THE EFFECT OF CONSUMER LOANS ON SUSTAINABLE DEVELOPMENT IN KENYA

BY:

JOSEPH M. KIMUYU

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DECLARATION

I hereby declare that this research project is my original work and to the best of my knowledge does not contain any material of substantial extent published or written for the award of a degree in any University.

Signature : .....

Name : Joseph Kimuyu

Registration No. : D63/29247/2019

Date : 12/06/2022

This project has been submitted for examination with my approval as the University Supervisor

Signature Date 11/06/2022

Prof. Josiah Aduda

Professor of Finance

University of Nairobi.

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DEDICATION

I dedicate this research work to my dad, mom, wife, brothers and sisters who vehemently prayed, encouraged and supported my course of study with brilliant and inspiring ideas throughout the entire course.

LIST OF ABBREVIATIONS

ARMA	:	Autoregressive Moving Average
CBK	:	Central Bank of Kenya
CBN	:	Central Bank of Nigeria
CO2	:	Carbon Dioxide
CPI	:	Consumer Price Index
EAC	:	East African Community
GDI	:	Gross Domestic Income
GDP	:	Gross domestic Product
GNI	:	Gross National Income
KNBS	:	Kenya National Bureau of Statistics
LEED	:	Leadership in Energy and Environmental Design
SACCO	:	Savings and Credit Co-operative Society
SDI	:	Sustainable Development Index
UN	:	United Nations
VIF	:	Variance Inflation Factor

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ABSTRACT

This paper examines the usefulness of consumer loans in predicting sustainable development in Kenya. The research on the effect of consumer loans is of cardinal importance as it aims to establish compounded effect on future generations. The conversation on the value add to the economy is becoming increasingly important on two fronts to individuals and country. The popularity of consumer loans having skyrocketed with the introduction of the fintech's would be irresponsible to keep a blind eye on the topic. We therefore need a critical consideration on its contribution to date and the projected impact in future. Consumers in difficult financial situations have a trend of sustaining their excess financial demand by use of consumer loans. This reliance on consumer loans leads us to the important aspect of expected future impact on the Kenyan economy. The continuous increase in uptake of consumer loans by households requires a precise investigation on the real impact to the future generations. The research relied on comprehensive samples from private household loans, consumer durable loans and real-estate loans. The results indicate that consumer loans in the current setup have a negative effect on sustainable development in Kenya. Furthermore, consumer debt lead to high levels of anxiety, depression and mental health. Moreover, consumer debt led to sharp decline on investment growth, consumption and GDP while increasing the risk of bankruptcy.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Financial institutions operate in an environment that requires continuous adaptation. Competitiveness in the financial market has championed the popularization of consumer loans and the development of competitive financial technology. This factor has increased public awareness of available financial facilities offered by financial institutions (Shiue & Huang, 2006). Consumer loan demand has been increasing in recent years. Online lending has provided a simple and fast means of lending. Inflation pressures have also influenced consumer loan uptake. Having reduced purchasing power, individuals have opted to boost their capacity through the use of consumer loans (Gachara, 2017). The age of the young bracket in the country was found to have some impact. With Kenya's average age of 21 years, the majority of the population is young. Consumer loans are found to be high for people aged up to 45 years, then decrease in later years (Poppe, 2017). This confirms the life cycle theory of consumption, which postulates that individuals seek to smooth their consumption throughout their lifetime by borrowing when income is low and saving when income is high.

In the CBK credit survey report for the quarter ended March 31st, 2021, compared to the quarter ended December 31st, 2020, personal and household loans had a higher percentage of consumers increasing their loan portfolios at a rate of 47% and 45%, respectively. In the same report, the percentage of non-performing loans was highest in the personal and household loans category at 55%. This supports the idea that consumer loans have become an integral part of the Kenyan economy. This has been chandelled by the emergence of Fintech as part of the evolution championing the use of consumer loans in the last decade. A majority of Kenyan adults confess having used different channels to access consumer loans,

with most of these loans ending up not being the best use in the market. It's of great importance to make a critical analysis of the increased desire and use of consumer loans and their contribution to the future generation's economy.

Financial technology has restructured the ease of communicating the availability of consumer loans with a gap between controlled use and economic contribution. Most fintech companies provide little or no information to consumers, but basically provide high credit facilities to entice the consumers. Most of the financial facilities available are not deemed to promote growth as the facility providers withhold critical information from facility consumers, creating inefficiency in the economy. The research study was based on the notion that if the consumer loan market offered a controlled uptake based on specific, strictly adhered facts for the benefit of the individuals and the country's future development,

1.1.1 Consumer Loans

Consumer loans can be defined as loans that establish consumer credit. They are granted for personal use, are majorly unsecured, and are issued in trust based on the borrower's ability to pay. Consumer loan expansion is one of the main impending challenges in the financial services sector. Personal loans, student loans, mortgages, auto loans, and credit cards will all be considered as types of consumer loans. The majority of the loans have no collateral, so you pledge no assets. Roberts & Jones, (2001) indicated consumer loans impact achievement or failure as consumer culture is one of the most powerful forces shaping individuals and societies. Secondly, the increased desire to become a member of the consumer culture gives the impression of being universal (Droge and Mackoy, 1995).

Personal loans are one of the most common loans offered by banks and other financial institutions. They are issued through banks, mobile apps, and specific USSD codes. There is

no control over the use of the facility. Its use is based on the borrower's discretion. This may be used for an investment, material or immaterial purchase. The issuance is based on a good credit score rating. The repayment period has a range of 1–12 months and interest rates are predetermined by the lender. Saunders (2010) explains the availability of loanable funds as one of the drivers of economic growth.

Student loans are popular with students starting college. They are offered to students by governments and private institutions. Some of these facilities are not limited to paying school fees, save for some specific government-sponsored students. The funds are deposited in student accounts and may be used for any purpose that arises. Wenli Li (2013) explains that student loans are controlled by the laws of demand and supply. The study suggests that to ensure sustainability, the government needs to deploy good recovery models.

Credit cards are a line of credit for revolving debt. This provides an open line of borrowing provided payments are made partially (base minimum) or in full during or before the expiry of the facility period. They are issued through banks after a simple application procedure, which entices many to apply. Credit cards play a pivotal role in e-commerce, with sellers accessing a pool of customers with guaranteed payment. (Moody's Analytics, 2016) established Credit cards are key to supporting the economic cycle.

Mortgages are long-term secured loans, floated to facilitate the purchase of assets. Mortgage financing aims to enable individuals to buy property that is generally not affordable based on their current financial status but is purchased and repaid on terms within the borrower's ability to repay (Ampofo, 2020). They are issued by banks to buy assets, e.g., homes, with the home serving as the collateral. Their use is restricted because the real assets purchased and serving as collateral must be available.

It would be extremely expensive for individuals and governments to turn a blind eye to consumer loans considering they are a major factor contributing to development in the country. Nations with no close consideration of consumer loans will soon lean negatively on the production of goods and services. Consumer loans were determined by the level of personal and household loans held by borrowers in Kenya.

1.1.2 Sustainable Development

The Brundtland Commission (1987) described sustainable development, which was later adopted by the United Nations (UN), as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Sustainable development is broadly achieved through good management of the economic, social, and environmental factors affecting individuals and nations.

Advancement in technology has significantly developed and is proving to be a key contributor in advancing the delivery of sustainable development goals in financial institutions. Financial institutions have to grab this opportunity to align service delivery standards and ensure economic performance. Financial technology has also changed how financial institutions engage to achieve the economic goal of sustainable development. The majority have embraced revolutions by investing in unexploited opportunities in technology and also aligning services to customers (Okiro & Ndungu, 2013). This has increased the institutions' ability to cover wider areas of the economy, thus contributing positively to sustainable development.

Financial institutions have been forced to alter their traditional goals of profit maximization in the process of offering consumer loans. They have to consider the social impact paused on individuals as they offer them credit facilities. Offering consumer loans was found to have a material impact on clients as the facility offered presented a direct threat to their

social life. Brown, Taylor, and Price (2005), evaluating the psychological cost of credit, discovered that households with outstanding debt were unlikely to report psychological wellbeing. Achievement of the social goal was found to have a positive contribution to sustainable development.

Hughes (1979) analyzed the role of capital in a nation's economic growth. From the study, it was established that borrowers were only interested in sourcing sufficient funds for their needs; upon obtaining a loan, the indebtedness became a concern. The investigation discovered that indebtedness had a negative influence on the social and economic factors of sustainable development.

Consistent with the objective of the study, the study will utilize the measures of sustainable development, which include poverty levels, education levels, health levels, gender equality and accessibility to clean water and clean energy.

1.1.3 Consumer Loans and Sustainable Development

Consumer loans are a major floating debt in Kenya, which may contribute greatly to the development of a country. It's a key determinant of whether a country is in a position to sustain its development in the future without robbing consumption. Sustainable development is an indicator of the future performance of a country, championed by changes in individual contributions to economic growth in forthcoming years.

Eales & Bosworth (1998) investigated the magnitude of loss in the event of default on consumer loans. The research established that many small business loans were secured by the owners' homes and other properties. The study concluded that borrowers would be

worse off in the event of default, and this would have a negative impact on sustainable development.

Ferreira, (2019). Working on a judgment risk-based assessing framework on consumer loans, he opined that the techniques and methods used for evaluating consumer credit risk have to be efficient and give the required information. The study concluded that the availability or absence of required information on consumer loan risks had a great impact on sustainability.

Kozlovtceva, Penikas, Petreneva, & Ushakova (2020) investigated the effectiveness of macro-prudential measures in Russia to curb the boom in consumer lending. They discovered that if correct measures are applied, they reduce the riskiness of consumer loan portfolios. Risk reduction has a positive impact on sustainable development.

1.2 Research problem

The effect of consumer loans on sustainable development has for a long time remained an unresolved and understudied area of academics. Credit provision to customers is a critical function of financial institutions and the economy at large, hence the importance of consumer loans in these establishments. Poor management of consumer loans is the primary cause of the myriad bank failures (Bhattacharya, 1993). Banks that were unsuccessful established that the principal reason for their failure was a lack of consumer loan management plans in regulating loan value at the bank. Individuals and households face financial risks as a result of the environment in which they operate. The operational environment consists of infrastructure, consumer complexity, and regulations. Even though credit risk is determined by the composition of customers, the approach taken by the financial institution to ensure efficient management of consumer loans helps determine the

complex nature of the risk as well as the ways to sustain it. Prudent management of consumer loans would undoubtedly increase bank and economic productivity.

Numerous studies on consumer loans and sustainable development have been conducted internationally and locally. Adaire Morse (2011) conducted research on payday lenders and whether payday loans and high-interest credit exacerbate or alleviate financial distress. The study established that payday lending had no mitigation effect, Xiao, Yan, Bialowolski, and Porto (2021) looked at the relationship between consumer debt holding, happiness, and income. A case study of China explained the contribution of debt to happiness. According to the findings of the inquiry, any type of debt has a negative impact on happiness. This study focused on the contribution to social life rather than sustainable development, resulting in a contextual gap. Marco & Andrea (2003) found a positive association between the effect of consumer loans and sustainable development. In general, consumer loans are a major contributor to sustainable development. The majority of the studies were done in developed countries. They were not undertaken in Kenya, which is a developing country, thus presenting a contextual gap.

Kenyan researchers studying the effect of consumer loans on sustainable development have conceptualized a variety of variables. Some researchers have used a holistic approach using the key variables of economic, social, and environmental factors. Others have opined that development is mainly pegged to economic factors. Some have also considered the social approach as the main contributor to sustainable development (Okech & Munyoki 2012). Kaimuri & Kosimbei, (2017) conducted research to determine the elements that influenced sustainable development in Kenya. The data revealed that a change in social factors can result in a significant change in sustainable development and that for sustainable development to succeed, there must be a spirited effort in social and environmental

dimensions. In a similar analysis of factors that influence sustainable development in Kenya, Nzioki et al., (2014) discovered that green real estate developments have a great impact on sustainable development. Kembo & Joshua (2013) looked into the contribution of consumer loans from SACCOs in Kenya, finding a strong positive correlation that amounted to 45% of GDP; they concluded that consumer loans through SACCOS significantly influenced economic growth in Kenya.

Suri, Bharadwaj & Jack, (2021) worked on fintech and household resilience to shocks. Analyzing evidence from digital loans in Kenya. The analysis discovered that 34% of people eligible to take loans take them and these loans do not substitute other forms of credit. The study discovered that household loans improved resilience and households had fewer forgone expenses as a result of negative shocks. They concluded loans improved financial access and, by the same measure, were not a solution to credit market failures. Robinson, Park and Blumenstock, (2022), analyzing the impact of digital credit in developing economies, discovered that digital credit had transformed the lending aspect in low- and middle-income countries. They established that a majority of consumers didn't understand the terms of their loans. The study had a mixed conclusion. On the one hand, it concluded that credit had no consistent positive impact on the welfare of the borrower and, on the other hand, digital credit had no statistically significant negative impact.

On the contrary, the theory of asymmetric information (Akerlof, 1970) asserts that financial institutions lack the needed information to enable proper management of consumer loans, which would consequently contribute positively to sustainable development. Therefore, the previous studies, having no consideration of information asymmetry, could not conclusively

explain the effect of consumer loans on sustainable development, thus presenting a conceptual gap.

Based on the aforementioned gaps, existing literature does not explicitly explain the real effect of consumer loans on sustainable development as consumer loans form a source of capital and, on the contrary, are a predator which supports productivity. The purpose of the study is to fill the gap and answer the following question: what are the effects of consumer loans on sustainable development in Kenya?

1.3 Research objectives

To examine the effect of consumer loans on sustainable development in Kenya.

1.4 Value of the study.

To scholars

The findings of this study are bound to be insightful, used for reference by scholars, helping to support or critique their propositions and contribute greatly to knowledge. It will also be helpful for further research as academicians may cite the study in developing their literature.

Policy Makers

The findings of this research inform us of the pros and cons of increased uptake of consumer loans, and this is of great importance to policymakers as they promote the use of consumer loans. Individuals are able to visualize key performance factors that need to be considered before, during, and after the uptake of a consumer loan.

Government

The study finding is of great significance to the Kenyan government in identifying information gaps that need to be addressed under governance for better empowerment of the population and economic growth.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses key consumer loan theories as well as the theoretical framework and the study variables. It also identifies gaps in theoretical arguments and empirical studies. Several reviews of empirical studies are discussed. This will help to clarify the study concepts and relationships in a defined manner. The researcher will review the lifecycle theory of consumption, the asymmetry of information theory, and the rational theory of choice. This is because these theory propositions support the current study and document important findings that seek to establish the background and context with case examples. The chapter further provides the conceptual framework.

2.2 Theoretical review

Several theories are discussed in this section. This was based on the presumption that they hold connections to consumer loans and sustainable development. This was based on the proposition and the relationship with the study. This will include the lifecycle theory of consumption, the theory of asymmetry of information, and the rational theory of choice.

2.2.1 The lifecycle model of consumption

Traditionally, policymakers, economists and business leaders had the view that households and individuals were rational in debt uptake and debt management based on their knowledge of their future income. Debt uptake provides additional capacity for purchases needed in the present, thus increasing purchasing power and removing barriers to spending based on current income. The life-cycle hypothesis by Modiglian and Brumberg, (1954), in addition to the permanent income hypothesis by Friedman, (1957), outlines the reasons individuals borrow and save to smooth consumption. Based on these theories, individuals borrow when

income generated is less than expected expenses and reduce borrowing as income and expenses converge.

The theory has received considerable criticism. It assumes that an individual's wealth depletes as they age, yet this is uncommon because people often desire to pass on inherited wealth to their offspring. There could also be a strong attachment to wealth and a reluctance to give it up. The endowment effect and prospect theory are also worth mentioning. Secondly, it is presumptively assumed that people are rational and plan ahead. According to behavioral economics, many people have reasons to avoid planning. People may lack the self-control required to reduce present spending while increasing long-term savings. Thirdly, people who earn more money have an easier time navigating life. They are more likely to be financially smart and to have the benefit of having the ability to save money. Moreover, people with modest incomes and large credit card debt may assume they do not have enough money to save.

In contrast, the level of future income to cover interest and future expenditure is not factored in consumer loan contracts. Expenses in the future cannot be analyzed and populated with certainty for inclusion in consumer loan contracts. The life cycle theory remains applicable enough for this study as it explains an individual’s response to changes in income flow through differing stages of life. The theory explains mitigating facts employed by individuals in times of low income and vice versa.

2.2.2 Theory of information Asymmetry

The theory of information asymmetry was developed by George Akerlof in 1970 based on an automobile case study. Asymmetric information undersupply produces credit lag. Asymmetry of information can be classified into three broad categories: hidden information,

hidden action, or a combination of the two. Akerlof narrates that information asymmetry will allow sellers of goods to include an incentive with less market quality, resulting in average quality goods invariably affecting market size. Market research has questioned the existence and practical duration of asymmetric information, triggering market failure over the years. In actual markets, not everyone is in the dark. According to the experts, ignorance of the facts is not a guarantee because savvy purchasers have instant access to information. Underwriting services are in high demand by insurance firms. Government involvement can cause market failure by preventing prices from appropriately reflecting known information.

For consumer loans, the borrower has access to more information from the lender on the state of their financial position based on their capacity to lend, but the lender has limited information on the borrower's actual ability to pay. The financial position of the borrower is best known to himself. This is of great contrast, as consumer loans are paid over time and the lender's disbursement plus interest being paid is based on the borrower's ability to pay. After the contract is signed, the lender may end up either making a profit or a loss depending on the accuracy of the information availed by the borrower. This theory has helped motivate interventions for credit supply to increase.

By explaining the threat paused by information asymmetry by increasing risk to lenders, the theory stands appropriate for the study. It explains the cost of failure to get the required information and why, if borrowers were to give the right information, financiers would make an informed decision with reduced credit risk.

2.2.3 The rational theory of choice

The rational choice theory was developed by Adam Smith (1776). Working on an inquiry into the nature and causes of the wealth of nations, Smith advanced the tendency of human

nature to self-interest, leading to prosperity. The theory underlines that, individuals have preferences and make choices based on them. If individuals used self-interest in making choices, it would provide the greatest benefit.

Individual decision-making constitutes the majority of macroeconomic analysis. Individuals analyze available options and have the option of selecting the best preferred option based on consistent criterion, according to rational choice theory. Contrary, non-self-serving actions, such as charity or helping others under circumstances where a cost is incurred but no return to the individual, are not taken into consideration by the theory. It does not take into account how ethics and values may impact decisions. Another point of contention is that rational choice theory ignores the impact of social norms. The majority of people respect social norms, even if they don't benefit from them. Furthermore, the theory ignores choices made in response to situational conditions or those that are context-dependent.

Consumer loans are entirely based on an individual’s choice. Individuals are deemed to have made an analysis of the available credit facilities to narrow it down to a specific one. The utility maximization approach is assumed to be the best choice for the consumer. Based on the choice theory approach, policies are to be designed based on the ability to attain the "greatest good for the greatest number" (Pinchot, 1947). The basis for this would be the utility index, measuring beneficial differences. The research study analyses individual choices based on self-interest for prosperity on consumer loans, checking on the impact on the percentage of wealth for future generations. The theory provides insight into available choices and their effects on sustainable development.

The rational theory of choice is relevant as it has been used to analyze personal and household choices under differing spectrums. It provides a compressed theory and empirical

predictions from the model of choice. This forms an important basis for understanding consumer choice on consumer loans and the range of alternatives available.

2.3 Determinants of sustainable development

Sustainable development is a way of human development using resources to meet human needs, ensuring the sustainability of natural systems (Hatthachan, 2014). It's a growth model that entails achieving and maintaining economic growth in relation to other factors of social and economic development.

2.3.1 Consumer Loans

Consumer loans have been on the increase in Kenya. This has been attributed to the increased credit demand from financially stressed consumers. This has led to increased pressure on incomes as more people are indebted and there has been no proportional increase in incomes to cover the payment of interest. When incomes are under pressure, the individual propensity to consume is reduced. This in turn affects the production capacity of the country. Kenya's experience has not been exceptional as this has affected economic growth, which is a main factor of sustainable development, reducing GDP to negative figures in the year 2020. To measure the level of consumer loans, the following indicators were used: loans outstanding, loan attrition, personal income and expenditure.

2.3.2 Economic growth

It is defined as the process by which the wealth of a nation increases over time. It's an aspect of consumption and the contribution of natural resources to production, achieved when the welfare of all generations is considered. The Harrod–Domar model postulated that

growth was dependent on capital and labor. Growing gross domestic product (GDP) increases the overall size of the economy, strengthening the fiscal outlook. Economic growth is a key contributor to sustainable development. It is associated with an increase in income and a related increase in saving, consumption, and investment. Investments in capital will lead to increased production. Strong production growth increases GDP and an individual's income, allowing them to achieve high standards of living. The final effect is that growth in GDP per capita occurs when GDP growth outpaces population growth, thus contributing to the economic factor of sustainable development.

Economic growth is measured based on levels of GDP, inflation, interest rates, and industrial production.

2.3.3 Social development

Social sustainability entails the interaction of economic players to bring about sustainable development through the use of physical, human and natural capital (World Bank, 2006). It's the association of people and their influence on productivity and the wellbeing of those people. Society should ensure social resources have equitable access. As sustainability focuses on the future, social sustainability focuses on offering a just society now and in the future. This ensures there are positive cultural relations. Barron & Gauntlet (2002) suggest social sustainability can be measured through equity, diversity, interconnectedness, quality of life, democracy and governance. Social stability is important in sustainable development as it ensures equitable use and protection of available resources to generate income for the current population. A country's taking good care of social development has a positive influence on sustainable development.

Social development was analyzed using its key performance indicators of health, population, education, income and gender equality.

2.3.4 Environmental conditions

Sustainable development entails equitable growth that preserves the environment. This is achieved when the benefits of growth serve to expand human capacity (Amartya Sen, 1999). Environmental conservation serves a great deal by presenting growth that improves environmental quality. Human quality is championed by improving the vitality and diversity of the country. Society should always work towards a minimum depletion of natural resources. A sustainable society lives partially on natural production. Therefore, to enable sustainable development, individuals should develop new ways of providing solutions to national challenges that do not degrade physical and biological environments.

Environmental factors are of great importance as they help sustain growth by providing the required natural resources to the economy. Protection of environmental factors helps in balancing humanity and renewable natural resources consumed, thus having a positive impact on sustainable development. Environmental factors were measured through environmental investment, water use, air pollution, and energy use.

2.4 Empirical review

Substantial knowledge of borrowing and spending behaviour is of great importance in economic recovery forecasts and policy decisions. Schooley & Worden (2010), the worst recession in decades, was attributed to excessive household debt. The life cycle and attitude toward credit were identified as the primary determinants of debt usage by debt users. Debt is more prevalent among young households. When consumers form families, their spending

increases faster than their income. This increases appetite for consumer debt and as they age, they use credit less frequently to meet their consumption needs.

Murat & Yusuf (2017) investigated the recent growth of consumer loans and credit cards in an emerging market, taking a case study of Turkey. Monthly data from January 2004–December 2013 was analyzed. They concluded that the level of growth in consumer loans and credit cards is determined by the level of income growth, economic future expectations, and interest rates. Consumer culture has grown to become one of the most powerful forces shaping individuals and societies (Roberts & Sepulveda, 1999). The desire to become a member of the consumer culture appears to be universal (Droge & Mackoy, 1995). A serious change of attitude towards money is a considerable catalyst for the spread of consumer culture. Money is important, especially to college students who belong to the card society. The availability of easy credit is one of the key factors in overspending. Most of the students have grown up with debt and used it freely. Key factors for using debt are power, distrust, anxiety, and compulsive buying, similar to reported findings by Yamauchi & Templer (1982). The study concluded that people spent more and the decision to spend more was triggered by the availability of credit cards.

A study by Sarangi (2020) focused on "investigation on global issues and financing to achieve sustainable development goals". The study sought to establish global issues that affect humanity and global economies as key determinants and vital performance indicators to achieve sustainable development. Based on the study, finance is the lifeblood of all economies, and financial institutions must work in tandem to support economic growth and strike a balance to achieve long-term sustainable development goals. According to Thomas, Sally, and Alex (2019), financial institutions play a huge role in upholding rigorous corporate governance and risk management practices. This includes corporate social

responsibility in guiding customers to maintain a state of financial wellbeing. They found financial institutions play a vital role in enabling gambling transactions and providing credit, which causes harm to customers. The study established that banks had the obligation to enable policies and practices that enhanced customer wellbeing. Further, the study established that, sufficient policies were lacking, which renders credit facilitation ineffective in promoting development.

Morris Robin, (1987) working on the new rationale of usury, they discovered there was an apparent relationship between economic development and consumer debt. The study discovered lenders have great influence on consumer borrowing and consumer behaviour when responding to information. They proposed the efficient use of data as part of the solution to the dilemma of accommodating consumer debt and economic growth today. They further found that value-moderating the supply of consumer credit has the ability to moderate the opposing interest in indebtedness, offering consumers protection. Hughes (1979) explored the role of capital in economic growth. The study established that borrowers were only interested in sourcing sufficient funds for their needs; upon obtaining a loan, the indebtedness became a concern. The balance between benefits and cost is positive only in exceptional cases. The study determined that indebtedness had a negative influence on the social and economic factors of sustainable development.

Greenberg and Mogilner (2021) investigated the link between consumer debt and life satisfaction. The study included a varied sample of American grown-ups and discovered that debt holdings and life satisfaction effects differed depending on the type of debt. Another discovery was that the rating by which consumers mentally label a certain debt type as debt influences the emotional magnitude of debt holdings. The findings propose that carrying debt can have a negative impact on people's overall subjective well-being. Brown, Taylor, &

Price (2005). While investigating the psychological cost of credit, they found households with outstanding debt, non-mortgage debt, were unlikely to report psychological wellbeing. The study established that unsecured debt had more impact on individuals and households than secured debt, while the increase in outstanding debt mainly resulted from non-reporting of psychological wellbeing. Considering the available evidence on the role of social protection in sustainable development, Marco & Andrea (2003) conclude that the available evidence indicates social elements seem to be firmly recognized as integral to sustainable development. Xiao, Yan, Bialowolski & Porto (2021) working on consumer debt holding, income and happiness, a case study of China clarified the role of debt in happiness. Their study discovered any type of debt has a negative impact on happiness. This was higher in medical, education, and housing, which had the least impact. They concluded debt holding had a negative impact on the social aspect of sustainable development.

Jason (2021). While conducting research on the response of consumer debt to income shocks, a case study on seminar participants at the North American Regional Science Council discovered that consumer debt remains a significant avenue for easing through income shocks. Wage shocks caused by drilling revealed a marginal propensity to borrow of 0.45. The marginal propensity to borrow was twice as high in previously undeveloped areas compared to areas with previous oil and gas growth experience. Serhat & Mustafa (2016) looked at the relationship between inflation, consumer loans and the current account deficits in Turkey. Using the Toda Yamamoto analysis, they gathered data for the period between 1994:1 and 2015:3. They concluded that consumer loans were not the cause of inflation and account deficit in Turkey. Cernohorsky (2017) examined the relationship between bank loans and economic development. The data was collected by the Czech National Bank from 2004 to 2015, and the variables were analyzed using the Granger Causation model. The

outcome of the study postulates that consumer loan causation did not fall within the meaning of granger causation on development. In conclusion, he discovered consumer loans did not affect the development of the economy but were indeed dependent on it. Leitao (2012) investigated the relationship between bank credit and economic growth in the European Union. The study was done using panel data for the period 1990–2010. The study concluded that bank credit had a negative impact on economic growth.

Adaire Morse (2011) conducted research on payday lenders and whether payday loans and high-interest credit exacerbate or alleviate financial distress. The study established that payday lending had no mitigating effect. Zinman (2014) investigated consumer credit; too much or too little. He worked on the interaction between research and consumer credit policy. Some researchers believe that markets produce little credit, while others believe that markets produce excessive credit. The research concluded that there is a lack of convincing evidence to understand whether markets over or under supply credit. Morgan, Strain, and Seblani (2012) worked on how payday credit access affects overdrafts, bankruptcy, and complaints by households against lenders. They discovered that there was decreased bankruptcy after payday credit bans and, in equal exchange, increased complaints against lenders. The resultantly offsetting movements of the implications were unclear. Brian Melzer (2011) investigated the real cost of credit access among low-income households. With access to credit being of small value, the loans also exhibited high interest rates resulting from many risky borrowers. He concluded that no evidence was available that loans alleviated economic hardship. Skiba & Tobacman, (2019) investigated whether payday loans cause bankruptcy. They analyzed the consequences of loans and personal bankruptcy determinants. They concluded that payday loans appeared to induce bankruptcy and worsened the household cash flow position.

Chinaemerem & Anayochukwu (2013) working on external debt financing on economic development in Nigeria collected data from the CBN statistical staple for the period 1969–2011 and deduced that the concept of debt was a problem working against African development. The study found debt and debt servicing burdens on accumulated debt served as a tax on future income, consequently discouraging investment in the private sector. Low investment resulted in a low rate of capital accumulation and a low growth rate. Channarith (2014) investigated consumer loans and their implications in Cambodia using the stress-testing method. The study concluded that the current consumer loans at the time didn't pose a threat to stability and development. This was because the percentage market share of consumer loans to total loans was small. The study also found a lower percentage of consumer loans had a positive impact on development in the banking system and economy.

Working on the assessment of the availability of consumer loans in the regions of Russia, Aleksandrovna et al. (2010) discovered that Russian banks face problems in saturating the market. This was mainly because financially reliable people either were not ready to take consumer loans for reasons that included reduced income or had already taken consumer loans. Verner et al., (2020). investigated household debt revaluation and the real economy. The study also examined the sudden increase in household debt burdens. The study concluded debt burdens increased, causing high default rates and a collapse in spending. They also found increased debt burdens had a negative impact on development as it reduced local demand.

Kaimuri & Kosimbei (2017) investigated the determinants of sustainable development in Kenya. Data was collected for the period 1991–2014. The study revealed that social

dimensions and factors play a significant role in ensuring sustainable development in the long run. It also established that in order for sustainable development to succeed, there must be a concerted effort on both the social and environmental fronts. Nzioki et al., (2014). Working on sustainable real estate development in Kenya, they investigated data on commercial developments in Nairobi. The study was conducted based on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, ascertaining the incorporation of the LEED factors into selected buildings. The study concluded that there was a need to promote green building and sustainable real estate development through the use of environmentally sensitive materials.

Suri, Bharadwaj & Jack, (2021) worked on fintech and household resilience to shocks. Analyzing evidence from digital loans in Kenya. The analysis discovered that 34% of people eligible to take loans take them and these loans do not substitute other forms of credit. The study discovered that household loans improved resilience and households had fewer forgone expenses as a result of negative shocks. They concluded loans improved financial access and by the same measure, were not a solution to credit market failures. Robinson, Park & Blumenstock, (2022), analyzing the impact of digital credit in developing economies, discovered that digital credit had transformed the lending aspect in low- and middle-income countries. They established that a majority of consumers didn't understand the terms of their loans. The study had a mixed conclusion. On one hand, it concluded that credit had no consistent positive impact on the welfare of the borrower and on the other hand, digital credit had no statistically significant negative impact.

2.5 Summary of literature review and Research Gaps

The chapter worked on the theoretical review, determinants of sustainable development and previous empirical studies. It also looked at three theories: the life cycle model of consumption, which assumes borrowing is not entirely for investment purposes but focuses on smoothing incomes; the theory of asymmetric information, which postulates a gap in information provided by the borrower and increases the risk of the lender; and the rational theory of choice, where borrowers use borrowed funds for the best-fit choice. The theories conclude that, with the right information and choice, consumer loans are likely to benefit sustainable development.

Several gaps were discovered, necessitating this investigation. All of the studies examined in this study had conceptual gaps in that they did not examine all indicators of sustainable development and how consumer loans affect sustainable development. Several studies covered the effects of consumer loans on social factors but did not investigate the effect of consumer loans on sustainable development; this outlines a conceptual gap in their studies.

In this context, the majority of the empirical studies are done in developed economies with high-standard working policies. This differs with the current study setup in Kenya, which is a developing economy. Moreover, studies done in Kenya ignore the relationship between consumer loans and sustainable development but mainly focus on the effects on an individual's social life. Methodological gaps are evident in the studies, as some used the Toda Yamamoto analysis, others used the stress-testing method, while the current study seeks to use multiple linear regression analysis.

2.6 Conceptual framework

The conceptual framework is a pictorial illustration of the relationship between key variables. It identifies the key variables and parameters of the study. The research study will cover consumer loans as the independent variable and sustainable development as the dependent variable. Other key determinants of sustainable development discussed are economic growth, social development, and environmental factors. The independent variable, consumer loans, was measured using the annual balance method of key indicators: Loans outstanding, loan attrition, personal income and expenditure. The study also incorporated control variables explaining the effect of consumer loans measured by levels of GDP, inflation, interest rates, production, health, age, education, income, gender equality, water use, waste water, and energy use as illustrated in Fig 1.

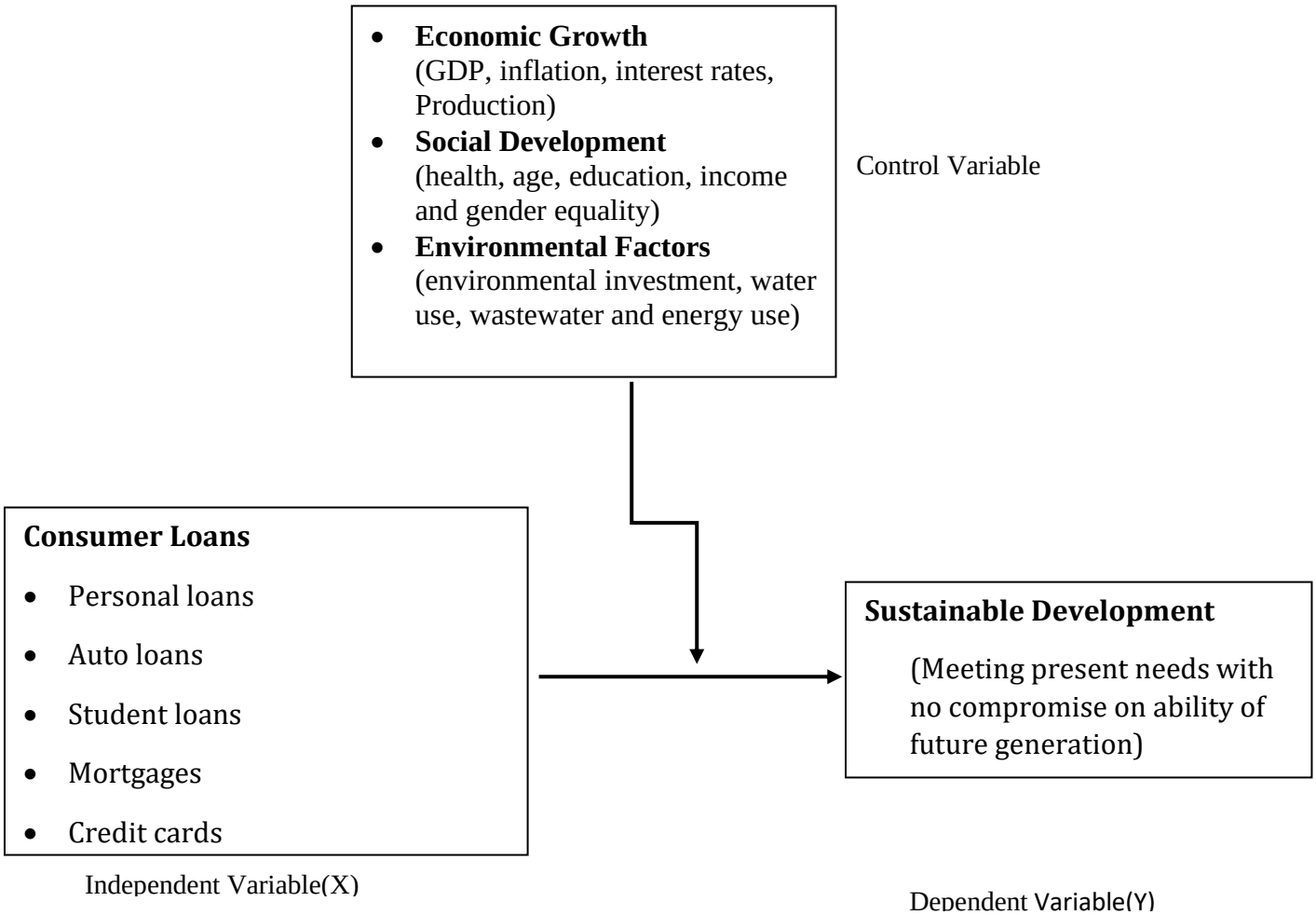

Figure 2. 1 Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter details the methodology to be adopted to carry out the study. This chapter expounds the methods, procedures, and research techniques to be employed by researchers to successfully implement the research. The chapter will go over the researcher's approaches to data collection, diagnostic tests, and data analysis.

3.2 Research design

A descriptive design was used in the research study. Descriptive design is an orderly way of presenting data with each variable having an equal chance of occurrence without manipulation by the researcher (Borg & Gall 1989). The researcher used the opportunity to analyse information from multiple sources of data. The use of different sources is aimed at attaining the most accurate results. The flexibility of the different sources enabled the researcher to access detailed data from the varied sources, thus providing a better-informed conclusion.

3.3 Data collection methods

Data collection involves obtaining data from empirical evidence in order to gain new insight into a situation. The study utilized secondary facts since the nature of the information to be collected is quantitative. To attain the objectives of the study, secondary data on published financial reports and supervisory reports, in line with the objective of the study, was collected from websites of the Central Bank of Kenya, the Kenya National Bureau of Statistics, selected commercial banks, and the World Bank. Data was collected annually for a period of 30 years. An extended period of more than 5 years was found to offer an enhanced mode of determining movements. (Kieso, et al. 2007)

To attain a satisfactory analysis, information on GDP, inflation, interest rates, consumer loans outstanding, net income, expenditure, age, education, gender, health and production for the period 1990-2020 was collected. This was informed by the major increase in fintech and consumer loan offers for this period. Data collection will specifically relate to consumer loans issued in Kenya.

3.4 Diagnostic Tests

A diagnostic test was employed to ensure the estimates were valid and significant. The researcher performed autocorrelation, multicollinearity and heteroskedasticity. Autocorrelation was used to measure the similitude between a certain time arrangement and its lag value over successive time intervals. Test statistics were analyzed based on the test scores of -1–+1 with -1 being perfect negative correlation, +1 being perfect positive correlation, and zero being static correlation. In the presence of auto-correlation, the model specification was modified by running the regression with ARMA.

Multicollinearity is a measure of bias. This was to ensure the data collected was not biased and the variables were not related. Multicollinearity was tested using the Variance Inflation Factor (VIF), with values greater than 5 indicating the presence of multicollinearity. In the presence of multicollinearity, the data was corrected by the use of robust regressions.

Heteroskedasticity is a measure of the consistency of variance of the data. It occurs when there is a difference in variance. The researcher estimated the consistency using the Breusch-Pagan model. In the presence of heteroskedasticity, the dependent variables were transformed by the use of robust regression.

3.5 Data Analysis.

Data analysis entails a process of editing and reducing gathered information to a reasonable size, summarizing, considering patterns and applying statistics (Cooper and Schindler, 2006). Data analysis was performed using multiple linear regression models. To ensure the raw facts collected were valid and significant, the data was scrutinized through statistical tools, i.e., descriptive analysis and test statistics, and then analyzed through statistical software STATA version 15 to analyze the statistical errors using regression analysis.

The descriptive statistics are comprised of the minimum, maximum, mean, standard deviation and percentages for analysis. Data was analyzed at annual intervals for the independent variable. Consumer loans were measured using the average annual balance method, economic growth was measured by the annual level of GDP, social development and environmental factors were measured using the triple bottom line. The final results of the research were presented through frequency distribution tables.

Based on the conceptual framework, data analysis was done using multiple regression analysis. A test statistic was also utilized to decide the individual significance of the variables, with $P > 0.05$ being statistically insignificant. The model was tested for goodness of fit utilizing the coefficient of determination (R-squared). The model of the study was as described below.

$$Y= \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \beta 7X7 + \beta 8X8 + \beta 9X9 + \beta 10X10 + \beta 11X11 + \beta 12X12 + \beta 13X13 + e$$

Y = the level of sustainable development at a specific time for data presented in quarterly intervals.

β0 = Constant sustainable development, which is achieved at zero level of the independent variable (consumer loans), which is also not affected by any other variable.

β1 – β13 = Beta coefficients, which are the regression coefficients of the independent variable.

X1 = Outstanding personal, household and real estate Loans Value

X2 = Average percentage rate of real GDP growth.

X3 = weighted average of consumer goods prices

X4 = Interest rate on lending (%)

X5 = GDI calculated by summing GDP and trade terms of adjustment

X6 = Total output minus intermediate inputs

X7 = Population average

X8 = Expected years of schooling

X9 = Life expectancy at birth, total (years)

X10 = kg of oil equivalent per capita

X11= Air pollution, mean yearly exposure (micrograms per cubic meter of CO2)

e = Error term that quantifies variables that were not considered in the study.

Concept	**Variable**	**Indicator**	**Measurement**
Consumer Loans	Personal & household Loans plus Real Estate Loans	Nominal	Value of Outstanding personal & household Loans pl Loans
Economic Growth	GDP	Ratio	Average percentage rate of increase in real GDP
	Consumer Price Index	Ratio	weighted average of prices of consumer goods
	Interest Rates	Ratio	Lending interest rate (%)
	GDI		calculated by summing GDP and trade terms of a
	Manufacturing Value	Nominal	All outputs less intermediate inputs
Social Development	Population	Ratio	% of population
	Education		Expected years of schooling
	Income	Ratio	GDP/population
	Life expectancy	Ratio	Life expectancy at birth, total (years)
	Waste water	Ratio	percentage GDP per cubic meter of total waste water
Environmental factors	Energy use	Nominal	kg of oil equivalent per capita
	Pollution Intensity (CO2)	Nominal	Air

			pollution, mean yearly exposure (micrograms per cubic meter of CO2)

Table 3. 1 Operationalization of Variables

3.6 Test of significance

The two-tailed P-test was utilized in the research study to test the statistical significance of the individual explanatory variables on the variability of sustainable development. The overall model validity was tested using the F-statistic with a 95% level of confidence. The results were statistically significant at 5%, meaning any figure below 5% was significant for the study.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter describes the analysis of data conducted based on the research objective to determine the effect of consumer loans on sustainable development in Kenya. It explains the descriptive statistics, correlation statistics, regression analysis, analysis of variances, and the findings.

4.2 Descriptive statistics

A descriptive statistic explains the preliminary analysis of data and the qualities of variables. It presents the analysis of mean, minimum, maximum, standard deviation, skewness, and kurtosis. Table 4.1 outlines the results of the descriptive analysis.

Table 4. 1 Descriptive Statistics

Variable	Mean	Min	Max	Std	Skewness	kurtosis	variance	N
SDI	.5570968	0.496	0.647	0.0552693	0.359337	1.518108	.0030547	31
Consumer loans	278.1942	8.97	1182.2	381.4795	1.305368	3.126173	145526.6	31
Lending Interest Rate	19.18598	11.99578	36.24	6.833443	1.088373	3.057029	46.69595	31
Gross Domestic Income	5053.891	2928.172	8783.727	1886.614	0.648675	2.097092	3559314	31
Consumer Price Index	79.99893	8.66902	200.2336	60.06441	0.615031	1.999326	3607.733	31
Gross Domestic Product	5150.66	3162.536	8742.413	1822.937	0.653469	2.090586	3323100	31
Population	37.51599	23.72457	53.7713	9.152717	0.201381	1.818321	83.77223	31
Energy use	444.9149	423.7141	505.9965	17.16357	1.92527	7.474703	294.5882	25
Life Expectancy	57.63333	50.9	66.7	5.347596	0.349844	1.70386	28.59678	30

CO2 Emissions	.385	.05	.56	.1209944	-0.55985	3.34583	.0146397	30
Manufacturing Value	521.5626	362.0965	756.711	131.5737	0.521689	1.803446	17311.65	31
Expected years of Schooling	9.796667	8.2	11.7	1.221498	0.287147	1.487117	1.492057	30

Source: Research Findings (2022)

The data collected indicates a mean on consumer loans of 278.1942 billion. This indicates that there is an average uptake of consumer loans in Kenya to the tune of 278.1942. We have a minimum consumer loan of 8.97 billion and a maximum consumer loan of 1182.2 billion, with the minimum happening in the first year of the research study and the maximum happening in the last year of the study. It also indicates a steady growth of consumer loans from year to year, leading to 2020. The data was moderately skewed positively with the exemption of CO2emmissions, which was negatively skewed with a skewedness of -0.5598 but still falls within the acceptable skewedness level of -3 to +3. Kurtosis was moderate, falling within the limits of -10 to +10 (Brown, 2006).

The dependent variable, Gross Domestic Income (GDI), which was scaled in billions of shillings, was measured by the level of income and was one of the measures of sustainable development. The highest GDI was 8783.7 billion, and the lowest was 2928.172 billion, with a mean of 5053.891 billion. The data had a moderate positive skewness of 0.6486.

The Consumer Price Index (CPI), which was measured as the weighted average of prices for consumer goods and services, Kenya experienced an average CPI of 79.99, which was skewed positively at 0.615, explaining the marginal increase in prices as the years went by.

Another independent variable was Gross Domestic Product (GDP), scaled in billions of shillings. GDP had a moderately positive skewedness of 0.65. It was the highest at 8742.4 billion and the lowest at 3162.536 billion.

Another independent variable was population, measured as the number of people in Kenya in a specific year expressed in millions. The highest was experienced in the last year of study, 2020, at 53.77 million and the lowest was at 23.72 million. The population had a positive asymmetric skewedness of 0.2013.

Energy use was measured in kilograms of oil per capita. Kenya had a mean energy use of 444.91kg with a maximum of 505.99kg and a minimum of 423.71kg. Energy use had a moderate skewedness of 1.9252 and a high kurtosis of 7.47, explained by the presence of outliers.

Manufacturing value add is another independent variable. It was measured as the total value added of all the manufactured goods in Kenya. It recorded a high of 756.711 and a low of 362.0965 with a mean of 521.5626. The data had a positive asymmetric skewedness of 0.5216 and a moderate kurtosis of 1.8034.

Another variable was CO2 emissions measured in kilograms. It was measured as the total volume of CO2 emissions in tons. It recorded a high of 0.56 and a low of 0.05 with a mean of 0.385. The data had a negative asymmetric skewedness of -0.55985 and a moderate kurtosis of 3.34583.

4.3. Diagnostic analysis

To ensure more accurate results, diagnostic tests was done before the regression. The diagnostic test included normality test, homoskedasticity test and autocorrelation. Testing normality was done by use of Shapiro-Franci test and Skewness/Kurtosis tests. Homoskedasticity was by use of Breusch-Pagan / Cook-Weisberg test, while autocorrelation was tested using Durbin Watson test

4.3.1 Normality test

Table 4.2 and 4.3 shows normality tests for the various variables used in the model

Table 4. 2 Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
Consumer loans	31	0.71953	10.136	4.251	0.00001
Gross domestic Product in Billions	31	0.90025	3.605	2.354	0.0093
Consumer Price Index	31	0.90593	3.4	2.246	0.01235
Lending interest rate	31	0.85826	5.123	2.998	0.00136

Gross Domestic Income in Billions	31	0.90517	3.427	2.261	0.01189
Manufacturing value added	31	0.89477	3.803	2.452	0.00711
Population	31	0.96589	1.233	0.384	0.35041
Expected Years of Schooling	30	0.8991	3.558	2.325	0.01003
Life Expectancy in years	30	0.92768	2.551	1.715	0.04315
Energy use	25	0.80279	6.084	3.273	0.00053
CO2 emissions	30	0.95037	1.75	1.026	0.15254

Source: Research Findings (2022)

Table 4. 3 Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Consumer loans	31	0.0032	0.5001	7.89	0.0193
Gross domestic Product in Billions	31	0.0998	0.1869	4.52	0.1041
Consumer Price Index	31	0.1194	0.1076	4.95	0.0842
Lending interest rate	31	0.0107	0.559	6.3	0.0429
Gross Domestic Income in Billions	31	0.1021	0.1935	4.46	0.1076
Manufacturing value added	31	0.1812	0.0182	6.66	0.0359
Population	31	0.5953	0.0217	5.35	0.0689
Expected Years of Schooling	30	0.4569	0	13.46	0.0012
Life Expectancy in years	30	0.3672	0.0057	7.42	0.0245
Energy use	25	0.0003	0.0016	16.99	0.0002

CO2 emissions	30	0.1583	0.3479	3.15	0.2073

Source: Research Findings (2022)

The level of significance was adopted at 5%. The values of the majority of the variables were less than 0.05, with population and CO2 emissions having values higher than 0.05. This indicates that the represented data is not normally distributed. The null hypothesis was thus rejected. A robust regression was used to normalize the data.

4.3.2 Homoskedasticity test

Table 4.5 shows homoskedasticity tests for the various variables that were utilized in the model.

Table 4. 4 The Breusch-Pagan/Cook-Weisberg heteroskedasticity test.

Breusch-Pagan / Cook-Weisberg, heteroskedasticity test

Ho: Constant variance

Variables: fitted values of SDI

chi2(1) = 0.08

Prob > chi2 = 0.7736

The level of significance was adopted at 5%. The significance level is greater than 0.05, thus the data was homoscedastic. The null hypothesis was not rejected. This explained why different samples had the same variance even when deduced from different populations.

4.3.3 Autocorrelation Test

To test autocorrelation, the Durbin-Watson statistic was used. The results indicated a Durbin-Watson d-statistic (12, 25) = 1.765701. The statistic is guided by the limits, ranging between 0 and 4. When the statistic value falls between zero and 2 this indicates a positive autocorrelation, while a statistic of 2 indicates no correlation. A statistic falling between more than 2 and less than 4 indicates negative autocorrelation. As a general rule, values which fall under 1.5 and greater than 2.5 are postulated as serially autocorrelated. Consequently, the data used met the threshold and was not serially correlated.

4.4 Inferential statistics

To determine the direction of association and predict the relationship based on the data available, inferential statistic were used. This was done using correlation analysis and multiple regression analysis.

4.4.1 Correlation analysis

The study used Pearson's correlation analysis, which is a measure of the relationship between variables. It gives a preliminary analysis of the association of the variables. A correlation analysis was conducted on consumer loans, Lending interest rate, Gross Domestic Income, Consumer Price Index, Gross Domestic Product, Population, Energy use, Life expectancy, Manufacturing value added and expected years of schooling. The statistic was guided by the limits of correlation of -1 perfect negative correlation, 0 no-correlation, and +1 perfect positive correlation. Values greater than zero but close to +1 have a strong positive relationship, and close to zero have a weak positive relationship. Values less than zero but close to zero have a weak negative relationship, while values less than zero but close to -1 have a strong negative relationship. Table 4.2 outlines the correlation statistic.

Table 4. 5 Correlation Statistic

	Consumer loans	Gross Domestic Product	Consumer Price Index	Lending interest rate	Gross Domestic Income	Manufacturing Value	Population	Expected years of Schooling	Life Expectancy in years	Energy use	CO2 emissions
Consumer loans	1										
Gross domestic Product in Billions	0.8923	1									
Consumer Price Index	0.8946	0.9936	1								
Lending interest rate	-0.3927	-0.5785	-0.5244	1							
Gross Domestic	0.8893	0.9992	0.9949	-0.5719	1						

Income in Billions											
Manufacturing value added	0.8817	0.9897	0.9856	-0.52	0.9874	1					
Population	0.8192	0.9758	0.9719	-0.6233	0.9786	0.9567	1				
Expected Years of Schooling	0.8591	0.9279	0.921	-0.5509	0.9218	0.9429	0.8529	1			
Life Expectancy in years	0.8122	0.8173	0.8133	-0.4519	0.8079	0.8359	0.694	0.9521	1		
Energy use	0.8899	0.7434	0.7391	-0.3049	0.7379	0.7437	0.6118	0.8116	0.8443	1	
CO2 emissions	0.7348	0.8444	0.8269	-0.5386	0.8471	0.8288	0.8198	0.7404	0.6326	0.6654	1

Source: Research Findings (2022)

The data show a 0.8923,0.8949, -0.3927,0.8893,0.8817,0.8192,0.8591,08122,0.8899,0.7348 relationship between consumer loans and gross domestic product, consumer price index, lending interest rate, gross domestic income, manufacturing value, population, expected years of schooling, life expectancy, energy use and CO2 emissions. This indicates the presence of a strong positive correlation for all the independent variables, excluding lending interest rate, with all but one having a coefficient of less than 0.8. This indicates that all the variables have statistical significance.

4.5 Analysis of variance

This forms an investigation into whether the model as used in the study is statistically significant. The statistic evaluates whether the model is statistically significant or not. Under the general rule, a model is deemed significant when the F-statistic calculated is greater than

10, the P-value is less than 0.05, and the R-squared is greater than 50%. To ascertain the significance, the study used the P-value, the F-statistic, and the R-squared.

4.5.1 The Model Summary

The model summary provides the strength of the relationship between the model and the dependent variable. Table 4.5 indicates an F- statistic of 7227.56, a P-value of 0.0000 and an R-square of 99.98%. Based on the general rule, this means that the model is statistically significant and explains overall changes in the dependent variable; thus, the model as set up will explain the dependent variable exhaustively.

Table 4. 6 Model Summary

Source	Sum of Squares	Degrees of freedom	Mean of Squares	Number of observations	=	25
				F(11, 13)	=	7227.56
Model	0.045732762	11	0.004157524	Prob > F	=	0.0000
Residual	0.000007478	13	0.00000057523	R-squared	=	0.9998
				Adj R-squared	=	0.9997
Total	0.04574024	24	0.001905843	Root MSE	=	0.00076

Source: Research Findings (2022)

4.5.2 Regression analysis and hypothesis testing

The regression model describes the relationship/influence of the independent parameters and the response or dependent variable. It explains whether the predictor parameter has a statistical influence on the dependent parameter at a given significant level. The model was tested at the 95% level of significance, where the variables were regarded as significant if the P-value was less than 0.05. Insignificant variables were not factored under the regression equation as they could not be relied upon for statistical inference.

Table 4. 7 Regression Model

Source	SS	Df	MS	Number of observations	=	25
				F(11, 13)	=	7227.56
Model	0.045732762	11	0.004157524	Prob > F	=	0.0000
Residual	0.000007478	13	0.00000057523	R-squared	=	0.9998
				Adj R-squared	=	0.9997
Total	0.04574024	24	0.001905843	Root MSE	=	0.00076

	Sustainable Development Index	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
X1	Consumer loans	-0.00000866	0.00000419	-2.07	0.049	-0.0000177	0.000000389
X2	Gross domestic Product in Billions	0.000000435	0.00000541	0.08	0.937	-0.0000112	0.0000121
X3	Consumer Price Index	-0.0002134	0.000067	-3.18	0.007	-0.0003583	-0.0000686
X4	Lending interest rate	0.000044	0.0000834	0.53	0.606	-0.0001361	0.0002242
X5	Gross Domestic Income in Billions	0.00000175	0.00000528	0.33	0.746	-0.00000966	0.0000132
X6	Manufacturing value added	0.0000502	0.0000232	2.16	0.05	0.000000104	0.0001002
X7	Population	0.0024109	0.000492	4.9	0.000	0.0013479	0.0034738
X8	Expected Years of Schooling	0.0097169	0.0012537	7.75	0.000	0.0070084	0.0124254
X9	Life Expectancy in years	0.005085	0.0003133	16.23	0.000	0.0044082	0.0057619
X10	Energy use	0.0000014	0.0000318	0.04	0.966	-0.0000673	0.0000701
X11	CO2 emissions	0.0111285	0.0038646	2.88	0.013	0.0027796	0.0194774
	_cons	0.0535842	0.0265467	2.02	0.065	-0.0037665	0.1109349

Source: Research Findings (2022)

Y = -0.00000866X1 + -0.0002134X3 + 0.0000502X6 + 0.0024109X7 + 0.0097169X8+ 0.005085X9+ 0.0111285X11 + e

The table above explains the findings from the regression analysis. The model has a P-value of 0.0000 and a constant of 0.0535842, an indicator of statistically significant positive sustainable development; this explains that, excluding the variables under study, sustainable development will remain positive. Consumer loans have a statistically significant negative influence on sustainable development because the P-value is less than 0.05. The consumer price index has a statistically significant association with sustainable development since the P-value of 0.007 is less than the general rule of 0.05. The consumer price index has a negative coefficient of -0.0002134, meaning a unit growth in the consumer price index translates to a decrease in sustainable development by -0.0002134.

The outcome also indicated population has a significant positive influence on sustainable development (B = 0.0024109, 0.000), which means a single unit growth in population will translate to a positive growth in sustainable development of 0.0024109. Consequently, GDP, Lending interest rate, GDI, and energy use were established to have immaterial statistical significance for sustainable development. Under the general rule, the P-values exceeded the minimum threshold of 0.05, i.e., 0.937, 0.606, 0.746, and 0.966, respectively. Under this condition, the study could not interpret these coefficients.

4.6 Discussion of research findings

The introduction of this project started with a concern about consumer loans as a problem for sustainable development. This was based on the appreciation of finance that, consumer loans form a set of capital and are also a predator which supports productivity. Investigating consumer loans has revealed similar tendencies, which when taken casually can easily be incomplete or misleading.

A consequent contribution of the project was to document the resulting tendencies of consumer loans for households and individuals in Kenya. This has confirmed that banks

have become reliant on investment banking and household lending, leading to increased indebtedness for individuals and households. The study undertook linear regression analysis to establish the effect of consumer loans on sustainable development in Kenya. This was done through analysis of independent variables: consumer loans, lending rates, gross national income, gross domestic income, consumer price index, gross domestic product, population, energy use, life expectancy, manufacturing value added, expected years of schooling and CO2 emissions. Data was subjected to a diagnostic test to establish the presence of collinearity, heteroskedasticity, and normality. Consequently, the variables were transformed to meet the standard conditions of homoscedasticity, normality, and stationarity by using a robust regression of all the variables.

The regression analysis established the model could predict 99.98% of the variations of the sustainable development index. The P-value was 0.000, which proved to be significant. The study established that consumer loans have a significant negative effect on sustainable development. Behavioural biases play a important role in the influence of consumer loans. Individuals engaging in borrowing have biases that lead them to either under-save or over-borrow. Many firms have taken advantage of behavioural consumers to make profits by exploiting them rather than helping them overcome their biases. Causal empiricism submits that there is limited scope in market advice, and what is available is of invaluable quality. This coincides with the low willingness of consumers to pay for unbiased advice. This inability of consumers to learn and better approach their biases even with the opportunity to do so has increased. Additionally, expensive short-term loans are common as consumers borrow repeatedly before defaulting. This leads to overpayment, which is equally important as overspending. This withdrawal of substantive value through overpayments has a negative effect on the economy.

The results of the study are in agreement with some of the existing literature. The findings of the existing studies are also quite mixed. A few studies postulate that generally, consumer loans, expensive in nature help smooth borrowers' shocks. (Morse, 2011). Others opine that consumer credit helps borrowers' in better managing their liquidity, elevating financial distress. Morgan, Strain, and Seblani (2012); Zinman (2010). Chinaemerem & Anayochukwu (2013), working on external debt financing on economic development in Nigeria, established that debt and debt servicing burdens on accumulated debt served as a tax on future income, consequently discouraging investment in the private sector. (Melzer 2011) established that there was increase in financial distress resulting from increased access to expensive credit. Skiba and Tobacman (2019) concluded that an increase in access to credit increases the chances of bankruptcy. Murat & Yusuf (2017) established that the recent growth of consumer loans and credit cards in an emerging market is determined by the level of income growth. Karlan and Zinman (2010) found that there was increases in job retention and well-being resulting from expanded access to consumer loans. Bhutta (2012); Bhutta, Skiba, and Tobacman (2012); Opined credit had no impact.

CHAPTER FIVE: SUMMARY, CONCLUSSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the summary findings of the research, conclusions and recommendations on the effect of consumer loans on sustainable development in Kenya. It also outlines the limitations and challenges faced through the research study and research recommendations for further research.

5.2 Summary

The research endeavoured to outline the relationship between consumer loans and sustainable development in Kenya. Data was collected from the CBK, the World Bank, the UN, and KNBS. For analysis, the study used STATA version 15 to analyse data through descriptive statistics. The regression analysis exhibited there is a negative significant impact of consumer loans on sustainable development in Kenya. The model was strong enough to explain 99.99% of sustainable development being predicted by consumer loans, population, gross national income, gross domestic income, consumer price index, CO2 emissions per capita, gross domestic product, manufacturing value added, life expectancy, expected years of schooling and energy use. The study discovered a strong correlation between consumer loans and sustainable development, explained by coefficients of independent variables which are very close to one. All the variables had strong positive correlations, with the minimum having a correlation coefficient of 0.7348 and a maximum of 0.8946.

Other variables in the model were population, gross national income, gross domestic income, consumer price index, CO2 emissions per capita, gross domestic product, manufacturing value added, life expectancy, expected years of schooling, and energy use. Gross national income, population, life expectancy, CO2 emissions per capita, manufacturing value, and expected years of schooling had significant positive influences on sustainable development, explained by a p-value of less than 0.05 and regression coefficients of greater than zero. The consumer price index had a significant negative influence, demonstrated by a P-value of less than 0.05 and a regression coefficient of -0.000147. Energy use, gross domestic income, and gross domestic product had positive insignificant influences explained by a P-value of greater than 0.05. The constant is positive,

meaning there exists a level of sustainability that is not influenced by the predictor variables.

The findings of the study indicate a unit growth in consumer loans would translate to a decrease in sustainable development levels in Kenya. This is explained by the fact that current debt not used for investment purposes reduces the purchasing power for future investment as the repayments spill into the future.

5.3 Conclusions

Household borrowing provides a wide range of choices, with markets offering a wide variety of fascinating puzzles. Some policy questions about consumer loans linger about the extent to which the current market inefficiently supplies credit. To investigate consumer loans as a development issue, we are required to understand how it's theoretically understood and empirically documented in Kenya. This revealed that across a diverse setting, similar tendencies were present across a range of behavioural consumers. It also suggests that a causal explanation can easily be incomplete or misleading.

The theoretical contribution of this research was to document the resulting effect of consumer loans for households and individuals in Kenya. This research has confirmed that banks have become reliant on investment banking and household lending, leading to increased indebtedness for individuals and households. Evidence suggests the emergence of fintech and persuasion by financial institutions have contributed significantly to the upward trend in the uptake of consumer loans. Mainly, consumer loans supplement recurrent spending gaps to sustain a level of peer spending. Historical analysis of consumer loan trends revealed that in response to a crisis, individuals turn to consumer loans, persistently leading to high debt levels of unsecured expensive forms. Evidence alludes to choice inefficiency and behavioural pressure resulting in overpayments, in-turn reducing

consumption and significantly having a negative influence on sustainable development in Kenya.

Policymakers should reconsider consumer credit markets based on recent history and the current regulatory market. There exists a gap of convincing evidence on whether these markets have failed or not and if they have, in what direction? There is also a need for understanding if there is an optimal level of consumer loans.

5.4. Policy recommendations

Consumer credit policies should reflect the underlying challenges by intervening to control the impact on prices and quantities. The policies should seek to create a level playing field for credit market players. This can be achieved by the use of price caps and strict underwriting criteria to control access.

A policy on disclosure has been key in consumer finance. This has not been received well in the market as it faces major challenges in enforcement and behavioural factors of households and individuals. Some of the empirical studies also state that one-off disclosures might be insufficient as borrowers underestimate some future cost. The research found evidence that maximum disclosure would lessen behavioural factors. It therefore suggests further research and enforcement on this factor.

Policies on financial literacy should be adopted. Previous empirical studies have found strong evidence that financial literacy and financial outcomes are closely related. The study recommends that financial institutions provide consumer sensitization to individuals on the value and effect of consumer loans on future generations. Furthermore, the study proposes a review on the impact of policy interventions on increased financial literacy in Kenya to raise awareness and correct biases associated with over-borrowing.

5.5. Limitations of the study

The study faced several challenges, which included active empirical studies with conflicting findings. The study required assumptions on these areas, e.g., does Kenya's political climate pose regulatory and supervisory threats and, if so, in which way? Do behavioural factors affect the uptake of consumer loans? If so, how? Evaluating empirical studies was also hindered by the shortcomings of the studies, including the anticipatory effects of consumer loans.

Secondly, the study utilized secondary data from the Central Bank of Kenya, the Kenya National Bureau of Statistics, and the World Bank. These are reports from individual institutions compiled to facilitate a comprehensive report. The individual reports could be prone to errors that would in-turn affect the value of the results of this study.

Another important limitation is that the research leaves us unable to diagnose underlying allocation failures. The current state of credit expansion could not be tested if it was over or under supplied. Credit expansion can either be sourced from inferior or superior sources. If it's proven that behavioural borrowers use inferior sources, it would be cost effective to regulate the sets of credit.

5.6. Recommendations for further studies

The research established a negative link between consumer loans and sustainable development. These results are in agreement with and, in the same measure, contradict some of the existing literature that postulates that increased cash flow increases purchasing power, leading to increased productivity. The research recommends that research be conducted to

establish the impact of increased productivity resulting from consumer loan uptake in the long run.

As understanding market failures and the current state of credit expansion was established to be an important factor, the research recommends an analysis of allocation failures. A current state analysis of whether there is an over or undersupply of consumer loans in Kenya. This will help to feed evidence to policy with an interplay between empirical evidence and theory by analysing how well households borrow and why.

The study used secondary data. The study recommends a similar study conducted using primary data to ascertain if the same results would hold. The study being conducted in Kenya proposes further studies on the effect of consumer loans on sustainable development within the East African Community (EAC) to give insight into the effect on our neighbouring countries.

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