. The card looks like a credit card even though it doesn't function like one. The amount of the purchase is promptly updated in both the store's and the debit card holder's accounts. Using a debit card, a POS starts an electronic fund transfer process. Asiyanbia and Ishola (2018) observed a positive association between electronic fund transfer service and customers' satisfaction. Simon and Thomas (2016) and Worku, Tilahun and Tafa (2016) found that electronic fund transfer service had significant positive effect on customers' satisfaction. The result is also similar with the researcher expectation.

CHAPTER - IV

RESULTS AND DISCUSSION

The primary goal of this study is to investigate how electronic banking impact customer satisfaction in Nepalese commercial banks, as the researcher has indicated in earlier chapters. This results in the chapter being divided into three sections that include the topic's analysis and conclusions. The first portion presented the descriptive and correlation analyses of the study variables; the second section demonstrated the fulfillment of the assumptions of the linear regression model; and the third section presented the regression findings. For further statistical analysis, the ratios of the given dependent and independent variables were established, along with the data analytical techniques employed for ratio scale measurement. The statistical tool used to assess the gathered data was SPSS version 26.

4.1 Results

4.1.1 Demographic Profile

The demographic analysis and interpretation of primary data obtained through survey collection are covered in this section. This section looks at the respondents' age and gender profiles. Every response is from the Kathmandu Valley.

Table 2

Gender Specification

Options	No. of Respondents	Response (percent)
Male	247	64.32
Female	137	35.68
Total	384	100

Note. Opinion Survey, 2024

Table 2 shows the distribution of the respondents on the basis of gender. In this study, data from 384 respondents were collected and analyzed. 64.32 percent of responses were from men, indicating that men represent the majority of respondents in banks. Men compose the majority of the 384 respondents, with fewer responses than female respondents. But 35.68 percent of respondents were female when it came to digital banking and its impact on customer satisfaction in Nepalese commercial banks. These findings suggest that respondents who are male are more likely than respondents who

are female to use electronic banking. In this case, respondents of both genders might be identified as the main survey participants by Nepalese commercial banks.

Table 3

Age Description of Respondents

Options	No. of Respondents	Response (percent)
Up to 29	132	34.37
30-39	183	47.66
40 and above	69	17.97
Total	384	100

Note. Opinion Survey, 2024

Table 2 represents the age distribution of the respondents, 47.66 percent of them are between the ages of 30 and 39. The demographic segment including commercial bank customers who are 40 years of age or older is the least. Still, the majority of replies are youthful. In addition, 17.97 percent of respondents stated they are 40 years of age or older, and 34.37 percent of respondents claimed to fit into one of the 29 age groups. This indicates that, among other things, 82.03 percent of the total customer base of Nepalese commercial banks was youthful, engaged, and able to use internet banking.

Table 4

Annual Income Description of Respondents

Options	No. of Respondents	Response (percent)
Up to Rs. 300,000	118	30.74
Rs. 301,000- Rs. 500,000	158	41.14
Rs. 501,000 and above	108	28.12
Total	384	100

Note. Opinion Survey, 2024

Table 4 displays the profile of respondents according to their income level, 41.14 percent of respondents make between Rs.301,000 and Rs.500,000. Customers of commercial banks making more than Rs.501,000 make up the lowest percentage income category. The bulk of responders, nevertheless, are at a medium level. Furthermore, of the respondents, 30.74 percent identified as belonging to the income category up to Rs.300,000 and 28.12 percent as representing the income of Rs.501,000 and above.

Table 5*Years of Using Electronic Banking*

Options	No. of Respondents	Response (percent)
Less than 1 year	28	7.29
1-2 years	45	11.72
2-3 years	72	18.75
3-5 years	127	33.07
More than 5 years	112	29.17
Total	384	100

Note. Opinion Survey, 2024

Table 5 also revealed how long the respondent used the bank's online banking service. 127 (33.07 percent) and 112 (29.17 percent) of the 384 respondents had been using the services for three to five years and longer, respectively. Subsequent investigation revealed that of the sample, 28 respondents (7.29 percent) had used the services for less than a year, 45 respondents (11.72 percent) for one to two years, and 72 respondents (18.75 percent) for two to three years.

4.1.2 Descriptive Statistics Analysis

The data in this study are analyzed using the mean and standard deviation methods. A higher mean value indicates that a greater number of respondents agree that the variable may have a significant effect on customer satisfaction.

Internet Banking

Through descriptive analysis, the banks' internet banking is displayed in this part. There are five distinct assertions in it. The likert scale used to quantify this concept ranged from 1 (strongly disagree) to 5 (strongly agree). The mean and standard deviation of the responses were calculated to observe the respondents' opinions. The standard deviation displays the variation from the average mean of the respondents, whereas the mean value indicates the average state of the respondents' feelings. The information shown below illustrates how customer satisfaction in Nepalese commercial banks is affected by internet banking.

Table 6*Internet Banking*

Scale Items of Internet Banking	Mean	Std. Dev.
IB1 The use of internet banking is secure for me	3.8646	.89524
IB2 The use of internet banking is time saving	3.7865	1.04530
IB3 I can easily access my account and make balance enquiry	3.6875	1.05773
IB4 I can easily request my account statement by email	3.7995	1.01111
IB5 I am satisfy with the use of internet banking	3.7005	1.02011

Note. Appendix-I

Table 6 shows descriptive statistics of five different scale items of internet banking of banks. Among all scale items, IB1 “The use of internet banking is secure for me” had high score mean 3.8646. It means most of the customers agreed the use of internet banking is secure for them. At the same time, the lowest mean score is 3.6875 for the statement IB3 “I can easily access my account and make balance enquiry” which shows that most of the customers agreed less compared to other statements.

Mobile Banking

This section uses descriptive analysis to examine the state of banks' mobile banking. Five statements from banks' mobile banking are included in this investigation. A five-point Likert scale is used to measure the variable. 1 being very disagreed and 5 being firmly agreed. The mean and standard deviation of the responses are calculated to observe the respondents' opinions. The standard deviation displays the variation from the average mean of the respondents, whereas the mean value indicates the average condition of the respondents' feelings.

Table 7*Mobile Banking*

Scale Items of Mobile Banking	Mean	Std. Dev.
MB1 The uses of mobile banking are secure.	3.8021	1.06076
MB2 The use of mobile banking is cost saving.	3.8620	.96908
MB3 Mobile banking system provides anywhere bill payment options.	3.8776	1.02099
MB4 I always get detail of my account through SMS/Email on my cellular phone.	3.8203	1.00469
MB5 The overall satisfaction with mobile banking system of bank is satisfactory.	3.6641	1.08595

Note. Appendix-I

Table 7 shows descriptive statistics of five different scale items of mobile banking of banks. Among all scale items, MB3 “Mobile banking system provides anywhere bill payment options” had high score mean 3.8776. Scale item MB5 “The overall satisfaction with mobile banking system of bank is satisfactory” had the lowest mean 3.6641. It can be concluded that customers believed that mobile banking provides anywhere bill payment options. Further, using mobile banking is cost saving.

Automated Teller Machine

This section uses descriptive analysis to investigate how automated teller machines affect customer satisfaction in Nepalese commercial banks. Five comments about social media are included in this research. A five-point Likert scale is used to measure the variable. 1 being very disagreed and 5 being firmly agreed. The mean and standard deviation of the responses are calculated to observe the respondents' opinions. The standard deviation displays the variation from the average mean of the respondents, whereas the mean value indicates the average state of the respondents' feelings. The information below illustrates how customer satisfaction in Nepalese commercial banks is affected by automated teller machines.

Table 8

Automated Teller Machine

Scale Items of Automated Teller Machine	Mean	Std. Dev.
ATM1 Service charge for ATM banking is reasonable	3.7292	1.03191
ATM2 The process of applying for ATM card is easy.	3.7422	1.04154
ATM3 I have always found ATM booths in working order.	3.8073	1.02162
ATM4 The ATM makes cash withdrawal very convenient	3.8281	.98640
ATM5 I am overall satisfied with the use of ATM banking.	3.7734	1.09269

Note. Appendix-I

Table 8 shows descriptive statistics of five different scale items of Automated Teller Machine of banks. Among all scale items, ATM3 “The ATM makes cash withdrawal very convenient” had high score mean 3.8281. Scale item ATM1 “Service charge for ATM banking is reasonable” had the lowest mean 3.7292. It can be concluded from the above table customers feel ATM makes cash withdrawal very convenient. Respondents also feel they are overall satisfied with the used of ATM banking.

Electronic Fund Transfer

This section uses descriptive analysis to demonstrate how electronic fund transfers affect customer satisfaction in Nepalese commercial banks. There are five distinct statements in it. The likert scale used to quantify this construct ranged from 1 (strongly disagree) to 5 (strongly agree). The mean and standard deviation of the responses were calculated to observe the respondents' opinions. The standard deviation displays the variation from the average mean of the respondents, whereas the mean value indicates the average condition of the respondents' feelings.

Table 9

Electronic Fund Transfers

Scale Items of Electronic Fund Transfers	Mean	Std. Deviation
EFT1 Electronic fund transfer is very secured and reliable	3.6120	1.03109
EFT2 Fast processing at reasonable cost	3.7682	.97805
EFT3 Most efficient digital payment method	3.6484	1.00850
EFT4 I feel secure while making transactions through electronic fund transfer.	3.5547	1.07287
EFT5 I am overall satisfied with the use of electronic fund transfer.	3.6536	1.04086

Note. Appendix-I

Table 9 shows descriptive statistics of five different scale items of electronic fund transfers in Nepalese commercial banks. Among all scale items, EFTS1 “Fast processing at reasonable cost” had high score mean 3.7682. Scale item EFTS4 “I feel secure while making transactions through electronic fund transfer” had the lowest mean 3.5547. It can be concluded that customers agreed on banks provide electronic fund transfers fast processing at reasonable cost. In addition, customers are overall satisfied with the use of electronic fund transfer.

Customer Satisfaction

This section uses descriptive analysis to illustrate the state of customer satisfaction. There are five distinct assertions in it. The likert scale used to quantify this concept ranged from 1 (strongly disagree) to 5 (strongly agree). The mean and standard deviation of the responses were calculated to observe the respondents' opinions. The standard deviation displays the variation from the average mean of the respondents, whereas the mean value indicates the average state of the respondents' feelings.

Table 10*Customer Satisfaction*

Scale Items of Customer Satisfaction	Mean	Std. Deviation
CS1 I am satisfied with the service charges of my bank account	3.6823	1.13713
CS2 I am satisfied with the transaction processing via E-Banking services.	3.7448	1.03337
CS3 I think I made the correct decision to use the E-Banking services.	3.7786	1.06227
CS4 My expectation meets with the electronic banking	3.6979	1.16179
CS5 My satisfaction with the E-Banking services is high	3.7760	1.05803

Note. Appendix-I

Table 10 showed individual scale items of customers' satisfaction. Among five scale items CS3 "I think I made the correct decision to use the E-Banking services" scored the highest mean value 3.7786 with standard deviation 1.06227. Then, scale items CS1 "I am satisfied with the service charges of my bank account" scored the lowest mean value 3.6823 and 1.13713 standard deviation. It is concluded from the study that the customers think they take the correct decision to use the E-Banking services. Moreover, consumers are highly satisfied by digital banking services.

4.1.3 Summary of Descriptive Analysis

The mean value and standard deviation of each variable are used to determine impact of electronic banking on customer satisfaction of commercial banks in Nepal. The data that have been gathered have been examined using descriptive analysis, which has helped with data summarization and description. Table 11 summarizes the descriptive analysis's specifics.

Table 11*Summary of Descriptive Analysis*

Study Variables	N	Mean	Std. Deviation
Internet Banking (IB)	384	3.7677	.79173
Mobile Banking (MB)	384	3.8052	.76747
Automated Teller Machine (ATM)	384	3.7760	.85713
Electronic Fund Transfer (EFT)	384	3.6474	.79393
Customer Satisfaction	384	3.7359	.82352

Note. Appendix-I

As per Table 11, among the independent variables,

The mean data for mobile banking is highest mean 3.8052 and standard deviation is 0.76747. This result indicates that most respondents strongly agreed that using mobile banking is affecting their level of happiness. Stated differently, the majority of participants claimed that using mobile banking provided options for bill payment from any location and was more cost-effective.

The automated teller machine has the second-highest mean, with a mean value of ($M = 3.7760$) and a standard deviation of (0.85713). This suggests that most respondents strongly agreed that using an automated teller machine is lowering their level of satisfaction. Put another way, most respondents said that using a bank's ATM made cash withdrawals very convenient, and they also thought that using ATM banking generally left them feeling satisfied.

Table 11 shows that the standard deviation is 0.79173 and the mean score for online banking is 3.7677. This finding suggests that most respondents agreed to a modest extent that the bank offers online banking. Stated differently, they concurred that using online banking is safe for them.

The electronic fund transfer have a mean score of 3.6474 and a standard deviation of 0.79393. According to this finding, the majority of respondents agreed, if only somewhat, that their satisfaction was impacted by electronic fund transfer. Put another way, the consumer believes that electronic fund transfer are the most effective digital payment option and that they offer quick processing at a fair price.

The mean customer satisfaction score is 3.7359, with a standard deviation of 0.82352. This result showed that the majority of respondents were very satisfied with the way that online banking handled their transactions, and they were continuously of the opinion that utilizing online banking was the best option for them. This indicates that most respondents had a high degree of personal satisfaction and that mobile banking and ATM service elements have a big influence on the satisfaction of banking clients.

4.1.4 Correlations Analysis

Correlation analysis is used in Nepalese commercial banks to assess how electronic banking affects customer satisfaction. The following tables show the link between the dependent and independent variables, bank and factor customer satisfaction. In this study, correlation analysis was employed to ascertain the relationship between the variables. The researcher calculated the correlation coefficient value in this analysis using the SPSS program. The correlation study focused on the overall relationship between online banking and customer satisfaction with banks.

Table 12

Pearson Correlation Coefficients of Study Variables

	IB	MB	ATM	EFTS	CS
Internet Banking (IB)	1				
Mobile Banking (MB)	.372**	1			
	.000				
Automated Teller Machine (ATM)	.426**	.734**	1		
	.000	.000			
Electronic Fund Transfer (EFTS)	.518**	.451**	.372**	1	
	.000	.000	.000		
Customer Satisfaction (CS)	.621**	.686**	.642**	.630**	1
	.000	.000	.000	.000	

Note. Appendix-II

Table 12 presents the results of the correlation test for both dependent and independent variables using a correlation coefficient matrix. The correlation analysis shows that internet banking (IB) has significant positive relationship with customer satisfaction with coefficient value 0.621 and significant value is 0.000. Likewise, mobile banking has significant positive association with customers satisfaction with correlation coefficient value is 0.686 and significant value is 0.000. The correlation analysis also shows that ATM banking (ATM) has significant positive relationship with customer satisfaction (CS) is 0.642 which has significant value 0.000. Finally, electronic fund transfer (EFT) has significant positive relationship with customer satisfaction (CS) is as 0.530 which has significant value 0.000.

4.1.5 Regression Analysis

It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable (customer satisfaction in

Nepalese commercial banks) and independent variables (internet banking, mobile banking, automated teller machine and electronic fund transfer).

Table 13

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.828 ^a	.686	.683	.46389

a. Predictors: (Constant), EFT, ATM, IB, MB

Note. Appendix-III

The R square is 0.686. The implication therefore is that, 68.60 percent of the variation in the dependent variable (customer satisfaction) is explained by the independent variables (internet banking, mobile banking, automated teller machine, and electronic fund transfer). The research's R-score of 0.828 indicates that the variables under examination have a strong association with one another. This implies that the degree of customer satisfaction was significantly impacted by the independent factors. The standard error of estimate has a perfect correlation with regression analysis.

Table 14

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	178.187	4	44.547	207.011	.000 ^b
	Residual	81.557	379	.215		
	Total	259.744	383			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), EFT, ATM, IB, MB

Note. Appendix-III

The influence of the dependent variable may be best explained by the largest number of possible combinations of predictor variables, according to an ANOVA analysis (F-value). The customer satisfaction metric has a significant impact, according to the findings. The customer happiness proxy variables, EFT, ATM, IB, and MB, have F-values of 207.011 ($p = 0.000 < 0.05$), which clearly show a significant association between the independent variables and the dependent variable, customer satisfaction.

Table 15*Regression Coefficient of Independent Variables on Customer Satisfaction*

Variables	Coefficients	t-statistics	Sig. or p-value
(Constant)	-.383	-2.632	.009
Internet Banking (IB)	.295	8.052	.000
Mobile Banking (MB)	.350	7.390	.000
Automated Teller Machine (ATM)	.175	4.158	.000
Electronic Fund Transfer (EFT)	.278	7.531	.000

a. Dependent Variable: CS

Note. Appendix-III

Table 15 presents the regression coefficient of independent variables internet banking, mobile banking, automated teller machine and electronic fund transfer and the intercept value of dependent variable customer satisfaction. The coefficient of regression (β) for internet banking is 0.295. According to the study, consumer satisfaction would rise by 0.295 units for every unit increase in online banking. Furthermore, the p-value of 0.000 indicates the statistical importance of online banking at the five percent significance level. Hence, this is significant positive effect of internet banking on customer satisfaction. The regression coefficient (β) for mobile banking is 0.350. This data indicates that a one-unit increase in mobile banking would result in a 0.350-unit increase in customer satisfaction. Additionally, the p-value of 0.000 for mobile banking indicates statistical significance at the five percent significance level. Hence, mobile banking has significant positive impact on customer satisfaction.

At the same time, the regression coefficient (β) for ATM banking is 0.175. According to the statistics, there is a 0.175-unit boost in customer satisfaction for every unit increase in ATM banking. Furthermore, statistical significance is shown at the five percent significance level by the ATM banking p-value of 0.000. Hence, this is significant positive effect of ATM banking on customer satisfaction. The regression coefficient (β) for electronic financial transfers is 0.278. Based on this data, if every electronic fund transfer rose by one, customer satisfaction would improve by 0.278 units. At the five percent significance level, the electronic fund transfer is statistically significant, as indicated by its p value of 0.000. Hence, this is significant positive effect of electronic fund transfer on customer satisfaction.

4.2 Discussion

The primary goal of the study is to determine how consumer satisfaction with Nepalese commercial banks is impacted by electronic banking. This study also demonstrates the connection between electronic banking and customer satisfaction. Research and earlier literature have supported the link between online and mobile banking, automated teller machines, electronic financial transfers, and customer satisfaction. A substantial amount of research demonstrates that electronic banking has a direct impact on customer satisfaction. This study shows that internet banking has positive and significant relationship with customers' satisfaction which is consistent with the finding of Kashif et al. (2021) identified a positive association between internet banking and customer satisfaction. This is also consistent with the finding of Worku, Tilahun and Tafa (2016). Likewise, there is positive and significant relationship of mobile banking and customer satisfaction among consumers in Kathmandu Valley. The result is line with the findings of Uchechukwu and Stella (2019) concluded that a mobile banking has positive and significant relationship with customer satisfaction. However, it contradicts with the finding of Ijeoma, Akujor and Mbah (2020) found that mobile banking had negative relationship with customer satisfaction.

The correlation analysis also shows that automated teller machine has positive and statistically significant relationship with customer satisfaction. The result is consistent with Simon and Thomas (2016) which observed positive and significant effect of ATM banking on customer satisfaction. The results are also consistent with Uchechukwu and Stella (2019); Kashif et al. (2021). Moreover, electronic fund transfer is found to have positive and significant relationship with customers' satisfaction. The impact is also found to be positive and significant. Asiyandia and Ishola (2018) which observed that there was a positive association between electronic fund transfer and customers' satisfaction but opposite to the finding of Ijeoma, Akujor and Mbah (2020).

The multiple regression analysis found that internet banking has significant positive impact on customers' satisfaction. This is consistent with the finding of Worku, Tilahun and Tafa (2016). This result is also similar with the prior study of Simon and Thomas (2016) mentioned that internet banking has significant positive effect on

customer satisfaction. However, it is not consistent with the finding of Buddhika (2021) mentioned that there was no effect of internet banking on customer satisfaction. Similarly, there is significant positive effect of mobile banking on customer satisfaction among consumers in Kathmandu Valley. This is consistent with Simon and Thomas (2016); Kashif et al. (2021) mentioned that mobile banking has significant positive influence on customers' satisfaction. However, it contradicts with the finding of Buddhika (2021) concluded that mobile banking has negative impact on customer satisfaction.

At the same time, automated teller machine has significant positive impact on customer satisfaction. The result is consistent with Uchechukwu and Stella (2019); Kashif et al. (2021); Buddhika (2021). The results of this study also support the Asiyandia and Ishola (2018) which states that automated teller machine greatly effect on the customer satisfaction. Finally, electronic fund transfer has significant positive impact on customers' satisfaction. This result is similar with the prior study of Simon and Thomas (2016) and Worku, Tilahun and Tafa (2016) mentioned that electronic fund transfer has significant positive effect on customers' satisfaction.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

Electronic banking is crucial to transforming banks in areas like customer service and goods and services. It is therefore recognized as an essential and effective tool for promoting innovation, growing it, and enhancing banks' competitiveness. It has been demonstrated that information technology improves business efficiency and service quality, which in turn attracts and retains customers. Bank expansion has become easier for banks because to electronic banking. A few of the distribution methods that banks employ to contact their customers are telebanking, PCs, smartphones, automated teller machines (ATMs), and now internet banking. One significant component of these networks is electronic banking. The processes for transferring funds, seeing and verifying savings account balances, paying bills, mortgages, and purchasing financial instruments and certificates of deposit have all been significantly improved by internet banking.

The main purpose of the study is to analyze the impact electronic banking on customer satisfaction of commercial banks in Nepal. The other specific objectives are to analyze the status of electronic banking and customer satisfaction in Nepalese commercial banks, to evaluate the relationship between electronic banking and customer satisfaction of commercial banks in Nepal and to examine the impact of internet banking, mobile banking, ATM banking, and electronic fund transfer on customer satisfaction in Nepalese commercial banks. The study is based on descriptive and casual research design. To describe the components of e-banking services descriptive research design is used. Similarly, casual design helps to determine the relationship between dependent (customer satisfaction) and independent variable (electronic banking). Further casual research design is used to examine the impact of e-banking service delivery on customer satisfaction of banking industry in Nepal. All the customers of twenty commercial banks are the population but the sample size of the study is 384. The convenience sampling strategy is used to contact the study's sample respondent. Convenience sampling method has been followed in this study. This study used descriptive analysis, correlation and regression analysis are

conducted to validate the hypothesis. This study used customer satisfaction as dependent variable and internet banking, mobile banking, automated teller machine and electronic fund transfer are the explanatory variables.

The study found that the Nepalese commercial banks offer electronic funds transfers, automated teller machines, mobile banking, and online banking services. The vast majority of respondents concurred that the satisfaction of banking clients is much impacted by mobile and ATM banking, and they also felt that their own satisfaction was high. The correlation analysis reveals that internet banking has significant positive relationship with customer satisfaction. At the same time, mobile banking has significant positive relationship with customer satisfaction. Further, ATM banking has significant positive association with customer satisfaction. Finally, electronic fund transfer has significant positive relationship with customer satisfaction. The regression result concluded that automated internet banking, mobile banking, automated teller machine and electronic fund transfer have significant positive impact on customers satisfaction in banking industry of Kathmandu Valley. Therefore, this study concluded that the effect of electronic banking on customer satisfaction is significant.

5.2 Conclusion

The study examined into how consumer satisfaction in the banking sector is affected by electronic banking. It can be inferred from the descriptive analysis study's results that a greater proportion of male consumers than female customers presumably use electronic banking. Most of the entire clientele of Nepalese commercial banks are young, active individuals who have access to electronic banking services, among other things. The majority of respondents fall within the middle income bracket, and the majority of users have been using electronic banking for three to five years. According to this survey, the majority of respondents believed that ATM and mobile banking service quality have a significant impact on banking customers' happiness and that their own satisfaction is high.

The correlation analysis concluded that there is a strong positive association between customer satisfaction (CS) and internet banking (IB). Likewise, there exists a significant positive correlation between mobile banking and consumer contentment.

Consequently, there is a strong and positive correlation between ATM banking and customer satisfaction (CS). Lastly, there is a significant positive correlation between an electronic fund transfer and client satisfaction. The regression result concluded that internet banking, mobile banking, automated teller machine and electronic fund transfer have significant positive impact on customers' satisfaction in banking industry of Kathmandu Valley. Hence, this study concluded that the impact of electronic banking on customer satisfaction is significant.

5.3 Implications

The researcher notifies the relevant bodies of the following implications based on the study's summary and conclusion.

- This study found that internet banking, mobile banking, mobile banking and ATM banking and electronic fund transfers had statistically significant impact on customer satisfaction. The findings of the study contribute to IT policy makers, bankers and customers.
- Information technology has been shown to increase customer attraction and retention by improving company efficiency and service quality, especially in light of the significant contribution that electronic banking has made to the growth of banks.
- The study is a great resource for academics and students who want to do additional research on the topic.
- More services, such depositing money, ought to be provided through e-banking, and banks ought to seize the opportunity to expand e-banking by getting beyond the challenges. Finally, the banks should pay more attention to the factors that most affect the level of satisfaction of their online banking clients.

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ABSTRACT

The main purpose **of the study is to** investigate effect **of** electronic **banking on customer satisfaction** **in Nepalese commercial banks. The study** is used **descriptive and casual research design. This study used descriptive statistic, correlation analysis and regression analysis to analyze the data** . The **study** shows **that the**

Nepalese commercial banks offer electronic funds transfers, automated teller machines, mobile banking, and online banking services. The vast majority of respondents concurred that the satisfaction of banking clients is much impacted by mobile and ATM banking, and they also felt