

QR CODES AND CUSTOMER SATISFACTION OF COMMERCIAL BANK

**A Dissertation Submitted to the Office of the Dean, Faculty of Management in
Partial Fulfillment of the requirements for the Master of Business Studies (MBS)**

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CERTIFICATE OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **“QR CODES AND CUCUSTOMER SATISFACTION OF COMMERCIAL BANK”** 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

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APPROVAL SHEET

We have examined the dissertation entitled **QR CODES AND CUCUSTOMER SATISFACTION OF COMMERCIAL BANK** presented by **Anjana Gurung** for the degree of Master of Business Studies (MBS Semester). We hereby certify that the dissertation acceptable for the award of degree.

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ABBREVIATION

ASBA	:	Application Supported by Block Account
CS	:	Customer Satisfaction
D	:	Disagree
ECC	:	Excise Control Code
EFT	:	Electronic Fund Transfer
IB	:	Internet banking
IT	:	Information Technology
N	:	Neutral
NFC	:	Near Field Communication
QR	:	Quick response
S.D	:	Standard Deviation
SA	:	Strongly Agree
SD	:	Strongly Disagree
SMS	:	Short Message Service
SPSS	:	Statistical Package for Social Science

ABSTRACT

This study investigates how QR code banking influences customer satisfaction within Nepalese commercial banks. Findings reveal a moderate negative correlation between QR code banking satisfaction and Internet banking satisfaction, suggesting a trade-off between these services. While QR code banking does not significantly affect mobile banking satisfaction, higher QR satisfaction correlates with slightly elevated overall customer satisfaction. The study underscores the importance of strategic improvements in QR code banking to enhance customer satisfaction across Nepalese banks. This research examines the influence of Internet banking on customer satisfaction in Nepalese commercial banks. Results indicate a strong positive correlation between satisfaction in Internet banking and mobile banking services, indicating mutual satisfaction among users. However, there is a negative correlation between Internet banking satisfaction and QR code services, pointing to potential speed-related issues. The findings suggest opportunities for Nepalese banks to strategically enhance Internet banking services to improve overall customer satisfaction levels. This study evaluates the impact of mobile banking on customer satisfaction within Nepalese commercial banks. Analysis shows that while mobile banking has a moderate effect on overall customer satisfaction, its influence on QR code banking satisfaction is minimal. Higher satisfaction with mobile banking weakly correlates with increased overall customer satisfaction. These insights suggest avenues for Nepalese banks to focus on optimizing mobile banking services to further enhance customer satisfaction and overall service quality.

Keywords: *Customer Satisfaction, Quick Response, Internet Banking, Mobile Banking*

CHAPTER I

INTRODUCTION

1.1 Background of Study

Electronic banking services encompass the delivery of banking information and functionalities by financial institutions to their customers through various electronic platforms such as mobile phones, QR codes, computers, and televisions (Allen et al., 2001). The concept of electronic banking has been defined in multiple ways. Daniel (1999) characterizes electronic banking as the provision of banks' information and services through diverse delivery platforms accessible via different terminal devices like mobile banking, QR codes, and online banking. It constitutes the utilization of electronic channels for offering banking products and services, falling within the broader scope of electronic finance. Key electronic delivery channels include internet banking, automated teller machines (ATMs), and mobile banking.

Electronic banking services are typically provided through two primary models: traditional banks that integrate both physical branches and electronic channels (known as "brick and click" banks), and banks that primarily or exclusively operate through electronic distribution channels, lacking a physical branch network (referred to as virtual banks, branchless banks, or internet-only banks). These virtual banks or branchless institutions enable customers to conduct financial transactions such as withdrawals and deposits via QR codes or other remote delivery methods.

In essence, electronic banking, as defined by Shahriari (2014), involves the automated delivery of both traditional and new banking services directly to customers through electronic and interactive communication channels.

Electronic banking represents a transformative approach to conducting financial transactions without physical presence. It is defined as the automated delivery of both traditional and innovative banking services directly to customers through personal computers. Initially, electronic banking served primarily as an informational tool for marketing banking products and services. However, with advancements in technology, internet banking has evolved into a medium for both transactions and information dissemination. This shift marks a significant revolution in traditional banking, offering customer's unparalleled convenience in managing financial activities electronically.

Banks, particularly major and cooperative banks, have progressively expanded their internet banking services available to customers over recent decades (Momeni, 2013). This trend has fundamentally altered the banking landscape, fostering a more competitive industry environment.

A Quick Response (QR) code is a type of barcode that stores information in a grid of pixels and can be scanned by digital devices. Unlike the disposable masks popularized during the pandemic, QR codes have become ubiquitous and are likely to remain so. They serve as a bridge between physical and digital realms, allowing users to access information by scanning menus, posters, or websites with their mobile phones. Beyond consumer applications, QR codes are increasingly utilized in inventory management to track product details across the supply chain. Recognized as an international standard since 2000 by the International Organization for Standardization (ISO), QR codes represent a technological advancement over traditional one-dimensional barcodes.

Customer satisfaction measures how well a company's products and services meet or exceed customer expectations. It reflects the extent to which customers are pleased with a business's offerings. In a business-to-customer (B2C) context, achieving customer satisfaction is paramount. It is a critical concern for marketers and consumer researchers alike, as organizations seek to understand customer preferences and behaviors (Fournier and Mick, 1999). For service-oriented sectors such as banking, customer satisfaction holds particular significance, with many institutions believing that higher satisfaction levels lead to greater customer loyalty. Typical methods for assessing customer satisfaction involve surveys with Likert scales to gauge perceptions of product and service quality.

In summary, electronic banking and QR codes represent pivotal advancements in modern business practices, reshaping how transactions are conducted and information is accessed. Likewise, understanding and enhancing customer satisfaction remain crucial for maintaining competitive advantage in today's market landscape.

The integration of information and communication technology (ICT) concepts, techniques, policies, and implementation strategies into banking services has become a critical focus for banks globally, essential for both local competitiveness and global relevance in the banking industry. This technological advancement has transformed

the business environment within the financial sector, making it highly dynamic and necessitating rapid adaptation to serve customers electronically. Automated Teller Machines (ATMs), cards, telephone banking, personal computer banking, and internet banking have become standard offerings in today's banking systems (Narteh, 2014).

The evolution of electronic banking (e-banking) began with the introduction of ATMs, and Finland was among the pioneers in this field. E-banking has been widely adopted in developed countries and is progressively gaining traction in developing economies, albeit at a slower pace. Nowadays, nearly all banks are embracing electronic banking to enhance the quality of their services and increase customer satisfaction. Electronic banking has not only improved but also transformed commercial banking by bridging geographical, industrial, and regulatory gaps, and by fostering innovation in products and services for both banks and customers.

Commercial banks, as financial institutions, play a pivotal role by accepting deposits, offering business loans, and providing various services to customers. They manage deposit accounts such as checking, savings, and time deposits. Operated for profit, commercial banks are typically privately owned and are central to the financial systems of most major economies, including Nepal. They offer a range of financial services beyond basic banking, including investment advice, security underwriting, insurance sales, and financial planning. Banks prioritize customer interests to ensure satisfaction, recognizing that profitability hinges on delivering high-quality services.

In summary, electronic banking has not only modernized but also revolutionized commercial banking operations worldwide, emphasizing customer-centric approaches and technological innovation to maintain competitive advantage in a rapidly evolving financial landscape.

1.2 Statement of the Problem

Customer satisfaction is a highly prized goal in today's fiercely competitive and globalized marketplace. Modern customers are not merely seeking lower prices; they demand reliable and dependable technologies that add value to their experiences. The introduction of electronic banking into the banking sector aims to enhance customer satisfaction, thereby boosting banks' profitability.

For electronic banking to effectively enhance customer satisfaction, it must surpass

traditional brick-and-mortar branches in perceived value as a delivery channel. It offers a competitive edge by reducing costs and meeting customer needs more effectively. In Nepal, many banks have significantly invested in information and communication technologies to enhance service delivery. These investments have focused on self-service and virtual banking solutions to improve overall customer service quality.

However, the adoption of e-commerce in Nepal has faced challenges such as inadequate telecommunications infrastructure, insufficiently skilled personnel, low internet penetration, limited bank account ownership, and delays in product delivery (Jalal, Marzooq & Nabi, 2011). These factors have hindered the widespread adoption of electronic banking despite substantial investments by Nepalese banks.

In summary, electronic banking represents a strategic move for banks to leverage technology for enhancing customer satisfaction and operational efficiency. Overcoming infrastructural and logistical challenges remains crucial for maximizing the benefits of electronic banking in emerging markets like Nepal.

The use of QR codes in commercial banks can significantly impact customer satisfaction, but it comes with both challenges and prospects. One of the primary challenges is the awareness and adoption of QR codes among customers. Many users may not be familiar with how to use QR codes or may perceive them as inconvenient compared to traditional methods. QR codes rely on technology infrastructure, including reliable internet connectivity and compatible devices. Technical glitches, such as scanning failures or slow processing times, can frustrate users. There are potential security risks associated with QR codes, such as phishing attacks through fake QR codes or vulnerabilities in the scanning apps. Customers may be hesitant to use QR codes if they perceive them as risky. Implementing QR codes requires integration with existing banking systems and processes. Compatibility issues and the need for system updates can pose implementation challenges. QR codes offer convenience by simplifying transactions such as payments, fund transfers, and account inquiries. They provide a faster and more seamless user experience compared to traditional methods (Oli, 2016). Using QR codes can reduce operational costs for banks by streamlining transactions and decreasing the need for physical infrastructure (e.g., ATMs and POS terminals). When implemented effectively, QR codes can enhance customer satisfaction by providing a modern and efficient banking

experience. They cater to tech-savvy customers who prefer digital solutions. QR codes can be used for marketing purposes, such as promoting new services or personalized offers to customers directly through their mobile devices. QR codes can play a role in financial inclusion by providing access to banking services in remote or underserved areas where traditional banking infrastructure is limited. It is concluded that while QR codes present challenges such as adoption barriers and security concerns, they also offer substantial prospects in terms of convenience, cost efficiency, enhanced customer experience, and broader financial inclusion. The successful integration of QR codes into banking services requires addressing these challenges while leveraging the benefits to meet customer expectations and drive satisfaction (Hossain and Rahman, 2018).

Adoption of technology in the financial sector has been examined in several studies. Sharma (2017) analyzed the Electronic Banking Practice and Customer Satisfaction with reference to HBL and KBL. Similarly, Oli (2016) also studied the Factors affecting customer satisfaction from QR services in Nepalese commercial banks. However, none of the above researchers has studied the impact of electronic banking on customer satisfaction among commercial banks in Nepal. Thus this study sought to fill this research gap. For that, the study was concerned with the following specific research questions:

- How does QR code banking system impact on customer's satisfaction of Nepalese commercial banks?
- What is the impact of internet banking on customer satisfaction of Nepalese commercial banks?
- What is the impact of mobile banking on customer satisfaction of Nepalese commercial banks?

1.3 Objectives of the Study

The objectives of the study are as follows.

- To analyze the impact of QR code banking system on customer satisfaction of Nepalese commercial banks.
- To examine the impact of Internet Banking on customer satisfaction of Nepalese commercial banks.
- To examine the impact of mobile banking on customer satisfaction of Nepalese

commercial banks.

1.4 Rationale of the Study

The significance of this study extends to both personal meaning and broader impacts on various stakeholders. For Nepalese commercial banks, it provides insights into the impact of electronic banking on customer satisfaction compared to traditional brick-and-mortar banking systems. Understanding customer attitudes towards e-banking is crucial, guiding banks on strategies to capitalize on opportunities and navigate challenges effectively.

Researchers can use this study as a foundational reference for further exploration in similar domains. It serves as valuable reading material for anyone interested in understanding the evolving landscape of electronic banking and its implications.

Moreover, this research anticipates future challenges that banks may face in achieving customer satisfaction, particularly in a country where electronic banking is still in its infancy. It serves as an early warning system, enabling banks to proactively address potential issues.

Policy makers in the banking sector can also benefit from this study by gaining insights into enhancing policies related to electronic banking services.

Lastly, this study contributes to the existing literature on marketing, customer satisfaction, and quality service delivery within the banking industry. It adds new perspectives and empirical evidence, enriching the knowledge base in these critical areas of study.

1.5 Limitation of the study

Here are the original ideas presented in a paraphrased manner:

- The study focuses exclusively on the correlation between QR codes and customer satisfaction within commercial banks.
- It relies solely on primary data collected through surveys or other direct methods.
- The sample size for this study consists of 400 respondents.

CHAPTER II

LITERATURE REVIEW

The review of related literature is crucial for guiding a study as it provides researchers with comprehensive information and ideas. It helps in understanding the existing body of knowledge, identifying gaps in research, and determining what needs further exploration and testing. By reviewing literature, researchers can avoid duplicating previous studies and formulate hypotheses that contribute meaningfully to the field. It also offers valuable insights and suggestions for designing research methodology, selecting samples, tools, data collection procedures, analyzing data, and drawing conclusions, ensuring the reliability and validity of the research findings.

2.1 Theoretical Review

Theoretical Underpinnings of Electronic Banking (E-Banking)

Electronic banking (E-banking) is rooted in several theoretical frameworks and concepts that explain its evolution, adoption, customer satisfaction dynamics, and future prospects within the banking industry (Sherpa, 2015). Here's an in-depth exploration:

Technological Determinism

E-banking's emergence can be understood through technological determinism, which posits that advancements in information technology (IT) drive societal and organizational changes. The evolution from traditional banking methods to electronic forms of transactions is propelled by innovations in digital communication and computing (Ovia, 2001).

Innovation Diffusion Theory

This theory explains how new technologies, such as online banking platforms and mobile apps, spread among individuals and organizations. It identifies key stages like knowledge, persuasion, decision, implementation, and confirmation that banks and customers go through during the adoption of e-banking services (Sharma, 2017).

Technology Acceptance Model (TAM)

TAM provides a framework for understanding how users come to accept and use a new technology. It emphasizes perceived usefulness (e.g., convenience, accessibility)

and ease of use (user-friendly interfaces, intuitive design) as critical factors influencing the adoption of e-banking services by customers (Ovia, 2001).

Service Quality Models (e.g., SERVQUAL)

These models assess customer perceptions and expectations regarding service quality in e-banking. Factors such as reliability (consistent service delivery), responsiveness (timely customer support), assurance (security and trustworthiness), empathy (personalized interactions), and tangibles (physical and virtual facilities) contribute to customer satisfaction and loyalty (Ovia, 2001).

Customer Relationship Management (CRM)

CRM strategies are pivotal in e-banking to build and maintain strong relationships with customers. By leveraging data analytics and personalized marketing, banks can enhance customer experiences, anticipate needs, and foster long-term loyalty (Vakulenko, Y., Shams, Hellstrom and Hjort, 2019).

Expectancy Disconfirmation Model

This model explains customer satisfaction in e-banking by comparing pre-service expectations with post-service experiences. Positive disconfirmation (exceeding expectations) leads to higher satisfaction and vice versa (Paulo, Tiago and Farisa, 2019).

Security Concerns and Risk Management

As e-banking expands, managing cyber security risks becomes critical. Banks employ risk management frameworks to safeguard customer data, prevent fraud, and ensure compliance with regulatory standards (e.g., GDPR, PCI DSS) (Ovia, 2001).

The future of e-banking is intertwined with advancements in artificial intelligence (AI), block chain technology, and machine learning. These innovations promise enhanced security, personalized financial advice (robo-advisory services), and improved operational efficiencies across global financial networks (Mueller, 1970).

Electronic banking represents a paradigm shift in the banking sector, underpinned by robust theoretical foundations that explain its adoption, benefits, challenges, and future directions. By integrating theoretical insights from technological determinism, innovation diffusion, TAM, service quality models, CRM, and risk management frameworks, banks can optimize e-banking services to meet evolving customer

expectations and industry standards. As digital transformation continues to shape the financial landscape, understanding and leveraging these theories will be crucial for sustaining growth and enhancing customer relationships in the e-banking era (Ovia, 2001).

2.2 Conceptual Review

Electronic banking

Electronic banking, also known as electronic funds transfer (EFT), refers to the use of electronic methods to transfer funds directly between accounts, bypassing traditional methods like checks or cash. It is a service provided for online banking purposes, offering convenient and secure access to bank accounts. This electronic service is characterized by its safety, speed, ease of use, and efficiency, allowing customers to manage their accounts and conduct banking transactions 24/7 from any location with internet access, be it home or office.

The advent of electronic business, a branch of Information Technology applications, has revolutionized conventional business transaction methods across various organizations. In response to the increasing demand from customers and the rapid advancement in technology, organizations in the banking industry have introduced electronic banking (e-banking). E-banking facilitates a range of services including:

- Providing accurate statements of all available funds in the bank account.
- Issuing statements for current accounts, credits, overdrafts, and deposits.
- Executing both national and international transfers in multiple currencies.
- Facilitating payments for various utility bills.
- Handling customs payments.
- Providing electronic confirmations for all transactions processed through e-banking.
- Managing credit cards.

This technological advancement in banking not only enhances customer convenience but also supports the operational efficiency of financial institutions by integrating seamless electronic solutions into everyday banking services.

E-banking products

The application of information technology within banking operations is commonly referred to as electronic banking. According to Ovia (2001), electronic banking emerged as a subset of e-commerce within the banking and financial services sector. It primarily functions in the Business-to-Consumer (B2C) domain, facilitating services such as balance inquiries, cheque book requests, stop payment instructions, balance transfers, account openings, and other traditional banking services through digital platforms.

Furthermore, banks extend their services to include payment processing on behalf of customers who make purchases from various online stores. Electronic banking encompasses a variety of products offered by banks to enhance customer convenience and service accessibility. In this research, the focus is on the most widely used electronic banking products, which include:

Internet banking

Internet banking is currently one of the fastest-growing practices in the banking sector. It refers to the provision of banking services and information by financial institutions to their customers over the internet. Seen as a complementary channel alongside traditional banking methods, it offers the convenience of banking from home or work without the need to visit a branch, thereby reducing associated costs and waiting times (Yang et al., 2007). Online banking transcends physical and geographical barriers, allowing users to access services anytime.

Customers of financial institutions, whether they are retail banks, virtual banks, credit unions, or societies, can conduct secure financial transactions on the institution's website. These transactions encompass a wide range of activities related to online banking, including inquiries into account balances, interest rates, and currency exchange rates.

However, comprehensive data on internet banking is limited, and discrepancies in definitions hinder cross-country comparisons. Moreover, internet banking significantly reduces labor costs by automating tasks traditionally performed by personnel, leveraging computer networks that are cost-effective and widely accessible.

Internet banking offers numerous advantages to both banks and their customers. For

banks, these include cost savings, expansion into new customer segments, operational efficiency, enhanced reputation, and improved customer service and satisfaction. By migrating more transactions online, banks can achieve substantial cost reductions.

Mobile banking

Mobile banking, also known as M-Banking, represents a significant departure from traditional banking methods. It encompasses a range of activities including balance checks, account transactions, payments, credit applications, and other banking operations conducted through a mobile device such as a mobile phone or Personal Digital Assistant (PDA). Initially, mobile banking services were primarily delivered via SMS, a system known as SMS banking. This mode of banking is particularly prevalent in regions lacking extensive infrastructure, such as remote and rural areas, as well as in countries where a large portion of the population remains unbanked. In these areas, physical bank branches are often located only in major cities, requiring customers to travel long distances to access banking services.

Mobile banking services can include a broad array of functionalities, from conducting banking and stock market transactions to managing accounts and accessing personalized financial information. The adoption of mobile banking is significantly higher in developed countries compared to developing ones, driven by advanced technological infrastructure and widespread access to mobile devices.

The introduction of mobile banking has revolutionized financial activities, offering convenience as financial services are accessible anytime and anywhere through a mobile device. This accessibility has transformed how individuals manage their finances on a daily basis. While mobile banking has seamlessly integrated into daily life in developed countries, its adoption and impact vary in developing countries due to differing levels of technological development and infrastructure.

QR

An Automated Quick Response (QR) is an electronic banking terminal that empowers customers to conduct essential transactions independently, without the need for assistance from branch personnel or tellers. It operates as an electronic telecommunications device, enabling users of financial institutions to perform a variety of financial activities. These include withdrawing cash, depositing funds, transferring money between accounts, and checking account balances, all accessible

24/7 without direct interaction with bank staff.

The QR machine also facilitates additional services such as selling recharge cards and facilitating fund transfers. It operates through a computerized system where customers use a magnetically encoded plastic card and a personal code to access their accounts securely. This technology allows customers to manage their banking needs autonomously, including paying bills, making deposits, withdrawing cash, and obtaining account statements.

Customer

A customer refers to an individual or entity that acquires goods, services, products, or ideas from a business. For businesses that interact directly with the public, attracting customers is typically the primary objective, as customers generate demand for their offerings. Businesses often employ strategies such as advertising campaigns or price reductions to expand their customer base. Customers receive goods or services in exchange for financial transactions involving money or other valuable considerations from sellers, vendors, or suppliers.

Satisfaction

Satisfaction is the fulfillment of a need, desire, or appetite, or the gratification experienced from such fulfillment. When a product claims "Satisfaction guaranteed," it assures that you will be pleased with it, or you will receive a refund. It measures how well products and services provided by a company meet or exceed customer expectations. Satisfaction is the positive emotion derived from achieving something desired or needed. In marketing and consumer research, satisfaction is regarded as a critical issue both theoretically and practically.

In consumption contexts, satisfaction can be described as the overall psychological state resulting from the emotions evoked when expectations are met or exceeded after purchasing a product. Essentially, satisfaction represents a customer's evaluation of a product's quality based on their expectations before making the purchase.

Customer Satisfaction

Customer satisfaction is a metric used to quantify the extent to which a customer is pleased with a product, service, or overall experience. It is a crucial concept for professionals in customer success, encompassing more than just offering a money-

back guarantee. It reflects how customers perceive their interactions with a brand. Achieving customer satisfaction involves effectively meeting and exceeding customer expectations, which is only possible when there is a positive overall relationship between the customer and the supplier.

In today's competitive business environment, customer satisfaction serves as a significant performance indicator and a fundamental differentiator in business strategies. Higher levels of customer satisfaction typically correlate with increased business success and stronger customer loyalty. It forms a crucial part of the customer's overall experience and reflects how well a supplier meets their expectations. Effective management and prompt service delivery are essential factors influencing customer satisfaction.

This satisfaction is influenced by various aspects of business operations such as marketing strategies, product quality, engineering, responsiveness to customer issues and inquiries, project completion, post-delivery services, and complaint management. Organizations prioritize maintaining existing customer relationships while aiming to attract new ones, recognizing that retaining current customers through effective customer satisfaction strategies is often more cost-effective than acquiring new ones.

Benefits of E-banking

The benefits of electronic banking cannot be over emphasized. This is to say that it provides a lot of benefits both to the customer and the bank itself. To begin with a foremost benefit e-banking service is competitive branding and as well as better appreciation to the market demands. As such banks that provide services are known to be leaders in technology implementation and advancement. Thus, the better image brand they enjoy. E- Banking provides various benefits to both banks and customers. With electronic banking customers can check accounts, transfer money and can have access to numerous banking products and services. There is no need for Customers to visit banks to make transactions. The other advantages may be measured in terms of money. The primary objective of every institution is to increase profits with which banks cannot be excluded. Many contend that E-banking can do away the hitherto laborious and less viable methods for banking. As indicated by perspectives communicated by Mols (1998) it was opined that the Internet is a revolution that will do away the old request holds much influence. The internet revolution in electronic-

banking transaction is much less expensive than branch or even telephone transactions.

2.3 Empirical Review

Fida et al. (2022) conducted a study on the impact of service quality on customer loyalty and customer satisfaction in Islamic banks in the sultanate of Oman. The objective of the study was to examine the impact of service quality on customer loyalty and customer satisfaction. The study used correlation, and multiple regression to analyze data. The findings indicated significant relationships among service quality, customer satisfaction, and customer loyalty. The study concluded that empathy and responsiveness dimensions have a significant positive impact on customer satisfaction, highlighting areas for banks to focus on to enhance customer satisfaction and loyalty.

Chang and Xu (2021) conducted a study on the customer's intention to use QR codes in mobile payments. The objective of the study was to analyze factors driving customers to choose QR code as a payment method. The study used multiple regression and correlation analysis to analyze data. This study found that customers' intention to use QR code as a payment method is influenced by attitude, perceived usefulness, and subjective norms where correlation and multiple regression to analyze data. Customers' attitudes toward QR code usage are affected by perceived usefulness, benefits, and subjective norms. The study concluded that the practical strategies for QR payment providers and suggests future research directions.

Dotulong et al. (2021) conducted a study on the effect of price, service quality, customer satisfaction, and image on customer loyalty on lion air Indonesia. The objective of the study was to analyze the effects of price, service quality, customer satisfaction, and image on customer loyalty. The study used correlation and multiple regressions to analyze data. The findings indicated that the price and service quality positively affect customer satisfaction, which, in turn, influences the image. The study concluded that the customer satisfaction and image have no effect on customer loyalty, while service quality positively affects customer loyalty.

Oleh and Winston (2021) conducted a study on the influence of e-service quality towards customer satisfaction and customer loyalty on GOPAY electronic wallet users. The objective of the study was to examine the influences of e-service quality

on customer satisfaction and loyalty among GOPAY electronic wallet users. The study used Pearson correlation and regression to analyze data. The study found that the e-service quality significantly impacts customer satisfaction, thereby influencing customer loyalty positively among GOPAY electronic wallet users. The study concluded that the impact of application design, reliability, security/ privacy, and customer service on satisfaction and loyalty.

Joshi (2021) conducted a study on the perceived service quality and customer satisfaction in Nepalese banking industry. The objective of the study was to examine the relationship between banking service quality dimensions and customer satisfaction. The study used Pearson's correlation and multiple regressions to analyze data. The findings indicated a positive relationship between service quality and customer satisfaction, with all service quality dimensions except tangibility significantly impacting satisfaction. The study concluded that service quality strongly impacts customer satisfaction, with reliability, responsiveness, assurance, and empathy being significant factors, while tangibility has a smaller influence.

Supriyanto et al. (2021) conducted a study on the effects of service quality and customer satisfaction on loyalty of bank customers. The objective of the study was to examine the effects of service quality and customer satisfaction on the loyalty of bank customers. The study used path analysis and one-way analysis of variance. The findings indicated the service quality did not have a significant direct effect on customer loyalty. The study concluded that the customer loyalty indirectly through customer satisfaction and it was explored the model's relationships with other variables.

Dhingra et al. (2020) conducted a study on the relationship among service quality of e-commerce websites, customer satisfaction, and purchase intention. The objective of the study was to analyze the impact of online service quality of e-commerce websites on customer satisfaction and purchase intention, focusing on dimensions such as website design, reliability, responsiveness, trust, and personalization. The study used correlation and multiple regressions to analyze data. The findings indicated a statistically significant relationship between overall e-service quality and customer satisfaction. The study concluded that customer satisfaction and purchase intention, highlighting the importance of service quality in influencing customer behavior.

Lin et al. (2020) conducted a study on the analysis of Customers Return Behaviour after Online Shopping in China Using SEM. The objective of the study was to examine the potential impacts of various variables on product return activities after online shopping, specifically focusing on logistics service-related and customer intention-related variables for general products in the e-commerce context. The study used structural equation modeling (SEM) to analyze data. The findings indicated that product return intention has the greatest impact on online shopping return, followed by flexibility in return. This study concluded that model enhances the theoretical understanding and offers a quantitative benchmark for online shopping stores to improve supply chains and customer satisfaction.

Mishra (2020) conducted a study on the impact of service quality dimensions on customer satisfaction in commercial bank. The objective of the study was to evaluate the impact of service quality dimensions on customer satisfaction in commercial banks. The study used descriptive statistics, factor analysis, and multiple regressions through SERVQUAL model dimensions to analyze data. The findings indicated the empathy and assurance have the most significant influence on satisfaction, followed by reliability and responsiveness, whereas tangibility shows a negative and insignificant relationship with satisfaction. The study concluded that the crucial roles of empathy and assurance in boosting customer satisfaction, alongside reliability and responsiveness.

Bazher (2019) conducted a study on the e-service quality and perceived value in internet banking. The objective of the study was to examine the effect of e-service quality and perceived value on satisfaction in internet banking, with an impact on loyalty, aiming to advance understanding of customer behavior in the digital banking context. The study used path analysis (correlation) with multiple regressions to analyze data. The findings indicated e-service quality and perceived value significantly affect satisfaction, which, in turn, influences loyalty, highlighting the importance of service quality and perceived value in enhancing customer loyalty in internet banking. The study was concluded that the e-service quality and perceived value strongly influence satisfaction, ultimately driving customer loyalty in internet banking, highlighting the critical role of these factors in fostering lasting customer relationships.

Vakulenko et al. (2019) concluded the study on the online retail experience and

customer satisfaction: the mediating role of last mile delivery. The objective of the study was to investigate the role of last mile delivery in the customer's e-retail experience and its impact on customer satisfaction. The study used correlation analysis and multiple regressions to analyze the data. The findings indicated the mediating role of last mile delivery in the relationship between the customer's perception of the online shopping experience and customer satisfaction. The study concluded that the last mile delivery experience mediates the relationship between the customer's perception of the online shopping experience and customer satisfaction, emphasizing the importance of last mile delivery in enhancing customer satisfaction in e-retail.

Al Karim (2019) concluded a study on the influence of service quality on customer satisfaction and customer loyalty in the private banking sector of Bangladesh: A PLS approach. The objective of the study was to determine the impact of service quality on customer satisfaction and loyalty in private banking in Bangladesh. The study used Partial Least Squares (PLS) method to analyze data. The findings indicated the tangibility and empathy significantly affect customer satisfaction, while reliability, responsiveness, and assurance do not. The study concluded that customer satisfaction directly influences loyalty in the private banking sector of Bangladesh.

Paulo et al. (2019) conducted a study on the impact of e-service quality and customer satisfaction on customer behavior in online shopping. The objective of the study was to examine the impact of e-service quality and customer satisfaction on customer behavior in online shopping. The study used correlation and multiple regressions to analyze data. The findings indicated the research significantly contributes to understanding the importance of e-service quality in shaping customer behavior, encompassing repurchase intention, word of mouth, and site revisit. The study concluded that the research extends knowledge about e-service quality's relevance to customer behavior, including repurchase intention, word of mouth, and site revisit, as well as the impact of customer trust.

Hossain et al. (2018) conducted a study on the impact of QR codes on online shopping: perceived flow perspective. The objective of the study was to assess how quick response (QR) codes influence customer satisfaction and purchase intention in online shopping, focusing on perceived flow. The study used Pearson correlation and multiple regressions to analyze data. The study found QR codes significantly impact

both purchase intention and customer satisfaction. They also influence perceived flow, which in turn affects customer satisfaction and purchase intention. The study was concluded that the marketers, who can use QR codes as embedded advertising tools with specific URLs to boost profitability, and for customers, who can better understand their behavior in online shopping.

Babatunde and Salawudeen (2017) conducted a study on the impact of electronic banking on customers' satisfaction in Nigeria. The objective of the study was to examine the impact of electronic banking on customer satisfaction in the Nigerian banking industry. The study used descriptive (mean, standard deviation) and inferential statistics (regression and correlation) to analyze data. The study found that the adoption of electronic banking in Nigerian banks not only improves efficiency and productivity but also leads to heightened customer satisfaction. The study concluded that the adoption of electronic banking enhances efficiency and productivity in Nigerian banks, contributing to increased customer satisfaction and suggesting a need for tailored technological solutions.

Alwie (2016) conducted a study on the sales promotion and e-service quality impact on repurchase intention. The objective of the study was to analyze the effect of sales promotion and e-service quality on repurchase intention, with e-customer satisfaction as an intervening variable. The study used Pearson correlation and multiple regressions to analyze data. The study found that the sales promotion and e-service quality directly influence e-customer satisfaction, which, in turn, affects repurchase intention. The study concluded that the insights for e-commerce platforms aiming to enhance customer retention.

Akroush et al. (2015) conducted a study on the service quality, customer satisfaction, and loyalty in the Yemeni mobile service market. The objectives of the study were to identify service quality dimensions from customers' perspectives and to examine their effects on customer satisfaction and loyalty in Yemen's mobile service market. The study used regression and correlation analysis to analyze data. The findings indicated positively and significantly affect customer satisfaction, which, in turn, positively and significantly influences customer loyalty, providing valuable insights for mobile service operators in Yemen.

Bismark et al. (2015) conducted a study on the electronic banking and customer

satisfaction. The objective of the study was to assess the impact of e-banking service delivery on customer satisfaction in selected banks in Ghana. The study used Pearson correlation and multiple regression analysis to analyze data. The study found positive correlations are established between customer satisfaction and e-banking availability, reliability, and convenience.

Mazwile (2014) conducted research examining how electronic banking impacts customer satisfaction with service delivery at NMB Bank in Tanzania. The study aimed to explore this influence and employed correlation and multiple regression analyses for data analysis. The findings indicated that electronic banking services offered by NMB Bank have a positive impact on customer satisfaction. Specifically, customers reported higher satisfaction due to the usability of electronic banking, convenience, time-saving benefits, and the overall efficiency of service delivery.

Ravichandran et al. (2010) conducted a study on the influence of service quality on customer satisfaction. The objective of the study was to explore the influence of perceived service quality on customer satisfaction, particularly in retail banking. The study used regression and correlation analysis. The study found the underscores importance of service quality in fostering customer satisfaction and loyalty, particularly in retail banking where competitive pressures are intense.

Table 1

Summary of Empirical Review

Name	Objective	Methodology	Findings
Fida et al. (2022)	To examine the impact of service quality on customer loyalty and customer satisfaction.	Correlation and multiple regressions	The findings indicated significant relationships among service quality, customer satisfaction, and customer loyalty.
Chang and Xu (2021)	To analyze factors driving customers to choose QR code as a payment method.	Multiple regression and correlation analysis	This study found that seven out of nine hypotheses were supported, indicating that customers' intention to use QR code as a payment method is influenced by attitude, perceived usefulness, and subjective norms. Customers' attitudes

			toward QR code usage are affected by perceived usefulness, benefits, and subjective norms.
Dotulong et al. (2021)	To analyze the effects of price, service quality, customer satisfaction, and image on customer loyalty.	Correlation and multiple regressions	The findings indicated that the price and service quality positively affect customer satisfaction, which, in turn, influences the image.
Oleh and Winston (2021)	To examine the influences of e-service quality on customer satisfaction and loyalty among GOPAY electronic wallet users.	Pearson correlation and regression	The study found that the e-service quality significantly impacts customer satisfaction, thereby influencing customer loyalty positively among GOPAY electronic wallet users.
Joshi (2021)	To examine the relationship between banking service quality dimensions and customer satisfaction.	Pearson's correlation and multiple regressions	The results revealed a positive correlation between service quality and customer satisfaction, highlighting that service quality dimensions, with the exception of tangibility, significantly influence satisfaction levels.
Supriyanto et al. (2021)	To examine the effects of service quality and customer satisfaction on the loyalty of bank customers.	Path analysis and one-way analysis of variance	The findings indicated the service quality did not have a significant direct effect on customer loyalty.
Dhingra et al. (2020)	To analyze the impact of online service quality of e-commerce websites on customer satisfaction and purchase intention, focusing on dimensions such as website design, reliability, responsiveness, trust,	Correlation and multiple regressions	The findings indicated a statistically significant relationship between overall e-service quality and customer satisfaction.

	and personalization.		
Lin et al. (2020)	To examine the potential impacts of various variables on product return activities after online shopping, specifically focusing on logistics service-related and customer intention-related variables for general products in the e-commerce context.	Structural equation modeling (SEM)	The findings indicated that product return intention has the greatest impact on online shopping return, followed by flexibility in return.
Mishra (2020)	To evaluate the impact of service quality dimensions on customer satisfaction in commercial banks.	Descriptive statistics, factor analysis, and multiple regressions	The findings indicated the empathy and assurance have the most significant influence on satisfaction, followed by reliability and responsiveness, whereas tangibility shows a negative and insignificant relationship with satisfaction.
Bazher (2019)	To examine the effect of e-service quality and perceived value on satisfaction in internet banking, with an impact on loyalty, aiming to advance understanding of customer behavior in the digital banking context.	Path analysis (correlation) with multiple regressions	The findings indicated e-service quality and perceived value significantly affect satisfaction, which, in turn, influences loyalty, highlighting the importance of service quality and perceived value in enhancing customer loyalty in internet banking.
Vakulenko et al. (2019)	To investigate the role of last mile delivery in the customer's e-retail experience and its impact on customer satisfaction.	Correlation analysis and multiple regressions	The findings indicated the mediating role of last mile delivery in the relationship between the customer's perception of the online shopping experience and customer satisfaction.
Al Karim	To determine the	Partial Least	The findings indicated

(2019)	impact of service quality on customer satisfaction and loyalty in private banking in Bangladesh.	Squares (PLS) method	the tangibility and empathy significantly affect customer satisfaction, while reliability, responsiveness, and assurance do not.
Paulo et al. (2019)	To examine the impact of e-service quality and customer satisfaction on customer behavior in online shopping.	Correlation and multiple regressions	The findings indicated the research significantly contributes to understanding the importance of e-service quality in shaping customer behavior, encompassing repurchase intention, word of mouth, and site revisit.
Hossain et al. (2018)	To assess how quick response (QR) codes influence customer satisfaction and purchase intention in online shopping, focusing on perceived flow.	Pearson correlation and multiple regressions	The study found QR codes significantly impact both purchase intention and customer satisfaction. They also influence perceived flow, which in turn affects customer satisfaction and purchase intention.
Babatunde and Salawudeen (2017)	To assess the influence of electronic banking on customer satisfaction within the Nigerian banking sector.	Descriptive (Mean, Standard Deviation) and inferential statistics (regression and correlation)	The study found that the adoption of electronic banking in Nigerian banks not only improves efficiency and productivity but also leads to heightened customer satisfaction.
Alwie (2016)	To analyze the effect of sales promotion and e-service quality on repurchase intention, with e-customer satisfaction as an intervening variable.	Pearson correlation and multiple regressions	The study found that the sales promotion and e-service quality directly influence e-customer satisfaction, which, in turn, affects repurchase intention.
Akroush et al. (2015)	To identify service quality dimensions from customers' perspectives and to	Regression and correlation analysis	The findings indicated positively and significantly affect customer satisfaction,

	examine their effects on customer satisfaction and loyalty in Yemen's mobile service market.		which, in turn, positively and significantly influences customer loyalty, providing valuable insights for mobile service operators in Yemen.
Bismark et al. (2015)	To assess the impact of e-banking service delivery on customer satisfaction in selected banks in Ghana.	Pearson correlation and multiple regression analysis	The study found positive correlations are established between customer satisfaction and e-banking availability, reliability, and convenience.
Mazwile (2014)	To explore how electronic banking affects customer satisfaction with service delivery.	Correlation and multiple regressions	The study found electronic banking products at NMB Bank positively influence customer satisfaction in terms of usage, convenience, time-saving and service delivery quickness.
Ravichandran et al. (2010)	To explore the influence of perceived service quality on customer satisfaction, particularly in retail banking.	Regression and correlation analysis	The study found the underscores importance of service quality in fostering customer satisfaction and loyalty, particularly in retail banking where competitive pressures are intense.

2.2.1 Review of Nepalese Studies

Sharma (2017) conducted a study on analysis of electronic banking practice and customer satisfaction with reference to HBL and KBL. The objective of the study was to analyze various aspects of electronic banking systems and customer satisfaction. The study used mean, standard deviation, Pearson correlation and multiple regressions to analyze data. The study found that 60% of customers are satisfied with electronic banking due to time-saving, easy access to cash, and convenience.

Sherpa (2015) conducted a research focusing on the development and impact of

mobile banking in Nepal. The study aimed to assess the current status of mobile banking in Nepal and its broader implications for Nepalese society. To analyze the data, the study utilized statistical measures such as mean, standard deviation, Pearson correlation, multiple regressions, and conducted a pilot study for testing the questionnaire. The findings revealed that a significant portion of mobile banking users in Nepal belong to the younger demographic, with 46.37% of the respondents indicating their use of mobile banking services.

Banstola (2012) conducted research focusing on the potential and challenges of e-banking implementation in Nepal. The study aimed to identify the main opportunities and obstacles associated with e-banking in the Nepalese context. Data analysis for the study involved the use of correlation and multiple regression techniques. The findings indicated that certain banks in Nepal face challenges such as irregular website backup and lack of clear e-banking policies. Despite these challenges, Nepalese banks adopt e-banking primarily to enhance convenience for customers and improve customer retention. The study also noted that demographic factors such as gender, marital status, and salary showed no significant correlation with e-banking usage. However, factors such as reliability and ease of use were identified as crucial determinants influencing the adoption of e-banking services.

Oli (2016) conducted research to investigate the factors influencing customer satisfaction with QR services offered by Nepalese commercial banks. The study aimed to identify these factors and employed statistical methods including mean, standard deviation, correlation, and regression for data analysis. The findings highlighted that the reasonableness of fees charged for QR services has a positive and statistically significant impact on customer satisfaction within Nepalese commercial banks.

2.4 Research Gap

The previous studies by Sharma (2017), Sherpa (2015), Banstola (2012), and Oli (2016) have shed light on various aspects of electronic banking and its impact on customer satisfaction in Nepal, there remains a notable research gap concerning the specific relationship between internet banking and customer satisfaction in Nepalese commercial banks.

Sharma (2017) primarily focused on the general analysis of electronic banking

practices and customer satisfaction without delving into the specific impact of internet banking. Sherpa (2015) explored mobile banking, which, while related, represents a distinct subset of electronic banking services and may have different implications for customer satisfaction compared to internet banking. Banstola (2012) examined the prospects and challenges of e-banking in Nepal, providing valuable insights into the overall landscape but not specifically addressing customer satisfaction in the context of internet banking. Finally, Oli (2016) investigated factors affecting customer satisfaction from QR services, which, although part of electronic banking, do not represent the entirety of internet banking services, QR services and may have distinct drivers of satisfaction.

Therefore, despite the valuable contributions of these studies, there remains a clear research gap in understanding the specific impact of internet banking on customer satisfaction in Nepalese commercial banks. By focusing specifically on internet banking services, QR services, this study aims to fill this gap and provide a broad analysis of the relationship between internet banking constructs and customer satisfaction, which has not been adequately addressed in the existing literature.

CHAPTER III

RESEARCH METHODOLOGY

The methodology section details the methods and procedures employed throughout the study. This chapter comprehensively outlines the methodological approaches utilized and the tools deployed to gather information on the subject. It describes the data collection methods used, including how data was gathered and analyzed, while addressing aspects of reliability and validity. The chapter is structured into six main parts: research design, population and sample selection, data collection tools, procedures for data collection, methods of data analysis, and considerations of validity and reliability.

3.1 Research Design

The study utilizes a descriptive and causal-comparative research design. This research design aids in effective planning and provides a structured approach for data collection. The researcher opted for a descriptive survey design to fulfill the study's objectives. Survey research is particularly effective for gathering information on personal beliefs, social facts, concepts, and opinions.

3.2 Population, Sample and Sampling Design

A population refers to a large group of people, events, or objects, making it impractical to collect detailed information from each member. Therefore, researchers often select a subset or sample from the population. Sampling, according to Mueller (1970), aims to reduce costs in terms of money, effort, and time. In this study, the population consists of all customers of commercial banks in Nepal. There are twenty commercial banks in Nepal, but for this study, Nepal Bank Limited and Nabil Bank Limited were chosen as they represent the characteristics of the commercial banking sector in Nepal. Nepal Bank Limited is the first commercial bank in Nepal, and Nabil Bank Limited is the first joint venture commercial bank, both having a significant number of e-banking registered customers. The sample for the study included 400 customers from both banks who use e-banking services in the Kathmandu district. The non random sampling method and convenience sampling method was employed to ensure the sample represented the characteristics of the entire population of commercial bank customers in Nepal.

3.4 Sources and Tools of Data Collection

Data forms the bedrock of research, underscoring the importance of collecting reliable information across all types of studies. In line with the study's needs, primary data was utilized, gathered through the use of questionnaires as the primary research tool.

3.5 Data Collection Procedure

Data serves as the cornerstone and reflection of research, revealing the opinions, concepts, and attitudes of respondents. Therefore, ensuring the collection of reliable data is crucial across all types of research endeavors. In this study, data was gathered from respondents through a structured questionnaire. The researcher visited sampled banks in Kathmandu, seeking permission from branch managers and customers before administering the questionnaire. Prior to distribution, the questionnaire underwent scrutiny by the research supervisor, experienced professionals, and experts to ensure clarity, appropriateness of content, and feasibility of the time allocated for completion. During data collection, the researcher personally explained the study's title, purpose, rationale for selecting the topic, and questionnaire completion methods to individual respondents and groups. Questionnaires were distributed to customers of both banks, with some respondents completing them immediately and others returning them within four to five days after distribution. This methodical approach aimed to enhance questionnaire comprehension, minimize misinterpretation, and optimize data reliability for the study.

3.5.1 Questionnaire

A questionnaire is a tool comprising a series of questions on psychological, social, educational, or other topics, administered to individuals or groups to gather data related to issues under investigation (Koul, 2000, as cited in Khanal, 2015). In this research study, quantitative data was collected using a structured questionnaire. The questionnaire used in this study is divided into two sections. Section A gathers respondent information, while Section B captures respondent opinions on specific statements. Overall, the questionnaire consists of 18 questions covering all independent variables, with 6 questions each dedicated to Quick Response (QR), QR banking, and mobile banking. This structure ensures comprehensive data collection across the key areas of interest in the study.

3.6 Method of Data Analysis

The collected data underwent quantitative analysis methods to derive meaningful insights. Descriptive analysis, including frequencies and percentages, was employed to present quantitative data through tables. The questionnaire data was coded and entered into Statistical Package for Social Science (SPSS Version 27.0) for thorough analysis. This process yielded means, standard deviations, correlations, and frequency distributions for each independent and dependent variable.

In particular, customer satisfaction was examined through regression analysis with the three independent variables. Descriptive statistics such as mean, percentage, and standard deviation were utilized to provide a clear understanding of the data's central tendencies. Tables and bar graphs were employed for further visual representation, enhancing the clarity and interpretability of the findings.

II) Correlation: Correlation analysis is a statistical method used to evaluate the strength of relationship between two quantitative variables. In this research, Correlation analysis has been used.

III) Regression Analysis:

Regression analysis is a powerful statistical method that allows you to examine the relationship between two or more variables of interest. While there are many types of regression analysis, at their core they all examine the influence of one or more independent variables on a dependent variable.

The empirical model is defined as shown below:

$$Y=CS= \alpha + \beta_1 *QR+ \beta_2 *IB + \beta_3 *MB+ e.$$

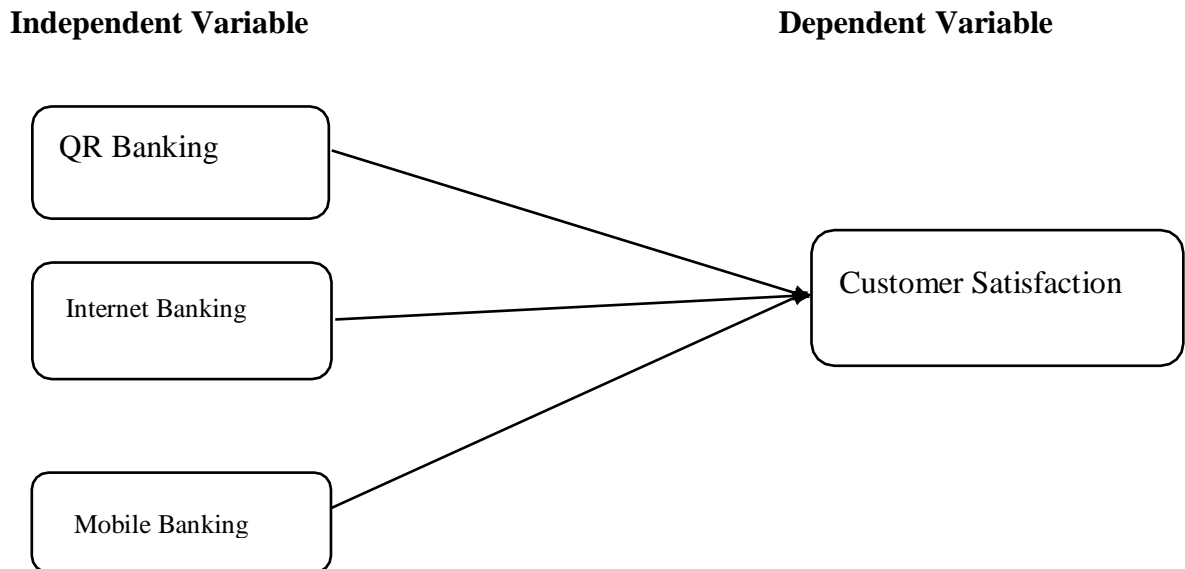
Were,

CS	=	Customer Satisfaction
QR	=	Quick Response
IB	=	Internet Banking
MB	=	Mobile Banking
e.	=	error terms.

3.7 Research Framework and Definition of the Variables

A conceptual framework is an analytical tool with several variations and contexts. It can be applied in different categories of work where an overall picture is needed. It is used to make conceptual distinctions and organize ideas. For the purpose of

understanding the impact of Electronic Banking towards customer satisfaction, the researcher proposes following conceptual framework. This conceptual framework was developed based on several previous studies relating to Electronic Banking, customer satisfaction and banking application are especially considered.



(Source: Hossain and Rahman, 2018).

Figure 1: Research Framework

This conceptual framework shows a relationship that exist between the variables used in this study to understand the impact of e-banking on customer's satisfaction.

Dependent Variable as a Customer Satisfaction

This study aims to investigate the correlation between the utilization of QR code services and customer satisfaction within Nepalese commercial banks, addressing an identified gap in current research. By specifically examining QR code usage, the study seeks to elucidate its effects on overall customer satisfaction. Employing a robust research design and rigorous statistical analysis, it intends to uncover the factors that significantly influence satisfaction levels. The findings are expected to offer valuable insights for banks and policymakers, enabling them to enhance the digital banking experience effectively.

Independent Variable (Quick Responses Banking, Internet Banking and Mobile Banking)

Quick Responses Banking (QR Banking)

This variable refers to the use of QR codes for banking transactions, allowing

customers to quickly scan codes for various banking services such as payments, transfers, and account inquiries. QR banking offers convenience, speed, and simplicity in financial transactions, enabling customers to perform banking activities swiftly using their smart phones or other devices. By examining the adoption and utilization of QR banking services, this study aims to understand its impact on customer satisfaction within Nepalese commercial banks.

Internet Banking

Internet banking involves the use of online platforms or applications provided by commercial banks, allowing customers to access their accounts, conduct transactions, and manage finances over the internet. It offers convenience, accessibility, and flexibility, enabling customers to perform banking activities from anywhere with an internet connection. This study will explore how the usage of internet banking services influences customer satisfaction among Nepalese commercial bank customers, considering factors such as ease of use, reliability, and security.

Mobile Banking

Mobile banking refers to the use of mobile devices such as smart phones or tablets to access banking services and conduct transactions. It offers on-the-go convenience, allowing customers to manage their finances anytime, anywhere. Mobile banking apps typically provide functionalities such as account balance inquiries, fund transfers, bill payments, and mobile check deposits. By investigating the adoption and usage patterns of mobile banking among customers of Nepalese commercial banks, this study aims to uncover its impact on overall customer satisfaction, considering factors such as user experience, accessibility, and perceived value.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter provides detailed research findings pertaining to the objectives of the study, which aimed to assess the impact of electronic banking on customer satisfaction within Nepal Bank Limited and Nabil Bank Limited. The analysis and interpretation of data collected from 400 customers focused on three dimensions: internet banking, QR banking, and mobile banking. A questionnaire with eighteen closed-ended questions, detailed in the appendix, was used as the primary research tool. Responses were rated on a 5-point Likert scale ranging from strongly agrees to strongly disagree.

Data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 27.0. The findings are presented in tables, starting with demographic variables such as gender, marital status, age, academic qualification, occupation, and annual income. Subsequently, the chapter addresses the research questions formulated for the study.

4.1 Demographic Characteristics of Respondents

The study collected information on demographic characteristics. Detailed results on each of the demographic characteristics are presented.

Gender of the Respondents

Table 2

Gender of the respondents

Gender	Frequency	Percent	Cumulative Percent
Male	185	46.25	46.25
Female	215	53.75	100.0
Total	400	100.0	

Table 2 shows that the gender structure majority of the respondents were Male. There is summarized explanation of the gender distribution based on the survey data of 400 respondents. The survey included 185 male respondents, which constitutes 46.25% of the total respondents.

Additionally, there were 215 female respondents, comprising 53.75% of the total sample size. Together, these percentages account for the entire group of 400

respondents. This breakdown shows that slightly more than half (53.75%) of the respondents were female, while the remaining 46.25% were male.

The percentages provide a clear picture of the gender distribution within the surveyed population of 400 individuals.

Marital Status of Respondents

Table 3

Marital Status of respondents

Marital Status	Frequency	Percent	Cumulative Percent
Married	235	58.75	58.75
Unmarried	165	41.25	100.0
Total	400	100.0	

Table 3 shows that the next demographic variable of the respondents was their marital status. Out of 400 respondents surveyed, 235 respondents are married, comprising 58.75% of the total sample. 165 respondents are unmarried, making up 41.25% of the total sample.

The cumulative percentage of 100% confirms that all respondents are categorized as either married or unmarried. This data highlights a significant majority of married individuals (58.75%) compared to unmarried individuals (41.25%) within the surveyed population.

This breakdown offers a clear snapshot of the marital status distribution among the respondents, emphasizing the prevalence of married individuals in the sample group.

Age of the Respondents

Table 4

Respondents of Ages

Age Group	Frequency	Percent	Cumulative Percent
BELOW 20	65	16.25	16.25
20 – 30	125	31.25	47.5
30 – 40	105	26.25	73.75
40 – 50	80	20	93.75
50 & ABOVE	25	6.25	100.0
Total	400	100.0	

Table 4 represents the demographic variable of the respondents examined was their age. In a survey of 400 respondents where below 20, 65 respondents (16.25% of the total) are in this age group. Similarly, 20-30 to age 125 respondents (31.25% of the total) fall within this age range.

Similarly, 30-40 years the respondents are 105 (26.25% of the total) belong to this age category. In the 40-50 age groups, where 80 respondents (20% of the total) are in this age bracket. Where 50 & above age groups shows 25 respondents (6.25% of the total) are aged 50 years and above. The largest proportions of respondents, at 31.25%, are aged between 20 and 30 years. The survey also captures significant numbers in the 30-40 age range (26.25%), followed by those aged 40-50 (20%), and those below 20 years old (16.25%). Respondents aged 50 years and above constitute the smallest group at 6.25% of the total.

The cumulative percentage reaching 100% indicates that all 400 respondents are categorized into these distinct age groups. This data provides valuable insights into the age demographics of the surveyed population, showing a concentration of respondents in younger and middle-age brackets, with fewer participants in older age categories.

Academic Qualification of Respondents

Table 5

Responses of academic qualification

Academic Qualification	Frequency	Percent	Cumulative Percent
PhD	5	1.25	1.25
Masters	105	26.25	27.5
Bachelor	130	32.5	60
Intermediate	110	27.5	87.5
SLC & Below	50	12.5	100.0
Total	400	100.0	

Table 5 presents an analysis of the educational backgrounds of the respondents in the sample. In a survey of 400 respondents, their educational backgrounds were categorized into several academic qualifications. The majority of respondents hold a bachelor's degree, comprising 130 individuals or 32.5% of the total sample. Following closely, intermediate qualifications were reported by 110 respondents, representing 27.5% of the sample. Masters degree holders constituted 105 respondents, making up 26.25% of the surveyed population.

A smaller proportion included those with SLC & below qualifications, accounting for 50 respondents or 12.5% of the total. The least represented group were respondents with PhD qualifications, comprising only 5 individuals or 1.25% of the sample. The cumulative percentages add up to 100%, indicating that all 400 respondents were categorized based on their academic qualifications.

This breakdown underscores the diversity in educational attainment among the surveyed population, highlighting the prevalence of Bachelor's and Intermediate qualifications, and the relatively smaller numbers with higher academic credentials such as Masters and PhDs.

Occupation of respondents

Table 6

Respondents of Occupation

Occupation	Frequency	Percent	Cumulative Percent
Government	35	8.75	8.75
Private	75	18.75	27.5
Self- Employed	85	21.25	48.75
Student	115	28.75	77.5
Retried	55	13.75	91.25
Housewife	35	8.75	100.0
Total	400	100.0	

The demographic characteristic was the occupation of the respondents. In a survey of 400 respondents, the distribution across various occupations provides a snapshot of their professional engagements. The largest occupational group is students, comprising 115 individuals or 28.75% of the total sample, indicating a significant portion actively pursuing educational goals. Self-employed individuals account for 85 respondents, constituting 21.25% of the sample, reflecting a substantial presence in entrepreneurial activities.

Private sector employees follow closely with 75 respondents, representing 18.75% of the total, highlighting employment outside of governmental or self-employment roles. Government employees make up 35 respondents, or 8.75%, showing a smaller but notable presence in public sector jobs. Retired individuals and housewives each account for 55 and 35 respondents, respectively, both constituting 13.75% and 8.75% of the total. The cumulative percentage of 100% confirms the complete coverage of all respondents categorized by their occupations.

This data underscores the diversity of professional statuses within the surveyed population, encompassing students, various forms of employment, retirees, and individuals managing household responsibilities.

Per year income of respondents

Table 7

Respondents of per year income

Per Year Income	Frequency	Percent	Cumulative Percent
Less Than 1 Lakh	65	16.25	16.25
1-3 Lakh	105	26.25	42.25
4-6 Lakh	205	51.25	93.75
More Than 6 Lakh	25	6.25	100.0
Total	400	100.0	

Table 7 displays an examination of the annual income of the respondents in the study. Based on the data from the survey of 400 individuals regarding their annual incomes, distinct patterns emerge across several income categories. Among the respondents, 16.25% reported earnings Less than 1 Lakh annually, totaling 65 individuals. The pre year's income is 1-3 Lakh income bracket includes 105 respondents, representing 26.25% of the sample. The largest group, comprising 51.25% of the total, falls within the 4-6 Lakh income range, with 205 individuals reporting earnings in this category. A smaller yet significant segment, accounting for 6.25% of the respondents, reported earning more than 6 Lakh annually, totaling 25 individuals. The cumulative percentage of 100% confirms that all respondents are accounted for within these income categories, providing a comprehensive overview of the income distribution among the surveyed population. This breakdown highlights a majority of respondents earning between 4 to 6 lakhs annually, indicating a concentration within this income range. Additionally, it underscores the diversity in income levels within the sample, with notable proportions falling below the 1 lakh mark and a smaller group earning higher incomes. These insights offer a clear depiction of the economic profiles of the surveyed individuals, illustrating their varying levels of income across different brackets.

4.2 Descriptive Analysis

Descriptive statistics play a crucial role in summarizing and simplifying data in research. They provide concise summaries of sample characteristics and data measures, often using measures such as mean, standard deviation, and correlation. In this study, all questionnaires utilized a five-point Likert scale ranging from "strongly

agree" (1) to "strongly disagree" (5), enabling the researcher to analyze responses in terms of frequencies and percentages. This method facilitated a deeper understanding of respondent behavior and relationships between variables, supported by cross-tabulation analysis to explore associations between different variables.

Responses of respondent on electronic banking products

The researcher in this section wants to find out the responses of respondent on electronic banking products through the data collected from questionnaire during the research process. Here, descriptive analysis incorporates calculation of statistical measures such as frequency, mean and standard deviation. Questions dealt with ranking system on five point Likert scale anchored "Strongly Agree 1, Agree 2 Neutral" 3, "Disagree 4 and Strongly Disagree 5.

Frequency and Percentage of internet banking on customer satisfaction

This section deals with the responses of respondent based on the use of internet banking and their satisfaction. On the basis of respondent's satisfaction on internet banking, frequency and percentage is tabulated below:

Table 8

Frequency and Percentage of internet banking on customer satisfaction

Particulars	SA	A	N	D	SD
The use of internet banking is time saving.	210 (52.5%)	176 (44%)	8 (2%)	3(0.75%)	3 (0.75%)
I can easily access my account and make balance enquiry.	48 (12%)	272 (68%)	69 (17.25%)	11 (2.75%)	0
The use of internet banking is secure for me.	48 (12%)	139 (34.7%)	139 (34.7%)	58(14.7%)	16 (4%)
I can easily request my account statement by email.	27 (6.75%)	234 (58.5%)	112 (28%)	27 (6.75%)	0
Response of service through internet banking is very prompt and quick.	125 (31.25%)	181 (45.25%)	67 (16.75%)	19 (4.75%)	8 (2%)
I am satisfied with the use of internet banking.	29 (7.25%)	317 (79.25%)	27 (6.75%)	19 (4.75%)	8 (2%)

Table 8 shows that the respondents views towards internet banking on customer satisfactions. The data provided offers insights into customer satisfaction with internet banking across several dimensions: time saving, accessibility, security, promptness of service, and overall satisfaction.

Firstly, regarding time saving, a majority of respondents strongly agree (52.5%) and agree (44%) that internet banking saves them time. This overwhelming positive response indicates that customers perceive internet banking as efficient in managing their financial transactions.

Secondly, in terms of accessibility and ease of account management, a significant portion of respondents (68%) agree that they can easily access their accounts and perform balance inquiries. This high percentage reflects the convenience customers experience when using internet banking services.

On the topic of security, opinions are more varied with 34.7% agreeing and an equal percentage being neutral (34.7%). This split suggests that while a substantial portion feels secure, there is also a notable segment that remains uncertain or cautious about the security measures of internet banking.

When it comes to requesting account statements via email, a considerable majority (58.5%) find it easy to do so. This indicates that the process for obtaining financial information electronically is generally seamless and satisfactory for most customers.

Regarding the promptness and quickness of service through internet banking, a significant number of respondents (31.25% strongly agree and 45.25% agree) find the service to be very prompt and quick. This high satisfaction level suggests that customers value the efficiency and responsiveness of internet banking transactions.

Lastly, in terms of overall satisfaction with internet banking, the majority of respondents (79.25%) express satisfaction with the service. This positive sentiment underscores the overall effectiveness of internet banking in meeting customer expectations and needs.

In conclusion, the data reveals that customers generally appreciate internet banking for its time-saving capabilities, ease of access, prompt service, and overall satisfaction. However, there are considerations around security where perceptions are more mixed, indicating an area where financial institutions may need to focus on further enhancing customer trust and confidence. Overall, the findings highlight internet banking's strengths while also pinpointing areas for potential improvement to better meet customer expectations in the future.

Frequency and Percentage of QR banking on customer satisfaction

This section deals with the responses of respondent based on the use of QR banking and their satisfaction. On the basis of respondent's satisfaction on QR banking, frequency and percentage is tabulated below:

Table 9

Frequency and Percentage of QR banking on customer satisfaction

Particulars	SA	A	N	D	SD
The location of QR code is convenient for me.	53 (13.3%)	203 (50.7%)	43 (10.7%)	72 (18%)	29 (7.3%)
I have always found QR codes in working order.	21 (5.3%)	112 (28%)	107 (26.7%)	117 (29.3%)	43(10.7%)
The process of applying for QR codes is easy.	24 (6%)	307 (76.7%)	56(14%)	13 (3.3%)	0
Service charge for QR banking is reasonable.	51(12.7%)	243 (60.7%)	85(21.3%)	8(2%)	13(3.3%)
The use of QR card helps me in the situation of urgency of cash.	120(30%)	179(44.7%)	75(18.7%)	16(4%)	10.8(2.7%)
I am overall satisfy with the use of QR banking	205(51.3%)	184(46%)	8 (2%)	3 (0.7%)	0

Table 9 shows that the evaluation of customer satisfaction with QR banking, based on the provided data, paints a largely positive picture of how customers perceive and experience this service. Analysis of QR banking customer satisfaction the convenience of QR code location shows the highest response category is (A) (50.7%), with 203 respondents finding the location of QR codes convenient. The lowest response category is (SD) (7.3%), with 29 respondents finding the location inconvenient. Similarly, functionality of QR codes shows that the highest response category is (D) (29.3%), with 117 respondents indicating that they have not always found QR codes in working order. The lowest response category is tied between (SA) (5.3%) and (SD) (10.7%), each representing 21 and 43 respondents respectively. In the same way, ease of applying for QR codes, the highest response category is (A) (76.7%), with 307 respondents finding the process of applying for QR codes easy. The lowest response category is (D) (3.3%), with 13 respondents finding the process difficult. Similarly, reasonableness of service charges shows that the highest response category is (A) (60.7%), with 243 respondents believing that the service charges for QR banking are reasonable. The lowest response category is (D) (2%), with 8 respondents considering the charges unreasonable. However, utility in urgent cash situations shows that the highest response category is (A) (44.7%), with 179 respondents stating that the use of QR cards helps them in urgent cash situations. The lowest response category is (SD) (2.7%), with 10.8 (rounded to 11) respondents indicating that QR cards are not helpful in emergencies. At last, overall satisfaction with QR banking shows that the highest response category is (SA) (51.3%), with 205

respondents being very satisfied with the use of QR banking. The lowest response category is (D) (0.7%), with only 3 respondents expressing dissatisfaction.

In overall all questions, the responses vary, indicating different aspects of customer satisfaction with QR banking. The highest levels of satisfaction are generally found in the categories of convenience of QR code locations, ease of applying for QR codes, and overall satisfaction. However, challenges exist in terms of the reliability of QR codes and some concerns regarding service charges. The majority of respondents express satisfaction with QR banking, reflecting its positive impact on customer experience in various aspects of banking transactions.

Frequency and Percentage of Mobile banking on customer satisfaction

This section deals with the responses of respondent based on the use of mobile banking and their satisfaction. On the basis of respondent's satisfaction on mobile banking, frequency and percentage is tabulated below:

Table 10

Frequency and Percentage of Mobile banking on customer satisfaction

Particulars	SA	A	N	D	SD
The use of mobile banking is cost saving.	78 (19.3%)	269(67.3%)	29(7.3%)	24(6%)	0
The bill payment service offered by bank through mobile banking system is easy.	37(9.3%)	154(38.7%)	173(43.3%)	30(7.3%)	6(1.3%)
I always get detail of my account throughSMS/Email on my cellular phone.	240(60%)	107(26.7%)	27(6.7%)	16(4%)	10(2.7%)
Mobile bankingsystem provides anywhere bill payment options.	29(7.25%)	195(48.7%)	88(22%)	61(15.3%)	27(6.7%)
The uses of mobile banking are secure.	35(8.75%)	150(37.3%)	90(22.7%)	90(22.7%)	35(8.7%)
The overall satisfactionwith mobile banking system of bank is satisfactory.	40(10%)	338(84.7%)	16(4%)	3(.7%)	3(.7%)

Table 10 shows that the data on customer satisfaction with mobile banking reveals several key insights into how users perceive and interact with this service. The analysis of mobile banking customer satisfaction are as the cost saving with mobile banking which shows that the highest response category is (A) (67.3%), with 269 respondents finding mobile banking cost-saving. The lowest response category is (D) (6%), with 24 respondents not considering mobile banking as cost-saving. Similarly, ease of bill payment service shows that the highest response category is (N) (43.3%),

with 173 respondents finding the bill payment service offered through mobile banking easy. The lowest response category is (SD) (1.3%), with 6 respondents finding it difficult. In the same way, receipt of account details via SMS/email shows that the highest response category is (SA) (60%), with 240 respondents always receiving details of their account via SMS/email. The lowest response category is (SD) (2.7%), with 10 respondents not receiving these details regularly. However, anywhere Bill payment options shows that the highest response category is (A) (48.7%), with 195 respondents appreciating the anywhere bill payment options provided by mobile banking. The lowest response category is (SD) (6.7%), with 27 respondents not finding this feature useful. Similarly, security of mobile banking shows that the highest response category is (A) (37.3%), with 150 respondents considering mobile banking secure. The lowest response categories are (D) (22.7%) and (SD) (8.7%), each with 90 and 35 respondents respectively expressing security concerns. At last, the overall satisfaction with mobile banking shows that the highest response category is (A) (84.7%), with 338 respondents being overall satisfied with the mobile banking system. The lowest response category is tied between (D) (.7%) and (SD) (.7%), each with only 3 respondents expressing dissatisfaction.

It is conclude that the data from Table 10 shows varying levels of satisfaction among customers using mobile banking services. Overall, mobile banking is positively perceived for its cost-saving benefits, ease of use for bill payments, and the convenience of receiving account details. However, there are concerns regarding security and some challenges with bill payment options and service reliability. Despite these concerns, the majority of respondents express satisfaction with the overall mobile banking system, indicating its effectiveness in meeting customer needs in digital banking services.

Mean and Standard deviation of internet banking

Table 11

Mean and Standard deviation of internet banking

Particulars	Mean	S.D
The use of internet banking is time saving.	1.53	0.642
The use of internet banking is secure for me.	2.64	1.005
I can easily access my account and make balance enquiry.	2.11	0.625
I can easily request my account statement by email.	2.35	0.705
Response of service through internet banking is very prompt and quick.	2.01	0.923
I am satisfied with the use of internet banking.	2.15	0.699

Table 11 presents the descriptive statistics illustrating the relationship between effective internet banking and customer satisfaction, which is influenced by the services provided by the bank. The responses to the first statement indicate that the use of internet banking is perceived as time-saving, with a low mean score of 1.53. This statement received a high agreement response from the respondents, indicating a high level of satisfaction regarding the time-saving aspect of internet banking.

On the other hand, the second statement regarding the security of internet banking received fewer agree and strongly agree responses, resulting in a higher mean score of 2.64. This suggests that many respondents do not feel completely secure or are unsure about the confidentiality of their information when using internet banking, possibly due to concerns about data security.

In summary, while customers are highly satisfied with the time-saving benefits of internet banking, there is a significant level of apprehension regarding its security among respondents.

Mean and Standard deviation of QR banking on customer satisfaction

Table 12

Mean and Standard deviation of QR banking

Particulars	Mean	S.D
The locations of QR booths are convenient for me.	2.55	1.150
I have always found QR booths in working order.	3.12	1.099
The process of applying for QR is easy.	2.15	.560
Service charge for QR banking is reasonable.	2.23	.820
The use of QR helps me in the situation of urgency of cash.	2.05	.944
I am overall satisfied with the use of QR banking.	1.52	.576

Table 12 presents the responses of the respondents regarding their satisfaction with using QR banking. The sixth statement received the highest response with a low mean score of 1.52, indicating that respondents are highly satisfied with the use of QR banking services.

Conversely, respondents expressed slight dissatisfaction with the first and second statements, which had higher mean scores of 2.55 and 3.12, respectively. These findings suggest that respondents find QR booths inconveniently located and not always operational. However, overall responses indicate that the use of QR cards is beneficial for accessing cash urgently outside of regular office hours. Respondents also find the process of applying for QR cards easy and reasonable, which contributes to their satisfaction with these services.

Mean and Standard deviation of Mobile banking on customer satisfaction

Table 13

Mean and Standard deviation of mobile banking

Particulars	Mean	S.D
The use of mobile banking is cost saving.	2.00	.714
The bill payment service offered by bank through mobile banking system is easy.	2.53	.817
I always get detail of my account through SMS/Email on my cellular phone.	1.63	.966
Mobile banking system provides anywhere bill payment options.	2.65	1.043
The uses of mobile banking are secure.	2.85	1.132
The overall satisfaction with mobile banking system of bank is satisfactory.	1.97	.477

Table 13 illustrates the respondents' satisfaction with using mobile banking. The third statement received the highest positive response with the lowest mean of 1.63, indicating that respondents are satisfied with mobile banking and appreciate receiving account details through SMS/email on their mobile phones. Conversely, the fifth statement garnered a higher negative response with a mean of 2.85, suggesting that respondents feel mobile banking is not entirely secure. Similarly, the fourth statement also had a higher mean of 2.65, indicating dissatisfaction with the mobile banking system's provision of anywhere bill payment options. Moreover, respondents found the bank's bill payment service not particularly easy, resulting in a higher mean of 2.53. Overall, however, respondents expressed satisfaction with mobile banking due to perceived benefits such as cost and time savings.

4.3 Correlation Analysis

Correlation analysis was conducted to examine the relationships among the variables. Pearson's correlation coefficient was used to measure the strength and direction of these relationships. This section explores the extent to which the variables studied are correlated with each other. A positive correlation indicates that as one variable increases, the other variable also tends to increase. Conversely, a negative correlation indicates that as one variable increases, the other variable tends to decrease. This analysis helps in understanding how changes in one variable may be associated with changes in another variable within the study.

Table 14

Correlation Matrix

Variables	CS	IB	QR	MB
CS	Pearson Correlations Sig. (2-tailed)	1		
IB	Pearson Correlations Sig. (2-tailed)	.073** .000	1	
QR	Pearson Correlations Sig. (2-tailed)	.072** .019	-.334* .018	1
MB	Pearson Correlations Sig. (2-tailed)	.011** .036	.676** 0.046	-0.130 .370

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

* . Correlation is significant at the 0.05 level (2-tailed).

The table 14 shows that the correlation matrix provided reveals the relationships between Customer Satisfaction (CS), Internet Banking (IB), Quick Response (QR), and Mobile Banking (MB). Customer Satisfaction (CS) shows weak positive correlations with both IB (0.073**) and QR (0.072**), both of which are statistically significant at the 0.01 level. This suggests that higher levels of Customer Satisfaction tend to correspond slightly to higher levels of Internet Banking and Quick Response satisfaction. Whereas the Internet Banking (IB) exhibits a strong positive correlation with MB (0.676**), indicating a robust relationship between Internet Banking and Mobile Banking satisfaction levels. IB shows a weak positive correlation with CS (0.073**), suggesting that higher levels of Internet Banking satisfaction are associated with slightly higher levels of Customer Satisfaction. IB has a moderate negative

correlation with QR (-0.334*), significant at the 0.05 level. This negative correlation suggests that as satisfaction with Internet Banking increases, satisfaction with Quick Response tends to decrease to a moderate extent. Similarly, Quick Response (QR) does not show a statistically significant correlation with MB (0.130), indicating that satisfaction with Mobile Banking is not significantly related to satisfaction with Quick Response services. QR has a weak positive correlation with CS (0.072**), implying that higher levels of Quick Response satisfaction are associated with slightly higher levels of Customer Satisfaction. QR has a moderate negative correlation with IB (-0.334*), indicating that as satisfaction with Quick Response increases, satisfaction with Internet Banking tends to decrease to a moderate extent. At last Mobile Banking (MB) shows a strong positive correlation with IB (0.676**), indicating a robust relationship between satisfaction levels of Mobile Banking and Internet Banking. MB shows a very weak positive correlation with CS (0.011**), statistically significant at the 0.01 level, suggesting that higher levels of Mobile Banking satisfaction are associated with slightly higher levels of Customer Satisfaction. MB does not show a statistically significant correlation with QR (-0.130), indicating no significant relationship between satisfaction with Mobile Banking and Quick Response services.

Customer Satisfaction (CS) is positively associated with Internet Banking and Quick Response, albeit weakly. Similarly Internet Banking (IB) strongly correlates with Mobile Banking, indicating that customers satisfied with one banking service are likely satisfied with the other. However, it shows a negative correlation with Quick Response, implying a trade-off where customers satisfied with Internet Banking might be less satisfied with the speed of responses. Where Quick Response (QR) shows no significant relationship with Mobile Banking and a negative relationship with Internet Banking, suggesting that satisfaction with Quick Response services may not strongly influence satisfaction with other banking services. At last Mobile Banking (MB) strongly correlates with Internet Banking but does not significantly correlate with Quick Response, indicating that satisfaction with Mobile Banking may not be influenced by the speed of responses from the bank.

These insights can guide further analysis or strategic decisions related to improving customer satisfaction across different banking services.

4.4 Regression Analysis

To evaluate the statistical significance and reliability of the findings, this study employs primary data analysis using a regression model specified in Chapter Three. The analysis focuses on regression results derived from different specifications of the model to assess the estimated relationships. Specifically, it examines the relationship between customer satisfaction (dependent variable) and the independent variables: internet banking, QR banking, and mobile banking.

The regression results are presented in the tables below, detailing how each independent variable relates to customer satisfaction. This approach allows for a thorough examination of the impact of electronic banking services on overall customer satisfaction, providing insights into which services contribute most significantly to customer perceptions and experiences.

Table 15

Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.097 ^a	.09	-.011		.459

a. Predictors: (Constant), Mobile banking, Internet banking, QR banking

The model indicates that approximately 9% of the variation in the dependent variable can be explained by the predictors included Mobile banking, Internet banking, and QR banking. However, after adjusting for the number of predictors, the adjusted R Square shows a negative value of -0.011, suggesting that the model's explanatory power diminishes when considering the complexity added by these predictors. The standard error of the estimate, at 0.459 units, reflects the average difference between observed and predicted values, indicating the model's moderate predictive accuracy. The negative adjusted R Square is atypical and typically suggests either over fitting of the model to the data or that the predictors chosen may not robustly explain the variance in the dependent variable. Therefore, careful consideration is warranted regarding the model's validity and the relevance of the predictors used.

Table 16

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.292	3	.097	.462	.009 ^b
Residual	30.781	146	.211		
Total	31.073	149			

a. Dependent Variable: customer satisfaction

b. Predictors: (Constant), Mobile banking, Internet banking, QR banking

Source SPSS Output

The ANOVA table 16 assesses how well the regression model explains customer satisfaction. The regression model, incorporating predictors such as Mobile banking, Internet banking, and QR banking, accounts for 0.292 units of variance in customer satisfaction. This model yields an F-statistic of 0.462 with 3 degrees of freedom and a mean square of 0.097, yielding a significant p-value of 0.009. This significance indicates that the model as a whole is statistically significant at the 0.05 level, suggesting that these predictors collectively contribute to explaining customer satisfaction. In contrast, the residual sum of squares is 30.781 with 146 degrees of freedom and a mean square of 0.211, indicating the unexplained variance in customer satisfaction. The total sum of squares, representing overall variability in customer satisfaction, amounts to 31.073. Therefore, while the model shows statistical significance, further exploration of its practical significance and predictive power is warranted.

Table 17

Coefficients

Regression Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.529	.361		4.233	.000
Internet banking	.099	.126	.066	.786	.033
QR banking	.085	.110	.066	.771	.042
Mobile banking	.020	.103	.016	.192	.048

a. Dependent Variable: customer satisfaction

The table 17 reveals how Internet banking, QR banking, and Mobile banking individually affect customer satisfaction in the regression model. The intercept (Constant) of 1.529 suggests that if all predictors are zero, the estimated customer satisfaction score starts at 1.529. For each unit increase in Internet banking usage, customer satisfaction tends to rise by 0.099 units, while QR banking and Mobile banking contribute increases of 0.085 and 0.020 units, respectively. Standardized coefficients (Beta) indicate that both Internet banking and QR banking have comparable, modest standardized effects (0.066), slightly more pronounced than that of Mobile banking (0.016). The T-statistics and corresponding significance levels (Sig.) underscore that Internet banking and QR banking are statistically significant predictors (Sig. = 0.033 and 0.042, respectively), whereas Mobile banking shows marginal significance (Sig. = 0.048). Overall, while Internet banking and QR codes banking exert stronger influences on customer satisfaction than Mobile banking; all three predictors contribute positively to explaining variations in customer satisfaction scores, as supported by the coefficients derived from the regression analysis.

4.5 Discussion

This chapter presents the primary data collected through questionnaires distributed to customers of Nepal Bank Limited and Nabil Bank Limited. The data analysis is structured around the research objectives and questions, focusing primarily on assessing the impact of E-banking on customer satisfaction in commercial banks. The study identified several electronic banking products introduced by commercial banks, with a specific focus on three dimensions: internet banking, QR banking, and mobile banking. These dimensions were selected based on their widespread adoption among customers. The analysis provides insights into how these electronic banking services influence customer satisfaction, highlighting their significance in shaping customer perceptions and experiences within the banking sector.

Based on the findings related to the first objective of the study, it was observed that respondents highly value internet banking for its time-saving benefits, with a mean score of 1.53. The promptness and quick response of internet banking services also significantly influence customer satisfaction, reflected by a mean score of 2.01. However, concerns about the security of internet banking were noted with a mean score of 2.11, indicating a more cautious sentiment among respondents.

Overall satisfaction with internet banking received a mean score of 2.15, suggesting a generally positive but not overwhelmingly high satisfaction level. On the other hand, aspects such as the ease of requesting account statements via email and the ease of use of internet banking were perceived to have a relatively lower impact on customer satisfaction, with mean scores of 2.35 and 2.64, respectively.

The standard deviations ranging between 0.625 and 1.005 indicate that there was relatively little variation in the responses across these dimensions among the respondents.

The second objective of the study highlighted several key findings regarding customer satisfaction with QR banking. Respondents expressed high satisfaction levels with QR banking in critical situations, with a mean score of 1.52 indicating its effectiveness during urgent needs. The ease of applying for a QR card also significantly influenced satisfaction, with a mean score of 2.15, reflecting the simplicity of the application process.

However, respondents were moderately satisfied with the service charges associated with QR banking, which received a mean score of 2.23. The convenience of QR booth locations also had a moderate impact on satisfaction, with a mean score of 2.55.

On the other hand, respondents reported significant dissatisfaction when QR booths were not operational, as indicated by a mean score of 3.12. This suggests that operational reliability plays a crucial role in customer satisfaction with QR banking services.

These findings underscore the importance of customer-centric QR banking systems that effectively meet customer needs and ensure consistent operational performance. Such systems are vital for banks aiming to maintain a competitive edge and sustain customer satisfaction in the digital banking landscape.

The third objective of the study revealed significant insights into customer satisfaction with mobile banking. Respondents indicated high satisfaction levels with several aspects of mobile banking: receiving account details through SMS/email on their phones, overall satisfaction with mobile banking, and its cost-saving benefits, with mean scores of 1.63, 1.97, and 2.00, respectively.

Moderate satisfaction was observed with the ease of bill payment services offered through mobile banking and the availability of anywhere bill payment options, with

mean scores of 2.53 and 2.65, respectively. However, respondents expressed less satisfaction with the security of using a mobile banking account, as indicated by a mean score of 2.85.

These findings underscore the significant impact of convenience, cost-effectiveness, and service reliability on customer satisfaction with mobile banking services. They highlight areas where improvements in security measures could enhance overall satisfaction and trust among mobile banking users.

CHAPTER V

SUMMARY AND CONCLUSIONS

After the analysis and interpretation of collected data as per the design of study, this is the concluding chapter an attempt has been made to draw conclusion. This chapter deals with the conclusion and implication derived from the study, impact of E-banking services on customer satisfaction of commercial banks of Nepal. It consists of three sections. First section provided the discussion of the study, second section draws the conclusion of the study and final section consists of the implication to solve the problem observed during the study.

5.1 Summary

Electronic banking is the delivery of banks' information and services by banks to customers through different delivery channels that can be used with different electronic devices such as computer and a mobile phone with browser software, telephone or digital banking. Apart from withdrawals of cash, it gives customers access to distinctive sorts of banking transaction just by the snap of a mouse. The accessibility and bank operations have been made much easier since the introduction of information technology where automated banking services have been made successful with the usage of quick response, mobile banking and internet banking where consumers are able to transact business without visiting the bank premises. In fact the use of electronic banking as an option for the dissemination of financial institutions has turned into a competitive tool rather than only an approach to accomplish competitive advantage of preference with the appearance of globalization and fiercer rivalry. In Nepal, the concept of e-banking services is growing over the past few years and more and more customers are getting involved in using these services. But still the use of e-banking is low and in the developing state and it has still a long way to go.

In order to discuss the whole study in a manner of the academic research this study follows the conventions of the methodologies set by the university.

The first chapter of the study deals with introduction which includes background of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study and organization of the study. The second chapter presents review of E-banking, history of e-banking in Nepal, types of e-banking, features of e-

banking, customers satisfaction, E-banking and customer satisfaction.

The third chapter explains the research methodology used in the study .It included research design, population and sampling, types and sources of data collection procedure, data analysis tools and techniques, reliability and validity.

The fourth chapter is the results which is the major part of the study. In this chapter, interpretation of data has been attempted within the frame of the methodology insisted in the chapter research methodology.

The final chapter is discussion, conclusion and implications. In this chapter, discussions of the whole study conclusions derived out of the study and the implications to solve the problem identified have been presented.

As per the purpose set earlier, the use of e-banking and customer satisfaction has been analyzed and presented by the use of set of questionnaires based on three dimensions of e-banking i.e. internet banking, QR banking and mobile banking.

5.2 Conclusions

Based on the results it was concluded that the concerning customer satisfaction with different banking services (internet banking, QR banking, and mobile banking), several key conclusions can be draw as internet banking, the customers generally perceive internet banking as a time-saving and accessible service. Satisfaction levels are positively correlated with overall customer satisfaction, although concerns about security exist among some users.

Similarly QR banking is well-received for its convenience and ease of use, particularly in obtaining QR codes and for urgent cash needs. However, dissatisfaction with the location and condition of QR codes suggests areas for improvement.

The customer satisfaction across all banking services, the majority of customers express satisfaction with their respective platforms. Internet banking shows a strong positive correlation with mobile banking satisfaction, indicating overlap in user experience and expectations. Enhancing security measures in internet and mobile banking remains critical to bolster customer confidence. Improving the accessibility and maintenance of QR banking facilities could further enhance customer satisfaction. Moreover, continuing to streamline user interfaces and provide clear

instructions for bill payments would address usability concerns highlighted in the data. Banks should focus on maintaining and improving customer satisfaction through targeted enhancements in security protocols, user interface design, and service accessibility. Leveraging the positive aspects of each banking service such as convenience, time-saving features, and responsiveness can strengthen customer loyalty and satisfaction in an increasingly digital banking environment.

It is concluded that the each banking service has strengths and areas for improvement, overall customer satisfaction is high. Addressing specific concerns related to security, usability, and facility maintenance will be crucial in ensuring continued satisfaction and meeting evolving customer expectations in the future.

Based on the analysis provided, it is evident that customer satisfaction in banking services is influenced differently by internet banking, quick response and mobile banking. Internet banking and quick response show statistically significant positive impacts on customer satisfaction, while mobile banking, though contributing positively, exhibits a weaker influence. The model, while statistically significant overall, indicates limitations in explaining the variance in customer satisfaction, possibly due to other unaccounted factors. Therefore, while improvements in internet banking and quick response may enhance customer satisfaction, a holistic approach considering additional variables is crucial for a comprehensive strategy in banking service enhancements.

5.3 Implications

Based on the findings of this study and insights from existing literature, it is evident that electronic banking services are crucial in meeting diverse customer needs and enhancing overall customer satisfaction. While various factors influence customer satisfaction, the study emphasizes the importance of improving the efficiency and reliability of internet banking, QR banking, and mobile banking services. The following implications emerge from the study:

- i. **Enhance Internet Banking:** Banking institutions should focus on making internet banking more flexible, fast, and user-friendly to increase customer satisfaction.
- ii. **Address Security Concerns:** Despite relatively lower impact on satisfaction, commercial banks should invest in robust security technologies to enhance secrecy and privacy in internet banking transactions.

- iii. Government Policy Support: There is a need for government and regulatory bodies to formulate policies that promote widespread adoption of internet banking across all financial institutions in Nepal, including legislation to combat cyber-crime.
- iv. Customer Education: Efforts should be made to educate a majority of the banking population about internet banking services to increase awareness and usage.
- v. Differentiation Strategy: Banks offering electronic services should differentiate themselves by providing clear information to customers about the competitive advantages of their services.
- vi. Improve ATM Services: Authorities should ensure that Automated Teller Machine (ATM) services are convenient and efficient for customers, possibly by increasing the number of machines and transaction limits.
- vii. QR Machine Maintenance: Regular inspection and maintenance of QR machines, along with security measures like providing guards, particularly during night hours, can improve the reliability and safety of QR services.
- viii. User-Friendly Technology: Banks should deploy user-friendly mobile banking applications developed in collaboration with mobile service providers to enhance ease of use and efficiency.
- ix. Enhance Bill Payment Services: Mobile banking systems should simplify bill payment processes and expand anywhere bill payment options to meet customer needs effectively.
- x. Assure Security in Mobile Banking: While mobile banking is efficient, banks must assure customers about the security and privacy of their transactions to maximize satisfaction.
- xi. Value Communication: Banks should focus on communicating the value that customers derive from electronic banking services rather than just the services offered, to enhance customer perception and satisfaction.
- xii. System Security: Strengthening system security measures is crucial to building customer trust and ensuring that banks fulfill their commitments made during marketing and advertisements.
- xiii. Personalized Customer Support: Offering live support over the internet instead of email-based support can foster better relationships and trust with customers, thereby increasing satisfaction.

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APPENDIX

Dear Respondent,

I am Anjana Gurung, final year student of Tribhuvan University conducting a purely academic research study on “**QR CODES AND CUSTOMER SATISFACTION OF COMMERCIAL BANK**” to meet the partial fulfillment of the requirements for the Master’s Degree in Business Studies (MBS), Tribhuvan University. The major objective of this study is to examine the impact of e-banking on customer’s satisfaction of commercial banks. Your responses will be maintained absolutely confidential and used for only academic purposes. Your participation in the study is anonymous, voluntary and will be very much appreciated.

Section A: Respondent’s Information

Name of Bank: _____

Gender: Male [] Female []

Marital Status: Married [] Unmarried []

Age: Below 20 [] 20 to 30 [] 30 to 40 [] 40 to 50 [] 50 to above []

Academic Qualification: PhD [] Masters [] Bachelor [] Intermediate [] SLC and below []

Occupation: Government [] Private [] Self-employed [] Student [] Retired []
Housewife []

Per year income: less than 1 lakh [] 1-3 lakh [] 4-6 lakh [] More than 6 lakh []

Section B: Respondent’s Opinion

This questionnaire is about impact of e-banking on customer’s satisfaction which consists of 18 statements including Internet banking, QR banking and Mobile banking. Please read each statement then indicate your reaction to each of the following statements by ticking (√) in an appropriate choice for the statements which represents your level of agreement or disagreement with it. Make sure to respond to every statement.

SA- Strongly Agree, A- Agree, N- Neutral, D- Disagree, SD- Strongly Disagree

S.N	Statement	SA	A	N	D	SD
Internet Banking						
1	The use of internet banking is time saving.					
2	I can easily access my account and make balance Enquiry.					
3	The use of internet banking is secure for me.					
4	I can easily request my account statement by email.					
5	Response of service through internet banking is very Prompt and quick.					
6	I am satisfied with the use of internet banking.					
QR Banking						
7	The location of QR booths is convenient for me.					
8	I have always found QR booths in working order.					
9	The process of applying for QR card is easy.					
10	Service charge for QR banking is reasonable.					
11	The use of QR card helps me in the situation of urgency of cash.					
12	I am overall satisfied with the use of QR banking.					
Mobile banking						
13	The use of mobile banking is cost saving.					
14	The bill payment service offered by bank through Mobile banking system is easy.					
15	I always get detail of my account through					

	SMS/Email on my cellular phone.					
16	Mobile banking system provides anywhere bill Payment options.					
17	The uses of mobile banking are secure.					
18	The overall satisfaction with mobile banking system of bank is satisfactory.					
Customer Satisfaction						
19	I am overall satisfy with the use of electronic Banking.					
20	My expectation meets with the electronic banking.					

Thank You!

QR CODES AND CUSTOMER SATISFACTION OF COMMERCIA...

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ABSTRACT This study investigates how QR code banking influences customer satisfaction within Nepalese commercial banks. Findings reveal a moderate negative correlation between QR code banking satisfaction and Internet banking satisfaction, suggesting a trade-off between these services. While QR code banking does not significantly affect mobile banking satisfaction, higher QR satisfaction correlates with slightly elevated overall customer satisfaction. The study underscores the importance of strategic improvements in QR code banking to enhance customer satisfaction across Nepalese banks. This research examines the influence of Internet banking on customer satisfaction in Nepalese commercial banks. Results indicate a strong positive correlation between satisfaction in Internet banking and mobile banking services, indicating mutual satisfaction among users. However, there is a negative correlation between Internet banking satisfaction and QR code services, pointing to potential speed-related issues. The findings suggest opportunities for Nepalese banks to strategically enhance Internet banking services to improve overall customer satisfaction levels. This study evaluates

the impact of mobile banking on customer satisfaction within Nepalese commercial banks

. Analysis shows that while mobile banking has a moderate effect on overall customer satisfaction, its influence on QR code banking satisfaction is minimal. Higher satisfaction with mobile banking weakly correlates with increased overall customer satisfaction. These insights suggest avenues for Nepalese banks to focus on optimizing mobile banking services to further enhance customer