

Addis Ababa University

College of Business and Economics

Department of Business Administration

The Effect of Green Banking Initiatives on Customer Satisfaction: The Case of Zemen Bank S.C Head Office.

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Declaration

I declare that this research project is the result of my work and that all sources of materials used are duly acknowledged. This work has not been submitted to any other university for achieving any academic degree or Master.

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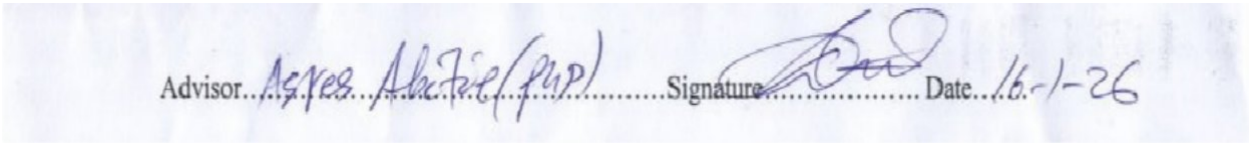
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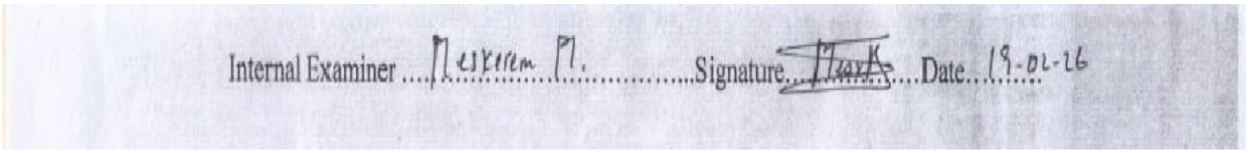
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Table Contents

List of Tables iv
Abstract vi
CHAPTER ONE 1
1. INTRODUCTION 1
1.1 Background of The Study 1
1.2. Statement of the Problem 4
1.3. Objective of the study 5
1.3.1. General Objective 5
1.3.2. Specific objective 5
1.4. Research Questionary 5
1.5. Significance Of the Study 6
1.6. Scope Of the Study 7
1.7. Operational Definitions 8
1.8. Organization Of the Study 9
CHAPTER TWO 10
2. LITERATURE REVIEW 10
2.1. Theoretical Review 10
2.1.1. Concept of Green banking 10
2.1.2. Customer Satisfaction Theory 14
2.1.3. SERVQUAL Model of Service Quality 14
2.1.4. Technology Acceptance Model (TAM) 15
2.1.5. Theory of Planned Behavior (TPB) 15
2.1.6. Stakeholder Theory and Green Financing 15
2.1.7. Theoretical Linkage to the Study 15
2.2. EMPIRICAL REVIEW 16
2.2.1. Green Banking Initiatives in Modern Banking Industry 16
2.2.2. Green digital banking channels 16
2.2.3. Definitions of green finance 17
2.2.4. Customer awareness of green banking 17

2.2.5. Customer intention to use green banking....18
2.2.6. Green customer satisfaction....18
2.2.7. Benefits of green practices in the banking sector....19
Paper-Work Reductions Electronic banking, or paperless banking....19
Raising Business Professionals' Awareness....19
Comparatively Low-Interests....19
Standards of the Environment for Lending....20
2.2.8. Features Of Green Banking Initiatives....20
2.2.9. Green banking initiative practice....27
2.3. Conceptual Framework....31
Hypothesis....32
CHAPTER THREE....33
3. METHODOLOGY....33
3.1. Study Area....33
3.2. Target Population....33
3.3. Data Type....33
3.3.1. Primary Data Collection....34
3.3.2. Secondary Data....34
3.4. Sampling Techniques....34
3.5. Sample Size Determination....34
3.5.1. Sample Size Formula (Finite Population Correction)....35
3.6. Variable Considers in the Study....35
Dependent variables....35
Independent variable....35
3.7. Method of Analysis....35
3.7.1. Descriptive Statistics....35
3.7.2. Inferential Statistics....36
3.7.3. Multiple Linear Regression....36
CHAPTER 4....37
4.1. DATA ANALYSIS AND INTERPRETATION....37
4.2. Descriptive Statistics....39
4.3. Reliability test....41

4.4. Correlation Analysis....41
4.5. Assumption....43
4.5.1. Multicollinearity....43
4.5.2. Linearity and Homoscedasticity test....44
4.5.3. Normality Test....45
4.6. Regression Result....46
ANOVA TABLE....46
Regression Result (Coefficients)....47
HYPOTHESIS TESTING....48
CHAPTER 5....49
SUMMARY, CONCLUTION AND RECOMMENDATION....49
Summary....49
Conclusion....50
Recommendation....51
Reference....54
Appendix....58
Questionnaire....59

List of Tables

Table 1: Demography characteristics of participants

Table 2: Descriptive Statistics major study variables

Table 3: Cronbach's Alpha Test

Table 4: Correlation Analysis

Table 5: Multicollinearity (VIF) Test

Table 6: Model summary

Table 7: ANOVA

Table 8: Regression Result and Coefficients

Table 9: Hypothesis Testing

List of Figures

Figure 1: Research Model

Figure 2: Scatterplot for linearity test

Figure 3: Homoscedasticity Test

Figure 4: Normality Test (Histogram and P-plot)

Abstract

This study examined "The effect of green banking initiatives on customer satisfaction the case of Zemen Bank S.C. Head Office and Olympia Branch in Addis Ababa, Ethiopia.''. The growing adoption of environmentally friendly and digital banking practice has created the need to understand how such initiatives affect customer satisfaction and perception of banking service.

A descriptive research design is employed, using both primary and secondary data source. Data analysis is conducted using descriptive statistics and multiple linear regression to determine the effect of green banking initiative on customer satisfaction. The study concentrated on major green banking initiatives, namely green digital banking, green financing, environmental and social concern, as well as customers awareness and intention to use green banking services.

The finding revealed that green banking initiatives has a positive and statistically significant effect on customer satisfaction. The study concludes that green banking initiatives contribute not only for environmental sustainability but also improve customer satisfaction in the banking sectors.

The study recommends that Zemen Bank S.C strengthen its green banking strategies by expanding digital service enhancing customer awareness and integrating green financing, environmental and social consideration in to core banking operations.

Keywords: Green Banking, Customers' satisfaction, Eco-friendly banking.

ACRONYMS

NBE- - - - - - - - - - - - - - - - National Bank of Ethiopia

FXD- - - - - - - - - - - - - - - - Foreign Exchange Directive.

IFC - - - - - - - - - - - - - - - - International Finance Corporation

ATM - - - - - - - - - - - - - - - Automatic Teller Machine

KYC- - - - - - - - - - - - - - - - Know Your Customer

EIB- - - - - - - - - - - - - - - - - European Investment Bank

ESG - - - - - - - - - - - - - - - - Economic, Social and Governmental

CSR - - - - - - - - - - - - - - - - Corporate Social Responsibility

CRGE- - - - - - - - - - - - - - - Ethiopia's Climate-Resilient Green Economy

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Every country, society and industry are becoming conscious of its actions. Customers are knowing about the impact their choice on the environment sustainability. Bank industry in Ethiopia is making effort to become green. Banks are working toward reducing their carbon foot printing. They are reducing paper wastage, investing in eco-friendly energy generation projects, evaluating project based on their environmental impact, promoting electronic banking, ATM, educating customers about the various benefit of green banking product and service (Kuosuwan, B., Risman, A., Dudukalov, E., & Kozlova, E., 2024).

Banking is the prominent sector of our nation play a significant role in our economy and for the environment also is the backbone for development. That's why banking industry try to adapt paper less banking which is also known as green banking. The concept of green banking is not just about providing environment friendly product and service but also focused on making less effect on natural resource and reduce carbon foot print so that that environment could get safe and balance will be maintained in the ecosystem. Its protector of a green system under which policy and regulation are framed for green practice (Liu, W., Cao, Y., Hou, J., Cheng, Y., Chan, H. K., & Tang, O., 2025).

Earlier studies largely focused on how environment initiative and corporate social responsibility activities within the bank sector influence customer perception and loyalty. When bank implement green policy ranging from paperless operation to energy efficient branch operation. They can significantly build their image and build strong emotional bond with customers. This improvement was associated with high level of customer satisfaction (singh and verma, 2015)

In more recent research, scholars have integrated the concept of digital transformation with green banking. The combination of digital technology and green practice enhance the customer experience. Digital platform offering green banking not only provide improved convince but also growing customer preference for sustain banking practices (Nguyen, 2020).

The customers have significant role in the operations of commercial enterprises and hence to satisfy customers is critical aspect of the organizations particularly in modern Banking and

Financial services industry. Banks face a hard problem in retaining consumers (Ayinaddis et al., 2023). Green banking practices are in line with the growing trend towards sustainability and have the potential to improve customer satisfaction and loyalty (Ettinger et al., 2021). Banks cannot afford to lose consumers, thus maintaining continual communication with them is in their best interests (Ho & Chow, 2023). Every organization aims to establish the kind of rapport with customers that will motivate them to purchase its goods over an extended length of time (Raza et al., 2020). In fact, a lack of customer satisfaction has been found to be a significant factor in clients choosing to switch to other Banking institutions (Manari & Manari, 2007a, 2007b). The pursuit of customer satisfaction has become a crucial principle in the highly competitive contemporary Banking industry, which is vital for retaining customers (Rust & Zahoric, 1993). The banking industry has increasingly evolved to prioritize environmental sustainability and ethical banking principles. The shifting has led to the emergency of green banking, which extend beyond technology driving initiatives to include banks effort to protect the environment and engaged in green financing activities and comply with rule and environmental regulations. These initiatives are largely motivated by growing intersection of environmental concerns and social responsibility and have been shown to influence customer satisfaction significantly. The relationship between green banking practice and customer satisfaction is very important, as financial institution have made investments in sustainable banking activities. The effectiveness and economic viability of such initiatives depend on several factors including customer awareness, preference, willingness to adopt green banking service, and satisfaction with environmentally responsible product and service. The concept of green customer satisfaction has gained increasing scholars' attentions (Campiglio, 2016). Green customer satisfaction refers to the extent to which customer feel satisfied when banking products and service meet their environmental expectation, adhere to regulatory standard and align with broader social goal of sustainability (Refaee Shirpak, P., & Beyzavi, M. ,2024).

Environmental themes have been integrated into the design, packaging, and features of products and services due to the influence of customer environmentalism and the impact of environmental regulations. This trend has been observed in both firms and Banks. The main objective of this approach is to meet environmental requirements and fulfill customer expectations (Chang & Fong, 2010). The comprehension and effective management of consumer expectations have significant importance for banking institutions.

For the moment, setting “green banking” aside, the phrase that comes to every person’s mind is, customer satisfaction. Customer satisfaction has long been central concern in the banking and financial service industries, as it plays a critical role in building stable and long-term relationship with customers. Such relationship enhances customer locality and adds value to the business sustained organizational growth (Ravald and Gronrros, 1996). Among the many reasons why bank customers are switching banks, dissatisfaction is the leading underlying factor (Manrai & Manrai, 2007).

The significance of customer satisfaction as a means for customer retention, which is vital for any institutions in today’s competitive market. Particularly the banking sector. The importance of customer satisfaction has become a widely researched issue within the banking sector.

Zemen bank S.C has taken significant step toward promoting environmental sustainability through different paper less banking and digital transaction. As part of green banking practice, the bank encourage customer to utilize and provide its digital platforms, including mobile banking, internet banking and ATM, promoting card less ATM withdrawals, contact-less payments, and mobile wallets to minimize the use of plastic cards and paper and digital receipt and replacing passbooks with mobile apps service to reduce reliance on paper base transaction. Customer are provided with E- statement and SMS alerts in steady of printed account statement and transaction slip which minimize paper usage and west. Zemen bank S.C also offer digital on boarding service allowing customer to open account and access service electronically with the help of e-KYC (Know Your Customer)**,** which reduce the need for physical forms and documentation. Zemen Bank S.C not only enhances customer convenience and operational efficiency but also contributes to the reduction of its environmental footprint, aligning its operations with global efforts to combat climate change.

One of the banks that have shown environmental sustainability by embracing green lending practice is Zemen Bank S.C. the bank finance projects that are environmentally sustainable, such as that fall under the horticulture sector. during the period of the period of covid-19 pandemic Zemen bank S.C made a significant move by setting the interest rate to zero for those seeking loan as horticulture institution include flower producer, effective Aprile 2 to Jun 30, 2020(Addi's Fortune, April 3, 2020), the bank also made significant progress by setting up their own Economic, social and govern (ESG) department to develop guidelines that are consistent with international best practice.

The European Investment Bank (EIB) for green financing has been particularly impactful, with the EIB providing technical support to Zemen's ESG initiatives. (Zemen Bank's 2024 Annual Report Analysis). As a participant in Ethiopia's broader Greening the Financial Sector initiative supported by the National Bank of Ethiopia and the European Investment Bank (EIB) Zemen Bank is also expected to adopt climate-resilient and energy-efficient operational frameworks (Ethiopian Capital Market, 2024). Through these efforts, the Bank aligns its physical operations with national and international environmental sustainability objectives, contributing to the fight against climate change.

Considering the above context, drawing attention on customer satisfaction and green banking makes perfect sense, understanding that these two concepts are crucial in the context of banking today.

1.2. Statement of the Problem

In Ethiopia, green banking adoption remains at an early stage. The National Bank of Ethiopia (NBE) has introduced several financial sector directives, including investment limitation (Directive No. SBB/92/2024) and foreign exchange operations (Directive No. FXD/01/2024). However, there is no specific regulation or policy framework that directly promotes or mandates green banking practices. Previous studies have highlighted the absence of environmental sustainability guidelines in Ethiopian banking operations and recommended the development of green financial principles.

Some private banks, including Zemen Bank S.C., have introduced green banking services such as mobile and internet banking, digital transactions, and paperless service delivery. Although these initiatives may improve operational efficiency and reduce environmental impact, their influence on customer satisfaction remains unclear. Ethiopian banking customers are still adapting to digital banking services, and factors such as customer awareness, technological infrastructure, and service reliability continue to affect their banking experience (Abebe & Teferi, 2023).

The main research gap is the lack of empirical evidence on the effect of green banking initiatives on customer satisfaction in the Ethiopian banking sector, particularly at Zemen Bank S.C. Most previous studies have focused on environmental and financial performance, with limited attention given to customer satisfaction. Therefore, this study aims to examine the effect of green banking initiatives on customer satisfaction in the case of Zemen Bank S.C., focusing on customers of the Head Office and Olympia Branch.

1.3. Objective of the Study

1.3.1. General objective

The general objective of the study is to measure the effect of green banking initiative on customer satisfaction in the case of Zemen Bank S.C head office.

1.3.2. Specific objectives

- To identify the different green banking service provided by Zemen bank S.C.
- To assess the effect of green digital banking channels (such as paperless transaction, mobile banking, internet banking and ATM cards) on customer satisfaction at Zemen Bank S.C.
- To evaluate the effect of green financing on customer satisfaction at Zemen bank S.C.
- To analyze the extent to which customer concern for environmental and social issues influences their satisfaction with green banking service at Zemen bank S.C.
- To assess the level of customer awareness and intention to use green banking product and service at Zemen bank S.C.

1.4. Research Questions

It aims to answer key questions such as:

- What are the different green banking services provided by Zemen Bank S.C?
- How do Green Digital Banking Channels (paperless transaction, mobile banking, internet banking, and ATM cards) affect customer satisfaction at Zemen Bank S.C?
- What is the effect of green financing on customer satisfaction at Zemen bank S.C?
- To what extent does customer concern for environmental and social issues influence their satisfaction with green banking services at Zemen Bank S.C?
- What is the level of customer awareness and intention to use green banking product and service at Zemen Bank S.C?

The hypothesis guiding this study is that green banking initiatives have significant and positive effect on customer satisfaction at Zemen Bank S.C head office. Understanding this relationship help bank management and policymakers to design more effective green banking strategies that are both sustainable and customer-centered.

1.5. Significance of the Study

The significance of the study on the effect green banking initiative on customer satisfaction in case of Zemen Bank S.C Head office and Olympia branch customers, is that it offers valuable insight in to green banking practice affects customer impression and experiences. As banks move toward more digital and paper less products to go green and meet global sustainability goal, there is a need to find out the degree to which those green efforts contribute to customer satisfaction. The research assists in filling this gap in knowledge by assessing customer reaction to green banking initiative like internet banking, e- statement, mobile banking, and less paper use etc...

The results can be used to inform Zemen Bank S.C in developing its green initiatives, upgrading service delivery, and creating more customer loyalty. More importantly, from a general perspective, the study adds to the emerging literature on sustainable finance in Ethiopia, providing managerial implications for other financial institutions seeking to adopt environmentally friendly operations without compromising on the high level of customer satisfaction.

1.6. Scope of the Study

The scope of this study is limited to examine the effect of green banking initiative on customer satisfaction at Zemen Bank S.C Head office and Olympia branch customers in Addis Ababa, Ethiopia.it focused specifically on environmentally friendly banking good and service practice such as digital banking service (paperless transaction, ATM, E- statement, mobile banking, RTGS, etc.),green financing, environmental and social concern and intention and awareness of green banking that involve both customer and employees of the Bank.

1.7. Operational Definitions

For the purpose of this study the following terms are defined operational as they are measured and used in the research.

Green Banking Initiatives

Refers to environmentally friendly banking practices adopted by Zemen Bank S.C. In this study, it is measured through:

- Green digital banking (mobile banking, internet banking, e-statements, paperless transactions)
- Green financing
- Environmental and social responsibility practices
- Customer awareness and intention to use green banking services

Customer satisfaction

Refers to the level of customer overall satisfaction with green banking service provided by Zemen Bank S.C. It is measured using customer perceptions regarding service quality, convenience, reliability, and overall experience with green banking services.

Green Digital Banking

Refers to the use of electronic banking platforms such as mobile banking, internet banking, ATM services, and electronic statements that reduce paper usage and physical transactions.

Green Financing

Refers to financial support provided by the bank for environmentally friendly projects or businesses that promote sustainable development.

Environmental and Social Concern

Refers to banking activities that promote environmental protection, resource conservation, and social responsibility.

Customer Awareness and Intention to Use

Refers to the level of customer knowledge, understanding, and willingness to adopt green banking services.

1.8. Organization of the Study

The thesis is organized into five Chapters.

Chapter One present the introduction of the study, including the background, problem statement, objective, research questions, significance, scope, limitation, operational definition, and organization of the study.

Chapter Two reviews related theoretical and empirical literature related to green banking, digital banking, green financing, environmental and social concern, awareness and intention to use green banking and customer satisfaction.

Chapter Three describe the research methodology, including research design, population, sampling techniques, data collection methods, and data analysis procedures.

Chapter Four present the analysis and discussion of the research finding.

Chapter Five conclude the study by summarizing key finding, presenting conclusions, offering recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theoretical Review

This chapter describes and documents what has been written and recorded in different manuals, literature and authors about green banking and effects of green banking on customer satisfaction.

2.1.1. Concept of Green banking

There is no single, universally agreed definition of green banking, as its intended differs across countries and institutional context (Alexander, 2016). Nerveless, various scholars and organizations have proposed their own explanation of the concept. Defined green banking as an umbrella term referring to practices and guidelines that make banks sustainable in economic, environmental and social dimensions (IDRBT, 2013). Green banking is similar to the concept of ethical banking, which starts with the aim of protecting the environment, as it involves promoting environmental and social responsibility while providing excellent banking services (Bihari, 2011).

Green banking as promoting environmentally friendly practices that aid banks and customers in reducing their carbon footprints (SBP, 2015). Green banking can be also called social or responsible banking because it covers the social responsibility of banks towards environmental protection, illustrating that social issues often inter sect with environmental issues. Social banking is broadly defined as addressing some of the most pressing issues of our time and aiming to have a positive impact on people, the environment and culture by meaning of banking (Kaeufer, 2010; Weber and Remer, 2011). Similarly, responsible banking encompasses a strong commitment by banks to sustainable development and addressing corporate social responsibility as an integral part of its business activities. Finally, green banking can be a subset of sustainable banking which tends to capture broader environmental and social dimensions (Dufays, 2012).

It is widely acknowledged that countries that established clear guidelines and mandatory regulations to direct public and private financing towards green products, offer an enabling environment for domestic finance institutions to scale up their green investments (GIZ, 2019). However, approaches toward green banking policy interventions tend to be different between developing and developed countries, although actions taken by prudential authorities in developed countries vary. For example, rule-based authorities such as those within France tend to act more

proactively and introduce policies that aim to measure climate risks, while principle-based authorities such as those within Switzerland and Japan tend to take more market-driven approaches (Spiegel et al. 2019).

The first to introduce green banking is the state of Florida in the year 2009. Green banks are those banks which take up practices that does not cause harm to the environment in conducting its day-to-day operations and implementing green financial products which are environmental protective and which reduce carbon emissions there by promoting environmental development and sustainability (Hossain et al., 2020; Zhixia et al., 2018). The green banks seek to perform their banking operations using renewable technologies. The impact of regulatory guidelines and other parameters on green banking strategies were studied and how corporate governance favorably affects the level of transparency were explored in commercial (Bose et al., 2017). The green banking strategies really develops competitive advantage to the banks and hence the growth of the economy and the environment can be boosted through initiating green financial products. Banks are crucial performers as they act as a link between people and the society. Due to their function as an economic middleman, banks have a huge potential impact on sustainable development. They are responsible for creation of novel products, such as investment funds that support the environment. (Jeucken & Bouma, 1999; UNEP FI, 2016).

Green banking is quickly becoming the standard across the globe to implement ecologically and socially responsible corporate practices. By halting environmental degradation and improving the earth's habitability, this banking is ecologically friendly. In recent decades, green banking has emerged as a trend in sustainable banking. Green banking is accepted as reasonable, safeguards the environment from harm, and ensures sustained economic growth (Islam, 2020). Practical measures must be taken to preserve and green our environment, with an emphasis on business-level initiatives, the establishment of environmental centers, and the implementation of greening programs at the corporate level (Islam et al., 2020). While banks themselves are generally seen as environmentally sustainable and their internal operations do not have a considerable impact on the environment, the actions of their customers have a significant "external" influence on the environment. Maximum carbon-emitting industrial projects, including those involving steel, paper, cement, chemicals, fertilizers, power, and textiles, are frequently financed in part by the banking sector. The banking industry can therefore serve as a mediator between environmental

Conservation and economic development to encourage socially and environmentally responsible investment term "green banking" related to the operation of financial institutions in a manner and location that contributes to the reduction of internal and external carbon footprints and emissions. Banks should support green technologies and pollution-reduction initiatives to aid in the reduction of external carbon emissions. Despite the banking industry's reputation for non-pollution, the current magnitude of banking activities has significantly augmented its carbon footprint. This is primarily attributed to the substantial energy consumption of banks (e.g., lighting, air conditioning, electronic and electrical equipment, IT), substantial paper wastage, absence of green buildings, and other related factors. As such, financial organizations must incorporate those technologies, processes, or product that significantly decrease their carbon footprint and contribute to the growth of environmentally sustainable businesses. Contrary to the prevailing development mode that uses the natural resources of the earth for economical gain, sustainable development has been recognized as an alternative model. The industry and the bank sector contribute significantly to economic growth. Financial organization form the basic pillar that contribute to economic growth. The banking sector significantly affects the quality and the scale of economic development and growth. Investment in business venture in the financial sector contributes to sustainable economic growth. All economic activities depend on a large extent on the banking sector. The banking sector forms the basic foundation for all economic activities in a country and play a vital role in promoting environmentally sustainable practices.

The focus has been on overall banking system with the objective of encouraging significant economic development while promoting eco-friendly practice (Lalon, 2015). Banks are required to take up a more significant role with regard to the issue of climate change with green banking initiatives, and these are effective (Sarker et al., 2019; Stephenes & Skinner, 2013). (Bai,2011) explain that sustainable banking is identified through these responsibilities that help in the development of eco-friendly enterprise much like, green banking.

The term “green banking,” which encompasses socially and environmentally conscious banking practices, is also used to refer to moral financial services (Goyal & Joshi, 2011) (Sarker et al., 2020). Businesses are becoming more aware of environmental integrity issues as a result of external pressure from a variety of sources, including government banking institutions, socially conscious investors, and host community lobby groups. Consistent with this pattern, the current increase in environmental expenses has forced companies to incorporate environmental concerns into

all aspects of operations (Shuvro et al., 2020). In their study, (Bhardwaj & Malhotra, 2013) mentioned various models of green banking practices adopted by Indian companies to grow. The case study technique forms the foundation of their research methodology. An effect of banks implementing green banking practices on the performance of the organization was discovered. In his study, (Chaurasia, 2014) concluded that it is necessary to require the banking and financial sector to contribute to sustainable development. In the realm of green banking, researched whether banks should change their routine operations by adopting paperless banking, online banking, mobile banking, and mass transportation systems, green cards made up of recycled plastic, and efficient use of resources. "Green Banking - The New Strategic Imperative," on public sector banks and gathered manager opinions on green banking financial goods, paperless banking, energy awareness, using mass transit, green building, and social responsibility services (all of which reduce carbon footprints). The public sector banks are the focus of this empirical study, which also collects managers' opinions on a range of green banking topics, such as social responsibility services, paperless banking, energy awareness, mass transit, green building, and lowering carbon emissions. The study is titled "Green Banking - New Strategic Imperative." She analyzed the most significant Green Banking solutions in her research by employing Garrett's ranking method. Sustainability development can only be attained through the dissemination of knowledge and the cultivation of consciousness, according to the study. To raise awareness, publications, and newsletters should be prioritized among the internal sub- systems, while event meetings, media, and websites are excellent channels for the exterior sub- systems. For green banking to be practicable, an appropriately defined green policy guideline is key.

Banks that strive to conduct their daily operations responsibly towards society by taking into account the internal and external environmental sustainability of the environment are referred to as "green" or "sustainable banks" (Hossain et al., 2020). (Choudhury et al., 2013) highlighted that every bank should create a new green product with higher stakeholder involvement and sustainable development in today's banking competition. However, (Dharwal & Agarwal, 2013) highlighted that green banking is crucial for avoiding numerous sorts of risks, including legal, credit, and reputation threats, according to the risk assessment. In addition, they advised the implementation of several environmentally friendly measures, including the use of carbon credit institutions, green financial products, green mortgages, energy conservation, green building, and social responsibility

Contributions. (Volz, 2018) found sustainable banking, in which decisions about loans and investments are based on risk assessment and environmental monitoring to meet sustainability standards; it also includes insurance services that handle climate and environmental risk, which are important aspects of green finance. (Zheng et al., 2021) outlined that green financing is an essential element of sustainable finance, exerting a substantial impact on the development of an environmentally conscious economy and sector at large. Therefore, it can be argued that when improving its sustainability practices, the bank industry should give priority to financially sound banking in order to obtain funding for environmentally conscious projects. This will strength its competitive advantage, boost earning, improve current asset and lower cost related to invested capital. (Amir,2021) stated that there is not many research on green banking in underdeveloped countries, so it's critical to comprehended the concept completely.

2.1.2. Customer Satisfaction Theory

In service sector like banking industry, customer satisfaction is very important. According to (Oliber, 1997), consumer evaluate a good or service by contrasting what they anticipated and what they received. This concept is derived from Expectation Confirmation Theory (ECT), which state that when an experience meet or exceeds your expectations, you are satisfying. Customer satisfaction in the banking is determined by how quick and dependable the service is, how simple it is to use, and whether or not they believe they are receiving good value. the green banking aligns with concept that going paperless or using digital platforms make things fast and more convenient, which is in line with what customer want. As a result, customer satisfaction theory greatly aids in our comprehension of how green banking can improve consumer perception of their banks.

2.1.3. SERVQUAL Model of Service Quality

The SERVQUAL model, developed in 1985 by Parasurama, Zeithaml and Berry, is still a popular instrument for measuring customer satisfaction and service quality. Reliability, responsiveness, assurance, empathy and tangibility are its five main point of emphasis. These five categories help banks understand how customers experience is shaped. Because transactions are completed more quickly and with few errors, digital green banking increase responsiveness and dependability. Additionally, going paperless enhance tangibility by making service feel more contemporary and eco-friendlier. Although SERVQUL does not specially address environmentally sustainability, its fundamental principle aligns well with green banking and customer satisfaction.

2.1.4. Technology Acceptance Model Theory

To explain why people begin using new technology, (Davis, 1989) develop the Technology Acceptance Model (TAM). TAM is a perfect fit for green digital banking, which include mobile apps, online banking, ATM s and paperless transactions. It comes down to two things, is it easy to use, and is it useful? Customers are more likely to use these tools and be happier if they find them useful and easy to use. Therefore, TAM provide a strong justification for examining the effect of these digital banking channels on customer satisfaction.

2.1.5 Theory of Planned Behavior (TPB)

Ajzen's Theory of Planned Behavior (1991) examine the motivation behind human behavior. It has to do with attitude (how you feel about the behavior), other people opinions (subjective norms), and your perception of your own abilities (perceived control). People who are concerned about the environment are more likely to feel good about using green banking services. Their decisions and level of satisfaction with their bank are influenced by these emotions. Therefore, TPB supports the notion that social and environmental issues influence consumer response to green banking, which is significant for this research.

2.1.6. Stakeholder Theory and Green Financing

According to Stakeholder Theory (freeman's, 1984), business should consider all parties involved, including consumer, society and environment, rather than just perusing profit. This promotes green financing in banking, which fund initiatives that benefit society and environment. Now a day's customer begins to view banks as trustworthy and responsible when they invest in green projects. Customer satisfaction and the bank reputation both increase as a result. Therefore, stakeholder theory provides a compelling argument for examining the relationship between green financing and customer satisfaction.

2.1.7 Theoretical Linkage to the Study

When you put these theories together, you get a complete picture.by enhancing service quality, increasing accessibility to technology, and promoting environmentally conscious attitude, green banking initiatives influence customer satisfactions. Service quality is covered by SERVQUL, TAM explain why consumer use digital channels, TPB demonstrates important of social and environmental concern, and Stakeholder Theory emphasizes the potential of green financing. When combined, they provide a strong foundation for measuring effect of green banking initiatives on customer satisfaction.

2.2. EMPIRICAL REVIEW

This section reviews empirical studies examining the relationship between green banking initiatives and customer satisfactions, with particular emphasis on green digital banking, green financing, environmental and social concern, and customer awareness and intention to use green banking service.

2.2.1. Green Banking Initiatives in Modern Banking Industry

Green banking initiatives have developed as a strategic approach through which the bank sector responds to global environmental challenge while sustaining financial performance and trust. These initiatives entitle the incorporation of environmentally responsible practice in to banks operations, product, and services, with the objective of reducing ecological impact and supporting sustainable development (Sahoo & Nayak, 2008). Contemporary banks increasingly rely on paperless systems such as electronic statements, mobile banking, and online transactions to limit paper usage and operational waste (Bahl, 2012). Furthermore, banks participate in green financing by channeling funds toward environmentally sustainable projects, including renewable energy, sustainable agriculture, and clean technologies (Biswas, 2011). Many institutions have also adopted energy efficient operational measures by modernizing infrastructure with LED lighting, solar energy system, and water conservation technologies (Weber & Feltmte, 2016). The expansion of digital payment platform not only improve customer convenience but also lowers carbon emission associated with frequent physical branch visits. These practices are consistent with global initiatives such as the United Nations Sustainable Development Goals (SDGs), underscoring the banking industry's contribution to environmental protection and social concern. Through the integration of green banking practice in to their core strategies, banks can strengthen their corporate image, appeal to environmentally aware customers, and play a meaningful role in advancing global sustainability objectives.

2.2.2. Green digital banking channels

Green digital banking channels are technology driven service channels that enable customer to perform financial transactions electronically without the use of paper or the need to visit physical bank branches, thereby lowering environmental impact. They are described as “Green” channels because they encourage paperless processes, reduce carbon emissions associated with customer travel, and limit resource consumption in banking activities (Sharma et al., 202). Common example includes internet banking, mobile banking applications, Automated Teller Machines (ATM), point-of-sale (POS) terminal, contact-less payment card, and electronic statements. Empirical evidence indicates that the use of these channels is positively linked to customer satisfaction, particularly when the systems are perceived as reliable, secure, and user-friendly, as explained by Technology Acceptance Model (TAM) and the SERVQUAL framework (Davis, 1989; Paranormal et al., 1988; Mir et al., 2025).

2.2.3. Definitions of green finance

There are several definitions of green finance. Green finance is the financing of public and private green investments (Lindenberg, 2014). Also, green finance is the financing of projects that yield economic benefits while promoting a sustainable environment (Ozili, 2021a).

Green finance as finance that integrates environmental protection with economic profits (Wang and Zhi, 2016). Green finance encompasses all investments in environmental goods and services, and investment in activities that reduce damage to the environment and the climate (Lindenberg, 2014). Also, in public policy, green finance involves the financing of public policies that encourage the implementation of environment protection projects or environment damage mitigation projects and initiatives (Lindenberg, 2014). Green finance as the financing of environment-friendly activities, green technology, and projects that reduce pollution (Bahl, 2012).

2.2.4. Customer awareness of green banking

Refers to the extent to which customers are informed about a bank's environmentally friendly products, services, and operational practices, and understand their benefits for both the environment and personal banking convenience. Customer awareness is the key determination of the customer's willingness to adopt green banking service, including mobile and internet banking and environmentally responsible financing products (Sharma ET al.2021). Research indicates that well informed customers tend to perceive high value in a bank offering and develop stronger trust which lead to increasing satisfaction and locality (Mir et al., 2025).

In many developing economy inadequate communication and low level of financial education often create disconnect between banks green initiatives and customer understanding of those initiatives (Rahman & Baru, 2016).

In Ethiopia despite there is encouragement for sustainable banking, many customers still have limited exposure to green financing policies or sustainable branch operations, highlighting the importance of awareness building initiatives (IFC, 2025). Well, designs awareness creating approaches such as focused digital campaigns, customer education within branch, and clear and information communication on green banking initiatives can enhance customer understanding of both the environmental and service-related advantages, thereby improving satisfaction and encouraging continues usage.

2.2.5. Customers intention to use green banking services

Refers to the probability that customers will embrace and maintain the use of environmentally friendly banking products and services such as mobile banking, internet banking, e-statements, paperless transactions, and green loans. In behavioral theory, intention is a central predictor of actual usage, according to Theory of Planned Behavior (TPB), where attitudes toward green banking, subjective norms, and perceived behavioral control influence the decision to adopt such services (Ajzen, 1991). Empirical studies have shown that positive perceptions of green banking's environmental benefits, convenience, and cost savings significantly enhance customers' intention to use these services (Sharma et al., 2021; Mir et al., 2025). In addition, perceived usefulness and ease of use, as explained by the Technology Acceptance Model (TAM), play a crucial role in shaping this intention, especially for digital green channels like mobile banking apps (Davis, 1989). In developing countries, including Ethiopia, customer intention may be moderated by factors such as digital literacy, trust in online transactions, and awareness of green banking benefits (IFC,

2025). For Zemen Bank, which positions itself as a digital-first institution, fostering strong customer intention to use paperless and eco-friendly services is essential, as it not only supports environmental goals but also strengthens customer satisfaction and loyalty.

2.2.6. Green customer satisfaction

During the last four decades, satisfaction has been considered as one of the most important theoretical as well as practical issues for most marketers and customer researchers (Jamal, 2004). Satisfaction referred to a consumer's judgment that a product or service feature, or the product or service itself, was providing a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment. Customer satisfaction can be seen as a fulfillment of consumers' consumption goals as experienced and described by consumers (Oliver, 2006). Previous studies have shown the existence of two different conceptualizations of customer satisfaction: transaction-specific and cumulative. The transaction-specific customer satisfaction was a post-choice evaluative judgment of a specific purchase occasion (Anderson, 1973). In comparison, cumulative customer satisfaction was an overall evaluation based on the overall experience with the goods and services of a particular firm over time (Oliver, 1980). All definitions proposed, however, agree that the concept of satisfaction implied the necessary presence of a goal that the consumer wanted to achieve. Companies faced a growing pressure to become responsible and greener.

With the rise of environmentalism, not only did consumers become more willing to purchase products that generate minimum impact, but also society became more concerned with the environment. Additionally, international environmental regulations have increased dramatically and become stricter in recent years. Green consumer satisfaction is described as the customer sensed that consumption fulfilled some need, goal, desire about environmental or green concerns and that this fulfillment was pleasurable. It was the outcome of consumption that the performance met or exceeded the green needs of customers, the requirements of environmental regulations, and the sustainable expectation of society.

2.2.7. Benefits of green practices in the banking sector

Paper-Work Reductions Electronic banking, or paperless banking

It's based on a basic banking service (CBS). Therefore, banks have a preliminary opportunity to implement paperless or minimal paper usage policies for various functions such as office correspondence, audits, and reporting. By adopting electronic reporting and correspondence, these financial institutions can effectively regulate deforestation.

Raising Business Professionals' Awareness

Regarding Environmental Sustainability Numerous non-governmental organizations (NGOs) and environmentalists engage in the dissemination of environmental knowledge to the general population through seminars, awareness programs, and other initiatives. To establish an association, banks may support such activities. In addition, numerous commercial organizations administer comparable initiatives, such as the "free pollution check program" that is coordinated by an automobile manufacturer. Banks may form partnerships with such businesses. These will contribute to enhancing the bank's reputation.

Comparatively Low-Interests

Loans Financial concessions for environmentally friendly items and projects, such as fuel-efficient vehicles, green building projects, housing, and house furnishing loans for the installation of solar energy systems, can also be incorporated into green bank loans.

Standards of the Environment for Lending

It is a good notion that lending institutions adhere to environmental standards; which will encourage inter to modify their operations so that they are more sustainable and environmentally beneficial for future generations.

2.2.8. Features of Green Banking Initiatives

2.2.8.1. Security and trust, convenience and ease of use, value creation features

The study analyzed the impact of customer satisfaction with the different features of e-banking, on customer satisfaction with e-banking as a whole. Authors have compared their findings with the UTAUT (Unified Theory of Acceptance and Use of Technology) model, which is about consumer adoption on new technology and found similarities between tested independent variables. They have used 14 different variables as features of e-banking and have categorized those features as, security and trust features; Convenience and ease of use features and value proposition features.

Transparency, reliability, safety and privacy are tested as variable constituents under security and trust feature (Agrawal, Rastogi and Mehrotra, 2009). Speed of transaction, congestion free, ease of use, ease of contact, easy accessibility and customer friendly website are tested as variable constituents under convenience and ease of use feature. 24*7 banking (365-day banking), low cost of transaction, add-on services and availability of latest information are tested as variable constituents under value proposition feature. They have found that customer satisfaction with above mentioned variables influence overall customer satisfaction on e-banking to a very significant extent. However, the customer satisfaction on security and trust had the largest impact on overall satisfaction on e-banking whereas value proposition had the least impact (Agrawal, Rastogi and Mehrotra, 2009).

Consumer adoption of a product or service involves not only to the initial acceptance but also to also its continued and sustained use over time. Accordingly, banks need to maximize the benefits of electronic channels. They have to identify the way such service is perceived by potential adopters and identify current stage of demand for such service base on usage and consumer acceptance which indicates concern should be given to customer satisfaction (Musiime and Ramadhan, 2011)

The banks should create accessible, convenient, timeliness, cost effective services with good network coverage, when using e-technology in the retail banking sector (Sudhalaksmi and Cinnadorai, 2014 and Malliga and Rewathy, 2016). They have done comparison between e-banking and traditional banking by considering several features of E-banking including speed, anytime everywhere banking, convenience, easy to use, less cost and prestigious concern. Data security and privacy as one of major concerns of customers in using green banking services (Sharma, Sharika and Gopal, 2015). The customer perceived fairness in price of different services offered by banks has direct or indirect impact on customer loyalty (Uddin and Akther, 2012).

security and privacy features have significant influence on customer satisfaction on internet banking provided a glimpse that convenience is one of the main focuses of customers of internet banking and it is positively related with customer satisfaction provided an insight that speed of the process has a positive significant effect on customer satisfaction on internet banking (Ling, Fern, Boon and Huat, 2015).

Environmental and Social Concern Features of Green Banking Initiatives With the rise of environmentalism; consumers are more interested in purchasing products and services which

create minimum environmental impact. Additionally, several studies concluded that environmental image can improve sales and competitive advantage of institutions while satisfying customers" green desires. It was clearly mentioned that green corporate image is one of important sources of customer satisfaction (Chang and Fong, 2010).

Customers today are highly aware and conscious of the harmful environmental impact of their banking operations. Green Banking initiatives are perceived by customers as a responsible step taken today that would go a long way in building a greener, sustainable future. Through green banking people can have more awareness about global warming and the ways in which the use of "greener" products and services benefits the environment (Hossain, Ahmad & Nisha, 2015).

Present study focuses on features of green initiatives not only from the aspect of technology, but also from the aspect of their green concern features. According to the available literature, a less attention has given to the aspect of environmental and social return of green initiatives, when studying customer satisfaction. Term green banking is a broader concept than just green, which is related with development of environment. An innovative banking product should save time, create less cost and should protect environment (Malliga and Rewathi, 2016). Argues that green banking is similar to an ordinary bank, where the aim of that ordinary bank is to operate its banking activities while protecting the environment. Thus, it will become an ethical bank or a sustainable bank. Greenbacks stimulate environmental and social responsibility (Rahman and Perves, 2016).

Thus, green banking protects environment, reduce resource wastage and covers corporate social responsibilities (Masukujjaman, Siwar, Mahmud, and Alam, 2010). Banks should maximize their social returns genuinely focusing the sustainable development of the economy. To move Ethiopian economies towards sustainable development requires transformation of investment from greenhouse gas, fossil fuel and natural resource intensive industries to more resource saving avenues. This is referred as green transformation.

Financial sector around the world has a tremendous potential to support green investments which is referred as green financing. Further the study suggests that financial institutions should understand the demand side of such green finance products which is arising from customer's side. Such an understanding will help institutions to design their green finance products.

Banks should maximize their social returns genuinely focusing the sustainable development of the economy (Relano, 2011). Global banks have formed a formal environmental and social risk (E&S) policy to administer lending activities. Those banks are signatory to equator principles (EP).

Further, those banks are in the practice of measuring social and economic impact of lending, minimizing paper consumption, reducing water and energy consumption, etc.

The same study has found that customer demand for environmental- friendly services is rapidly increasing and people expect public institutions to be more responsible in environmental concerns. Companies and institutions which efficiently use resources and energy will be rewarded by future markets. Hence the potential investors will move towards institutions who comply with pollution norms. Ultimately customers" perception will be affected by the level of environmental concern of such institutions (Sindhu, 2015).

In the middle of customer environmentalism's trend and with regard to the sever international environmental regulations, companies should not only involve themselves in green or environmental concepts of the future design or package of their product in order to extend product differentiation but they also should meet the environmental needs of customers in order to create customer loyalty together with competitive advantages (Salehi,Salek, Hojabri & Nikkheslat,2012). Thus, the present study is aimed at focusing on four aspects: green digital banking, green finance, Environmental and Social concern and awareness and intention to use green banking features as features of green banking initiatives, with the use of available literature.

2.2.8.2. Environmental and social concern features of green banking initiatives

With increasing environmental awareness, consumers are becoming more interested to use and purchasing products and services that have minimal negative effect on environment. Previous several studies indicate that environmental image enhances institutions sales performance and competitive advantage while meeting customers green desires. It was clearly mentioned that green corporate image is one of important sources of customer satisfaction (Chang and Fong, 2010). Modern banking customers are increasingly aware of the environmental consequence of banking activities.as a result, green banking initiatives are viewed as responsible action that contribute to long term environmental sustainability. furthermore, green banking practice helps raise public awareness of global environmental issue such as climate change demonstrate how the adoption of environmentally banking product and service can support environmental protection (Hossain, Ahmad & Nisha, 2015).

The Present study examines green initiatives from a broader perspective by considering not only technology aspect, but also environmental responsibility features when analyzing customer satisfaction. Green banking is a comprehensive concept that extends beyond environmental

protection alone and encompasses banking practices that support sustainable developments (Malliga and Rewathi, 2016). Green banking is similar to an ordinary bank, where the aim of that ordinary bank is to operate its banking activities while protecting the environment. Thus, it will become an ethical bank or a sustainable bank, also Greenback's stimulate environmental and social responsibility (Rahman and Perves, 2016). Thus, green banking protects environment, reduce resource wastage and covers corporate social responsibilities (Masukujjaman, Siwar, Mahmud, and Alam, 2010).

Banks should maximize their social returns genuinely focusing the sustainable development of the economy (Relano, 2011). To move Ethiopian economies towards sustainable development requires transformation of investment from greenhouse gas, fossil fuel and natural resource intensive industries to more resource saving avenues which referred as green transformation. Financial sector around the world has a tremendous potential to support green investments which is referred as green financing. Further the study suggests that financial institutions should understand the demand side of such green finance products which is arising from customer's side. Such an understanding will help institutions to design their green finance products (Kohn, 2012). Banks should maximize their social returns genuinely focusing the sustainable development of the economy (Relano, 2011). Banks have formed a formal environmental and social risk (E&S) policy to administer lending activities. Those banks are signatory to equator principles (EP). Further, those banks are in the practice of measuring social and economic impact of lending, minimizing paper consumption, reducing water and energy consumption, etc. (Sindhu, 2015). The same study has found that customer demand for environmental- friendly services is rapidly increasing and people expect public institutions to be more responsible in environmental concerns. Gupta's study mentioned that companies and institutions which efficiently use resources and energy will be rewarded by future markets. Hence the potential investors will move towards institutions who comply with pollution norms. Ultimately customers" perception will be affected by the level of environmental concern of such institutions (Sindhu, 2015).

In the context of growing customer environmental awareness and increasingly strict international environmental regulation, firms should go beyond incorporating green banking or environmentally friendly features in to product design or packaging solely for differentiation purposes. Instead, they must address customers environmental expectations more comprehensively in order to build customer loyalty and achieve sustainable competitive advantage (Asgharian, Salehi,Salek, Hojabri & Nikkheslat,2012). Thus, the present study is aimed at focusing on four initiatives of green

banking: green digital banking, green financing, environmental and social concern and customer awareness and intention to use, with the use of available literature.

2.2.9. Green banking initiative practice

Many developing countries have introduced mandatory regulations that require banks to adopt environmental and social policy and to report related activities to central banks and regulators. In some countries, such as Bangladesh and India central bank have also introduced lending requirements for sectors that are sensitive to climate change. Several developing countries have received support from international organization, including the international Finance Corporation (IFC) to developing green banking policy framework. According to (IFC), developing countries are at different stages of sustainable finance development, with countries such as Bangladesh, Brazil, China, Colombia, Indonesia, Mongolia, Nigeria and Vietnam being more advance due to their progress in implementing and reporting green banking practice (IFC 2018a, 2018b).

In contrast, most the developed countries have adopted an industry-driven, voluntary approach, mainly focusing on the disclosure of climate-related financial risks as part of supporting the Task Force on Climate Related financial risk (TCFD). As of 2018, governments in Belgium, France, Sweden, and the United Kingdom (U.K.) and financial regulators from Australia, Belgium, France, Japan, the Netherlands, Sweden and the U.K. have expressed support for the TCFD, which fully remains a voluntary initiative (TCFD 2018). Furthermore, France made the disclosure of climate-related financial information by listed firms, banks and credit providers as well as investors mandatory under its Energy Transition Law for Green Growth. Japan is another case of a developed country, as the Bank of Japan provides concessional loans to banks that lend to environment and energy businesses. However, even those mandatory schemes under implementation often lack details of the enforcement and thus create some ambiguity as to the extent to which authority within the government will take the responsibility of compliance- check and monitoring.

2.2.9.1. Green banking practice in Zemen Bank S.C

Zemen Bank S.C has recognized the growing importance of managing environmental risks in banking operations, especially due to climate change and resource scarcity. In line with green banking principles, the bank includes environmental factors in its credit risk assessments and lending decisions. Before approving loans for large-scale development projects, particularly in sensitive areas like construction, manufacturing, and agriculture, the bank conducts environmental

risk screenings. These assessments evaluate the potential negative impacts of proposed activities (International Finance Corporation [IFC], 2012). Risks can include deforestation, water pollution, excessive carbon emissions, and ecological damage. Projects that pose significant environmental threats are either modified to meet sustainable standards or denied funding. This risk management approach helps Zemen Bank avoid potential legal, financial, and reputation issues while supporting Ethiopia's environmental policy goals (National Bank of Ethiopia [NBE], 2020). Regarding sustainability, Zemen Bank has made notable efforts to reduce its environmental impact and promote green banking practices. It actively encourages paperless and digital banking through its mobile app, internet banking, and ATM services, which lowers paper use and energy consumption in branches. These initiatives align with global sustainability practices that aim to reduce the financial sector's carbon emissions (United Nations Environment Programmed Finance Initiative [UNEP FI], 2021).

The bank has also introduced green lending schemes to support environmentally responsible projects, such as renewable energy initiatives and eco-friendly businesses. By investing in green sectors, Zemen Bank not only promotes economic growth but also aids Ethiopia's Climate-Resilient Green Economy (CRGE) strategy (Federal Democratic Republic of Ethiopia, 2011). Through these practices, Zemen Bank positions itself as a sustainable financial institution that balances profit with environmental responsibility.

In addition to integrating green banking practices into its operations, Zemen Bank S.C. actively promotes environmental awareness among both employees and customers. The bank encourages the use of eco-friendly digital services like mobile and internet banking. It also organizes awareness campaigns to support a green mind set among its stakeholders. One notable initiative is the "Zemen Going Green!" campaign, where the bank has launched targeted programs to improve environmental consciousness. Through internal and public campaigns, the bank raises awareness about sustainability, responsible resource use, and the banking sector's role in environmental protection.

Zemen Bank also participates in national reforestation efforts as part of Ethiopia's Green Legacy Initiative. In collaboration with the Ethiopian Heritage Trust Association, the bank has contributed to large-scale tree planting programs on Mount Entoto and at Bole Lemi Industrial Park. Over the past four years, these efforts have resulted in a seedling survival rate of over 90%, which reflects both commitment and effective implementation (Zemen Bank, 2024). These initiatives show the bank's twofold approach to environmental stewardship advancing sustainable banking practices

and engaging directly in ecological restoration projects. By linking its corporate social responsibility (CSR) agenda with national environmental priorities, Zemen Bank illustrates the role that financial institutions can have in supporting broader sustainability and climate resilience goals.

2.2.9.2. Green Banking Services Offered by Zemen Bank S.C.

Internet Banking

Zemen Bank S.C eliminates paper statement and lower visit-based CO2 emissions by providing customers with 24/7 secure online banking service that enable them to access balance, e-statements, fund transfers, loan tracking, currency exchange information.

Mobile Banking App & SMS Banking

Zemen bank offer mobile banking that are accessible through iOS/Android, USSD (*844#), or SMS platforms. the service enables customers to perform a wide range of transaction include, balance inquiries, interbank transfers, bill payments, QR-code transfers, Z-Cash instant vouchers (usable at ATMs), card activation/deactivation, and even e-statement requests—delivering comprehensive services without branches.

ATM and Contact-less Card Services

Zemen Bank S.C issues ATM cards with secure PIN s and operates ATM s across Addis Ababa and selected location nationwide. Remarkably, "Z Tap" makes possible Ethiopia's first contactless MasterCard & VISA tap-to-pay functionality at POS terminals and ATM s, significantly lowering printed receipts. They cut down on paper wastage, transportation emissions, and consumption of resources characteristics of green operations while enhancing customer satisfaction through convenience and speed.

Prepaid Cards

The prepaid car tokens, which can be loaded with up to birr 50,000 for both individual and businesses, eliminate the logistical challenges associated with using physical cash at ATMs and point of Sales system

Zemen Platinum Travel Prepaid MasterCard

The first contact less prepaid travel card in Ethiopia that takes both USD and EUR. Offers safe, paperless international transaction that are appropriate for tourists. These cards enable eco-friendly

travel financial solutions, ease cross-border payments, and minimize currency handling.

Digital Payment Ecosystem

Zemen Bank S.C offer safe multi factor authentication for online card payments through a partnership with Netcetera, facilitating safe and easy e- commerce transactions. This service reduce paper- based transactions while promoting the use of digital commerce.

Green Agri Value Chain Loan Program

With support from the European Investment Bank (EIB), Zemen Bank S.C operate as financial intermediary by providing credit facilities of approximately EUR 20 million to small and medium sized enterprises (SMEs) and mid-sized companies, particularly in the area of agriculture, environmental sustainability, climate action. Through financing sustainable initiatives, the bank plays an active role in advancing key environmental goal while strengthening its green brand image. This contribution essential for increasing customer trust and customer satisfaction

ESG and Institutional Commitment to Sustainability ESG Unit & Strategy

Zemen Bank S.C has established a dedicated ESG unit and develop policies aligned with international best practices. Also, in collaboration with European Investment Bank (EIB) the bank is strengthening its capacity in green financing and including sustainability principles in to its core business operation.

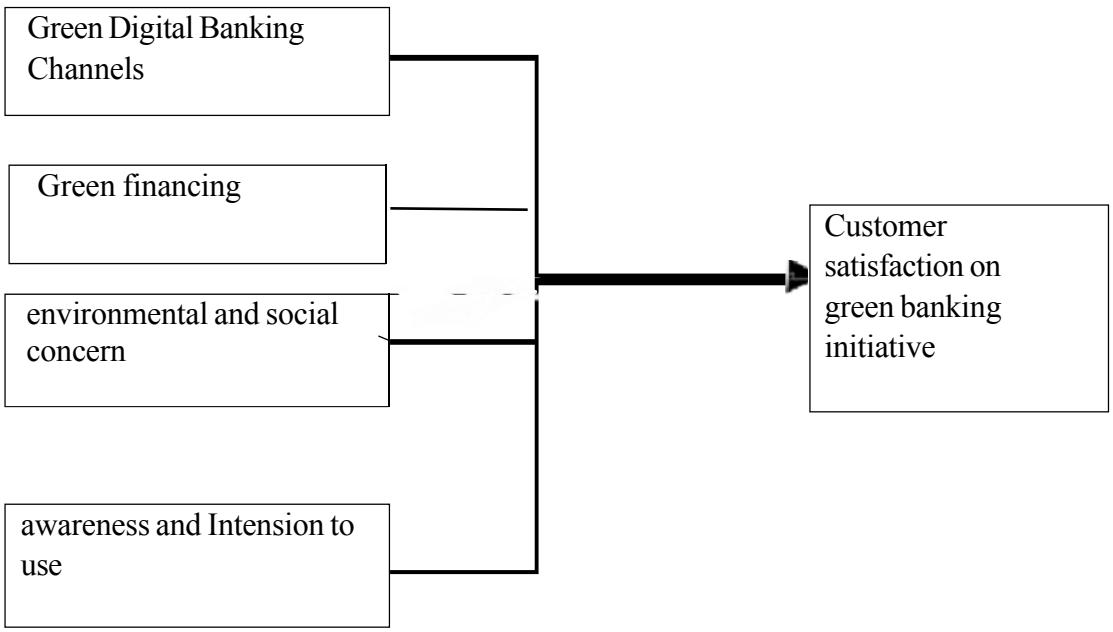
CSR Initiatives

By making sustainable donation of more than birr 16.2 million in 2024, Zemen Bank S.C demonstrated its strong commitment t social and environmental development. Significant effort to protect the environment was among the many communities' related initiatives that benefited from this substantial funding. The bank green reputation is built on these institutional commitments which also improve customer satisfaction and perceptions.

2.3. Conceptual Framework

The research model presented below was developed to guide the study, overall customer satisfaction with green banking initiatives is treated as the dependent variable. The model considers Green Digital Banking Channels, green financing, Customer awareness and Intention to use, Environmental & Social Concern as its main independent t variable.

Figure 1: Research Model



Hypothesis

H_1: Green digital banking channels has a significant positive effect on customer satisfaction at Zemen Bank S.C.

H_2: Green financing has a statistically significant positive effect on customer satisfaction at Zemen Bank S.C.

H_3: Customer concern for environment and social issues has a significant effect on customer satisfaction at Zemen bank S.C.

H_4: Customer awareness and intention to use has statistically significant positive effect on customer satisfaction at Zemen Bank S.C.

CHAPTER THREE

3. METHODOLOGY

3.1. Study Area

The study the ‘’effect of green banking initiative on customer satisfaction’’ conducted on Zemen bank Headquarter, Ras Abebe Aregay Street, Lideta Sub City, Addis Ababa, Ethiopia. The branch selected for the study is Olympia branch located inside Getu commercial center situated in one of the capital vibrant commercial centers, known for its traffic and diverse customer base which include both individual customer and business activity engaged in modern financial service.

The Olympia branch of Zemen bank S.C is selected for this study due to strategic urban location and availability of data and information on the initiatives. These initiatives include the use of digital banking platform, paperless transaction, green financing, eco-friendly, and their awareness intention to use green banking service.

The study analyzes the various green banking services offered by Zemen Bank S.C., focusing on its Head Office and Olympia Branch. Assess customer awareness and their intention to use these services. Specifically, the research examines the effect of green digital banking channels such as, paperless transactions, mobile banking, internet banking, and ATM cards on customer satisfaction. Additionally, evaluate the impact of green financing and explore how customers' environmental and social concerns influence their satisfaction with green banking services at Zemen Bank S.C

3.2. Target Population

The target populations of this study comprised employees and all individual customer of Zemen Bank S.C who receive banking service from the Olympia branch, located in Addis Ababa Getu commercial center.

3.3. Data Type

To obtain accurate and reliable data the study uses both primary and secondary data collection method.

3.3.1. Primary Data Collection

The main method of data collection is through a structured questionnaire distributed and interview designed to Zemen Bank customer at Olympia branch and employees of Zemen bank headquarter.

3.3.2. Secondary Data

Secondary data sourced from Zemen bank annual reports, internal policy, NBE green finance guidelines, and previous academic studies.

3.4. Sampling Techniques

The appropriate sampling technique for this study is probability and non-probability sampling, probability sampling technique to determine sample size from Olympia branch customers, a type of sampling technique all members have a known or equal chance of being selected. Non probability to determine the sample size from Zemen bank employees, where not every member of the population has a known and equal chance of being selected. Non-probability sampling is commonly used in explanatory and context -specific research aim to gather relevant data from respondents with a specific characteristics or experience (Creswell, 2014)

3.5. Sample Size Determination

Accordingly, purposive Sampling is use to select and ask employees, since employees are only supporting the study to provide insight, clarification and opinion. Employees who interact directly with customer or have experience with the service and products.

The sample size is determine based on practical consideration including time, resources and research objective. In non-probability sampling, statistical formulas for sample size are not strictly applied. The sample of 40 respondents is selected for studies using purposive Sampling, especially when the population is relatively homogeneous and the goal is to identify general trends rather than make statistical generalizations (Saunders et al., 2016).

A simple random sampling is used to select the customers. This method ensures every customer has an equal and known chance of being included in the sample, thereby minimizing selection bias and improving the representative of the findings.

3.5.1. Sample Size Formula (Finite Population Correction)

For the customer sample, the total population of Zemen bank S.C Olympia Branch customer identified as 1213. With 5% margin of error at a 95% confidence level.

Using the sample size formula for finite populations:

$$n = \frac{N \times Z_2 \times p \times (1-p)}{e^2 \times (N-1) + Z_2 \times p \times (1-p)}$$

Where:

- N=1213 (total number of employees)
- Z=1.96 (Z-score for 95% confidence level)
- p=0.5 (estimated proportion, maximum variability)
- e=0.05 (margin of error, 5%)

The calculated sample size is approximately 292customers.

3.6. Variable Considers in the Study

Dependent variables

Customer satisfaction toward green banking initiatives of Zemen bank S.C Head office, Olympia branch

Independent variable

- Social and demographic characteristics
- Green digital
- Green financing
- Awareness and intention to use
- Environmental and social concern feature

3.7. Method of Analysis

3.7.1. Descriptive Statistics

Descriptive statistics summarize and interpret some of the properties of a set of data (sample) but do not infer the properties of the population from which the sample was drawn and the Frequencies entails the number of counts found under each category in relation with descriptive output. So, that in this part we can use charts to express the descriptive part.

3.7.2. Inferential Statistics

Among inferential statistics logistic regression is used to determine whether there is a significance relationship in the independent variables and dependent variable.

3.7.3. Multiple Linear Regression

Multiple regression analysis was used to assess how different dimensions of green banking initiatives influence overall customer satisfaction with green banking initiatives. N As part of the analysis diagnostic test is conducted to assess correlation among variables collinearity statistics (Tolerance and Variance Inflation Factor – VIF), as well as to check the assumptions of normality, linearity, homoscedasticity, and the presence of outliner. A regression model is then developed, and hypothesis testing is carried out at a 5% significance level ($\alpha = 0.05$) to determine the statistical positively significance of the predictor variables.

Multiple linear regression formula

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\varepsilon$$

Whereas: - Y: Customer Satisfaction

X_1: Green Digital Banking

X_2: Green Financing

X_3: Environmental and Social Concern

X_4: Awareness and intention to use Green Banking

ε: Error term

CHAPTER 4

4.1. DATA ANALYSIS AND INTERPRETATION

In this chapter the data collected from the respondents were analyzed and interpreted using different analytical strategies. Statistical procedures were carried out using SPSS version 23.

Descriptive statistics (frequency, percentage, mean and standard deviation) are used to analysis the demo-graphical and respondent perception of green digital banking, green financing, environmental and social concern, and customer awareness and intention to use green banking service. Reliability analysis using Cronbach's alpha is conducted to insure the internal consistency of measurement items. Pearson correlation analysis is employed to examine direction and strength of the relationship between green banking initiative and customer satisfaction.

Prior to hypothesis testing, multiple regression assumptions including normality, linearity, homoscedastic and multicollinearity are assessed to confirm the suitability of the data for regression analysis. Finally, multiple linear regression analysis is applied to directly test hypotheses.

The inclusion of both bank employees and customer in this study done deliberately. Since green banking initiatives involve two key group customer and employees, who design and implement green policies and procedures. So, they can be used for supporting the study to provide insight, clarification and opinion. Although customer satisfaction is traditionally measured using customer responses, the inclusion is justified on the ground that employees at Zemen Bank S.C are active user of the bank digital and green banking service and possess direct experiential knowledge of paper less transaction, green banking products and sustainability initiatives. This inclusion enhances the depth of insight into green banking initiative of Zemen Bank S.C.

The primary unit of analysis in this study is individual service user of green banking service However, customer satisfaction and awareness and intention to use were analyzed with careful consideration.

One potential limitation of this study is the mixing of employees and customers in the respondent sample without clear segmentation. Combining these two groups could introduce bias, as employees and customers may have different perception on the subject of customer satisfaction.

Future research would benefit from separating the employee response from the customer response to analyze each group on its own. This would allow for a more accurate understanding of customer satisfaction by isolating potential biases introduced by employees.

A total of 332 questionnaires were distributed to respondent out of which 306 questionnaires were filled up and returned back making the response rate 92.1% percent. The study participant represents diverse demographic background. The below Table present a summary of the respondent's demographic characteristics.

Table 1: demography characteristics of participants

Variable	Category	frequency	Valid percent (%)
Gender	Male	166	54.2
	Female	140	45.8
Age	18–25	55	18
	26–35	159	52
	36–45	69	22.5
	46–55	12	3.9
	56+	11	3.6
Education	High School	31	10.1
	Diploma	49	16
	Bachelor's Degree	118	38.6
	Master's Degree	103	33.7
	PhD	5	1.6
Occupation	Student	31	10.1
	Private Sector	143	46.7
	Government Employee	55	18
	Self-employed	56	18.3
	Other	21	6.9
Monthly Income	< 3000 ETB	29	9.5
	3000–6000 ETB	29	9.5
	6001–10,000 ETB	61	19.9
	>10,000 ETB	187	61.1

Source: Own survey, Jan 2026.

Table 1 presents the demographic characteristics of the respondents regarding gender distribution. Male respondents accounted 166 (54.2%) while female respondents constituted 140(45.85), and most of them are with age group of 26-35 years 159 (52%), followed by 36-45 years 69(22.5%). respondent age 18-25 represents 55(185), while older age group 46-55, 12(3.9) and 56 and above, 11(3.6) accounted for a smaller proportion of the sample.

Education background, the large portion of the respondent hold a bachelor degree 118 (38.6%) and Masters holding 103(33.7%). Respondent with diploma qualification accounted for 49(16%), while High school graduates represent 31(10.1%) a small portion of respondent held PhD 5(91.6)

In term of occupation private sector employs 143(46.7%) and 56 (18.3%) self-employee and 55 (18%) government employee. Student accounted for 31(10.1%), while respondent classified under other occupation represented 21(6.9%) of the sample.

Regarding income the frequency shows that 61(19.9 %) respondents earn between 6,001 and 10,000 ETB while 187(61.1%) of respondent earn more than 10,000 ETB, while those earn below 3000 ETB and 3000-6000 ETB each accounted for 29(9.5%).

The demographic finding indicates a diverse sample in term of gender, age, education, occupation and income, which provide an adequate base for subsequent statistical analysis without making behavioral inferences.

4.2. Descriptive Statistics

Table 2: Descriptive Statistics major study variables

	N	Mean	Std. Deviation	Min	Max
GDB	306	4.0991	.89604	1.00	5.00
GF	306	4.0806	.81249	1.00	5.00
ESC	306	4.2625	.75270	1.00	5.00
AITU	306	3.6830	.97103	1.00	5.00
CS	306	4.0087	.89561	1.00	5.00

Source: Own survey, Jan 2026.

Table 2 present the descriptive statistics of the study based on response from 306 customer and Employees measured using five-point Likert scale.

The Result indicate that Green digital Banking had mean value of 4.10 (SD=0.90) and green financing has a mean score of 4.08(SD=0.81), showing high level of acceptance, reflecting growing appreciation of paperless transaction and environmentally oriented green financial products. Environmental and social concern with high mean value of 4.26(SD=0.75), suggesting that respondents place strong important on environmental and social concern responsible banking. However, Awareness and intension to use green banking record a lowest mean value of 3.68(SD=0.97), indicating a gap between positive attitude and readiness to engage with green banking service. Suggest that limited awareness, insufficient information may hide active adaptation of green banking initiatives. Within the Ethiopian banking context, where green banking initiatives are relatively recent this finding highlight the need for enhancing customer education and communication about green banking. Customer satisfaction has mean value of 4.01(SD=0.90), indicating that green banking initiatives contribute positively to the banking experience.

Overall, the mean value suggests the respondent's perception of green banking initiatives and customer satisfaction are generally positive. However, these descriptive results are used to identify trends and perception patterns.

4.3. Reliability test

Table 3: Cronbach's Alpha Test

Statements	No items	Valid	Cronbach's Alpha
Green Digital Banking Services (e.g., mobile, internet, paperless transactions)	3	306	0.780
Green Financing (e.g., loans for echo-projects, green mortgages)	3	306	0.751
Environmental and Social Concern	3	306	0.791
Customer Awareness and Intention to Use	3	306	0.712
Customer Satisfaction	3	306	0.835

Source: Own survey, Jan 2026.

Cronbach's Alpha was used to evaluate the internal consistency of the measurement scales. All constructs recorded Alpha value exceeding the recommended threshold of 0.70, indicating strong internal consistency and acceptable reliability. Customer satisfaction shows high reliability with Alpha value (0.835), while Customer Awareness and Intention to Use lowest acceptable reliability (0.712). Each construct was measured using three items adapted from prior validated studies. Therefore, the scale is statistically reliable for further analysis

4.4. Correlation Analysis

Correlation analysis is a statistical technique used to measure the strength and direction of the relationship between two variables. It indicates the extent to which changes in one variable are associated with changed in another and it commonly expressed using a correlation coefficient that ranges from -1 to +1. A positive coefficient signifies that the variable moves in the same direction, while a negative coefficient indicates an inverse relationship. Correlation analysis is widely applied in social and business researches to examine associations among variable prior to conducting regression analysis (Pallant, 2020; Hair et. 2019).

Table 4: Correlation analysis

	GDB	**GF**	**ESC**	**CAI**	**CS**
GDB	1				
GF	.647**	1			
ESC	.565**	.701**	1		
CAI	.493**	.833**	.421**	1	
CS	.593**	.616**	.552**	.627**	1

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

Source: Own survey, Jan 2026.

Table 4 indicates that all study variables are positively and significantly correlated, the relative high correlation between green financing and customer awareness and intention to use ($r=0.833$, $p<0.01$). Green financing initiatives such as (green mortgage, financing environmental projects) accompanied with customer intention and awareness. Therefore, the strongest correlation reflects a complementary and reinforcing relationships rather than duplication of constructs.

4.5. Assumption

Multicollinearity

Multicollinearity occurs when two or more independent variables in regression models are highly correlated, making it difficult to distinguish their individual effect on the dependent variable. The presence of multicollinearity can lead to unstable regression coefficients and inflated standard errors, thereby reducing the reliability of statistical inference. multicollinearity is commonly assessed using Variable inflation factors (VIF) and tolerance statistics. A VIF value greater than 10 (or, more conservatively, greater than 5) indicates a potential multicollinearity problem, while tolerance value below 0.10 (or 0.20) suggest series collinearity among predictors (Gujarati & Porter, 2009; Hair et al., 2019)

Table 5: Multicollinearity (VIF) Test

Independent variable	TOLERANCEY	VIF
GDB	0.557	1.795
GF	0.145	6.881
ESC	0.409	2.446
AITU	0.254	3.943

Source: Own survey, Jan 2026.

From the above Table, the multicollinearity test of the independent variables indicates that the Regression model does not suffer from multicollinearity problem all tolerance value is above the minimum 0.02 and the Variable inflation factors (VIP) values for all predictors fall well below the critical value 10, shows that none of the independent variables are highly with each other.

Green digital banking (GDB) shows a tolerance value of (0.557) and VIF value (1.795), indicate a low level of shared variance with other predictors and a strong independent contribution of the model. Green financing (GF) shows lowest tolerance value (0.145) and highest VIF (6.811), suggest that relatively higher degree of correlation with other green banking dimensions, particularly customer awareness and intention to use which is consistent with strong bivariate correlation observed earlier. Environmental and social concern (ESC) also shows acceptable

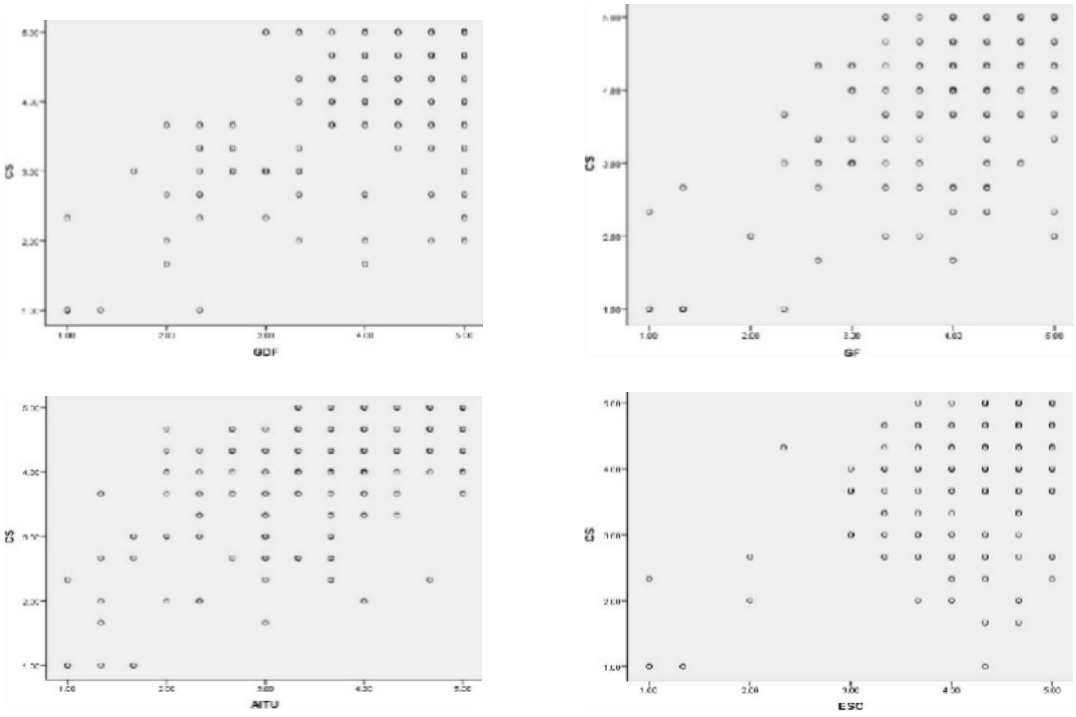
multicollinearity level with tolerance (0.409) and VIF (2.446). Awareness and intention to use (AITU) show moderate multicollinearity with tolerance (0.254) and VIF (3.943).

Overall, the multicollinearity diagnostic shows the model is sufficiently robust for inferential analysis

4.5.1. Linearity and Homoscedasticity test

Linearity model assumes a straight-line relationship between the predictor and the outcome (Field, 2018; Gujarati & Porter, 2009) and homoscedastic means the residual have equal variance, meaning they spread evenly across the regression line. (Wooldridge, 2016; Field, 2018)

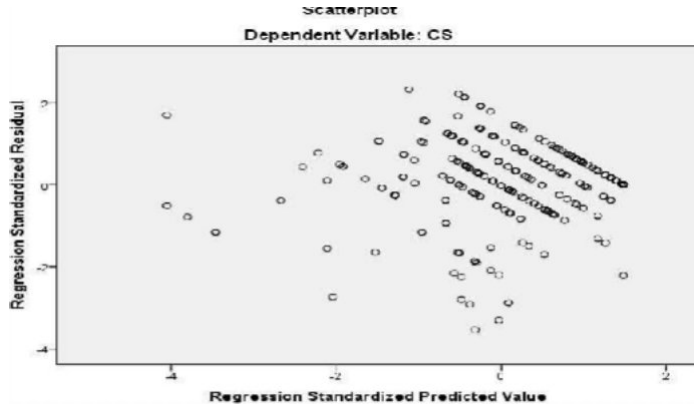
Figure 2: Scatter-plot for linearity test



Source: Own survey, Jan 2026 (SPSS output).

The above scatter-plots figure shows the relationship between the independent variables and the dependent variable. Across all four plots the data points show relatively consistence across the range of each independent variable. There is no evident funneling or narrowing pattern in the dispersion of residuals, indicating that the error variance remains approximately constant. This support the efficiency of the estimated regression coefficients and suggests that standard errors are not significantly biased due to heteroscedasticity.

Figure 3: Homoscedasticity Test



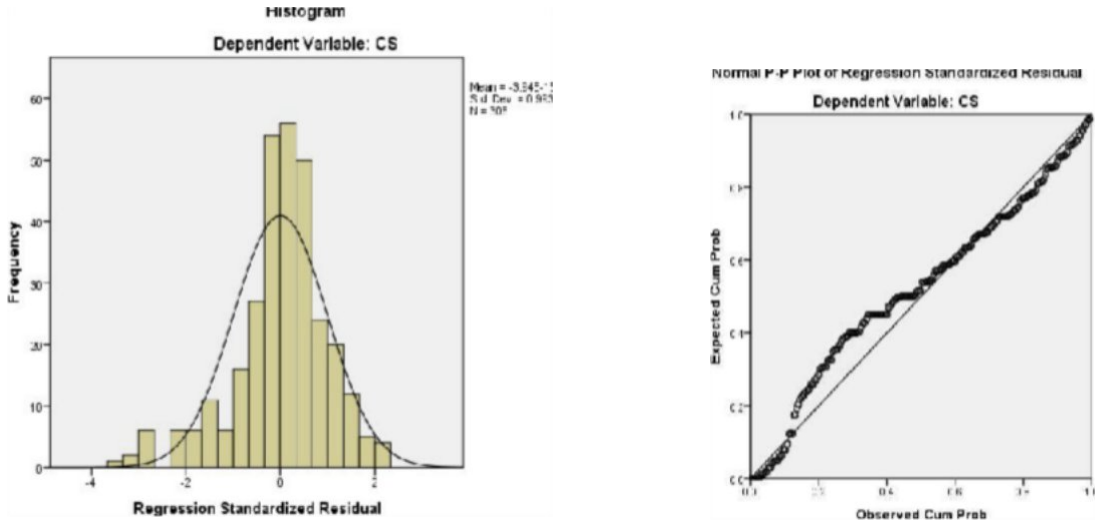
Source: own survey, Jan 2026(SPSS output)

From the above figure the residual appears randomly scattered and no clear curve this indicate that the relationship between predictor and the dependent variable in linear.in the case of homoscedasticity residual shows constant variance across predicted values which satisfied the assumption. This implies the model standard errors are likely unbiased and enhancing confidence in hypothesis testing.

4.5.2. Normality Test

One of the assumptions of linear regression is that the residual follows a normal distribution. this assumption can be assessed by examining the histogram of standardized residuals.

Figure 4: Normality Test (Histogram and P-plot)



Source: On survey, Jan 2026(SPSS output)

From the above figure residuals are approximately normally distributed, with mean value clustering around zero and gradually decrease toward the tails with normal curve and now skewness, and standard deviation near one. The P-P plot show that most data points closely follow the diagonal reference line and the residual do not deviate from normality. This show that the estimated regression coefficient and associated significance test are reliable. Minor deviation at the tail is observable, which indicate the present of unobserved heterogeneity among customers

4.6. Regression Result

Table 6: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.744[a]	.554	.548	.60230	1.636

a. Predictors: (Constant), GDF, GF, ESC, AITU

b. Dependent variable: CS

Source: Own survey, Jan 2026 (SPSS output).

The model demonstrates the extent to which variation in the dependent variable, customer satisfaction, is accounted by the predictor variables, green digital banking, green financing, environmental and social concern and awareness and intention to use. The R Square value of 55.4% indicates that these factors collectively explain 55.4% of the variation in customer satisfaction**.**

Also, Durbin Watson value for regression model is 1.636 which is close to the ideal value 2. This indicate that there is no serious autocorrelation among the residual and autocorrelation is not a major concern in the model.

ANOVA TABLE

Table 7: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	135.451	4	33.863	93.345	.000[b]
Residual	109.193	301	.363		
Total	244.643	305			

Source: own survey, Jan 2026(SPSS output)

From the above table F statistics value is 93.345 and p value 0.000 which indicate the model is significant since p value<0.001, independent variables have statically significant relationship with the independent variable.

Regression Result (Coefficients)

Table 8: Regression Results and Coefficients

Model constant	Unstandardized Coefficients		Standardized Coefficients	Sig
	B	Std. Error	Beta	
Constant	.385	.210		.067
GDB	.312	.552	.312	.000
GF	.388	.111	.352	.001
ESC	.433	.072	.364	.000
AITU	.566	.071	.613	.000

Coefficients[a]

Source: Own survey, Jan 2026 (SPSS output).

The multiple regression analyzes the effect of green banking initiatives on customer satisfaction. The result show that green digital banking has a positive and statistically significant effect on customer satisfaction (β=0.312 and p <0.05). This indicate that more favorable perception of green digital banking is associated with higher customer satisfaction, holding other variable constant. Which implies Zemen Bank S.C should continue investing in environmentally friendly digital Banking and paperless service.

Green financing shows positive and statically significant effect on customer satisfaction (β =0.388, p < 0.05) which suggest that customer response positively to bank that support environmentally responsible lending and investment activities. Expanding green loan products and clearly communicate can enhance customer satisfaction and strength the bank green image

Environmentally and social concern also shows positive and significant effect on customer satisfaction (β=0.433, p < 0.05), this indicate customers tend to be more satisfied with a bank that obey its environmental. Zemen Bank S.C should strength and communicate their environmental protection and social responsibility initiatives, as these efforts enhance customer trust and satisfaction and social responsibility.

Also, customer awareness and intention to use is strongest positive prediction of customer satisfaction with ($\beta = 0.566$ and $p < 0.05$). This suggests that customer who are more aware of green banking service and intend to use them tend to report higher satisfaction.

The regression model can be represented as:

Customer Satisfaction = 0 .385+0.312**(***Green Digital Banking)* +0.388**(***Green Financing)* +0.433**(***Environmental and Social Concern***)** +0.566**(***Customer Awareness and Intention to Use)*

HYPOTHESIS TESTING

Table 9: Hypothesis Testing

Hypothesis	Coefficient and significance level	Decision
H0: Green digital banking channels has no significant positive effect on customer satisfaction. **H1**: Green digital banking channels has a significant positive effect on customer satisfaction.	β =0.312, P =0.000 (P <0.05)	H0 is rejected H1 is accepted
H0: Green financing has no statistically significant positive effect on customer satisfaction **H1**: Green financing g has a statistically significant positive effect on customer satisfaction.	β =0.388, P =0.001 (P <0.05)	H0 is rejected H1 is accepted
H0: Customer concern for environment and social issues has no significant effect on customer satisfaction. **H1**: Customer concern for environment and social issues has a significant effect on customer satisfaction.	β =0.433, P=0.000(p<0.05)	H0 is rejected H1 is accepted
H0: Customer awareness and intention to use has no statistically significant positive effect on customer Satisfaction **H1**: Customer awareness and intention to use has statistically significant positive effect on customer Satisfaction	β=0.566, P=0.000(p<0.05)	H0 is rejected H1 is accepted

CHAPTER 5

SUMMARY, CONCLUTION AND RECOMMENDATION

Summary

The objective of this study is to examine the effect of green banking initiative on customer satisfaction at Zemen Bank S.C. the study sought to examine the relationship between green banking initiatives and customer satisfaction, with particular emphasis on four key determinants: green digital banking, green financing, environmental and social concern and customer awareness and intention to use.

In line with the first objective, which aim to identify the green banking service offered by the bank S.C, the finding revealed that the bank has implement a variety of green initiative, particularly in the area of digital banking. These include paperless transaction, mobile and internet banking service, ATM usage, E –statements, SMS, and digital on boarding service through e-KYC. This confirms that Zemen Bank has made meaningful program toward operational greening.

Green digital banking channels, including paperless transactions, mobile banking, internet banking

, and ATM service, were find to have significant positive effect on customer satisfaction. This show that customer highly value convenient, efficient and environmentally friendly digital service.

Green financing shows positive and statically significant effect on customer satisfaction which suggest that customer response positively to bank that support environmentally responsible lending and investment activities.

Environment and social concern also had a significant positive influence on customer satisfaction, suggesting the customer who are more environmentally conscious tend to appreciate and support green banking practices.

Customer awareness and intention to use green banking service emerged as one of the strongest predictors of customer satisfaction, showing the importance of effective communication and awareness creation.

Overall, the regression result reveal that green digital banking, green financing, environmental and social concerns, as well as customer awareness and intention to use have statistically significant effect on customer satisfaction.

Conclusion

The study examines the effect of green banking initiatives on customer satisfaction at Zemen Bank

S.C Head office, Olympia Branch, focus on green digital banking, green financing, environmental and social concern and customer awareness and intention to use green banking service of Zemen Bank S.C. The finding shows that green banking initiatives pay a significant role in understanding customer satisfaction. Also, the effect differs in each parameter. Green digital banking had a significant positive effect on customer satisfaction. Services such as paperless transaction, mobile banking, internet banking and ATM use improve convenience, efficiency. Indicating customers appreciate Zemen Bank S.C digital and paper less banking service.

Furthermore, the study find green financing has statistically significant positive effect on customer satisfaction. This suggest that customer s perceive Zemen Bank's environmentally responsible financial practice as a sign of ethical commitment and long-term sustainability. Environmental and social concern also positively affect customer satisfaction. Shows that customers value bank that help and take responsibility toward environmental protection and community welfare.

Similarly, customer awareness and intention to use green banking service significantly influence satisfaction, showing the important of informing customer about green initiatives and encourage their adaptation.

Generally, the study concludes strengthening digital banking and paperless transaction, enhancing engagement in environmental and social cause, improving customer awareness are essential for maximizing customer satisfaction wile more effort improving the green financing service of the bank and more effort on developing and promoting green financing offerings of Zemen Bank S.C.

Recommendation

Based on the finding and conclusion of the study, which revel that green banking initiatives have a positive and statistically significant effect on customer satisfaction at Zemen Bank S.C Head office, Olympia Branch. The following recommendation are listed derived directly from the empirical result and are intended to support managerial decision making and policy formulation.

Strategic recommendations

The study found that green banking initiatives significantly enhance customer satisfaction, Therefore Zemen Bank S.C recommended to integrate green banking into its core corporate strategy. Environmental sustainability should be reflected in the bank mission and strategic objectives to ensure consistency and sustainability of green banking initiatives.

In addition, the result indicate that green financing has a positive and significant effect on customer satisfaction. Therefore, the bank should expand its green financing activities by increasing credit allocating to environmentally friendly projects such as renewable energy, sustainable agriculture, and green mortgages. This strategic focus will strength the bank green image and customer satisfaction.

Finally, Zemen Bank S.C should align its green banking strategy with national and international sustainability framework. Such alignment will enhance institutional credibility and long-term competitiveness.

Operational Recommendation

The finding indicate that green banking channels exert a significant and positive influence on customer satisfaction. I response, Zemen Bank S.C should consistently enhance the functionality, reliability, and security of its digital banking platforms. Improving system performance and user-friendlies will encourage wider encourage will adoption and lead to higher level of customer satisfaction.

In addition, the bank should further promote paperless banking practices across both internal operations and customer service activities. Greate reliance on electronic statement, digital records, and online service delivery can substantially reduce paper consumption while simultaneously improving operational efficiency.

The result also reveals that environmental and social concerns play an important role in shaping

customer satisfaction. Accordingly, Zemen Bank S.C. should reinforce its environmental and social risk assessment mechanisms within its lending operations to ensure that funded projects align with recognizes sustainability and environmental protection standards.

Awareness and communication Recommendation

The study reveals the Customer awareness and intension to use green banking service have a strong positive effect on customer satisfaction. Therefore, Zemen Bank S.C should place greater emphasis on strengthening customer awareness by continuous communication programs. Information about green banking products and their benefit through digital platform, branch notices, and customer service interactions.

Finally, Zemen Bank S.C should ensure open and transparent communication regarding its green banking activities achievements. Such transparency will help build customer trust, enhance confidence in the bank sustainability efforts, and reinforce its long-term commitment to environmentally responsible banking practices.

Theoretical contribution

The finding of this study extends customer satisfaction theory by demonstrating environmentally oriented banking practice having significantly influence on customer satisfaction, this suggest that customer now a days evaluation is not only by efficiency but also by environmental and social consideration.

In addition, the study reinforces the Technology Acceptance Model (TAM) by confirming green digital banking channels, such as mobile banking, internet banking, ATM and paperless transaction positively affect customer satisfaction. This show that perceived usefulness and ease of use of green banking service enhance customer satisfaction.

Furthermore, the result provides empirical support for the Theory of Planned Behavior (TPB) by showing that customer awareness and intention to use green service and environmental and social concern significantly influence satisfaction level. These finding highlight the importance of attitude and behavioral factors shaping customer response to green banking initiatives.

Finally, the study contributed to Stakeholder Theory by establishing that green financing enhances customer satisfaction. Suggesting that customers value banks that balance financial performance with environmental and social responsibility.

Policy implication

The finding of this study offers important policy implication for bank management and financial sector regulator in Ethiopia. The positive significant effect of green banking initiatives on customer satisfaction the need for commercial banks to develop policies that integrate environmental sustainability in to core banking operation and service delivery.

The significant role of green financing suggests that National bank of Ethiopia should consider issuing clear directive or framework to encourage environmentally lending practice across the banking sector.

In addition, the effect of customer awareness and intention to use on customer satisfaction shows banks should collaborate to implement awareness creating programs and improve customer understanding of green banking initiatives, product, service and their benefit.

Limitation and future research direction

This study examines the effect of green banking initiatives on customer satisfaction in the case of Zemen Bank S.C Head office, Olympia branch has serval limitation that should be consider when interpreting its finding. First, the study limited to Zemen Bank S.C Head office and Olympia Branch in Addis Ababa. The result may not be fully generalized to other branch of the bank and other commercial banks operating in different region of Ethiopia.

Second, the study employed a cross-sectional research design, which capture customer perception at single point in time. This limits the ability to measure change in customer satisfaction and green banking adaptation over time. Third, the study relied on self-reported questionnaire data, which may be subject to response bias.

In view of these limitation, future research is recommended to include a broader sample converting multiple banks and region to improve generalization, longitudinal studies are also suggested to assess trends and long-term effect of green banking initiatives on customer satisfaction.

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Appendix

Appendix: Data Collection Instrument

ADDIS ABABA UNIVERSITY

College of Business and Economics

Department of Accounting and Finance

Questionnaire

On the Effect of Green Banking Initiatives on Customer Satisfaction: The Case of Zemen Bank S.C Head Office.

Introduction

Dear Respondent,

I am a Master's student in Business Administration at Addis Ababa University conducting a study entitled *"The Effect of Green Banking Initiatives on Customer Satisfaction: The Case of Zemen Bank S.C Head office."* This questionnaire is prepared to collect your views and experiences on green banking services. The information you provide used only for academic purposes and kept strictly confidential.

Thank you for your cooperation.

Section A: Demographic Information

Please tick (✔) the appropriate answer.

1. **Gender**

   ☐ Male ☐ Female

2. **Age Group**

   ☐ 18–25 ☐ 26–35 ☐ 36–45 ☐ 46–55 ☐ 56+

3. **Educational Level**

   ☐ High School ☐ Diploma ☐ Bachelor's ☐ Master's ☐ PhD

4. **Occupation**

   ☐ Student ☐ Private Sector ☐ Government Employee ☐ Self-employed ☐ Other: _____

5. **Monthly Income**

   ☐ < 3,000 ETB ☐ 3,000–6,000 ETB ☐ 6,001–10,000 ETB ☐ > 10,000 ETB

6. **Do you use digital banking services?**

   ☐ Yes ☐ No

7. **How often do you use green banking services (e.g., paperless, mobile/internet banking)?**

   ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Section B: Independent Variables and Dependent Variable

Please indicate your level of agreement with the following statements.

Use the scale:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Table 1.

No.	Statement	1	2	3	4	5
	I. *Green Digital Banking Services* ***(e.g., mobile, internet, paperless transactions)***					
1	I favor digital banking channels rather than visiting a physical branch					
2	Digital banking services are fast and convenient.					
3	Paperless transactions reduce environmental harm.					
	II. Green Financing *(e.g., loans for eco-projects, green mortgages)*	1	2	3	4	5
4	My bank offers green financing options.					
5	I am interested in using green loans or eco-financing.					
6	Green financing helps improve sustainability.					
	III. Environmental and Social Concern	1	2	3	4	5
7	I prefer to use banks that care for the environment.					
8	My bank is contributing to environmental protection.					
9	I am more satisfied with banks that support social causes.					

	IV. Customer Awareness and Intention to Use	1	2	3	4	5
10	I am aware of the green banking services offered by my bank.					
11	I plane to increase my use of green banking service in the future					
12	My bank provides sufficient information about green banking.					
	V. Customer Satisfaction (Dependent Variable)	1	2	3	4	5
13	I am satisfied with the green banking services of my bank.					
14	Green banking has improved my overall banking experience.					
15	I would recommend my bank's green banking services to others.					

End of Questionnaire

Thank you for your valuable time and responses!