ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGMNET

The Effects of Service Innovation on Customer Satisfaction and Loyalty and; The Moderating role of customer income: evidence from The Ethiopian banking industry.

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JUNE, 2023

ADDIS ABABA, ETHIOPIA

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A Thesis Submitted to the Department of Management, College of Business and Economics, Addis Ababa University for the requirement and a partial fulfillment of master's in business administration.

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Declaration

I, **Abebe Desta Tedla**, the under signed, declare that this thesis entitled: "**The effects of service innovation on customer satisfaction and loyalty; the moderating role customer income: evidence from The Ethiopian banking industry.**" is my original work. I have undertaken the research work independently with the guidance and support of the research advisor. This study has not been submitted for any degree or diploma program in this or any other institutions and that all sources of materials used for the thesis has been duly acknowledged.

Declared by

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Name	Signature	Date

Statement of Certification

This is to certify that the thesis prepared by **Abebe Desta Tedla**, entitled "**The effects of service innovation on customer satisfaction and loyalty; the moderating role customer income: evidence from The Ethiopian banking industry.**" and submitted in partial fulfillment of the requirements for MSC Degree in management with the regulations of the university and meets the accepted standard with respect to originality and quality. School of Postgraduate Studies

Signed by the Examining Committee:

External examiner: ____________________ Signature: ____________Date: __________.

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Abstract

One of the industries receiving a major attention in the field of innovation research is the service sector, which is among the rapidly growing in the world economy and makes up majority of a country's GDP and the banking sector is a prime example of service industry in Ethiopia with intense competition in. this research will help to improve our understanding of the relationships between service innovation, Customer satisfaction and loyalty and; to uncover the effect of Customer income on this relationship. It will also provide Bank managers' useful tools to retain important Customers. The objective of this research paper is to study the effects of innovation on customer satisfaction and customer loyalty in Ethiopian banking industry; further more to determine the contribution of customer income in the relationship between service innovation, customer satisfaction and customer loyalty. This research used quantitative research approach and explanatory research design and; it distributed 384 and collected primary data from 350 customers through structured questionnaires acquired from previously validated literatures using 5 scales likert. The data is processed and analyzed though multivariate regression mediation moderation analysis of SPSS macro process model 8 to investigate how customer income impacts the relationships. The Findings of the study revealed that in the Ethiopian banking industry Customer satisfaction and loyalty was determined by service innovation. Furthermore, the study established that Customer Income strengthen the direct-effect, indirect-effects of service innovation on Customer loyalty mediated by Customer Satisfaction positively and significantly. More importantly, the interaction effect of the direct and indirect-effect of service innovation on Customer loyalty was positively and significantly strengthened by Customer income supported claims that demographic characteristics such as income, age and gender moderated the Customer satisfaction and loyalty relationships. Besides it also supported the claims increasing customer income increases brand awareness.

Key Words: Customer Income, Service innovation, Customer loyalty, Customer Satisfaction

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ACRONYMS

CI customer income

SI service innovation

CS customer satisfaction

CL customer loyalty

NCA national communication association

OECD Organization for Economic Co-operation and Development (OECD)

ECSA Ethiopian central statistical agency

CHAPTER ONE

1. INTRODUCTION

1.1. Introduction

The introductory chapter is divided in to the background of the study, the statement of the problem, the objective of the research, the research questions, and the findings of the study as well as the Organization of the thesis document.

Service industry covers a bigger share of the nation's economy in both developed and developing economy (Tidd & Bessant, 2020) and is receiving a great attention on the innovation research. An increasingly complicated, fiercely competitive, and dynamic business environment has been created by the expansion of market participants in the banking industry (Kumar & Gulati, 2009) and obtaining customer satisfaction & loyalty is a difficult task. This competitive pressure drives businesses to keep looking for and providing new goods and services in order to enhance the Services and products they deliver and; innovation is to be considered to satisfy and retain customers as an inevitable importance for any firm's survival.

Customer loyalty is critical for businesses, especially banks. Companies' expenses to acquire new consumers will be higher than their costs to keep existing customers. Furthermore, clients that are loyal to a company's brand or products tend to spend more than new customers (Chiu et al., 2009). As a result, banks must better understand their customers' wants and aspirations in order to provide products that please them and keep them loyal. Therefore, researcher seeks to establish the effects of Service innovation on Customer loyalty and satisfaction and; the contribution of customer income in the relationship in the Ethiopian Banking industry.

1.2. The Background of the Study

Service industry covers a bigger share of the nation's economy in both developed and developing economy (Tidd & Bessant, 2020). It covers the lion a bigger share of the country's economy in both developed and developing economy (Tidd & Bessant, 2020) however recently, it has seen an increase in competitiveness (Hosseini & Saravi-Moghadam, 2017). One of the Service sectors most impacted is the banking industry (Sardana & Bajpai, 2020). Banks play a critical role in enhancing economic effectiveness and efficiency by directing cash from the resources excess units to those with greater fruitful investment prospects. An increasingly complicated, fiercely competitive, and dynamic business environment has been created by the expansion of market participants in the banking industry (Kumar & Gulati, 2009). In a very intense competitive banking market which companies offer similar Services, obtaining customer satisfaction & loyalty is a difficult task. With the increasing competitiveness and technological enhancements; marketing in banks, the need to make faster & better market planning decisions is greater than ever. Companies must be able to establish positive connections to satisfy and retain their consumers and comprehend their demands in addition to making the most of their human resources (Bontis et al., 2011).

According to (Shqipe et al., 2013; Audretsch, 1995); Elena & Marsili, 2006); this competitive pressure drives businesses to keep looking for and providing new goods and Services in order to enhance the Services and products they deliver and; innovation is to be considered to satisfy and retain customers as an inevitable importance for any firm's survival. (Nguyen et al., 2014; Campanella et al., 2017) discovered that using innovations in financial services is an excellent strategy to improve service delivery and allow banks to function more effectively and maintain a consistent client base. Innovation is a very critical to maintain sustainable competitive advantage (Liao et al., (2010). This is because companies that can innovate are able to respond to challenges from outside the organization faster and more effectively than companies that can't innovate ((YuSheng & Ibrahim, 2019).

Banking in Ethiopia as an African nation and the other of the developing nations has experienced several regulatory and financial reforms during the past two decades (Hansson, 1995). These reforms have lead private banks to start and grow their operations in the sector and which have resulted in several structural changes in the banking industry of the country (Lelissa, 2007). The Ethiopia's Council of Ministers has passed a bill which allows foreign firms to invest in the financial sector and; allows foreign banks to participate in the local market. This, together with rapid technology advancement and improved communication networks, has supported in the financial sector's institutions' growing interconnectedness and similarity and as a result, banks are currently subjected to intense competition (Harvey, 2010). As result banks in Ethiopia like other developing countries are adopting different Service innovations and technologies such as ATM, Mobile and internet banking however there is little study in these areas and the benefits of these investments needs to be studied.

Many previous studies have conducted have asserted that Service innovation has impacted positively and significantly on customer loyalty and it is also positively and significantly mediated by customer satisfaction. Studies made by (Mahmoud, 2017) indicated Services innovation improves customer satisfaction directly and indirectly through customer value creation. (YuSheng, 2018) also asserted Services innovation has a direct significant positive effect on customer satisfaction and indirect positive significant effect through Service delivery. Another study by (Diaw, 2018) also explained that there is a significant positive relationship between innovation and customer satisfaction and retention. According to (Tsai, 2012) also Service innovation and customer value creation simultaneously and significantly improves customer satisfaction. Moreover, Many other studies by (Wu, 2014; Seesaiprai, 2016; YuSheng & Ibrahim, 2019; Rantyanti & Halim, 2020; Tai et al., 2021; Rayna & Striukova, 2021; Yeh et al., 2019; Truong et al., 2020) determined that Service innovation has a significant positive effect in satisfying and retaining customers in banking sector. In Ethio Telecom context (ayneaddis, 2020) also confirmed that Service innovation has a significant positive effect on customer loyalty and satisfaction intention.

Whereas other studies conducted by (Valencia & Layman, 2021; Lemy et al., 2019) asserted that Service innovation do not impact customers to remain loyal. (Angola et al, 2018) also found out that banking innovations has significant positive direct relation to loyalty but the indirect-effect of banking innovation on loyalty through the mediation of customer satisfaction doesn’t exist. In other words, customer satisfaction doesn’t improve customer loyalty; which shows inconsistency of the results of the previous studies. This in consistency in results of the relationship between Service innovation, customer loyalty and satisfaction is probably due to the difference in consumer behaviors which are not included in the study. Designing the bank's product in light of the demands of the target market is a key component of the marketing management process. In order to allocate the bank's resources in a way that would satisfy customers while also making a profit for the bank, market analysis and expertise are essential (McTavish and Perrien, 1988).

(Sharda & Bhat, 2018) has identified Five personal traits are thought to have a moderating effect on the relationship between customer satisfaction & loyalty, according to a review of the research on personal determinants of buying behavior. The article picked three important demographic parameters such as age, gender and income and; two important psychological components such as involvement & variety seeking to compare the explanatory power of each. In past research, it was discovered that each of these variables was pertinent when discussing consumer happiness and/or loyalty.

According to (Zeithaml, 1985), an individual's income is seen to have a significant influence on their decision-making. Individuals frequently spend more time digesting information before making a decision (Schaninger & Sciglimpaglia, 1981), and their conclusion is largely determined by how well they judge the material that has been provided to them. High income consumers should feel more at ease coping with and relying on new information inputs because of their cognitive abilities (Spence & Brucks, 1997). Moreover, studies demonstrate that rapid economic development and the resulting rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018) Therefore; it is hypothesized that another demographic factor that could influence the effects of (dis)satisfaction is income. The main purpose of this research is to investigate moderating the relationship between Service innovation, customer satisfaction and customer loyalty in the context of Ethiopian banking industry and the external factors income moderating the relationship between Service innovation, Customer Satisfaction and Customer loyalty.

1.3. Statement of the Problem

An increasingly challenging task of today's competitive banking firms is to satisfy and enhance their customer loyalty. The Service industry covers the lion a bigger share of the country's economy in both developed and developing economy (Tidd & Bessant, 2020) however it has seen an increase in competitiveness (Hosseini & Saravi-Moghadam, 2017). One of the Service sectors most impacted is the banking industry (Sardana & Bajpai, 2020). An increasingly complicated, fiercely competitive, and dynamic business environment has been created by the expansion of market participants in the banking sector (Kumar & Gulati, 2009).

Due to the consequent competitive pressures banks now have a greater need to know and understand their clients to provide Services and products to match the demands of their clients. According to (Audretsch, 1995; Elena & Marsili, 2006) the continuous increasing intensity of competition in the international markets, speed of rapid development in technology has led innovation to be taken into consideration to satisfy and retain customers as an inevitable necessity for any firm's survival. According to (Nguyen et al., 2014), applying innovation to banking Services is an effective strategy to boost customer satisfaction. Innovations enable banks to operate more efficiently and steady customer base (Campanella et al., 2017).

Studies by previous researchers conducted on the relationship between Service innovation, Customer loyalty and satisfaction resulted in inconsistent findings. Many studies by (Wu, 2014; Seesaiprai, 2016; YuSheng & Ibrahim, 2019; Halim, 2020; Truong et al., 2020) determined that Service innovation has a positive significant effect in satisfying and retaining customers in banking sector however other researches by (Valencia & Layman, 2021; Lemay et al., 2019) asserted that Service innovation does not impact customers to remain loyal. Furthermore, According to (Pitchayadejanant & Nakpathom, 2016), demographic considerations actively affect consumer behavior. They have varying effects on consumer perceptions, particularly in the Service sector (Akbar, 2013).This seemingly established relationship is complex and the inconsistency in the research findings may be due to the impact of underlying demographic moderators. Moreover, Studies demonstrate that rapid economic development and the rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). High income consumers should feel more at ease coping with and relying on new information inputs because of their cognitive abilities (Spence & Brucks, 1997).

The Knowledge gap in this study is that there is an inconsistence in the results studies done by previous researchers and besides this relationship is rarely studied in Ethiopian context. Furthermore although there are numerous studies with regards to the relationship of innovation, customer satisfaction & loyalty, demographic characteristics in our case customer income as important factor in influencing customer behavior is not considered in the relationship.

Like other banks in developing countries, Ethiopian banks also adopt different Service innovations with little study in the Ethiopian context. These investments on different innovations consume a lot of finance & time. It is required to hit their target to make the banks return the cost incurred, improve their profit and furthermore improve competitive advantage. Based on Pareto's rule, analysis by contribution (Bender, 1981) separates consumers into A, B, and C groups. 10% of all clients make up Group A, which accounts for 80% of all sales. In case these very big &

critical investments on innovations fail to address the needs of the customers and most importantly the VIP or high income customers, the investment is said to be failed to bring the desired results and it will have critical Consequences on the success of the bank.

The study have three contributions; first previous studies indicated inconsistent results on the relationship between Service Innovation, Customer loyalty and Satisfaction in previous studies and the study wants to investigate the relationship. Second the effect of Service innovation on Customer loyalty mediated by customer Satisfaction has not previously investigated in the Ethiopian banking sector and the study wants to investigate the effect of Service innovation on the relationship in the Ethiopian banking industry. Third there is no previous study that considers for demographic factors particularly income as moderator in this relationship and this study improves the detail understanding of the relationship and uncovers of the effect of under layer demographic characteristics in the relationship. The research is significant and useful from both a theoretical and management standpoint. From a theoretical standpoint, the research findings provide details to a better understanding of the factors that influence Customer loyalty. From a management standpoint, it offers direction for Service businesses about the suitability of the instruments and tactics they employ to increase Customer loyalty and Satisfaction specially VIP customers.

1.4. The Research objective

1.4.1 The Main objective

The objective of this research paper is to investigate the effects of innovation on customer satisfaction and customer loyalty in Ethiopian banking industry; further more to determine the contribution of customer income in the relationship between service innovation, customer satisfaction and customer loyalty.

1.4.2 The Specific objective

1. To investigate the effect of service innovation on Customer satisfaction.
2.To investigate the effect of service innovation on Customer loyalty.
3.To investigate the effect of Customer satisfaction on Customer loyalty.

4. To investigate the effect of Customer income on the relationship between Service innovation and Customer Satisfaction.
5. To investigate the effect of customer income on the direct relationship between of service innovation and customer loyalty.
6. To investigate the effects of Customer income on the relationship between Service innovation and Customer loyalty Mediated by Customer Satisfaction.
7. To investigate the effect of the Customer income on the Combined effects of Direct and; indirect relationship of Service innovation and Customer Loyalty.

1.5. The Research questions

1. Does Service innovation have an effect on Customer loyalty?
2. Does Service innovation have an effect on Customer Satisfaction?
3. Does Customer satisfaction have an effect on Customer loyalty?
4. Does customer income have an effect on the relationship between Service innovation and Customer Loyalty?
5. Does Customer income have an effect on the direct relationship between Service innovation and customer satisfaction?
6. Does Customer income have an effect on the indirect relationship between Service innovation and Customer Loyalty mediated by Customer satisfaction?
7. Does Customer income have an effect on the combined direct and indirect relationship between Service innovation and Customer loyalty?

1.6. Significance of the research

This type of study is significant and relevant from both a theoretical and management standpoint. From theoretical perspective; the research findings provide additional details to a better understanding of the factors that influence consumer loyalty by uncovering the demographic factors that influenced the relationship. From a management standpoint, the research findings offer a direction for Service businesses about the suitability of the tools and tactics they employ to increase client loyalty. Our moderator analysis research helps businesses pinpoint the circumstances when and where there is a particularly high correlation between Service innovation, customer loyalty, and satisfaction, and therefore in which investments in certain variables offer particular promise for retaining customers.

1.7. Scope of the Study

The scope of the study was limited to the commercial banks customers in the city of Addis Ababa. The research could have been more inclusive if it had considered samples from the Commercial banks customers outside the city but lack of resource and time constraint made it an impossible to cover and the limited time and finance is another challenge. This research used explanatory research design and; closed structured & self admin questionnaires were used to collect data. The research delimited to income moderator and excluded other demographic and psychological moderators.

1.8. Organization of the Thesis

This research is divided in to five chapters. The first chapter includes the background of the research, followed by the problem statement, the objectives to be achieved and the research questions, the significance, the scope of the study. In chapter two, literature review related of the study, the theoretical and empirical review of a research is discussed. The third chapter has presented, and drawn the methodological process of sampling, data collection and analysis. Chapter four provides descriptive summary of the empirical data collected together with detailed analysis, results and discussion. Finally, in chapter five the research makes conclusion & summaries and provides recommendation.

CHAPTER TWO

2. Review of Related Literatures

2.1 Introduction

The Chapter describes and presents the Theoretical & empirical review and the conceptual framework and; Mediation Moderation analysis of the research and it also states important terminologies of definitions and ideas linking to the Customer loyalty, Service innovation, Customer satisfaction, Customer income and their relationships. It aims and makes it realizable to be familiar with what other researchers have contributed to the subject topic.

2.2 Theoretical Review

2.2.1 Expectation-Disconfirmation Theory (EDT)

Expectation-disconfirmation theory (EDT) (Oliver 1977, 1980) is commonly used to investigate the factors that contribute to shifting consumer behavior. It is predicated on the idea that expectation and disconfirmation would lead to satisfaction, which is a crucial element in determining the likelihood of repurchasing (Balakrishnan et al., 1994).

(Olson & Dover, 1979) defined disconfirmation as the difference between expectation and actual perception, and expectation as a set of pre-exposure assumptions about the product. There would be some degree of disconfirmation due to the apparent discrepancy between expectations and actual experiences. The degree of satisfaction would therefore be determined by this disconfirmation, which would also affect future purchase intentions. Under positive disconfirmation, customers are satisfied, but under negative disconfirmation, they are dissatisfied. While many studies have used EDT in longitudinal investigations, many other studies have used EDT in cross-sectional contexts (Fan & Suh, 2014). The cross-sectional situation of our study is suitable for the use of EDT.

Expectations: Expectations may result from earlier encounters, recommendations, and other types of advertising or communication (Oliver 1977, 1980). Thus, it is presumed that expectations exist prior to the consuming experience, directly impact consumer pleasure, and indirectly result in disconfirmation (Van Ryzin 2006; Ha 2006).

Perceptions and Perceived Value: According to (Oliver, 1977), perception is an individual's opinion whether a good or Service based on their actual usage. It may also be a customer's assessment of a good or Service's characteristics based on a recent consuming experience. Its value depends on price, quality, utility, and/or convenience which might be the basis for perceptions (Parasuraman et al., 1988). Perceptions can also be explained and described based on performance, which is influenced by consumers' perceptions of brand name, image of the company, marketing strategy of the company, and the circumstances surrounding the purchase of the good or Service (Richins, 1983).

Disconfirmation: According to (Oliver 1977, 1980), disconfirmation is what consumers think about a product and Service based on their past assumptions about its features or advantages. (Erevelles & Leavitt, 1992) explained that "Expectancy disconfirmation" is the difference between prior expectations and actual performance, and it is a factor in perceived quality and performance (Van Ryzin, 2006). When a performance surpasses expectations, disconfirmation is positive; when a performance falls short of expectations, disconfirmation is negative (Oliver, 1980).

2.2.2 Signaling theory:

To understand how innovation affects customer perceptions, signaling theory offers a helpful paradigm (Pappu & Quester, 2016). The market is assumed to be characterized by information asymmetry or incomplete information, according to signaling theory (Spence, 2002). In other words, customers, unlike the company, do not possess all the knowledge required to evaluate the quality of a Service (Stiglitz, 2000). Therefore, businesses use signals to try and notify the market about the worth and quality of their ideas. Signaling theory thought to provides a framework for a sender to communicate information, particularly concealed or limited information, to the receiver in order to promote the successful exchange or purchase (Mavlanova et al., 2016; Wells et al., 2011).

According to (Mavlanova et al., 2016) signals may depict an object-related situation that the sender can manipulate. This information is crucial for influencing the receiver's cognitive views, decision-making, and behavioral intention. Most researchers agree that one of the signals customers receive from a company is its innovativeness. Innovation may be an indicator of future value (Stock, 2011), extra benefits above competing products (Mukherjee & Hoyer, 2001), and a company's capacity to deliver on its promises (Kunz et al., 2011). A firm’s brand innovativeness may serve as a signal, according to recent studies (Henard & Dacin, 2010; Stock, 2011).

Therefore, consumers depend on indicators such as advertising (Kirmani, 1990), brand name (Rao et al., 1999), and warranty (Boulding & Kirmani, 1993) to infer the value of these conveyed innovations and to predict their behavioral intention. The possible advantages for businesses of adopting socially responsible practices have also been explained by management experts using the signaling theory (Montiel et al., 2012; Ramchander et al., 2012). For instance, Su et al. (2016) discover that CSR activities, particularly in emerging economies, may be a signal that discloses extra information to concerned stakeholders. As a result, this study will integrate the effects of Service innovation and CSR on customer behavioral intentions using signaling theory as the theoretical framework.

2.2.3 The Theory of Consumers behavior

(Schiffman & Kanuk, 1997) defined consumer behavior’s study as the study of how a person decides to use their accessible resources, explicitly time, effort, and money, to consume anything. This includes researching why, what, where, and when a person purchases something as well as how frequently they use a good or Service. Additionally (Engel et al., 1994) noted that there are five (5) stages in which consumers behave when making a purchase decision: Introduction of the demand, Information Search, Information Evaluation, Purchase, and Post-Purchase are the first three steps.

(Engel et al, 1994) assert that consumer attributes such varied income levels will result in divergent demand and tastes, which will then have an impact on the goods and Services that are consumed. Marketers must have complete knowledge of the demographic factors are used as the foundation for segmentation of market because variations in these characteristics can have an impact on consumer’s behavior directly and indirectly through other characteristics of specific clients like personal values. Customer demographics, including age, income, gender, and educational level, have an impact on how consumers make purchasing decisions. Moreover, Studies demonstrate that rapid economic development and the rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). High income consumers should feel more at ease coping with and relying on new information inputs because of their cognitive abilities (Spence & Brucks, 1997).

2.2.4 Customer Segmentation and Customer Income

According to the marketing philosophy, all businesses must perform any customer advice through the consumer in order to provide innovation Services and customer happiness. The firm must deliver Services in accordance with its capacity in order to aim its efforts toward the target market in order to manage its consumers or market. The Firm must divide its clientele into categories based on shared traits and attributes. While the business grouping is known as market segmentation, the group listed is referred to as a market segment. (Assauri, 2014) explained that market segmentation is a method of grouping diverse markets in to groups of customers with homogenous features and attributes which can be advantageous for the firm. The market is divided into many segments based on demographic characteristics like age, sex, education and income. The client income component will be the study's main emphasis.

According to (Hawkins et al., 2010), market segmentation requires the following four (4) steps: (1). Recognizing the product demand devices. (2). Categorizing the consumers with similar demand devices. (3). Define each group, and (4). Selecting one group of Customer or segments is to be served. Market segmentation, when done correctly, will optimize results for a given marketing investment, claims by (Salami & Adewoye, 2006). Fundamentally, the necessity to align the advantages of the product with the demands of the prospects drives business segmentation needs (customers). Targeting is the process of choosing one or more groups that will be successfully serviced so that all marketing efforts may be concentrated on this segment for rewards that seem promising. Positioning is a psychological idea that has to do with how current or future customers would perceive a firm and its goods in relation to those of its rivals.

2.2.5 Analysis by Contribution

Based on Pareto's rule, analysis by contribution (Bender, 1981) separates consumers into A, B, and C groups. 10% of all clients make up Group A, which accounts for 80% of all sales. Group B is the segment of consumers that make the same contribution as their share of the population, for example, 10% of all customers make up 10% of all sales. The remaining 80% of clients, Group C, account for just 10% of overall revenues. According to the ABC theory, a company has a greater opportunity to increase sales with less effort if it can identify the VIP consumers who belong to Group A, create a better customer connection program for them, and provide straightforward programs to normal non-VIP customers . In our case we consider high earners as VIP customers and retaining this customer is very important for the profitability of the bank. Since banks offer fundamentally identical Services, they look for innovations to differentiate their level of customer Service and increase their market share of the targeted customer segment (Wilhelm, 2005). The use of information technology in relationship marketing and relationship building strategies and tactics by banks is one especially intriguing innovation that has been created and used (Floh & Treiblmaier, 2006). The standard customer relationship management systems to the more complex investment portfolio management systems are all included in this technology. Banks need to provide differentiated Services to attract important customers such as high earners as they are sources of ta significant part of its deposits.

2.3 Empirical Literatures

2.3.1 Customer Loyalty

The Customers willingness to maintain a connection with a business and to continue utilizing its Services or goods is called Customer loyalty (Zaini et al., 2020). Literally, loyalty is described as fidelity, explicitly, one's faithfulness to goods and Services. (Oliver, 1997) explained that the concept of loyalty is the commitment of the consumer to firmly maintain to rebuy and repurchase the goods and Services continuously in the future, notwithstanding the potential for a change in behavior due to external factors and marketing efforts.

According to (Keiningham et al., 2007), customer loyalty is the continuity of a client's commercial connection with a company. It is the continuance of the account connection with the bank for a retail commercial bank. According to (Coviello et al., 2001) and (Yim et al., 2004), one of the main goals of service companies using relationship marketing is to increase customer loyalty. A service company must remain competitive to develop and survive (Chinje, 2013). (Maxham, 2000) claims that four factors—general firm satisfaction, good word of mouth, recurring purchases, and loyalty to the company—have been used to quantify client retention.

The opposite of customer defection has been compared to customer loyalty. According to (Schweidel et al., 2008; Nwankwo & Ajemunigbohun, 2013), a high retention rate is similar to a low defection rate. According to (Hanks, 2007), even a little increase in client retention of 5% may increase profitability by 75%.

It requires a long time to develop relationship between a company and its loyal consumers and it requires constant record interactions with clients (Liat et al., 2014). (Pan et al., 2012) also explained that creating and maintaining loyal customer's base will help a firm to establish sustainable mutual beneficial relations with its customers. (Aaker, 1996) forwarded firms defined brand loyalty a key strategy because loyal customers result in bigger sales and profits. This study uses the 5 item indicator questionnaires for customer loyalty is proposed by (Zeithaml et.al., 1996; Tam, 2012; Ganguli & Roy, 2011; Caruana, 2002; Leninkumar, 2017).

2.3.2 Customer Satisfaction

(Kotler, 2003) defined Customer Satisfaction is the feeling of happiness or disappointment after Comparing from a product performance's perception or result and its expectations. Customer satisfaction measures how satisfied customers are with a company's offerings and capabilities as explained by (Bassan & Kathuria, 2016; Gupta, 2016). In short Satisfaction is the comparison gap between product perception and expectation after using it. If the product perception of performance is less that the product performance expectation; the customer will be dissatisfied. If the product performance fulfilled the expectation, The Customer will be satisfied. A company must prioritize customer happiness since it may be utilized to spot prospective market possibilities (Jawaad et al., 2019). Satisfied customers are advantageous to the business since they are less likely to change suppliers (Harzaviona & Syah, 2020; Nikou & Khiabani, 2020) while Dissatisfied Customers may not complain but rather to leave the business and go to rivals (Hasfar et al., 2020, 2020; Islam et al., 2020). This study uses the 5 item indicator questionnaires for the measurements for customer satisfaction is proposed by (Gremler & Gwinner, 2000); Kaura, 2013; Fatima & Razzaque, 2014; Leninkumar, 2017).

2.3.3 Service Innovation

Innovation is a general term that refers to the improvement, improvement and use of novel methods, products, or techniques according to (YuSheng & Ibrahim, 2019; Carayannis et.al, 2015). (Organization for Economic Co-operation and Development (OECD), 2005) defined innovation is the introduction of a brand-new, considerably improved item and Service, procedure, or marketing strategy into business operations. According to scholars such as (Grigorescu & Ion, 2021; Tödtling & Grillitsch, 2014) innovation should be assessed based on its ability to create value for the customers rather than merely creating something new. (YuSheng & Ibrahim, 2019) also introduced different types of innovation such as assimilation approach, Service oriented approach and synthesis approach and in our context Service innovation is a development of new Service or an improvement of an existing one.

In the context of Service, Innovation in the Service industry refers to the creation of new Services or the enhancement of current ones. Service innovation primarily refers to changes and improvements in the Service's qualities. (Baniasadi et al., 2021) define Service innovation as the application of new or existing technology to improve a company's product or Service. According to (YuSheng & Ibrahim, 2019) banks may innovate in concrete areas of their goods like ATMs, credit cards, etc. by using a synthesis approach to Service innovation. (Abdallah et al., 2016) explained innovation significantly improves overall operational performance.

According to the Oslo Manual, innovation must be brand-new or include a substantial organizational improvement. The notion of innovation in the service sector has an impact on a wide range of areas, from modest adjustments to significant changes that impact workflows or the caliber of services (Arundel et al., 2019). This definition has made it clear that, human and organizational qualities, in addition to technological ones, are crucial for the provision of services (den Hertog, 2000). Service innovation may be divided into four categories: product innovation, process innovation, organizational innovation, and market innovation (den Hertog, 2000). Service innovation is seldom restricted to a change in the features of the service product itself. Schumpeter's original definition of innovation (Schumpeter, 1934) is therefore followed by the specific service innovation idea. The fact that an innovation is put into practice, benefits its creator, and can be replicated, i.e., has more than one specific use, is a crucial aspect of innovation.

The last decade has seen a very remarkable advancement in the study of services and services innovation due to the growth of the service economy (Drejer, 2004). A common theme in previous service innovation literature is technological bias. In order to comprehend service innovation, this research utilized the theories created for new product creation and held that services are not only passive beneficiaries of technological advances (Barras, 1986). (Yeh et al., 2019) asserted that, service innovation necessitates, among other things, (1) new ideas. Specifically, service development necessitates innovative ideas for businesses in terms of service providers, clients, or the market. (2) A new customer interface that emphasizes on interactions between service providers and clients, allowing businesses to gather data from clients. (3) In terms of the delivery system for services, namely the innovation in customer-facing processes. (4) The selection of the newest capabilities, namely seizing the chance to examine client data and showcase the newest technology in servicing customers.

According to several studies, service innovation can be broken down into four categories: (1) radical process innovation (new or significantly improved service delivery process), (2) incremental process innovation (service provision process that is improved or improved gradually), (3) additional service innovation (modification, revision, and repositioning of existing services), and (4) radical service innovation (new features and new services to market). Pan and Zinkhan (2006) claim that innovation is utilized to strategically focus on customer happiness, loyalty, and market potential in order to grow the company's market share. Therefore, innovation might be a brand-new concept or product that is the result of in-depth analysis and fresh thinking.

It is also known as the monetization of original works. The process of turning an invention or concept into a product that customers buy and gives its creators financial rewards is sometimes referred to as innovation. For an idea to be transformed into an invention that can be turned into a product or service, it must be of a caliber to meet certain specific client wants and be feasible to implement at a reasonable cost (Khan & Iftekhar, 2010). This study uses the 6 item indicator questionnaires for the measurements for Service innovation is proposed by (Rantyanti & Halim; 2020).

2.3.4 Effect of Service innovation on Customer Satisfaction & Loyalty

According to (Wu, 2014), technological innovation in the form of improved processes and products/Services is crucial for businesses to cultivate and maintain customer loyalty. (Mahmoud et al., 2018) with research in Ghana telecommunication determined that Service innovation has Significant effect on Customer value creation and customer satisfaction. (YuSheng & Ibrahim, 2019) also explained that Service innovation improves Service quality delivery which in return positively & significantly improves customer satisfaction.

(Elfineh, 2020) has explained Service quality improvement with innovative Services such ATM and mobile banking has significant positive effect on Ethiopian commercial bank Customer satisfaction. (Halim, 2020; Truong et al., 2020) have attained Service innovation improves customer satisfaction and customer loyalty positively and significantly by creating customer value. Moreover (Aynadis, 2022) also asserted that he has confirmed that Service innovation has a direct and an indirect positive & significant effect on intention of retention in ethiotelecom customers. (Seesaiprai, 2016) also discovered that customer pleasure, a byproduct of Service innovation, has an indirect impact on consumers' loyalty. In the banking industry, a substantial positive association between Service innovation and loyalty intention has been observed by (Rantyanti & Halim, 2020). According to (Shqipe et al., 2013; Audretsch, 1995); Elena & Marsili, 2006); this competitive pressure drives businesses to keep looking for and providing new goods and services in order to enhance their services and products and; innovation to be taken into account to satisfy and retain customers as an inevitable necessity for any firm's survival. (Nguyen et al., 2014) discovered that using innovation in financial services is an effective strategy to improve service delivery. This is due to the fact that innovations allow banks to operate more effectively and maintain a consistent client base (Campanella et al., 2017).

H1: Service innovation has a positive & significant effect on customer satisfaction

H2: Service innovation has a positive & significant effect on customer loyalty.

2.3.5 Satisfaction Effect on Loyalty

(Fornell, 1992) defines customer satisfaction as a mentality impacted by an experience after a consumer purchases something or utilizes a Service and pays for it. Similarly (Ningsih & Segoro,

2014) defined satisfaction as a consumer's attitude, appraisal, and emotional reaction after making a purchase. A research by (Ehigie, 2006) and a more recent study in the banking industry by (Boonlertvanich, 2019) indicated that customer satisfaction had significant positive impact on loyalty of Customers. Consumer satisfaction, business image, and Service quality are some of the variables that impact client loyalty (Orozco & Arroyo, 2017). Customer satisfaction has important impact on client loyalty (Chiguvi & Guruwo, 2017). The International Journal of Organizational Innovation Vol 4 Num 3 Winter 2012 104 corresponds to a high level of satisfaction, which infers that the customer is more likely to be retained.

H3: customer satisfaction has a significant positive impact on customer loyalty.

2.3.6 Income Moderation in the relationship between innovation, Satisfaction & loyalty

High income consumers should feel more at ease coping with and relying on new information inputs because of their cognitive abilities (Spence & Brucks, 1997). (Sharda & Bhat, 2018) has also identified personal traits are thought to have moderating impact on the correlations between customer satisfaction & loyalty, according to a review of the research on personal determinants of buying behavior. Customer like other demographic characteristics has an effect in the customer loyalty and satisfaction and (Pitchayadejanant & Nakpathom, 2016) claimed Demographic factors play an active role in influencing consumer behavior. They impact perceptions of customers differently especially within the Service industry (Akbar, 2013). Studies also demonstrate that rapid economic development and the rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). Extant literatures demonstrate significant disparities between different income customers' buying behaviors.

Other studies by (Assauri, 2014), also indicated that Customer income is one demographic factor affecting the customer behavior. Segmentation is a strategy employed by the business in categorizing heterogeneous customers into more similar group of customers so that the business is easier to design system and strategy to provide Services based on demand to be able to give the customer the maximum level of satisfaction. Furthermore, according to (Shongting Dong's, 2011) research, customer strengthens the link between customer loyalty & satisfaction and the research also hypothesis that customer income also strengthen the relation between Service innovation, Customer satisfaction & loyalty.

H4: customer income has positive & significant effect on the relationship between Service innovation and customer loyalty.

H5: customer has a positive & significant effect on the relationship between Service innovation and customer satisfaction.

H6: Customer income has positive & significant effect on the indirect relationship between Service innovation and Customer loyalty mediated by Customer satisfaction

H7: customer Income has a positive & significant effect on the combined direct and indirect relationship between Service innovation and Customer loyalty.

2.4 The Conceptual frame work and mediating moderation analysis

A useful method for determining if an indirect impact depends on the value of a moderator is the moderated mediation analysis. We go through the fundamentals of both moderation and mediation and how they are merged into a moderated mediation analysis inside a framework of regression. Two often employed methods to answer the issues of when and why variables are associated, respectively, are mediation analyses and moderation analyses. Moderation is useful for assessing situations in which relationships between variables. Moderation happens when the Magnitude & direction of a link between two variables are conditional on a third variable (Aguinis, 2004). In similar words, if a variable correlation holds true for various demographic groupings. In contrast, mediation analysis offers a way to investigate the potential relationships between two or more variables. A third variable that impacts in the interaction between more other variables, functioning as a method which the impact of one variable is passed on to another is known as a mediating variable (Baron & Kenny, 1986).

Even if each mediation and moderation has their own benefits, combining them into a single model helps researchers to analyze more complex interactions between variables. According to (Hayes & Preacher 2014), these combination forms, also known as moderated mediation or conditional process models, allow for assessments if an indirect influence is tempered by another variable. When attempting to understand in which conditions variables are linked to one another, moderated mediation models may be quite useful. This combination technique allows for the simultaneous investigation of dependent and indirect-effects.

2.4.1 Conceptual framework

The conceptual frame work for Service innovation effects on customer satisfaction & customer loyalty moderated by customer income is shown below. The path a is the effect of Service innovation on Customer satisfaction moderated by customer income, path b the effects of customer satisfaction on customer loyalty; and path C' is the Direct-effect of Service innovation on customer loyalty moderated by customer income. The indirect condition effect path b provide that path a is moderated by customer income.

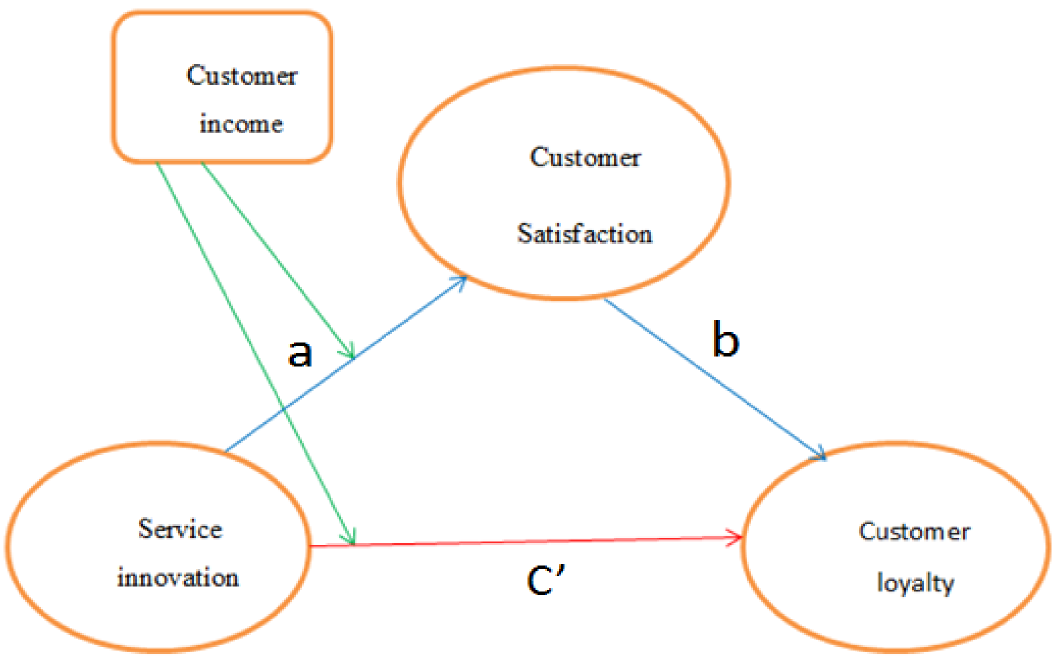


Figure 1 Conceptual model of the study variable. Source: adapted from (Kiumarsi, 2020)

2.4.2 Moderation analysis

The following is an example of a linear regression model that examines the connection between two regresses (X and W) and outcome (Y).

$$\boldsymbol{Y = iY + b1X + b2W} \qquad \textbf{Equation 1}$$

Where $b1$ is a change in Y for Unit change in X

$b2$ Is a change in Y for Unit change in W

iY is a value of Y when X & W are zero

This is only true when the relationship between one regressor and the independent variable is the same across all value of the second regressor. Otherwise including a product term of the two regressors XW, it is possible to assess if b is a viable representation of the magnitude of Y change for a unit change in the regressor across all points.

$$\boldsymbol{Y = iY + b1X + b2W + b3XW} \qquad \textbf{Equation 2}$$

Where XW is the Indexed Effect on Y;

When the connection between two variables depends on a third variable, there is a moderator effect (Saunders, 1956), & interaction (Cohen, 1968), which is shown by a non-zero $b3$ coefficient. As evidence of a link between two factors may occasionally is only obtained when analyzed in the context of a moderating variable. When determining whether relationships hold true across contexts, places, and individuals, tests of moderation can be very helpful.

2.4.3 Mediation analysis

Despite the fact that the idea of mediating variables existed before Kenny and colleagues published their important works (Judd & Kenny, 1981; Baron & Kenny, 1986), their work contributed to the development of statistical mediation analysis and encouraged to be use by Researchers. (Judd & Kenny, 1981) advocated a strategy they called process analysis in which mediation hypotheses were assessed using a set of regression equations.

$$\boldsymbol{Y = iy + cX} \qquad \textit{\textbf{Total impact of X on Y}} \qquad \textbf{Equation 3}$$

$$\boldsymbol{M = im + aX} \qquad \textit{\textbf{Impact of X on M}} \qquad \textbf{Equation 4}$$

Combined to

$$Y = iY + c'X + bim + abX \qquad \textit{Total impact of X on Y in terms of M} \qquad \textbf{Equation 5}$$

According to (MacKinnon et al., 1995), OLS regression shows that $ab = c - c'$ represents the indirect impact as the overall effect less the direct-effect.

2.4.4 Regression assumptions

Regression assumes that the random error to be normally distributed but this issue of normality assumption is avoided by not assuming a normal sample distribution in bootstrap confidence limit intervals (Preacher & Hayes, 2004, 2008) and confidence limit intervals (MacKinnon et al., 2004; Preacher & Selig, 2012). The bootstrap methodology for conclusions regarding indirect-effects was first presented by (Bollen & Stine, 1990) and; subsequently described by (Lockwood & MacKinnon, 1998). It has since grown to be one of the more well-liked approaches in the literature on mediation methods. In order to create a confidence interval for the indirect-effect, a sample is repeatedly taken from the analytics sample with replacement and; estimates of "ab" are derived for each bootstrap sample.

The model assumptions used in regression-based frameworks for mediation analysis are similar to those used in OLS general linear models. The residuals are considered to be independent, normally distributed, and homoscedastic (Williams et al., 2013). It is also important to keep in mind that there is an implicit assumption of chronological precedence while doing mediation analysis. This is the presumption that X comes before M, which comes before Y. When using cross-sectional data for mediation analysis, this strong assumption cannot be satisfied. As a result, cross-sectional data should not be used to draw causal conclusions about mediation. In reality, according to certain methodologists (Little, 2013; Maxwell & Cole, 2007), the word "mediation" only refers to causal interpretations that are solely based on longitudinal designs.

2.4.5 Moderated mediation analysis

The phrase moderated mediation refers to situations in which the mechanism by which X influences Y is moderated by a fourth variable W, so that the indirect impact varies with W value. A conditional indirect-effect is how one or two of the component pathways (X M, M Y) through the mediator are referred to when X has an impact on Y. The easiest way to think about conditional indirect-effects is to determine if the moderating variable (W) has an impact on the

M-Y relationships (second stage moderated mediation) or the X-M relationships with these equations:

$$\boldsymbol{M = im + a1X + a2W + a3XW} \qquad \textbf{Equation 6}$$

$$\boldsymbol{Y = iy + c'X + bM} \qquad \textbf{Equation 7}$$

Combined to

$$\boldsymbol{Y = iy + c'X + a1bX + a2bW + a3bXW} \qquad \textbf{Equation 8}$$

Here, the impact of X on M is denoted by (a1 + a3W) and the impact of M on Y is denoted by b. The conditional indirect impact () of X on Y is thus written as = (a1 + a3W) b, which is changed to = a1b + a3bW by rearrangement. The projected impact of W on the indirect-effect of X on Y through M is represented by the coefficient a3b and is called indexed mediation.

2.4.6 Hypothesis Testing

Through bootstrap confidence interval analyses, it is possible to test the hypothesis that the $a3b$ coefficient, also called the index of mediated moderation, doesn't include zero (Hayes, 2015). The indirect impact is mitigated if the confidence limit interval does not contain zero. Because it evaluates the significance of the correlation between the moderator and the indirect impact, the index technique to assessing moderated mediation is advantageous.

The index technique works effectively when the indirect impact is a simple model and is linear. However, it is not applicable when the same continuous variable moderates both the impact of X on M and M on Y. According to (Edwards & Lambert, 2007) and (Hayes, 2015), the indirect impact here assumes a non-linear, quadratic. Therefore, linearity is important.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

This Chapter Presents the Research design, Research approach Sampling design and Sampling technique, population, Sampling size and Sample determination, Source & data collection methods, Measurement Scale, Method of data analysis, validity & reliability and lastly the research ethics.

3.2 Research Design

The study examines the effect of Service innovation on Customer loyalty and Satisfaction and; the role of income moderator on the impact of Service innovation on customer loyalty and satisfaction in bank sector. Determine the scope and kind of cause and effect relations between variables collected from survey and used explanatory research design and therefore, the study used explanatory research design because of the nature of the hypotheses that were put out. To understand the interaction patterns between variables, this design focuses on an examining a scenario (Creswell, 2014).

3.3 Research approach

A research approach, according to (Creswell, 2014), is a plan, design, and method for study that includes both general assumptions and specific procedures for data collection, analysis, and interpretation. The study examines the role of income moderator on the effect of Service innovation on customer loyalty and satisfaction in bank sector. This study is a quantitative approach and used the survey approach for data collection, which is consistent with the majority of innovation studies (Petridou et al., 2007; Glaveli et al., 2006; Hinson et al., 2011). The main advantage of this strategy is that working with numbers is straightforward; information can be gathered, coded, analyzed, and summarized with ease.

3.4 Sampling design and sampling Technique

Due to confidentiality concerns, a sample frame was not available; this study instead adopted a non-probability sampling method called purposive & convenient sampling method (Sekaran & Bougie, 2016; Teeroovengadum & Nunkoo, 2018).Only customers who have an account and; which have frequently utilized for the last two years will be invited to answer to the questionnaires, guaranteeing that they had at least some exposure to bank Services.

3.5 Target population

This research was conducted in Addis Ababa and the target population private and public banks customers in Addis Ababa. Addis Ababa is a city of 3,384,569 people (Ethiopian central statistics agency (ECSA), 2007) however according to (UN World Urbanization Prospects, 2023) the recent population in Addis Ababa is 5,460,591. It is the major business and political capital of the nation. 80% of the city residents make a relatively low monthly income of less than 74.51 the city's high unemployment rate. The Addis Ababa city administration includes 11 sub-cities. There are 28 private and 1 public banks in the capital.

3.6 Sample size and sampling determination

Studies by (Saunders et al., 2012) described that the sample size is decided by the permissible margin of error, the confidence range and variability. The customers in the Ethiopian banking industry in the city of Addis Ababa are infinite and the research used (Cochran, 2007) formula that is level of confidence, precision rate and margin of error to determine the sample size.

The confidence level 5% is taken and its value is 1.96, the precision with maximum variability is considered which is 0.5 and 5% margin of error is considered.

Sample size = {[1.96] ^2*[0.5*0.5]/ [0.05] ^2}

Sample size = {0.9604/0.0025}=384 and we considered 384 sample.

Due to the large number of banks, this study only considered customer from; Commercial bank of Ethiopia, Awash international bank, Bank of Abyssinia, dashin Bank and Cooperative bank of Oromia; the top 5 profitable banks in Ethiopia in 2022 according to (NBE, 2022). Because the business intelligence issues most of the private banks don't reveal their customer number and the study believes that the profit represents many of the banks status. The research used multi stage none-proportional, purposive and convenient sampling techniques. Where 50% of the samples are taken from the CBE and the rest half is equally divided among the four private banks. The samples taken are 192 from CBE and 48 each from the four the top private banks.

3.7 Source and method of data collection

Primary data are used in this study to get the necessary information from the sources and closed structured & self admin questionnaires were used to collect data. The data were gathered by distributed structured questionnaires to 384 clients of commercial banks in Addis Ababa and collected 350 valid replies. The questionnaire was divided into four pieces. The first section of the questionnaire addresses concerns concerning the respondent's personal information. It included information such as age, gender, educational background, and income. The second part is 6 questions which were used to assess Service innovation on the banks. The third part is 5 questions which were used to assess the perception of the customer's satisfaction indicators. The fourth part is 5 questions which were used to assessment of customer loyalty. It was first prepared in English and translated to Amharic and on a five-point Likert scale, 384 respondents were asked to indicate their level of agreement with each of the items and 350 valid replies are collected.

3.8 Scale of Measurement

Key characteristics such as Service innovation, customer satisfaction, and customer loyalty were assessed using scale items which are adopted from previously validated measures. A four sections questionnaire is prepared. The first section of the questionnaire addresses concerns concerning the respondent's personal information. It includes information such as age, gender, educational background, and income. The second section consists of 6 questions which will be used to assess Service innovation on the banks. The measurement for Service innovation is adopted from (Rantyanti & Halim; 2020). The third part is 5 questions which will be used to assess the perception of the customer's satisfaction indicators proposed (Gremler & Gwinner, 2000; Kaura, 2013; Fatima and Razzaque, 2014; Leninkumar, 2017). The fourth part is 5 questions which will be used to assess customer loyalty proposed by (Zeithaml et al., 1996; Tam, 2012; Ganguli & Roy, 2011; Caruana, 2002; Leninkumar, 2017). The surveys are written in English first and then translated into Amharic. On a five-point Likert scale, respondents will be asked to indicate their level of agreement with each of the items.

3.9 Method of Analysis

The research paper edited the raw data is typically the first stage in the analysis to make sure the data is accurate, consistent, and complete for future analysis (Cooper & Emory, 1995). The questionnaires which are incomplete, faulty and inconsistent were considered as unimportant for data processing and analysis. As a result, data were initially edited, coded, and inputted before being subjected to correlation and multivariate regression mediation moderation analysis of SPSS macro process model 8. Therefore, the study used multivariate regression mediation moderation SPSS macro process of model 8 to process and analyzes its data.

3.10 Reliability and Validity Analysis

According to (Kothari, 2004) if a measuring device yields repeatable results, it is dependable. In this study, a pilot study conducted before the main research to establish the validity and reliability of the data collection instrument. According to (Smith, 199; Babbie, 1989) validity as to which the data empirical measurement trust worthiness or reflect the real value of the conceptual model to be studied. In this research study the measurement scale is adopted from previous validated works.

3.10.1 Reliability Analysis

According to (Smith, 199; Babbie, 1989), validity refers to the degree to which data empirical measurement trustworthiness the true value of the conceptual model under consideration. The measuring scale in this research study is based on previously verified works. The reliability of the questionnaires used in this study was determined using Cronbach's Alpha, an indicator of internal consistency. Borsboom (2009) defines reliability as the consistency of measurements inside an instrument monitoring the same thing. Furthermore, Brown et al. (2010) claim that dependability outcomes a test's consistency throughout time, regardless of whether it is subjected to the same or different test formats. According to Joseph and Rosemary (2003), Cronbach's alpha reliability values frequently vary between 0 and 1. This research study considers a Cronbach's alpha greater than 0.7 to be acceptable.

Table 1 Reliability Test

scale	Cronbach's alpha	N of items
Service innovation	0.890	6
Customer Satisfaction	0.827	5
Customer loyalty	0.898	5
Average	0.872	16

According to George and Mallery, (2003 p. 231), if "α > 0.9, Excellent, α >0.8, Good, α >0.7, Acceptable, α > 0.6,, Questionable, α >0.5,,Poor, andα <0.5, Unacceptable." The results are shown in Table-1 above, which show the independent variable's parameters have "Good" internal consistency. The reliability test of the study average is also within the "good" category, and the study's average Cronbach's alpha value for the independent variable sum is (=0.890). The study's Average Cronbach Alpha score is 0.872 Validity Analysis.

3.10.2 Validity Analysis

Validity Test: Since a research's validity depends on its conceptual and scientific accuracy, the test's main goal was to eliminate or at least lessen the influence of unrelated pressures, factors, and explanations that can skew the accuracy of the study's final conclusions. Pre-testing was carried with the questionnaire after the researcher had adopted it. The questionnaires were translated from English to Amharic in accredited translation office. This is done to make sure that respondents can understand the questionnaire and complete it in a meaningful manner, and the instrument was examined by an academic adviser prior to the collection of the data in order to maintain its validity and to improve the accuracy and usefulness of the findings in which it allows greater self-confidence for the research.

This is study data is confirmed to have a 0.01 confidence level at 2 tailed and the research measurement tools are said to be valid.

3.11 Research ethics

The researcher has followed the ethical consideration explained by (Bryman & Bell, 2007) to conduct his studies that research participants shouldn't subjected to harm, respect their dignity, their full consent is obtained, protection of their privacy, ensured their confidentiality, anonymity is ensured. The researcher will also assure that deception or exaggeration & misleading of information is voided and is done with honesty & transparency.

CHAPTER FOUR

4. DATA PRESENTATIONS AND INTERPRITATION

4.1 Introduction

This chapter four is divided in to data analysis, presentation and interpretations and interpretation and discussion of the findings. The study aimed to describe the effects of Service innovation on customer satisfaction & loyalty; the moderating role customer income: evidence from The Ethiopian banking industry. Section one used descriptive analysis to obtain demographic information. Section two is information about the model tests (validity, reliability and regression assumption tests) which are through SPSS analysis, the third section contains the Results and Interpretation of the independent variable customer loyalty, the customer satisfaction mediator and the income moderator obtained from the SPSS mediation moderation regression macro process model 8. The main findings and discussion is made at the end of the chapter.

4.2 Descriptive statistics

4.2.1 Response rate

Table 2 Response rate

Category	Frequency	Percentage
Total Response	371	96.61%
Valid Response	350	91.15%
Total	384	100%

Sources: own Data Survey, (2023)

(Bacon, 2014), defines the response rate is the ratio between the number of questionnaires returned from research participants who were interviewed and the total number of questionnaires collected from respondents. Table-2 above shows the sample size of the study was 384 respondents. The convenience sampling approach was used to choose a sample design from the total number of commercial Banks customer in Addis Ababa; 371 of these 384 questionnaires were collected and 350 of them are used for the study, however the other 13 questionnaires were not collected and 21 were not used in this study. This high response rate boosts confidence in the study's findings being generalizable.

4.2.2 Response Rate by Bank Customers

Table 3 Response by Bank Customers

Category	Frequency	Percentage
CBE	174	49.71%
Awash international Bank	43	12.29%
Bank of Abyssinia	46	13.14%
Dashen Bank	45	12.87%
Corporate Bank of Oromia	42	12%
Total	350	100%

Sources: own Data Survey, (2023)

Table-4 indicated the bigger share of the respondents 49.71 are from CBE while Bank of Abyssinia 13.41%, Dashin Bank 12.87, Awash International bank 12.29 and corporate bank of Oromia 12%. The response rate nearly represents the sample assign the research has assigned and is a good composition of our sample and, it is very helpful to generalize the study Findings.

4.2.3 Analysis of Respondent by Gender

Table-4 Response Rate by Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	151	43.1		43.1
Male	199	56.9		100
Total	350	100		

Sources: own Data Survey, (2023)

According to table-4, in demographics, men respondents outnumbered female respondents by 56.9% to 43.1%. As a result, the study suggests that the majority of respondents were male; nevertheless, the proportion indicates that both genders were sufficiently represented in the study, which enhances confidence in generalizing the findings.

4.2.4 Analysis of Respondent by Education level

Table 5 Response Rate by Education Level

Categories	Frequency	percent	Valid Percent	cumulative percent
No Formal education	22	6.3	6.3	6.3
Elementary School	68	19.4	19.4	25.7
High School	27	7.7	7.7	33.4
Bachelor Degree	195	55.7	55.7	89.1
Master's Degree	38	10.9	10.9	100
Total	350	100	100	

Sources: own Data Survey, (2023)

According to Table- 5 above, respondents of Education level distribution was as follows: Bachelor degree were the majority at 55.7%, followed by Elementary School at 19.4%. The table shows that 10.9% of the respondents have Master's Degree, and high School graduates had a respondent of 7.7% only 6.3% of the respondents are no formal education.

4.2.5 Analysis of Respondent by Income

Table 6 Response Rate by Income Interval

Category	Frequency	percent	Valid percent	Cumulative percent
Below 100,000	106	30.3	30.3	30.3
100,000 -199,999	123	35.1	35.1	65.4
200,000 - 299,999	24	6.9	6.9	72.3
300,000 - 399,999	12	3.4	3.4	75.7
400,000 - 499,999	23	6.6	6.6	82.3
500,000 -999,999	50	14.3	14.3	96.6
1,000,000 - 1,999,999	4	1.1	1.1	97.7
2,000,000 and above	8	2.3	2.3	100
Total	350	100	100	

Sources: own Data Survey, (2023)

In table-6; The Income of the respondents was 35.1% 100k-1999, 999; 30.1 % below 100k; 14.3% 500K -999,999; 6.9% 200K- 299,999; 6.6% 400,000 - 499,999; 300K - 399,999 3.4%, above 2000K 2.3% and1,000K- 1,999,999 only 1.1% . The research indicated that the majority of the respondents are 100K -199,999; nevertheless, the classes were sufficiently represented.

4.2.6 Analysis of Respondent by Age

Table 7 Response Rate by Age

Category	Frequency	Percent	Valid percent	Cumulative percent
20 and below	15	4.1	4.1	4.3
21-30	144	41.1	41.1	45.4
31-40	110	31.1	31.1	76.9
41-50	49	14.0	14.0	90.9
51-60	19	5.4	5.4	96.3
61 and above	13	3.7	3.7	100
Total	350	100	100	

Sources: own Data Survey, (2023)

According to Table 7, the age interval distribution of respondents was as follows: 21 to 30 years were the majority at 41.1%, followed by those aged 31 to 40 years at 31.4%. According to the survey, 14% of respondents were between the ages of 41 and 50, and 9.1% were above the age of 51, while youngsters aged 20 and under had just 4.3% of respondents

4.3 Linear Regression Assumption Test

This research the multiple regression assumptions addressed properly before it tried to regress the likert data to design a model. Some of these assumptions are normality, Heteroscedasticity, and linearity. Multicollinearity is correlations the independent variables to each other and has the same effect. This research doesn't have multiple independent variables and Multicollinearity is not an issue.

4.3.1 Robust macro Process test

Regression assumes that the random error to be normally distributed but this issue of normality assumption is avoided by not assuming a normal sample distribution in bootstrap confidence limit intervals (Preacher & Hayes, 2004, 2008) and confidence limit intervals (MacKinnon et al., 2004; Preacher & Selig, 2012). This study used macro process model 8 mediation moderation analyses to regress and analyze the Likert data to formulate the model and Macro process has robust macro process test using bootstrap inference for model coefficients. Regression also assumes homoscedasticity but As a result, cross-sectional data should not be used to draw causal conclusions about mediation. In reality, according to certain methodologists (Little, 2013; Maxwell & Cole, 2007), the word "mediation" only refers to causal interpretations that are solely based on longitudinal designs. Heteroscedasticity – consistent inference called HC4 (Cribari-Neto) to resolve the issues which can from normality and Heteroscedasticity. According to Edwards & Lambert (2007) and Hayes (2015), the indirect impact here assumes a nonlinear. Therefore, linearity is important. This research used robust Macro Process and is only required to make linearity test.

4.3.2 Linearity Test

Table 8 ANOVA Table

			Mean Square	df	Mean Square	F	Sig
Customer Loyalty * Service Innovation	Between Groups Within Groups Total	(Combined)	128.733	16	8.046	30.994	.000
		Linearity	122.924	1	122.924	473.526	.000
		Deviation from Linearity	5.808	15	.387	1.492	.000
			86.445	333	.260		
			215.177	349			

Sources: Own SPSS regression Result, (2023)

As we can see from the ANNOVA Table-7 the linearity between the dependent variable customer loyalty and in dependent variable of Service innovation has p value 0.000 and it is significantly linear at 95% confidence level. Where are the deviation from the linearity between the customer loyalty and Service innovation has significance value (P value of 0.106) and the deviation from linearity is insignificant at 95% confidence level and the relationship is said to be linear. This relation between customer loyalty and Service innovation also has R value 0.756 and R-sq. & value 0.571 and it is said to be that 57.15% customer loyalty is explained by the effect of Service innovation.

4.4 Results, Interpretations and discussions

This research has made mediation and moderation regression analysis with macro process Model 8 Hayes version 2022. Using 350 sample size an independent variable of Service innovation, dependent variable of customer loyalty and mediation of customer satisfaction and moderation of customer income respectively. Macro processes regressions for each individual analysis for each path and hypothesis or research question is presented below. The interpretation results and discussions are presented in subsections and; Each Hypothesis or research questions have its own subsection results are presented, interpreted and discussed.

4.4.1 An effect of service innovation on Satisfaction

Table 9 Outcome Variable Customer Satisfaction

OUTCOME-VARIABLE:						
SAT						
Model-Summary						
R	R-sq	MSE	F(HC4)	df1	df2	p
.7721	.5962	.2624	300.9198	3.0000	346.0000	.0000
Model						
	Coeff	se(HC4)	t	p	LLCI	ULCI
Constant	3.9633	.0274	144.6286	.0000	3.9094	4.0172
SI	.8841	.0364	24.3147	.0000	.8126	.9556
INCOME	.0014	.0005	3.0644	.0024	.0005	.0024
Int_1	.0042	.0008	5.1364	.0000	.0026	.0059

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As you can see from "outcome variable SAT" or Customer Satisfaction outcome Table-9 according to (Hayes, 2015) the effect of Service innovation on satisfaction significant because the confidence interval are positive and doesn't include zero. As we can see from the Table-9 the coefficient of Service innovation is positive 0.8841, for every unit change in the Service innovation there is a change of 0.8841 unit change in the customer satisfaction. This also indicates the relationship is also significant positive. We can also check if there are transition points in the relationship from the Johnson-Neyman method table.

4.4.1.1 Johnson-Neyman method Service innovation on Satisfaction

Table 10 Johnson-Neyman method Service innovation on Customer Satisfaction

INCOME	Effect	se(HC4)	t	p	LLCI	ULCI
-24.4951	.7802	.0488	16.0010	.0000	.6843	.8761
-15.0904	.8201	.0433	18.9372	.0000	.7349	.9053
-5.6856	.8600	.0387	22.2488	.0000	.7840	.9360
3.7191	.8999	.0351	25.6221	.0000	.8308	.9690
13.1239	.9398	.0331	28.4171	.0000	.8748	1.0049
22.5287	.9797	.0328	29.8856	.0000	.9152	1.0442

31.9334	1.0196	.0343	29.7286	.0000	.9522	1.0871
41.3382	1.0595	.0374	8.3301	.0000	.9860	1.1331
50.7430	1.0994	.0417	26.3431	.0000	1.0173	1.1815
60.1477	1.1393	.0470	24.2595	.0000	1.0470	1.2317
69.5525	1.1793	.0528	22.3246	.0000	1.0754	1.2831
78.9572	1.2192	.0591	20.6205	.0000	1.1029	1.3354
88.3620	1.2591	.0657	19.1525	.0000	1.1298	1.3884
97.7668	1.2990	.0726	17.8962	.0000	1.1562	1.4417
107.1715	1.3389	.0796	6.8204	.0000	1.1823	1.4954
116.5763	1.3788	.0867	15.8953	.0000	1.2082	1.5494
125.9810	1.4187	.0940	15.0950	.0000	1.2338	1.6035
135.3858	1.4586	.1013	14.3980	.0000	1.2593	1.6579
144.7906	1.4985	.1087	13.7872	.0000	1.2847	1.7123
154.1953	1.5384	.1161	13.2482	.0000	1.3100	1.7668

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from the Jonson Neyman Table-10 below, all values the vales of income the effect of service innovation on customer satisfaction is positive with P vales less than 0.05 and this is said to be that there are no statistical significance transition points within the observed range of the moderator found using the Johnson-Neyman method (Edward et.al, 2020).

Therefore, the impact of Service innovation on customer satisfaction is significant & positive in Ethiopian banking Industry with significance value of 0.05 (95% confidence level) and the hypothesis H1 that says Service innovation positively and significantly impacts customer satisfaction is accepted. This means an improvement in Service innovation results an increase in customer satisfaction. This is not surprising because many previous studies such (Wu, 2014; YuSheng & Ibrahim, 2019) determined that innovation positively and significantly Improves Customers satisfaction. This is in line with the Expectation and signaling theories. According to (Oliver 1977, 1980) the Expectation-disconfirmation theory (EDT) is commonly used to investigate the factors that contribute to shifting consumer behavior. (Nguyen et al., 2014; Campanella et al., 2017) discovered that using innovations in financial services is an excellent strategy to improve service delivery and allow banks to function more effectively and maintain a consistent client base. Innovation improves the Service provided to meet expectation which results an improved Customer satisfaction. This helps the banking to industry to improve their customer satisfaction by adopting & introducing different Service innovations.

4.4.2 An effect of Service innovation on Loyalty

Table 11 Outcome variable of Customer loyalty

OUTCOME-VARIABLE:						
LOY Model-Summary						
R	R-sq	MSE	F(HC4)	df1	df2	p
.8447	.7136	.1786	840.7428	4.0000	345.0000	.0000
Model						
	Coeff	se(HC4)	t	p	LLCI	ULCI
Constant	1.8161	.5379	3.3765	.0008	.7582	2.8740
SI	.3849	.1335	2.8839	.0042	.1224	.6475
SAT	.5343	.1368	3.9066	.0001	.2653	.8033
INCOME	.0015	.0005	3.1533	.0018	.0006	.0025
Int_1	.0035	.0007	4.7952	.0000	.0020	.0049

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As you can see from "Outcome variable LOY "or Customer Loyalty outcome Table-11, according to (Hayes, 2015) the direct-effect of Service innovation on Customer Loyalty significant because Both the upper level confidence interval 0.6475 and lower level confidence interval 0.1224 are positive and the interval doesn't include zero and; in addition to that the P value is 0.0042 which is less than the significant level (0.05or 5%). As we can also see from the Table-11, the coefficient of Service innovation is positive 0.3849, which means for every unit improvement of Service innovation; there is 0.3849 unit improvement in the Customer loyalty. And; the effect of Service innovation on Customer Loyalty is significantly positive with significant value of 0.05 (95% confidence level). We can also see if there are transition points which violets the relationship from the Jonson-Neyman method table

4.2.2.1 Johnson-Neyman method Service innovation on consumer Loyalty

Table 12 Johnson-Neyman method Service innovation on Customer Loyalty

INCOME	Effect	se(HC4)	t	p	LLCI	ULCI
-24.4951	.2998	.1258	2.3838	.0177	.0524	.5472
-15.0904	.3325	.1285	2.5876	.0101	.0798	.5852
-5.6856	.3652	.1315	2.7767	.0058	.1065	.6239
3.7191	.3979	.1348	2.9511	.0034	.1327	.6630
13.1239	.4306	.1384	3.1115	.0020	.1584	.7027
22.5287	.4632	.1422	3.2583	.0012	.1836	.7429

31.9334	.4959	.1462	3.3924	.0008	.2084	.7835
41.3382	.5286	.1504	3.5146	.0005	.2328	.8244
50.7430	.5613	.1548	3.6258	.0003	.2568	.8658
60.1477	.5940	.1594	3.7269	.0002	.2805	.9075
69.5525	.6267	.1641	3.8187	.0002	.3039	.9495
78.9572	.6594	.1690	3.9020	.0001	.3270	.9917
88.3620	.6921	.1740	3.9777	.0001	.3499	1.0343
97.7668	.7247	.1791	4.0465	.0001	.3725	1.0770
107.1715	.7574	.1843	4.1090	.0000	.3949	1.1200
116.5763	.7901	.1897	4.1658	.0000	.4171	1.1632
125.9810	.8228	.1951	4.2175	.0000	.4391	1.2065
135.3858	.8555	.2006	4.2646	.0000	.4609	1.2501
144.7906	.8882	.2062	4.3075	.0000	.4826	1.2937
154.1953	.9209	.2119	4.3468	.0000	.5042	1.3375
163.6001	.9536	.2176	4.3826	.0000	.5256	1.3815
173.0049	.9862	.2234	4.4154	.0000	.5469	1.4256

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from the Jonson Neyman Table-12 below, all values the vales of income the effect of service innovation on customer satisfaction is positive with P vales less than 0.05 and this is said to be that there are no statistical significance transition points within the observed range of the moderator found using the Johnson-Neyman method (Edward et.al, 2020).

Therefore, the effect of Service innovation on Loyalty is significant positive with significant value of 0.05 (95% confidence level) and the hypothesis H2 that says Service innovation directly positively and significantly impacts customer loyalty is accepted. When a firm improves its Service innovation there is an increase in its customer retention. This in line with previous findings by (Wu, 2014; Seesaiprai, 2016; YuSheng & Ibrahim, 2019) determined that Service innovation has a positive significant effect in satisfying and retaining customers in banking sector. According to (Ta & Yang, 2018) Service innovation is the development of new business models in the Service business to enhance current Service systems and technologies and develop new value propositions. This may lead to an improved market offering that is novel to the company or industry. According to (Mital et al. (1998), the declaration of loyalty is a result of satisfaction, which is the source of customer loyalty. (Campanella et al. (2017) also explained that Service innovation improved customer Service while lowering transfer costs and maintaining a steady customer base and market share.

It is also fits the Expectation and signaling theory. According (Oliver 1977, 1980) the Expectation disconfirmation theory (EDT) is commonly used to investigate the factors that contribute to shifting consumer behavior. It is predicated on the idea that expectation and disconfirmation would lead to satisfaction that is a crucial element in determining the likelihood of repurchasing (Balakrishnan et al., 1994). It helps the banking industry to improve their customer retention or customer loyalty by introducing, adopting and investing on Service innovation. Building a loyal client base has become a key marketing aim and a crucial foundation for creating a sustainable competitive advantage since customer loyalty is seen as a crucial goal for a company's survival and growth (Mandhachitara et al., 2012). Since earnings may be raised throughout the course of a customer's lifetime through his or her retention, understanding loyalty cultivation or retention is thus regarded to be a significant ingredient in producing long-term business profitability (Oberseder et al., 2013). The improvement of customer retention or customer loyalty reduces the cost of the banks and improved the bank's profitability and competitive advantage.

4.4.3 An effect customer satisfaction on loyalty

Table-13 Outcome variable of loyalty

OUTCOME-VARIABLE: LOY Model-Summary						
R	R-sq	MSE	F(HC4)	df1	df2	p
.8447	.7136	.1786	840.7428	4.0000	345.0000	.0000
Model						
	Coeff	se(HC4)	t	p	LLCI	ULCI
Constant	1.8161	.5379	3.3765	.0008	.7582	2.8740
SI	.3849	.1335	2.8839	.0042	.1224	.6475
SAT	.5343	.1368	3.9066	.0001	.2653	.8033
INCOME	.0015	.0005	3.1533	.0018	.0006	.0025
Int_1	.0035	.0007	4.7952	.0000	.0020	.0049

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As you can see from "Outcome variable LOY "or Customer Loyalty Table-13, according to (Hayes, 2015) the impact of Customer Satisfaction mediation on Customer Loyalty significant because both the ULCI (0.8033) and LLCI (0.2653) are positive and the interval doesn't include zero and; in addition to that the P value 0.0001 which is less than the significant level (0.05or 5%). As we can also see from the Table-13, the coefficient of Customer Satisfaction is positive 0. 5343 and for every unit change in satisfaction there is 0.5343 change in the loyalty and; the Mediation effect of Satisfaction on Customer Loyalty is significantly positive with significant value of 0.05 (95% confidence level). The hypothesis H3 that says satisfaction positively and significantly impacted loyalty is accepted. When a firm improves its customer satisfaction, it results an improvement its capacity to retain customers. In other words, when a customer is satisfied its probability to be loyal improves. This is consistent with previous findings that Consumer satisfaction, business image, and Service quality are some of the variables that impact client loyalty (Orozco & Arroyo, 2017). The result is consistent with many previous studies and According to a research by (Ehigie, 2006) and a more recent study in the banking industry by (Boonlertvanich, 2019) showed that satisfaction had a positive significant impact on loyalty. Csatisfaction has a beneficial effect on client loyalty (Chiguvi & Guruwo, 2017).

4.4.4 The effect of Service Innovation on satisfaction moderated by Income

Table-14 Outcome variable of Customer satisfcation

OUTCOME VARIABLE: SAT Model Summary						
R	R-sq	MSE	F(HC4)	df1	df2	p
.7721	.5962	.2624	300.9198	3.0000	346.0000	.0000
Model						
	Coeff	se(HC4)	t	p	LLCI	ULCI
Constant	3.9633	.0274	144.6286	.0000	3.9094	4.0172
SI	.8841	.0364	24.3147	.0000	.8126	.9556
INCOME	.0014	.0005	3.0644	.0024	.0005	.0024
Int_1	.0042	.0008	5.1364	.0000	.0026	.0059
Product terms key:						
Int_1	:	SI	x	INCOME		

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from Table-14, "outcome Variable SAT or Customer Satisfaction); the moderation impact of income on the effect of Service innovation on satisfaction has a p value of 0.000 and according to (Hayes, 2015) both the ULCI & LLCI are positive for income and it is the same for int_1 which the product effect of Service innovation and income (SI* INCOME) (Saunders, 1956; Cohen, 1968). The coefficients for income and int_1 are positive 0.0014 & 0.0042 respectively. For every unit change of an income; there is 0.0014 unit change in customer satisfaction. Moreover, for every unit change in the interaction (SI*Income), there is 0.0042 unit change in the customer satisfaction. This indicated the moderation Effect. More ever this relation has R value of 0.7721 and R-Sq value 0.5962 which signifies 59.62% of the effect on satisfaction is explained by effect of Service innovation moderated by customer income.

Table-15 Service innovation & Customer Income indexd effect on Customer satisfcations

Test(s) of highest-order-unconditional-interaction(s):					
	R2-chng	F(HC4)	df1	df2	p
X*W	.0103	26.3825	1.0000	346.0000	.0000

Sources: Own SPSS mediation & Moderation regression Result, (2023)

The Table-15 also shows the interaction effect Service innovation and customer income on Customer satisfaction is positive at 95% confidence level. As it can also be seen from the table the interaction has brought a change 1.03 in R-sq.

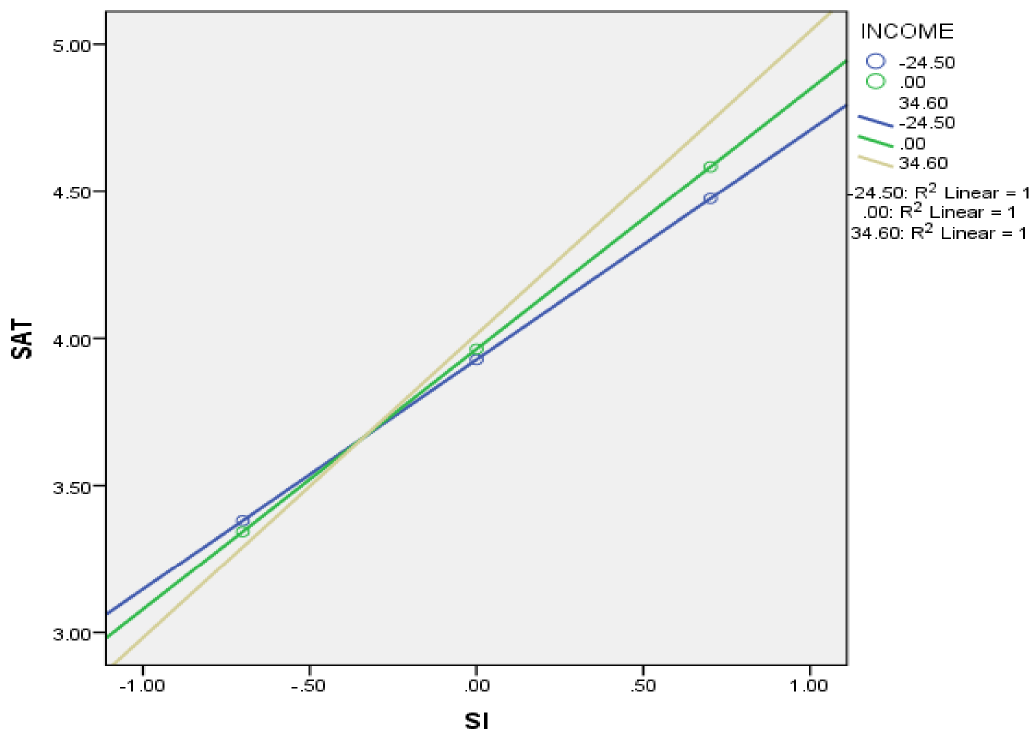
Table-16 Income Effect on Service innovation and Customer Satisfcation relationshsips

Focal-predict: SI (X)						
Mod-var: INCOME (W)						
Conditional-effects of the focal-predictor at the values of the moderator(s):						
INCOME	Effect	se(HC4)	t	p	LLCI	ULCI
-24.4951	.7802	.0488	16.0010	.0000	.6843	.8761
.0000	.8841	.0364	24.3147	.0000	.8126	.9556
34.6004	1.0309	.0350	29.4298	.0000	.9620	1.0998

Sources: Own SPSS mediation & Moderation regression Result, (2023)

Furthermore, the Table-16 shows the impact of Service innovation on satisfaction. (Hayes, 2015) the upper and lower limit confidence level for all the three categories of Customer income -1 standard deviation, mean and 1 standard deviation are both positive while the significance of the effect are 0.7802, 0.8841 & 1.0309 respectively which has clearly shown the effect is higher at 1 standard deviation. It explains the effect of the moderation is higher at high income customers. We can also see figure-2; the result in graph. The yellow color line of Service innovation for customers income at 1 standard deviation, the green color at the mean and blue at -1 standard deviation. The graph gradient of the graph clearly shows the slop is higher at higher customer income, lower at the mean and lowest at low income customers.

Figure 2 Service Innovation effects on Customer Satisfaction moderated by Customer income



Sources: Own SPSS mediation & Moderation regression Result, (2023)

Therefore, the moderation Effect Income on the impact of Service innovation on satisfaction is significant positive and hypothesis H4 which says income moderated the effect of Service innovation on customer satisfaction is accepted. More ever this relation has R value of 0.7721 and R-Sq value of 0.5962 which signifies 59.62% of the effect on satisfaction is explained by effect of Service innovation moderated by customer income. The effect of Service innovation on Customer satisfaction increasing as the customer income increases. High income customers are more satisfied by the improvement of Service innovation than lower income customers, this is may be related to technology awareness and another reason could be the demand of high-income customers to save their time.

It is also consistent with Theory of Consumer Behavior that (Engel et al, 1994) asserted that consumer attributes such varied income levels will result in divergent demand and tastes, which will then have an impact on the goods and Services that are consumed. The finding is supported by previous studies that Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). Other similar (Sharda & Bhat, 2018) has identified Five personal traits are thought to have a moderating impact on the correlations between satisfaction & loyalty, according to a review of the research on personal determinants of buying behavior. Therefore, an improvement in Service innovation by banks is more satisfied high income customers this is more related with time saving. In addition to that theory of customer behavior is explained that as per capital income raises customer demand brand more which banks could exploit to their profit.

4.4.5 The indirect-effect of Service innovation on customer Loyalty mediated by Customer satisfaction and moderated by Customer income.

Table 17 Income effect of the Indirect Effets of Service Innovation On Customer loyalty

Conditional-indirect-effects of X on Y:				
INDIRECT-EFFECT:				
SI -> SAT -> LOY				
INCOME	Effect	BootSE	BootLLCI	BootULCI
-24.4951	.4169	.0916	.2505	.6015
.0000	.4724	.0993	.2888	.6712
34.6004	.5508	.1126	.3425	.7758
Index of moderated mediation:				
	Index	BootSE	BootLLCI	BootULCI
INCOME	.0023	.0006	.0012	.0036

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from the table from the Table-17 (Hayes, 2015) conditional Effect Service innovation on customer loyalty mediated by Customer Satisfaction and moderated by customer income both the ULCI and LLCI of the index of moderated mediation are positive with positive index of 0.0023; therefore the effect of the moderation of effect of customer income the indirect-effect of Service innovation on customer loyalty mediated by customer satisfaction is significant positive at 95% confidence level (0.05 significance value). The loyalty of Customers due to an improvement in Service innovation and satisfaction increases as the income of customers increases. For every unit improvement in the customer income there is an increase on the effect by 0.023 units in the customer loyalty. In other words, High income satisfied customers are more interested to stay loyal by the improvement of Service innovation than lower income customers, this is may be related to technology awareness and another reason could be the demand of high-income customers to save their time. Furthermore, another reason can be low income customer don't bother too much about saving as the low income dwellers use 80% of their income for food consumptions (ORAAMP, 2002).

Therefore the effect of the moderation of effect of customer income the indirect-effect of Service innovation on loyalty mediated by satisfaction is significant-positive at 95% confidence level and H5 is accepted. This is not surprising because this finding is supported previous Studies demonstrate that rapid economic development and the rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). Other similar (Sharda & Bhat, 2018) has identified Five personal traits are thought to have a moderating effect on the correlation between satisfaction & loyalty, according to a review of the research on personal determinants of buying behavior. It was also supported with findings from (Razak et. al, 2016) established that customer income moderator strengthened the relationship and therefore by implication, it supported the findings. This is not surprising because many previous studies by (Ehigie, 2006; Boonlertvanich, 2019; Chiguvi & Guruwo, 2017) established the significant positive of satisfaction on loyalty.

4.4.6 The direct-effect of Service innovation on loyalty moderated by Income

Table-18 Income effect of the direct Effets Service Innovation on Customer Loyalty

Conditional-direct-effects of X on Y						
INCOME	Effect	se(HC4)	t	p	LLCI	ULCI
-24.4951	.2998	.1258	2.3838	.0177	.0524	.5472
.0000	.3849	.1335	2.8839	.0042	.1224	.6475
34.6004	.5052	.1474	3.4282	.0007	.2154	.7950

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from the Table-18, the p values of this direct-effect of Service innovation moderated by customer income are (0.0177, 0.0042 & 0.0007) which are all less than the significance level of 0.05 (95% confidence level) and in addition to that both ULCI & LLCI are positive and; therefore, the direct-effect of Service innovation on loyalty moderated by customer income significant positive at 95% confidence level or 0.05 significance level (Hayes, 2015). Besides that we can also see the increment is significantly higher at high Customer income that at lower and mean income customers. Therefore, the direct-effect of Service innovation on customer loyalty moderated by customer income significant positive at 95% confidence level and hypothesis H6 that says the direct-effect of Service innovation moderated by income is positive & significant; is accepted. Besides that we can also see the increment is significantly higher at high Customer income that at lower and mean income customers. This is not surprising because this finding is supported previous Studies demonstrate that rapid economic development and the rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018). Other similar (Sharda & Bhat, 2018) has identified Five personal traits are thought to have a moderating effect on the correlations, according to a review of the research on personal determinants of buying behavior.

4.4.7 The Combined-Effect of Service innovation on Loyalty Moderated by Income

Table-19 Outcome variable of Customer Loyalty

OUTCOME-VARIABLE:						
LOY Model-Summary						
R	R-sq	MSE	F(HC4)	df1	df2	p
.8447	.7136	.1786	840.7428	4.0000	345.0000	.0000
Model						
	Coeffi	se(HC4)	t	p	LLCI	ULCI
Const	1.8161	.5379	3.3765	.0008	.7582	2.8740
SI	.3849	.1335	2.8839	.0042	.1224	.6475
SAT	.5343	.1368	3.9066	.0001	.2653	.8033
INCOME	.0015	.0005	3.1533	.0018	.0006	.0025
Int_1	.0035	.0007	4.7952	.0000	.0020	.0049
Product terms key:						
Int_1	:	SI	x	INCOME		

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As we can see from the Table-19; "outcome variable LOY or customer loyalty"; the direct-effect of Service innovation has positive coefficient of 0.3849 and p value of 0.0042. In addition to that the upper and lower limit confidence are all positive and the interval doesn't contain zero value therefore, the direct-effect of Service innovation on customer loyalty moderated by customer income (the C path) is significant positive (Hayes, 2015). In the Table-19, it can also be shown that the Customer satisfaction effect on customer loyalty has positive coefficient of 0.53 and p value of 0.000, the Upper limit confidence level and the lower limit confidence level are both positive and the interval doesn't contain zero; therefore the relationship is significant positive (Hayes, 2015). The moderation effect of customer income on Customer loyalty out put on both B and C path has a coefficient 0.005 and p value of 0.0018. The upper and lower limit confidence interval are both positive and in the interval doesn't contain zero; Furthermore the interaction of both Service innovation and income has positive coefficient; both upper & lower limit confidence intervals are positive & doesn't contain zero and; besides it has 0.000 p value. Therefore, the Effect of Service Innovation on customer loyalty mediated by customer income is significant positive (Hayes, 2015). The loyalty of Customers due to an improvement in Service innovation as the income of customers increases. In other words, High income customers are more interested to stay loyal by the improvement of Service innovation than lower income customers, this is may be related to technology awareness and another reason could be the demand of high-income customers to save their time. Furthermore, low income customer don't bother too much about saving as the low income dwellers use 80% of their income for food consumptions (ORAAMP, 2002).

From the table, it can also be seen that this mediated moderation relationship has r value of 0.8447, R-sq. value 0.7136 which means the effect of Service innovation on customer loyalty mediated by customer satisfaction and moderated by customer income explains 71.36% of Customer loyalty.

Table-20 Indexed Service innovation and income interaction

Test(s) of highest-order-unconditional-interaction(s):					
	R2-chng	F(HC4)	df1	df2	p
X*W	.0070	22.9940	1.0000	345.0000	.0000
Focal-predict:	SI	(X)			
Mod-var:	INCOME	(W)			

Sources: Own SPSS mediation & Moderation regression Result, (2023)

The Table-20 also shows the interaction effect of Service innovation and Customer income moderator have brought a change of 0.007 in the R-sq. with 0.000 P value, it shows it has Customer income moderates eth effect of Service innovation on Customer loyalty positively and significantly with confidence 99% confidence level and 0.01 significance level.

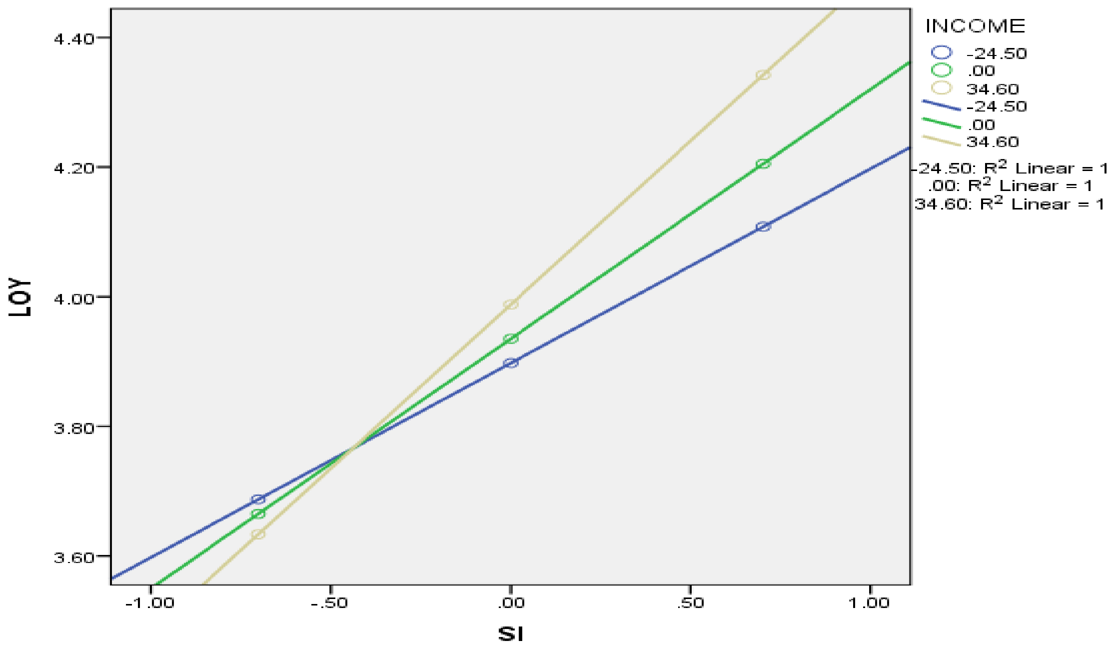
Table-21 Customer Income effect on Loyalty

Conditional effects of the focal predictor at values of the moderator(s):						
INCOME	Effect	se(HC4)	t	p	LLCI	ULCI
-24.4951	.2998	.1258	2.3838	.0177	.0524	.5472
.0000	.3849	.1335	2.8839	.0042	.1224	.6475
34.6004	.5052	.1474	3.4282	.0007	.2154	.7950

Sources: Own SPSS mediation & Moderation regression Result, (2023)

As it can be seen in the Table-21, the studies explains the effect Service innovation on customer loyalty mediated by customer satisfaction moderated by customer income are positive and have positive upper limit and lower limit confidence intervals for all customer income at -1 standard deviation, Mean and 1 standard deviation. All the Confidence intervals also don't contain zeros values besides they have P values (0.0177, 0.042, 0.007). Therefore, the impact of Service innovation on Customer loyalty mediated by Customer support and moderated by Customer income is significant positive at 95% confidence level (at 0.05 significance level). This explains the effect of Service innovation on customer loyalty mediated by Customer satisfaction (Hayes, 205) and moderated by customer income is positive insignificant at all levels of customer income where are from the Table-21 we can observe the effect is highest at high income customers, lower at mean income customers and lowest at low income customers.

Figure 3 Service Innovation effect on Loyalty moderated by Customer Income



Sources: Own SPSS mediation & Moderation regression Result, (2023)

We can also see figure-3; the result in graph. The yellow color line of Service innovation for customers income at 1 standard deviation, the green color at the mean and blue at -1 standard deviation. The graph gradient of the graph clearly shows the slop is higher at higher customer income, lower at the mean and lowest at low income customers. The slop or gradient of the graph of the effect of Service innovation on Customer loyalty mediated by Customer satisfaction and moderated by customer income is highest at income customers, lower at mean income customers and lowest at lower income customers; therefore the effect of customer income on customer loyalty mediated by customer satisfaction and moderated by Customer income is significant positive for mean and higher income customers and insignificant for lower income customers. Therefore, the effect of Service innovation on Customer loyalty mediated by Customer support and moderated by Customer income is significant positive at 95% confidence level (at 0.05 significance level). And; the hypothesis H7 that says the effect of Service innovation on Customer loyalty moderated by customer income is significant positive is accepted. Though there are little studies to mention to explain this result and I think, it is better to explain the result in two parts. The first part is the relationship between Service innovation is supported by many previous studies such that by (Wu, 2014; Seesaiprai, 2016; YuSheng &

Ibrahim, 2019; Rantyanti & Halim, 2020; Tai et al., 2021) determined that innovation has a positive significant effect in satisfying and retaining customers in banking sector. It is also consistent with the signal and expectation theories and researches like (Engel et al, 1994) assert that consumer attributes such varied income levels will result in divergent demand and tastes, which will then have an impact on the goods and Services that are consumed. Other many previous studies also supported the moderation of income had an impact on Customer satisfaction & loyalty. The second part, which is the income moderation, is also supported by the theory of consumer behavior. According to Zeithaml (1985), an individual's income is seen to have a significant influence on their decision-making. High income consumers should feel more at ease coping with and relying on new information inputs because of their cognitive abilities (Spence & Brucks, 1997). (Sharda & Bhat, 2018) has identified Five personal traits are thought to have a moderating effect on the relationship between customer satisfaction & loyalty, according to a review of the research on personal determinants of buying behavior. The article picked three demographic parameters (age, gender and income) and two psychological components (involvement & variety seeking) to compare the explanatory power of each. Moreover, studies demonstrate that rapid economic development and the resulting rise in per capita income lead to a shift in spending patterns from mandatory to discretionary. Customers start experimenting with brands and develop brand awareness (Sharda & Bhat, 2018) Therefore; it is hypothesized that another demographic factor that could influence the effects of (dis)satisfaction is income.

The research is significant and useful from both a theoretical and management standpoint. From a theoretical standpoint, the research findings provide details to a better understanding of the factors that influence Customer loyalty. From a management standpoint, it offers direction for Service businesses about the suitability of the instruments and tactics they employ to increase Customer loyalty and Satisfaction specially VIP customers because the result of the study shows that high income customer are more sensitive to service innovation. Therefore Banks and other service business firms have to continue investing in their service innovation to Satisfy, retain more importantly high customers thereby to increase their profit.

CHAPTER FIVE

5. CONCLUSION AND SUMMARY

5.1 Conclusions

This study investigated the correlation between innovation of services, customer satisfaction, and loyalty and; the effect of the Customer income on the correlations between service innovations, Customer satisfaction and loyalty considering the case of Ethiopian banking industry into account. In this research, the survey results showed that the bank industry ability to attain customer satisfaction was determined positively and significantly by service innovation. It was also confirmed that service innovation was very essential to boosting loyalty. Besides that, the findings demonstrated Customer income positively and significantly strengthened the effect of innovation of services on customer satisfaction and loyalty. Besides the results showed that customer satisfaction directly improves Customer loyalty. Furthermore, the study indicated that service innovation had both direct and; indirect-effects on Customer loyalty the mediated by Customer Satisfaction.

Finally, the research determined that Customer income had positive and significant effect on indirect relationship of service innovation on customer loyalty mediated by Customer satisfaction. More importantly, the findings established positives and significant effect of Customer Income on the combined direct and indirect-effects of service innovation on customer loyalty. The higher the customer earn the more the effect of service innovation have on their loyalty with the bank. Therefore, it is confirmed that the introduction of innovative services is an increasingly strengthen the retention their most important High earning VIP Customers. It is found to be that the adoption of innovative services is an important tool for the success, survival and competitive advantages of banks. Managers and business companies should understand that innovative services can create and add value to their clients present and potential needs that Strengthen the loyalty of their clients more importantly the VIP one’s. Retaining high income customers result in higher profit and 10% of VIP customers result in 80% the profit according analysis by contribution.

5.2 Recommendations

5.2.1 Recommendation for Improvement

The study findings had the following recommendations. The findings have established that an innovative service improves Customer satisfaction & loyalty Furthermore the findings determined the effect of innovative services on Customer satisfaction & loyalty increased at high income customers. Therefore, this research recommends banks and banks manager to intensify their investment on service innovation so that it will increase their satisfaction and retention of their customers and more importantly satisfying and retaining their high earning VIP Customers. This will improve the survival, success and Competitive advantage of the firm.

5.2.2 Recommendation for Future Work and Imitations

Hence, the results of this study are very important and it considered significant & important variables; however it has limitations. Privacy and confidentiality of Customer information hindered the researcher from using other random sampling techniques than convenience sampling and; analyzed the relationship using SPSS macro model 8 mediation moderation analyses. Another issue is that respondents are suspicious to reveal their personal information; some are not interested, some are busy. The researcher instead used social media follow up to solve the challenge and made eased for them to participate. Future academician or researcher can repeat the work with different random sampling technique if they will have the privilege to access Customer data. Futures researches can also added other demographic characteristics like employment status as it is another important customer character for banks. I also recommend banks, policy makers and governments can use of it for their business solution or for further study.

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Appendix

Questionnaire

Dear Respondent,

This questionnaire is prepared by MBA student at Addis Ababa University. The purpose of the questionnaire is to collect data for research on "**the effects of service innovation on customer satisfaction and loyalty; the moderating role customer income: evidence from The Ethiopian banking industry"**. The research is designed to identify **Service Innovation, Customer satisfaction and loyalty**. The research outcomes are important for **Addis Ababa University and the banking industry in Ethiopia.** Your genuine and honest response is very important for the success of the research and the researcher would like to thank you for your cooperation in advance.

Note: For any clarification or question please don't hesitate to contact the researcher through the following address. Name: **Abebe Desta**, Mobile phone: **0939914151** email: **abebedestat@gmail.com**

General Instruction:

1. No need to write your name
2. Your response confidentiality is maintained
3. Instruction for each part of the questionnaire is given at the beginning of the questions

Part I: General background information

Age _______

Gender: Female______ Male ______

Annual Income: ________________

Educational level: No formal Education ____: Primary school: ___ High school _____

Bachelor degree: _____ Master's Degree: ____: PhD and above: _______

Account holding time : Less than two year _____: Two & above Years _______

Thank You for your cooperation!

Listed below are a series of statements that represent **service innovation** to concerning your feeling towards **"your bank"** please, indicate the degree of your agreement or disagreement with each statement by putting a tick mark ***(√)*** on one of the five alternatives. ***Responses are measured on 5- point scales with the following verbal anchors: Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), and Strongly Agree (5)***

Service Innovation:	5 Strongly agree	4 Agree	3 Neither Agree nor Disagree	2 Disagree	1 Strongly disagree
1. The range of services your bank offers is consistent with the latest technological innovations in banking services.					
2. My bank has significantly improved the functionalities of its products or introduces new products					
3. My bank has introduced new or significantly improved processes for the provisioning of services.					
4. My bank provides services quicker than before with the help of an innovation process					
5. Time taken to serve customers has reduced drastically due to the use of the new process					
6. There are new methods to promote products and services by my bank					

Listed below are a series of statements that represent **Customer satisfaction** concerning your feeling towards "**your bank"** please, indicate the degree of your agreement or disagreement with each statement by putting a tick mark ***(√)*** on one of the five alternatives. ***Responses are measured on 5- point scales with the following verbal anchors: Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), and Strongly Agree (5)***

Customer satisfaction:	5 Strongly agree	4 agree	3 Neither Agree nor Disagree	2 Disagree	1 Strongly Disagree
1. Based on all of my experience with my bank, I am very satisfied with the banking services it provides					
2. My choice to use this bank was a wise one					
3. Overall, I am satisfied with the decision to use this bank					
4. I think I did the right thing when I decided to use this bank for my banking needs					
5. My overall evaluation of the services provided by this bank is very good					

Listed below are a series of statements that represent **Customer Loyalty** concerning your feeling towards "**your bank"** please, indicate the degree of your agreement or disagreement with each statement by putting a tick mark *(√)* on one of the five alternatives. ***Responses are measured on 5- point scales with the following verbal anchors: Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), and Strongly Agree (5)***

Customer loyalty:	5 Strongly agree	4 agree	3 Neither Agree nor disagree	2 Disagree	1 Strongly Disagree
1. I say positive things about my bank to other people					
2. I recommend my bank to someone who seeks my advice					
3. I encourage friends and relatives to do business with my bank					
4. I consider my bank as my first choice to buy banking services					
5. I will do more business with my bank in the next few years					

Thank you for your time

5.1 Questionnaire translation (Accredited translations office)

ለክቡር/ክብርት ማጠይቅ ሞላሽ

ይህ መጠይቅ የተዘጋጀው በአዲስ አበባ ዩንቨርሲቲ ቢዝነስ አድሚኒስትሬሽን ድህረ ምረቃ ተማሪ ነው። የመጠይቁም አላማ ለጥናቱ መረጃ ለመሰብሰብ ሲሆን ጥናቱም "**የአገልግሎት ፈጠራ እና ማሻሻያ በደንበኛ እርካታ እና ታማኝነት ላይ በሚያሳድረው ተጽእኖ፡ የደንበኛውን ገቢ ያለው አስተዋጽኦ፡ ከኢትዮጵያ የባንኮች ኢንደስትሪ አኳያ**" የሚል ነው። ጥናቱ የተቀረጸው የአገልግሎት ፈጠራ እና ማሻሻያ፣ የደንበኛ እርካታ፣ እንዲሁም ታማኝነት ለመለካት ነው። የጥናቱ ውጤት በአዲስ አበባ ዩንቨርሲቲ እና ለኢትዮጵያ ባንኮች ኢንደስትሪ በጣም አስፈላጊ ስለሆነ፤ የእርስዎም ቅንና ግልጽ መልስ ለዚህ ጥናት ስኬት አስፈላጊ ነው። የጥናቱ ባለቤትም ለሚያደርጉት ትብብር በቅድሚያ ምስጋና መስጠት እንፈልጋለን።

ማስታወሻ፡ *ለማብራሪያ እንዲሁም ለሌሎች ጥያቄዎች እባክዎ በሚከተሉት አድራሻዎች ያግኙን፡*

አድራሻ ስም፡ አበበ ደስታ፣ ስልክ ቁጥር 09 3991 4151፣ ኢሜይል፡ abebedestat@gmail.com

ጠቅላላ መመሪያ

1. ስምን መጻፍ አያስፈልግም።
2. የመልስዎ ሚስጥራዊነት የተረጋገጠ ነው።
3. ለእያንዳንዱ መጠይቅ ክፍል ጥያቄ በመጠይቁ መጀመሪያ ላይ መመሪያ ሰፍሯል።

ክፍል 1፡ ጠቅላላ መረጃ

እድሜ__________________

ጾታ፡ ሴት ________ወንድ________

አሟታዊ ገቢ______________

የትምህርት ደረጃ፡ መደበኛ ትምህርት የለም________፡ የመጀመሪያ ደረጃ __________2ኛ ደረጃ_________ ባችለር ድግሪ_____________ ማስተርስ ድግሪ_ዶክሬትና ከዚያ በላይ___________

ከታች የተቀመጡት አረፍተነገሮች አገልግሎት ፈጠራ እና ማሻሻያ የሚወክሉ ሲሆን ይህም በሚጠቀሙበት ባንክ ያለዎትን ስሜት ያንጸባርቃል እባክዎ ከታች ከተጠቀሰው አረፍተ ነገር ጋር ከተቀመጡት 5 አማራጮች ውስጥ አንዱን (✓) በማድረግ መስማማትዎን ወይንም አለመስማማትዎን ይግለጹልን፡፡ እነዚህ መልሶች በ5 መለኪያ ነጥቦች የተቀመጡ ሲሆን እነሱም፡ 1. በጣም አልስማማም ፣ 2. አልስማማም፣ 3. ለውሳኔ አልደረስኩም ፣

4. እስማማለሁ፣ 5. በጣም እስማማለሁ

የአገልግሎት ፈጠራ እና ማሻሻያ	5 **በጣም እስማማለሁ**	4 **እስማማለ ሁ**	3 **ለውሳኔ አልደረስኩም**	2 **አልስማማ ም**	1 **በጣም አልስማማም**
1. ባንኩ የሚሰጠው አገልግሎቶች ከዘመኑ ቴክኖሎጂ ጋር የሚጣጣምነው፡ ፡					
2. ባንኩ በምርቶቹና አገልግሎቶቹ የሚታይ ፈጠራና ማሻሻያ አድርጓል					
3. ባንኩ አዳዲስ እና የተሻሻሉ የአገልግሎት አሰጣጥ ዘዴዎች አስተዋወቋል፡፡					
4. ባንኩ ፈጠራና ማሻሻያ በመጠቀም ከበፊቱ በተሻለ ፍጥነት አገልግሎት መስጠት ችሏል፡፡					
5. አዲሱን አገልግሎት በጥቅም ላይ በማዋሉ ለደንበኞች አገልግሎት ለመስጠት የሚወስደውሰዓት በከፍተኛ ቀንሷል፡፡					
6. ባንኩ አገልግሎቶችንና ምርቶችን የማስተዋወቅ አዳዲስ ዘዴዎች አሉት					

ከታች የተቀመጡት አረፍተነገሮች አገልግሎት የደንበኞች እርካታ የሚወክሉ ሲሆን ይህም በሚጠቀሙበት ባንክ ያለዎትንስሜት ያንጸባርቃል እባክዎ ከታች ከተጠቀሰውአረፍተ ነገር ጋር ከተቀመጡት 5 አማራጮች ውስጥ (✓) በማድረግ መስማማትዎን ወይንም አለመስማማትዎን ይግለጹልን፡፡ እነዚህ መልሶች በ5 መለኪያ

ነጥቦች የተቀመጡሲሆን እነሱም፡ 1. በጣም አልስማማም ፣ 2. አልስማማም፣ 3. ለወሳኔ አልደረስኩም ፣ 4. እስማማለሁ፣ 5. በጣም እስማማለሁ፡ ፡

የደንበኞች እርካታ	5 በጣም እስማማለሁ	4 እስማማለ ሁ	3 ለወሳኔ አልደረስኩ ም	2 አልስማማ ም	1 በጣም አልስማም
1. ከባንኩ ጋር ባለኝ ልምድ ባንኩ በሚሰጠው አገልግሎት በጣም እረክቻለሁ፡ ፡					
2. ባንኩን ማጠቀሜ ብልህነት ነው፡ ፡					
3. በአጠቃላይ ባንኩን ለማጠቀም መወሰኔ እርካታ ሰጥቶኛል፡ ፡					
4. ይህንን ባንክ ለባንክ ፍላጎቴ ለማጠቀም መወሰኔ ትክክኛወን ነገር እንዳደረኩ እንዲሰማኝ አድርጎኛል፡ ፡					
5. የባንኩን አገልግሎት ስገመግመው በጣም ጥሩ ነው፡ ፡					

ከታች የተቀመጡት አረፍተነገሮች የደንበኛ ታማኝነት የሚወክሉ ሲሆን ለሚጠቀሙት ባንክ ያለዎትን ስሜት ያንጸባርቃል እባክዎ ከታች ከተጠቀሰው አረፍተ ነገር ጋር ከተቀመጡት 5 አማራጮች ወስጥ (✓) በማድረግ ማስማማትዎን ወይንም አለማስማማትዎን ይግለጹልን፡፡ እነዚህ ሚዛኖች በ5 ማለኪያ ነጥቦች የተቀመጡ ሲሆን እነሱም፡ 1. በጣም አልስማማም ፣ 2. አልስማማም፣ 3. ለወሳኔ አልደረስኩም፣ 4.እስማማለሁ፣ 5. በጣም እስማማለሁ፡ ፡

የደንበኞች ታማኝነት	5 በጣም	4 እስማማለሁ	3 ለወሳኔ	2 አልስማማ	1 በጣም
2. ምክሬን ለሚፈልግ ባንኩን እንዲጠቀሙ ምክሬን እለግሳለሁ					
3. ጓደኞቼን እና ዘመዶቼ ከባንኩ ጋር ንግድ ትስስር እንዲያደርጉ አበረታታለሁ፡ ፡					
4. ለባንክ አገልግሎቶች ባንኩ የመጀመሪያ ተመራጭ እንደሆነ አምናለሁ					
5. በሚቀጥሉት አመታት ከባንኩ ጋር ቀጣይ የንግድ ትስስር አደርጋለሁ					

ስለሰጡኝ ጊዜ አመሰግናለሁ፡ ፡

5.2Regression Results

```
Run MATRIX procedure:


***************** PROCESS Procedure for SPSS Version 4.2 ****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 8
    Y  : LOY
    X  : SI
    M  : SAT
    W  : INCOME

Sample
Size:  350

**************************************************************************
OUTCOME VARIABLE:
 SAT

Model Summary
          R       R-sq        MSE     F(HC4)        df1        df2          p
      .7721      .5962      .2624   300.9198     3.0000   346.0000      .0000

Model
              coeff    se(HC4)          t          p       LLCI       ULCI
constant     3.9633      .0274   144.6286      .0000     3.9094     4.0172
SI            .8841      .0364    24.3147      .0000      .8126      .9556
INCOME        .0014      .0005     3.0644      .0024      .0005      .0024
Int_1         .0042      .0008     5.1364      .0000      .0026      .0059

Product terms key:
 Int_1    :        SI       x        INCOME

Test(s) of highest order unconditional interaction(s):
       R2-chng     F(HC4)        df1        df2          p
X*W      .0103    26.3825     1.0000   346.0000      .0000
----------
    Focal predict: SI       (X)
          Mod var: INCOME   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     INCOME     Effect    se(HC4)          t          p       LLCI       ULCI
   -24.4951      .7802      .0488    16.0010      .0000      .6843      .8761
      .0000      .8841      .0364    24.3147      .0000      .8126      .9556
    34.6004     1.0309      .0350    29.4298      .0000      .9620     1.0998


There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.
```

```
Conditional effect of focal predictor at values of the moderator:
     INCOME     Effect    se(HC4)          t          p       LLCI       ULCI
   -24.4951      .7802      .0488    16.0010      .0000      .6843      .8761
   -15.0904      .8201      .0433    18.9372      .0000      .7349      .9053
    -5.6856      .8600      .0387    22.2488      .0000      .7840      .9360
     3.7191      .8999      .0351    25.6221      .0000      .8308      .9690
    13.1239      .9398      .0331    28.4171      .0000      .8748     1.0049
    22.5287      .9797      .0328    29.8856      .0000      .9152     1.0442
    31.9334     1.0196      .0343    29.7286      .0000      .9522     1.0871
    41.3382     1.0595      .0374    28.3301      .0000      .9860     1.1331
    50.7430     1.0994      .0417    26.3431      .0000     1.0173     1.1815
    60.1477     1.1393      .0470    24.2595      .0000     1.0470     1.2317
    69.5525     1.1793      .0528    22.3246      .0000     1.0754     1.2831
    78.9572     1.2192      .0591    20.6205      .0000     1.1029     1.3354
    88.3620     1.2591      .0657    19.1525      .0000     1.1298     1.3884
    97.7668     1.2990      .0726    17.8962      .0000     1.1562     1.4417
   107.1715     1.3389      .0796    16.8204      .0000     1.1823     1.4954
   116.5763     1.3788      .0867    15.8953      .0000     1.2082     1.5494
   125.9810     1.4187      .0940    15.0950      .0000     1.2338     1.6035
   135.3858     1.4586      .1013    14.3980      .0000     1.2593     1.6579
   144.7906     1.4985      .1087    13.7872      .0000     1.2847     1.7123
   154.1953     1.5384      .1161    13.2482      .0000     1.3100     1.7668
   163.6001     1.5783      .1236    12.7699      .0000     1.3352     1.8214
   173.0049     1.6182      .1311    12.3429      .0000     1.3604     1.8761
Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   SI         INCOME     SAT        .
BEGIN DATA.
     -.7013   -24.4951     3.3807
      .0000   -24.4951     3.9278
      .7013   -24.4951     4.4750
     -.7013      .0000     3.3433
      .0000      .0000     3.9633
      .7013      .0000     4.5834
     -.7013    34.6004     3.2904
      .0000    34.6004     4.0134
      .7013    34.6004     4.7365
END DATA.
GRAPH/SCATTERPLOT=
 SI       WITH     SAT      BY       INCOME   .
**************************************************************************
OUTCOME VARIABLE:
 LOY

Model Summary
          R       R-sq        MSE     F(HC4)        df1        df2          p
      .8447      .7136      .1786   840.7428     4.0000   345.0000      .0000

Model
              coeff    se(HC4)          t          p       LLCI       ULCI
constant     1.8161      .5379     3.3765      .0008      .7582     2.8740
SI            .3849      .1335     2.8839      .0042      .1224      .6475
SAT           .5343      .1368     3.9066      .0001      .2653      .8033
INCOME        .0015      .0005     3.1533      .0018      .0006      .0025
Int_1         .0035      .0007     4.7952      .0000      .0020      .0049
```

```
Product terms key:
 Int_1    :        SI       x        INCOME

Test(s) of highest order unconditional interaction(s):
       R2-chng     F(HC4)        df1        df2          p
X*W      .0070    22.9940     1.0000   345.0000      .0000
----------
    Focal predict: SI       (X)
          Mod var: INCOME   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     INCOME     Effect    se(HC4)          t          p       LLCI       ULCI
   -24.4951      .2998      .1258     2.3838      .0177      .0524      .5472
      .0000      .3849      .1335     2.8839      .0042      .1224      .6475
    34.6004      .5052      .1474     3.4282      .0007      .2154      .7950

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     INCOME     Effect    se(HC4)          t          p       LLCI       ULCI
   -24.4951      .2998      .1258     2.3838      .0177      .0524      .5472
   -15.0904      .3325      .1285     2.5876      .0101      .0798      .5852
    -5.6856      .3652      .1315     2.7767      .0058      .1065      .6239
     3.7191      .3979      .1348     2.9511      .0034      .1327      .6630
    13.1239      .4306      .1384     3.1115      .0020      .1584      .7027
    22.5287      .4632      .1422     3.2583      .0012      .1836      .7429
    31.9334      .4959      .1462     3.3924      .0008      .2084      .7835
    41.3382      .5286      .1504     3.5146      .0005      .2328      .8244
    50.7430      .5613      .1548     3.6258      .0003      .2568      .8658
    60.1477      .5940      .1594     3.7269      .0002      .2805      .9075
    69.5525      .6267      .1641     3.8187      .0002      .3039      .9495
    78.9572      .6594      .1690     3.9020      .0001      .3270      .9917
    88.3620      .6921      .1740     3.9777      .0001      .3499     1.0343
    97.7668      .7247      .1791     4.0465      .0001      .3725     1.0770
   107.1715      .7574      .1843     4.1090      .0000      .3949     1.1200
   116.5763      .7901      .1897     4.1658      .0000      .4171     1.1632
   125.9810      .8228      .1951     4.2175      .0000      .4391     1.2065
   135.3858      .8555      .2006     4.2646      .0000      .4609     1.2501
   144.7906      .8882      .2062     4.3075      .0000      .4826     1.2937
   154.1953      .9209      .2119     4.3468      .0000      .5042     1.3375
   163.6001      .9536      .2176     4.3826      .0000      .5256     1.3815
   173.0049      .9862      .2234     4.4154      .0000      .5469     1.4256


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   SI         INCOME     LOY         .
BEGIN DATA.
     -.7013   -24.4951     3.6874
      .0000   -24.4951     3.8976
      .7013   -24.4951     4.1079
     -.7013      .0000     3.6651
```

```
      .0000      .0000     3.9351
      .7013      .0000     4.2050
     -.7013    34.6004     3.6336
      .0000    34.6004     3.9879
      .7013    34.6004     4.3422
END DATA.
GRAPH/SCATTERPLOT=
 SI       WITH     LOY      BY       INCOME   .

****************** DIRECT AND INDIRECT-EFFECTS OF X ON Y *****************

Conditional direct-effects of X on Y
     INCOME     Effect    se(HC4)          t          p       LLCI       ULCI
   -24.4951      .2998      .1258     2.3838      .0177      .0524      .5472
      .0000      .3849      .1335     2.8839      .0042      .1224      .6475
    34.6004      .5052      .1474     3.4282      .0007      .2154      .7950

Conditional indirect-effects of X on Y:

INDIRECT-EFFECT:
 SI          ->    SAT         ->    LOY

     INCOME     Effect     BootSE   BootLLCI   BootULCI
   -24.4951      .4169      .0916      .2505      .6015
      .0000      .4724      .0993      .2888      .6712
    34.6004      .5508      .1126      .3425      .7758

      Index of moderated mediation:
            Index     BootSE   BootLLCI   BootULCI
INCOME      .0023      .0006      .0012      .0036

*********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS ************

OUTCOME VARIABLE:
 SAT

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     3.9633     3.9633      .0277     3.9099     4.0179
SI            .8841      .8853      .0363      .8114      .9559
INCOME        .0014      .0014      .0005      .0004      .0024
Int_1         .0042      .0043      .0008      .0027      .0059

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OUTCOME VARIABLE:
 LOY

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     1.8161     1.7702      .4099     1.0185     2.5978
SI            .3849      .3746      .1017      .1868      .5762
SAT           .5343      .5461      .1033      .3401      .7342
INCOME        .0015      .0015      .0004      .0007      .0024
Int_1         .0035      .0035      .0007      .0022      .0048


********************** ANALYSIS NOTES AND ERRORS ************************
```

```
Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

W values in conditional tables are the minimum, the mean, and 1 SD above the
mean.

NOTE: One SD below the mean is below the minimum observed in the data for W,
      so the minimum measurement on W is used for conditioning instead.

NOTE: A heteroscedasticity consistent standard error and covariance matrix
estimator was used.

NOTE: The following variables were mean centered prior to analysis:
          INCOME   SI

------ END MATRIX -----
```