KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

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DEPARTMENT OF ECONOMICS

"INVESTIGATING THE IMPACT OF THE SAVINGS BEHAVIOUR OF CUSTOMERS ON BANK'S PERFORMANCE – CASE: YAA ASANTEWAA RURAL BANK"

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BY

SAMUEL ADDO OTOO

(MBA BANKING AND FINANCE)

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DECLARATION

I hereby declare that this submission is my own work towards the award of Master of Science (Economics) and that, it contains no material previously published by another person nor material which has been accepted for the award of any degree by this university or any other university, except where due acknowledgement has been made in the text.

Otoo Samuel Addo   Signed………………………   Date………………...

(PG 2736614)

(Candidate)

Certified by:

Mr J. Appiah-Nkrumah   Signed………………………   Date………………...

(Supervisor)

Certified by:

Dr Anthony Osei-Fosu   Signed………………………   Date………………...

(Internal Examiner)

Certified by:

Dr Hadrat Yusif   Signed………………………   Date………………...
(Head of Department)

ABSTRACT

The principal objective of this study was to investigate the saving habit of customers of Yaa Asantewaa Rural Bank (YARB) and how such attitude influence the performance of the bank. To accomplish this aim and per the nature of contributing factors of saving, both primary and a thirty-six month secondary data (covering 2013 – 2015) were used. The multinomial logistic regression model was adopted in analysing the primary data collected and the secondary data were analysed using the Ordinary Least Squares model. The results from the multiple linear regression estimation revealed that interest on deposits and the prevailing rate of inflation in the Ghanaian economy have significant deterministic effect on deposit growth at YARB. Also, the multinomial logistic regression model showed that customers' attitude toward risk, number of people who financially depend on customers, and their level of income can influenced their saving culture very much. However, age distribution of customers and their educational background (but those with vocational education) were found to have no influence on saving behaviour of customers of the bank. It was also revealed that a good number of customers contacted were ignorant about the existence of interest earned on their deposits. In general, the growth rate of savings at the bank assumed a downward trend for the period understudied. The study then recommends awareness creation on deposit rate, expansion of credit facility to clients, and provision of incentive packages besides interest paid on deposits as measures to be put in place to improve the saving culture of customers at YARB.

DEDICATION

This work is dedicated to our God almighty and my dear son, Yaw Yeboah Otoo.

ACKNOWLEGDEMENT
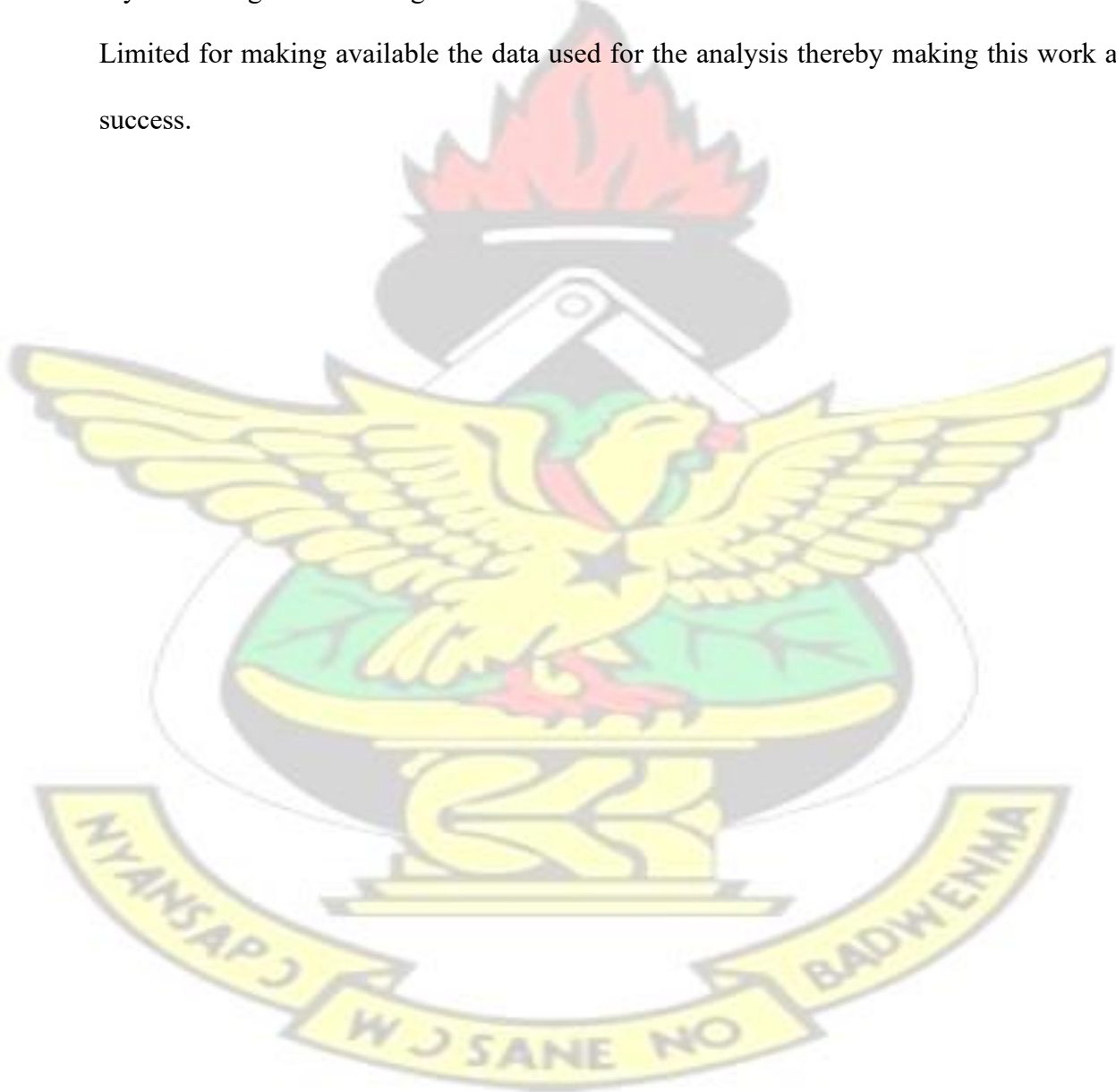
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ABBREVIATIONS AND ACRONYMS

ARB	Association of Rural Banks
ATR	Attitude towards risk
BoG	Bank of Ghana
CAL	Continental Acceptance
CS	Civil status
Depr	Deposit rate
FINSAP	Financial Sector Adjustment Programme
FSAC	Financial Sector Adjustment Credit
IIA	Independents of Irrelevant Alternatives
IL	Income Level
Infl	Inflation rate
LR	Likelihood ratio

MLR	Multinomial Logistic Regression
NBFIs	Non-bank financial institutions
NHIS	National Health Insurance Scheme
NIM	Net Interest Margin
NoD	Number of dependants
OLS	Ordinary Least Squares
Prim	Primary
PSID	Panel Study of Income Dynamics
ROA	Return on Asset
ROE	Return on Equity
S	Savings growth at YARB
Sec	Secondary
SPSS	Statistical Package for Social Sciences
SSNIT	Social Security and National Insurance Trust
TB	Treasury bill
Ter	Tertiary
Voc	Vocational
YARB	Yaa Asantewaa Rural Bank

CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

The contribution of financial intermediaries towards economic growth and development cannot be overemphasized since they aid in channeling funds in an economy. That is to say, funds are transferred through these institutions from surplus lender-savers to deficit borrow-spenders. According to Mishkin (2004), this channeling of funds is so imperative to an economy because those who save are, most of the times, not the same people who have profitable investment opportunities available to them.

Banks, belonging to this class of institution, offer financial services ranging from savings mobilisation, risk shearing, liquidity provision, maturity transformation, to mention a few. Accepting deposits and making payment on demand to customers appear to be the core activity undertaken by banks. Savings, from the surplus unit, represents the portion of income not spent or postponed consumption and this serves as the tradable stock for financial intermediaries, not excluding, Yaa Asantewaa Rural Bank (YARB). Thus, personal saving also termed household saving is the portion of individual income not spent on current consumption. It is a key economic and financial issue and also represents a primary force propelling growth and development in an economic at large (Mumin et al.,

2013). Countries rely on their internally generated savings for their foreign and domestic investment. Countries which do this have an upper hand over other countries that generate less saving since they can relinquish funds from foreign countries and organizations. According to Bozena (2011), savings play an important role in an economy's development. The household savings contribute a major part of the national savings. This implies that many factors affecting household savings also have an impact on economic growth. Of course, it would be incorrect to conclude that the higher saving rate ultimately means a faster economic growth. Accumulated saving needs to be put back into income and expenditure circular flow through investment and the financial sector of economies plays this role efficiently.

Economies are not the only beneficiaries of saving but households as well as corporate institutions. Saving helps individuals to either maintain or improve their quality of life. It is a spring of wealth for individuals and a safeguard against uncertain periods giving room for people to keep up their consumption in unfavourable periods. They are able to reduce amount outstanding and accumulate enough for reasonable standard of living during retirement. Vast amounts of money are prerequisites for acquiring long-lasting necessities and these can be achieved after saving for some time. According to Marrie-Therese (2007), developing countries do little or no savings and individuals who have the interest of saving mostly spend beyond their budget. In the end, they acquire no positive net worth which becomes a barrier to accessing formal finance.

Ghanaians in the informal sector have 'near to the ground' savings habits (Bremang, 2012). This could be attributed to poverty, unemployment, lack of education and

information failures among these individuals. Younger generation's culture of spending more and saving less is also a contributing factor. Although other factors like bandwagon effects, procedural rationality and obvious consumption contribute to excessive spending thereby altering their decision to save. It is clear that few have interest in saving. Individuals' attitude towards risk and market failure such as ignorance on saving, adverse selection and incomplete information have also contributed to the limited interest of households to save.

1.2. Problem Statement

Ghana's savings performance has been far below the regional average, although the ratio for the sub-Saharan African countries have been low and deteriorating over the past two decades (Aryeetey *et al*., 2000). According to the World Bank's data base, Ghana's savings growth averaged 6.4 percent of the total national income between 1980 and 2001 which was the lowest in most less developed countries as at then. The savings rate in comparable nations were 37.4 percent in Botswana, 21.45 percent in Cameroon, 21.6 percent in Nigeria, 13.9 percent in Kenya and 7.3 percent in Malawi (See Issahaku, 2011). This is a contributing factor to the low economic growth of the country. This is because of its outstanding debts resulting in the debt crisis.

Significant questions such as: do households in Ghana and for that matter those within the catchment areas of Yaa Asantewaa Rural Bank Limited have the capacity to save? If so, in what form(s) do they save and what might have accounted for such choices? What are

the factors that influence saving behaviour of households? These and many others remain a serious challenge and baffle the minds of policy makers and financial intermediaries in almost all less developed countries. According to the World Bank, only 30% of Ghana's population use banks. Majority of Ghanaians are ignorant about savings and even the literates among these most often do not trust the recognized financial institutions because of the apartheid legacy of the past. Some people still use traditional mechanisms of saving like **stokvels** and burial sites to assemble financial resources.

For instance, Yaa Asantewaa Rural Bank has over 10,000 customers in its three branches at Ejisu, Atonsu and Danyame since its establishment in 2010. However only about 6,700 are active customers who are into saving regularly at the bank leaving majority of the bank accounts dormant. Similar problems are likely to be witnessed in other financial institutions in the country.

Several studies have considered the saving behaviour of households in both developed and developing countries (Aidoo, 2015; Larbi, 2013; Bremang, 2012; Marie-Therese 2007). Though some of such studies have been conducted in Ghana, they seem inadequate for the country's development. It is for this reason that this research considers the saving behaviour of customers of the Yaa Asantewaa Rural Bank.

1.3. Research Questions

The research was centered on such questions as:

i. What are the contributing factors of household saving behaviour in Ghana? ii. What has accounted for the low savings growth of Yaa Asantewaa Rural Bank?

iii. How can customers' saving culture be ameliorated?

1.4. Aim and Objectives

Based on the questions raised above, the objective of the research work has been formulated. The main aim of the study was to investigate the savings behavior of the customers of Yaa Asantewaa Rural Bank and its impact on the performance of the bank.

The specific objectives were:

i. to identify the factors that determine customers' savings in the Yaa Asantewaa Rural Bank. ii. to suggest strategies to create a saving culture that will improve the quality of life of customers.

1.5. Hypothesis of the Study

The following null hypothesis were tested and analysed.

H_0:   Interest rate on deposits has no effect on customers' saving habit;

H_0:   Income levels of households does not influence their saving behaviour;

H_0:

     The number of dependents in a household is not a contributing factor to saving behaviour;

H_0:   Age structure has no influence on households' saving;

H_0:   Civil status cannot influence saving culture of households;

H_0:   Prevailing rate of inflation impacts not on saving by households; and

H_0:   Customers' attitude towards risk does not affect their saving decisions.

1.6. Methodology of the Study

The study employed qualitative and quantitative data in its analysis. Hence, both primary and secondary data were used. The multiple regression was run after performing a multicollinearity test. The multinomial logistic regression approaches was used to handle the primary data collected from customers of Yaa Asantewaa Rural Bank Limited. Statistical packages including SPSS (for the primary data) and Eviews (for the secondary data) were used in the analysis of data collected. The results has been presented in tables and charts.

1.7. The Scope of the Study

Despite the existence of various measures of bank's performance, the study made use of the deposit growth rate. This stems from the fact that deposits serves as the primary means of raising funds for investment to yield any such benefit as net interest margin (NIM), return on equity (ROE), and return on asset (ROA). Thus, ability of officials of Yaa Asantewaa Rural Bank Limited to map up strategies to mobilise deposits plays a critical role in measuring the performance of the bank.

Due to the nature of the study, a blend of monthly secondary data on deposit growth rate, deposit rate, and inflation rate for the period of 2013 to 2015 as well as primary data were used.

1.8. Significance of the Study

Several empirical studies (Kodom, 2013; Ngula, 2012; Issahaku, 2011; Horioka *et al.*, 2007; Prema-Chandra, 2003, and Gupta, 1970) in relation to the factors that influence saving ignored one critical factor, ones attitude towards risk, but this study included this factor. Economic growth and development are largely dependent on the financial sector. Economies with the quest to achieve sustainable growth must, therefore, depend not entirely on external financial sources due to their unpredictable nature. The ideal way, inter alia, is to mobilize domestic savings. This study, first of all, provides information

about the factors that determine saving by customers of the Yaa Asantewaa Rural Bank and other banking institutions. It can also help financial institutions in the evaluation and analysis of their saving incentives for a more attractive and effective package for their customers. In addition, the study can help in designing policies to promote saving and investment in the country. Thus, to formulate or design appropriate theories or policies to boost saving and its associated investment which will eventually propel economic growth and development, there is the need to a better understanding and appreciate households' saving characteristics in the Ghanaian economy.

1.9. Organisation of the Study

The entire study has been put into five chapters with each chapter comprising sections and subsections where necessary. The first chapter gives a general overview of the whole research work. This chapter highlights the general structure and the need for the research, the procedures, processes and impact of the research on the behaviour of Ghanaians towards savings. In the following chapter, the study considers, in detail, the many research works on savings behaviour of citizens in societies and its impact on their economic growth and development. Theories advanced by other researchers were not left out of the discussion in this chapter. The third chapter throws more light on the methodology employed by this study. The validity of this study, therefore, can be verified per the information proffered in this chapter. Chapter four contains the presentations of findings and analysis. These were done in statistical forms not leaving out the economic intuitions

and policy implications. A summary of findings, relevant recommendations, limitations

of the study and conclusions has been presented in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The pertinence of saving being an indispensable source when it comes to the supply of capital for investment has received extensive exploration and for that matter has become a global topic of discussion among economic analysts. This is particularly due to capital shortage and the chronically stagnant economic state which has become phenomenal in less developed countries which Ghana is not an exception.

The chapter proffers a historical background of YARB and measures put in place at the national level to boost the financial sector in the Ghanaian economy. Moreover, a brief overview of empirical works conducted in the subject area will receive attention in this chapter. Again, theoretical models in relation to saving behaviour of households will not be left untouched.

2.2. Financial Sector Reforms in Ghana

As part of the Economic Recovery Programme, Ghana, since 1980 has embarked on institutional, legal and policy reforms in the financial sector aimed at the expansion (in size and diversity) and enhancing development of the banking sector. Before then the financial sector was in distress attributable to the financial sector and macroeconomic policies implemented after attainment of independence and partly to the sharp decline in

economic performance in the late seventies (Brownbridge *et al.*, 2001). The new banking law was enacted and this gave birth to a more disciplined financial sector in the Ghanaian economy.

The late 1980s saw the introduction of Financial Sector Adjustment Programme (FINSAP I) which partially liberalised interest rates determination and ensured the removal of sectoral credit ceilings. Accompanied by this policy was the liberalisation of access to foreign exchange as well as granting of foreign exchange bureaux with license in their operations. A World Bank's Financial Sector Adjustment Credit (FSAC) lend support to the FINSAP. The FINSAP I, inter alia, aimed at addressing the institutional deficiencies of the financial system, especially by developing capital and money markets, reforming prudential legislation and the supervisory system, restructuring distressed banks, permitting new entry of private and public sector financial institutions into the financial market. Further liberalisation of financial markets took place in the early 1990s during which period indirect instruments of monetary control were adopted and that saw the allowance of demand-supply interplay in the determination of T-Bill rates.

The phase two of the FINSAP, since 1994, has been implemented with the principal aim of privatising of state owned banks and developing non-bank financial institutions (NBFIs) to cater for financial services that the banks failed to offer. With reference to the survey performed by Antwi-Asare and Addison (2000), the specific policy reforms which enhanced bank performance were interest rate liberalisation, deregularlisation of credit allocation and the removal of non-performing assets to the Non-Performing Assets Recovery Trust.

2.2.1. Prudential System Reforms

Entailed in these reforms were banking legislation revisions coupled with the enactment of a new Banking Act in 1989 and a legislation covering the NBFI Act in 1993, the insertion of accounting procedures and standardised reporting, and the strengthening capacities of Bank of Ghana (BoG) supervision. The supervisory role of the BoG included the right of the bank to impose minimum capital requirement on commercial and other banks, prescribe minimum liquidity asset ratio and the right of revoking a bank's license among others.

2.2.2. Financial Market Liberalisation

Financial markets in Ghana have witnessed progressive liberalisation since 1987. This entailed the sectoral composition of bank lending, the introduction of market based instruments of monetary control and the removal of controls on interest rates. With private sector participation, new financial institutions including universal banks and merchant banks have been licensed and there have been partial privatisation of public banks.

Also, new banks have made their way into the banking markets since these reforms came into being. In 1990, two merchant banks (i.e. Ecobank and Continental Acceptances (CAL)) commenced operations. It must be stated that both are joint ventures involving foreign shareholders and local public sector shareholders. Meridian Bank BIAO, a foreign

commercial bank, was established with the Social Security and National Insurance Trust (SSNIT) holding a minority local share in 1992. Two more merchant banks, in 1995, began operations. These are: the Metropolitan and Allied Bank and First Atlantic Bank.

In addition to the new entrants into the banking market, a number of non-bank financial institutions which included finance houses, leasing companies, savings and loan companies, and building societies have been licensed to operate. Many of these non-bank financial institutions - of which Yaa Asantewaa Rural Bank is an example - accept deposits and offer credit facilities thereby providing some competition for the services rendered by the banks.

2.3. Overview of Yaa Asantewaa Rural Bank (YARB) Limited

The 2012 Association of Rural Bank (ARB)-Apex Bank Report on the performance of rural and community banks shows that Yaa Asantewaa Rural Bank (YARB) was the best out of 133 rural and community banks in Ghana in terms of capital adequacy. The bank's capital adequacy was 71.4% as at 31st December 2012; the 13th and 3rd largest rural and community bank in Ghana and Ashanti Region respectively in terms of paid-up share capital. Yaa Asantewaa Rural Bank Limited was incorporated on 14th April 2010 under the companies' code 1963 Act 179 as a Public Company Limited by liability to provide Rural and Community Banking among other services to its clients.

The purpose of Yaa Asantewaa Rural Bank Limited is to provide the shareholders with the highest return possible on their investment while respecting the core values of the bank

and taking into consideration other stakeholders' interests. This is determined to instill good business practices in all its facets of operations by embracing realistic ideas from all stakeholders i.e. shareholders, supervisory authority, customers, personnel and the general public through the medium of discussion, consultations, suggestions, seminars and open forum and brain storming session. It is believed that by this methodology, the desirable productivity will be achieved and sustained.

Driven by the bank's motto and slogan: "Your Future, Our Vision" and "Dreams Made Real" respectively; it seeks to the delivery of tailor made quality services that satisfy the specific needs of our clients. It offers various savings, investment and loans products which are all aimed at meeting clients' short, medium term and long term financial needs through a continuous assessment of their current and future financial needs and resources. The product range includes: current accounts, savings accounts, investment deposit accounts, provident plans accounts, pension plan accounts, child education accounts, overdraft facilities, microfinance loans, and term loans (both commercial and individuals).

2.4. Forms of Savings

Studies have identified two forms of saving and investment. These are: non-financial and financial. Financial savings involve the purchase of financial securities or investing in bonds, shares, mutual funds, and current/savings accounts. On the other hand, the nonfinancial savings involves investing into assets rather than financial instruments with the prospect of generating additional income. Real estate investment has become the most

popular non-financial form of saving and investment in recent years. In the case of the local people, this takes the form of investing in lands, livestock, commercial vehicle, to mention a few.

2.5. Motives for Saving

In spite of the fact that numerous studies have been conducted in relation to saving behaviour, only a few aimed directly at investigating the motivations for saving (Xiao and Noring, 1994). Research on motives for saving is of both theoretical and applied interest. This due to fact that it can serve as an indispensable tool for financial educators and advisors in their quest to acquire in-depth understanding of the rationales of individuals' financial behaviours (Canova *et al.,* 2005).

In his book entitled, "The General Theory of Employment, Interest, and Money", Keynes (1936) came out with eight different motives for saving by economic agents: (1) "Precaution", which implies building up a reserve against unforeseen contingencies; (2) "Calculation", which refers to the wish to earn interest; (3) "Pride", which concerns leaving money to heirs (the bequest motive); (4) "Improvement", which means to enjoy a gradually improving standard of living over time; (5) "Enterprise", which means having the freedom to invest money if and when it is favourable; (6) "Independence", which refers to the need to feel independent and to have the power to do things; (7) "Foresight", which includes providing for anticipated future differences between income and expenditure (the life-cycle motive); and (8) "Avarice" or pure miserliness

Lusardi and Browning, in 1996, added the ninth motive which they termed as "Downpayment" motive. They argued that households save in order to accumulate deposits to buy cars, houses, and other durables. They also believe that there is considerable heterogeneity in the motives for saving. This can be deduced from the saying, "It is unlikely that a single explanation will suffice for all members of a population at any given time or even for the same person over a long stretch of time". It has become a universally accepted truth that the non-poor (wealthy) have diverse and different motives to save from the poor (less wealthy).

2.6. Theoretical Review

Economists, over the years, have developed several theories aimed at explaining saving culture of economic agents: households, firms, and governments and how the savings impact on the economy. Notable among these theories are: Katona's saving theory, the Life-Cycle Hypothesis, the Absolute Income Hypothesis, the Permanent Income Hypothesis, the Paradox of Saving et cetera. Although they each has inherent shortcomings based upon their underlining assumptions, they have been able to stand the test of time.

2.6.1. Katona's Savings Theory

According to Katona (1975), the mere fact that saving is the residual of income after consumption spending is not a guarantee to determine savings rate but should be backed

by willpower of the individual to save. Otto *et al.* (2006) noted that "Katona's theory of saving is based on the assumption that saving/consumption is dependent on the ability to save/consume and the willingness to save/consume".

The theory stressed the importance of income but thought of the absolute income hypothesis as being too simplistic. Simply having money left over after expenditures on necessities does not mean that this money has been saved or will be saved. To predict saving, there is the need to consider the willingness to save as well. Put differently, those who are able to save still need to choose to do so, that is, they have to make a decision that requires some degree of determination and self-discipline. With regard to a general and one's personal evaluation of the economic situation, a consumer sentiment and expectations will impact on his/her saving decisions and optimism and pessimism. In spite of the fact that different reasons inform people's saving decisions, Katona assumes that someone's personal evaluation of the economic situation will influence contractual as well as discretionary saving decisions.

Katona, thus, put forward that the average persons' saving habits can be categorized into three. These are: one, contractual saving, where routine installment payments for an asset like a home mortgage, which can be seen as obligatory saving are made; two, discretionary saving, where one deliberately saves; and three, residual saving, where one does not spend all of income and therefore saves by default.

2.2.2. The Paradox of Thrift/Saving

The paradox stands to explain the tendency that individuals, in attempt to prepare for hard times in future through accumulating much more saving, end up saving less. That is, if individuals try to save more money by cutting down current consumption, the increase in saving will cause a decline in national income as a result of a fall in aggregate demand. Since saving is directly related to income, total saving will tend to fall. In simple terms, the paradox is best elucidated by analyzing the place, and effect, of economy's increased savings. If the people residing in a country at given period decide to increase their saving at all levels of income, then there will a decrease in aggregate demand. Companies will be compelled to increase their unplanned inventory. This causes a contraction in their future output, thus, experiencing a decline in their total revenue. The resultant impact on employees will a reduction in income. The total saving of the population will have remained unchanged or even declined due to decline in incomes, that is, weaker economy.

Popularized by John M. Keynes and forming part of mainstream economics since the late 1940s, the concept had been made known as early as 1714 in "The Fable of the Bees", and similar sentiments date to antiquity. The argument begins from the observation that in equilibrium, total income must equal total output. If we assume that saving increases with income, a rise in the autonomous component of saving, ceteris paribus, will cause a shift in the equilibrium point at which output equates income to a lower value. This induces a fall in saving that may offset the original increase more than proportionately. This can be likened to the famous prisoner's dilemma which illustrates the principle that

the pursuit of self-interest leads not to socially optimal result. Thus, as saving is of immense benefit to the individual, it is deleterious to the economy in its entirety. This is a "paradox" for it runs contrary to intuition (affirming in the proverbial saying: "A penny save is a penny earned"). Figure 2.1 is an illustration of the doctrine of this 'paradox'.

Figure 2.1: Effect of Increase in Saving with Fixed Investment
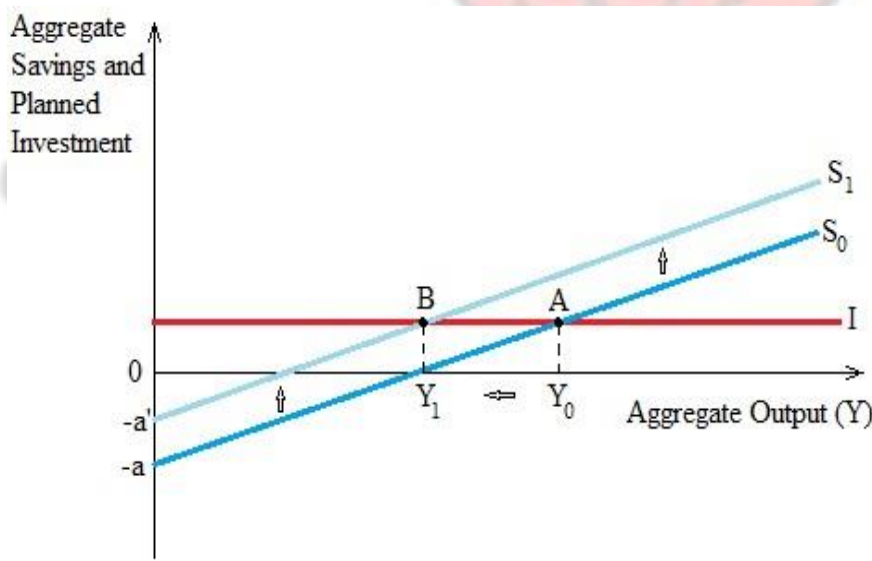
Source: Case, Fair, and Oster (2009)

From Figure 2.1, if households increase their planned saving, the saving schedule shifts upwards from S_0 to S_1. A new equilibrium is established at point, B, where the planned saving and investment intersect. The rise in saving has, possibly, brought about a decrease in equilibrium output from Y_0 to Y_1. Albeit, saving is the same as it was at the initial equilibrium, point A, but there has been a decline in national income.

Relaxing the fixed investment for a moment reveals a beneficial impact on the economy. If the extra saving that households want to do in order to ward off hard times is channeled into additional investment through the financial markets, there will be an upward shift in the investment (I) schedule. The paradox then could be averted and this depends critically on the existence of a channel through which additional household saving finance additional investment.

2.6.3. Socio-Economic Impacts of Saving

In preceding discussions, the importance of saving has not been silenced and this section gives a detail look at how saving socio-economically affect individuals and the economy as a whole.

2.6.3.1. Individual Level

Economic agents, especially households, stand the chance of reaping immense benefit from saving. Some of such benefits are: one, saving provides the opportunity of financing unforeseen contingencies in future and hence, maintain financial security; two, it aids in households' consumption smoothening; three, as means of wealth accumulation, it raises the social status of the individual; four, it serves as means of generating additional income to households, corporate institutions and government when the saving type is interest bearing; to mention a few.

2.6.3.2. National Level

Here, we adopt the steady state effects of an increase in the savings rate proposed by Solow. The Solow growth model considers changes in the savings rate as a key factor in economic growth. In Figure 2.2, the effect of an increase in the savings rate, from s_1 to s_2, on the steady state quantity of capital per worker is illustrated. The increase in s shifts the curve $sf(k_t)$ up, and the steady state capital increases from k_{*1} to k_{*2} with per worker output increasing from y_1 to y_2. Therefore, in the new steady state, the quantity of capital per worker is higher, which implies that output per worker is also higher, given the per-worker production function $y_t = f(k_*)$. Though the growth rates of aggregate variables are unaffected by the increase in the savings rate in the steady state, but it may take some time for the adjustment from one steady state to another to take place. Hence, growth is possible at the transition stage as shown in Figure 2.3 below.

Figure 2.2: Effect of an Increase in the Savings Rate on the Steady State Quantity of Capital and Output per Worker
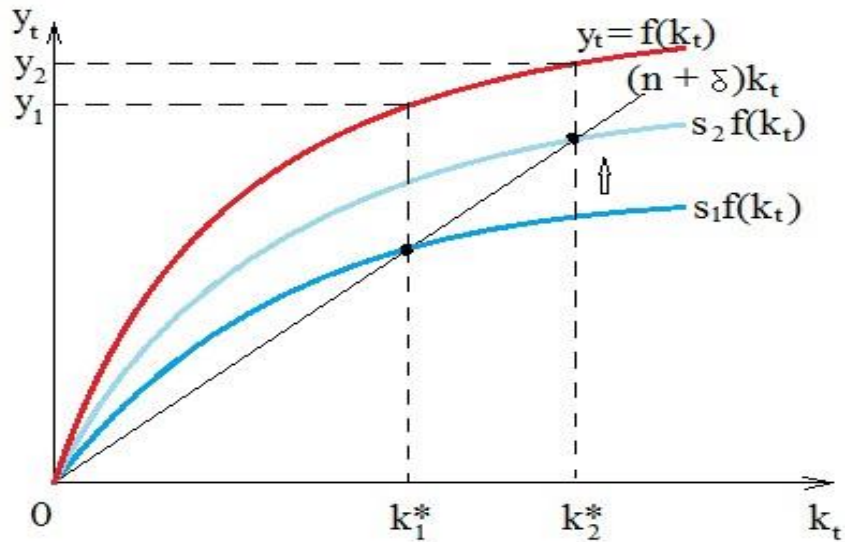
Figure 2.3: Effect of an Increase in the Savings Rate at Time, *T*
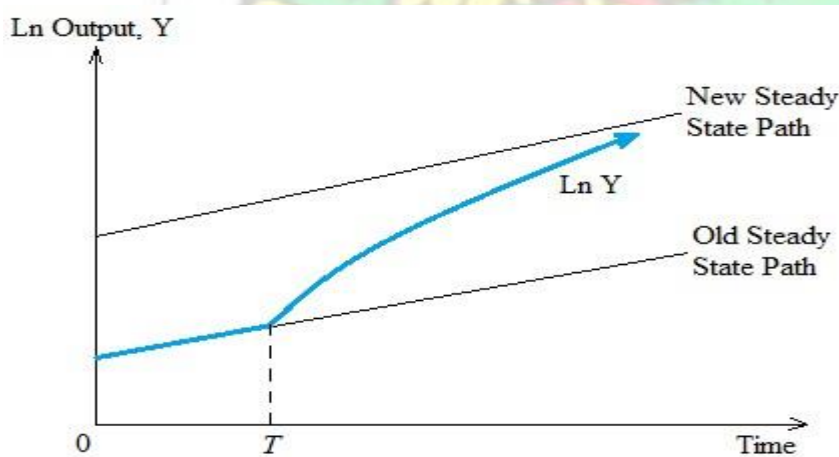
Figure 2.3 shows the path that the natural logarithm of output follows when there is an increase in the savings rate, with time measured along the horizontal axis. Before time T, aggregate output is growing at the constant rate and then the savings rate increases at time T. Aggregate output then adjusts to its higher growth path after period T, where the transition growth rate in output is higher. The temporarily high growth rate in transition results from a higher rate of capital accumulation when the savings rate increases, which translates into a higher growth rate in aggregate output. Before time T, the economy is in a steady state. At time T, the savings rate increases, and output then converges in the long run to a new higher steady state growth path.

2.7. Empirical Review

As noted in section 2.1, the subject matter has been dealt with by other researchers in diverse forms adopting different approaches in arriving at their findings. This section review some of these works done in other countries as well as Ghana.

Smith et al (2004) examined the wealth effect of the decline of household saving in the US economy. The research used a unique set of household level panel data that provide measures of household saving and the capital gains received by households during the stock market boom of the 1980s and the 1990s when real equity prices quadrupled. With a sample of approximately 5000 families and savings rates and capital gains for a sixteen year period (i.e. 1984 – 1999), the study employed the Panel Study of Income Dynamics

(PSID) wealth modules in its analysis. To measure the unbiasness of the modules, the Ordinary Least Square (OLS) was used. It was revealed that most of the decline in the personal savings rate over the 90s can be explained by the unprecedented rise in the value of corporate equities.

Kulsum and Salam (2002) understudied empirically the savings behaviour in Indian households. The study was to find out the factors which have contributed to fluctuation in saving by analysing saving behaviour over a twenty year period (i.e. 1980 – 1999). The study revealed that household sector saving provides the bulk of national saving with the share of total household saving to the national saving increasing from 75.9 percent in 1980-1981 period to 82.7 percent in 1998-1999 period. The rate of public sector saving declined but that of corporate institutions ameliorated. Also revealed by the study is less effectiveness of income growth in explaining variations in savings rate.

Ngula (2012) examined the determinants of saving mobilisation and the role savings play in promoting economic growth in Ghana. Time series data covering 1980 and 2010 were used and a unit root test was conducted to envisage the stationary conditions of the variables involved. Performing this test was appropriate because data of such kind have the usual characteristic of exhibiting trends. Having performed the stationarity test, the ordinary least square technique was adopted in modelling and analysing the deterministic effect of the regressors on the regressand. The study perceived the over-reliance on the unpredicted external source of financing public projects is as a results of Ghana's inability to mobilise funds internally to embark on such projects. The result showed that inflation, exchange rate, and money supply significantly influence deposit mobilisation. Although,

deposit rate is expected to have a strong influence on saving mobilisation but it was proven otherwise. This is inconsistent in a priori sense and can be ascribed to the lees developed nature of the financial market.

Ojeaga *et al.* (2013) investigated the impact of interest rate on customer saving behaviour in the Nigerian banking sector. Basically relating deposit rate and bank deposit, the study incorporated average wage rate, bank annual losses, institutional factors, and the central bank's monetary policy rule to see the respective effects on saving habit of bank customers. With time series data spanning a 24 year period (i.e. 1989 – 2012), the quantile regression estimation technique, a non-parametric method, was employed to arrive at the findings of the study. The results from the simultaneous quantile regression and the bootstrapped simultaneous quantile regression revealed that interest rate was insignificant in determining saving behaviour due to the existence of heteroscedasticity. However, after controlling for the heteroscedastic error, a robust causative effect was established between deposit rate and saving habit. Bank losses, money supply, bank lending, income and legal right strength were as well found significant.

Also, relating to the determinants of savings and investment was a study undertaken by Issahaku (2011) with Nadowli, a town in the Upper West Region of Ghana. The study used primary data collected from households in the district and the response gotten were analysed by employing multiple linear regression model. The study revealed that in spite of low income of inhabitants in the district, there was the propensity to save and invest. Whiles educational status, income levels, and occupation were found to influence saving

positively, the number of dependents exerts a negative influence on saving. Assets and age composition did not have significant impacts on saving.

Horioka et al. (2007) employed a dynamic panel analysis of the determinants of the household saving rate in China. The study, covering the period 1995 – 2004, used a panel data and life cycle model on Chinese provinces from a survey conducted on China's household. They established a persistent increase in savings rate among households in China. The principal contributing factors for the variations over space and overtime were the income growth rate, the lagged saving rate, the inflation rate and the real interest rate. The study, however, revealed that age structure related variables have no significant impact on the saving rate of households.

Kodom (2013) assessed the factors that influence the savings habit of households, as well as the motives and use of savings in the Ga-West Municipality, Ghana. The study made use of primary data (where 200 hundred households were sampled) as well as secondary data from the Ghana Living Standard Survey five in its analysis. Multivariate regression analysis - binary logistic and ordinary least squares were used to envisage the contributing factors of households' saving level in the municipality. In order to examine the significance level and the relationships existing between the dependent variable and each of the independent variable, test such as Chi square test and mean test were ran. The results of the Ghana Living Standard Survey showed that households' decision to save is largely influenced by such factors as: income level, NHIS registration, locality, household size, marital status, sex, age, and education. It was also revealed that heads of many households had planned motives for saving but greater percentage of such savings end up spent on

unplanned expenses like: medical, funeral, marriage et cetera. The study then recommended that subsidies be granted on education and sensitization programs on NHIS intensified to boost saving by households in the municipality.

In the light of the Taiwanese experience during the period 1952 – 1999 was an examination on the factors that determine household saving in the process of economic development by Prema-Chandra *et al*. (2003). The study established a significant positive relationship between household saving rate and both the growth rate and the level of household disposable income and that saving increases with the real deposit rate. Public saving, they discovered, seems to crowd out private saving, but less than proportionately and that while both young- and old-dependency in population negatively affect saving rate, the magnitude of the impact of the former is far less than that of the latter. They, finally, concluded that saving rate seems to fall as a result of enhanced credit availability and increased availability of social security provisions.

Using annual time series data from India, Gupta (1970) conducted an empirical analysis on the determinants of saving. At lower level of development, his study confirmed the Keynesian argument that marginal propensity to save is an increasing function of income. It was further found out that the saving behaviour of rural folks was in accordance with the absolute income hypothesis whereas the permanent income hypothesis is a better fit in the urban areas in India.

Also at the municipal level was research work carried out by Amu et al (2012) with the principal objective of exploring the saving behaviour of rural households in the Ho municipality. By employing the multi-stage cluster sampling technique, 160 families were

sampled and interrogated. Data collected were analysed by the use of descriptive statistics. The findings showed that the family heads, in general, are not highly knowledgeable about formal saving forms and as a result resort to the informal forms. More so, it was revealed that personal, organisational and societal constraints play a critical role inhibiting the ability to save by respondents. No particular pattern for saving was realised among the studied households as they save as and when they have an excess income.

Mashamba *et al.* (2014) analysed the relationship between deposit mobilisation and interest rates on deposit in Zimbabwean banks for the period 2000 - 2006. To demonstrate the relationship existing between the regressand and regressors, they developed an Ordinary Least Squares model. Pearson's correlation coefficient was adopted to show the degree of linear relationship among the variables. Before running the regression equation the data was first tested for stationarity using the Augmented Dicker-Fuller Test, multicollinearity using correlation matrix and autocorrelation using the Durbin-Watson statistic. The study found a positive relationship between deposit rates and banks' deposits for the period under study and all the other independent variables were significant statistically at 5 percent margin of error. Also, the coefficient of determination was found to be significantly high showing that the independent variables could account for the total variation of the dependent variable – deposits.

2.9. Conceptual Framework

Deposit mobilisation serves as a key measure of banks' ability to lend out funds for investment and increasing aggregate demand in an economy. The individuals' saving behaviour is influenced by several factors. This study will focus on such factors as: inflation rate, income level, deposit rate, household size, demographic features, civil status, and attitude towards risk. Some of these are external and for that matter outside the control of households. Corporate institutions and government as well take into account one or two of these factors in their saving decision making process. The developed conceptual framework is graphically shown in Fig. 2.4.

Figure 2.4: Framework of Households' Saving Behaviour Determination
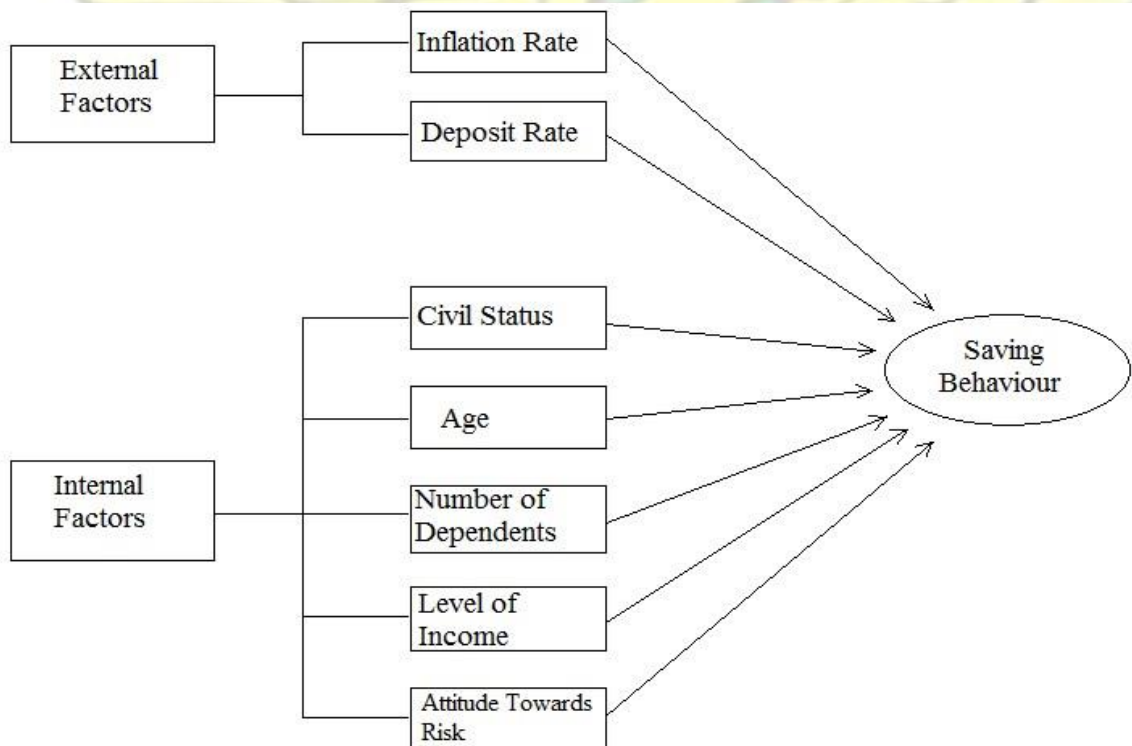
The level of education (civil status), deposit rate, and income level are expected to relate positively with saving. The implication is that when any of these factors witness a rise, the resultant effect on saving will be an increase. On the other hand, an inverse relationship is expected between customers saving behaviour and any of these factors: number of dependents (or household size), attitude towards risk, and rate of inflation. This implies that as these factors increase, saving will fall. Depending on the age group, saving can fall or rise.
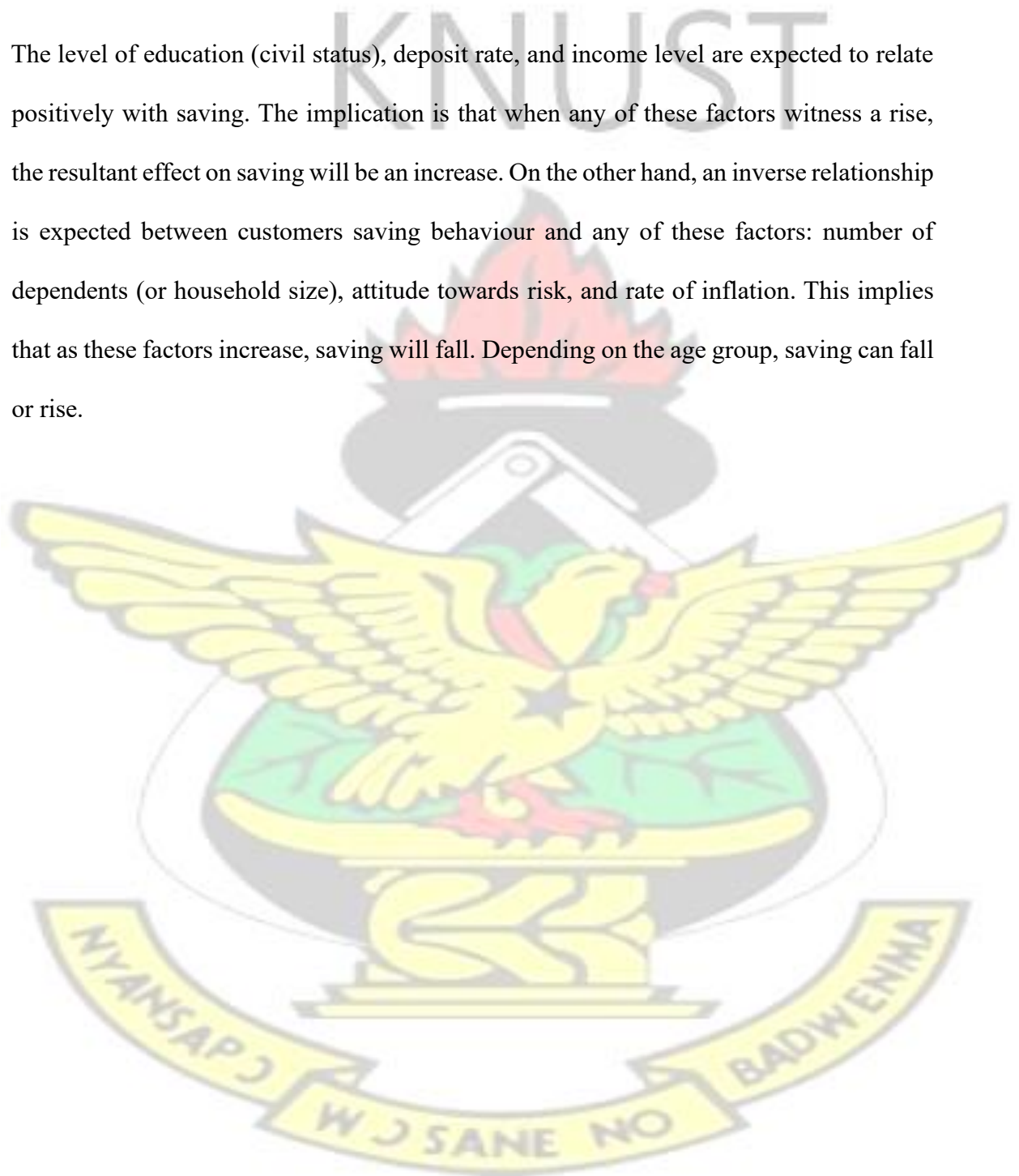
CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter takes into account methods employed by the study to arrive at its findings. It seeks to provide vivid interpretations of statistical techniques used to gather and analysis the data thereof. In addition, the chapter considers the possible factors that can influence the saving habits of individuals who turn out to be customers of the financial institution being studied.

3.2. Research Design

There exists different classifications of research design – experimental, semiexperimental, descriptive (survey), review, correlational, and meta-analytic. For the purpose of this study, the descriptive and the correlational methods were used because they allowed for observations of customers' saving habits and analysing the relationship between the

explained and the explaining variables respectively. It is worth noting that, the study was that of cross-sequential which combines both the longitudinal and crosssectional designs and correcting for some of the problems inherent in each. Hence, a descriptive-longitudinal method was used since the research, partly, involves a case study.

The study has been divided into two: theoretical and empirical approaches. In the case of the former, the study used an explorative research method in order to better understand issues pertaining to saving behaviour of economic agents upon which assumptions could be generated to serve as guides for the study. In the latter approach, based on the data collected, analytical and inferential research methodology, from which economic intuition could be inferred, were used. The study saw the need for a field work because it creates a picture of reality regarding the contributing factors of saving behaviour of individuals.

3.3. Sampling Techniques

Albeit, the study mainly used primary data in its analysis and arriving at its findings, the use of secondary data was equally indispensable. The population targeted for this study include all customers of Yaa Asantewaa Rural Bank totaling 10,830. This constitutes 7,684 at Ejisu branch, 3,140 at the Atonsu branch, and 6 at the Danyame branch. Out of the total customer population, a sample of 386 respondents were contacted. The researcher considers the sample size a cost effective decision as it would have involved a lot of time and money to gather data from the entire population.

The simple random sampling method was used as the selection criterion of the participants for the survey. This was chosen to allow for equally likely selection of respondents for the study thereby avoiding any personal bias in the selection process. Also, the efficiency of the estimates of the parameters can be easily verified with the simple random sampling compared to other sampling techniques. The sample size selection criterion adopted by this study is that propounded by De Vaus (2002). The formula is given in equation (3.1).

$$n = \frac{N}{1 + N(e^2)} \qquad (3.1)$$

Where N denotes the population of customers, n being the sample size and e representing the confidence level.

Putting in the respective values (i.e. $N = 10,830$ and $e = 5\%$), the sample size can be calculated as:

$$n = \frac{10,830}{1 + 10,830(0.05^2)}$$

$$\Rightarrow \quad n = \frac{10,830}{28.075} = 385.75 \approx 386$$

3.4. Data Collection and Source

The study made use of both quantitative and qualitative data. According to Veal (2006), qualitative research is often based on the belief that, the people personally involved in a particular situation are best placed to describe and explain their experiences or feeling in

their own words. Qualitative methods, thus, are perfect in exploring attitudes, perceptions and meanings of a situation thereby providing a means of assessment of the unquantifiable facts about the actual individuals under studied. Patton (2002) posited that quantitative study is usually based on causal inference and utilizes standardized measures to produce qualified data that can be analyzed statistically.

The tool employed in gathering the primary data was personally administered questionnaire. Here, predetermined questions were posed to respondents personally to solicit their views about the various factors that influence their saving decisions. Monthly based data on deposits growth and deposit rate were made available by YARB limited. Data on inflation rate were extracted from the Bank of Ghana's website.

3.5. Model Specification

Due to the different data types used in this study, two different regression models were estimated. The secondary data were estimated using the ordinary least square model whiles the multinomial logit model was adopted in the estimation of the primary data.

3.5.1. The Ordinary Least Square (OLS) Model

The solution of small simultaneous equation model can be presented in the form as shown in equation (3.3).

$$S_t = F_t{}^\beta \tag{3.3}$$

Where F being a vector of the permanent component of Yaa Asantewaa Rural Bank and macro fundamentals with β representing the vector of the parameter to be estimated. Hence:

$$F = f(Infl, Depr) \tag{3.4}$$

Introducing an intercept and putting equation (3.4) into equation (3.3) gives:

$$S_t = \alpha Infl_t{}^{\beta_1} Depr_t{}^{\beta_2} \tag{3.5}$$

Taking natural logarithm and introducing a stochastic term gives:

$$lnS_t = ln\alpha + \beta_1 lnInfl_t + \beta_2 lnDepr_t + \mu_t \tag{3.6}$$

If it is assumed that $ln\alpha = \beta_0$ which is the long run model of deposits, then the respective ordinary least square estimates can be presented as:

$$lnS_t = \beta_0 + \beta_1 lnInfl_t + \beta_2 lnDepr_t + \mu_t \tag{3.7}$$

Where: S_t represents saving at period, **t.**

$Infl_t$ denotes inflation rate in the economy at time, **t.**

$Depr_t$ is the deposit rate offered customers on their saving by YARB at time, **t.**

3.5.2. Multinomial Logistic Regression Model

The multinomial logistic regression equation for this study has been expressed in equation (3.8) below.

$$S_{ij} = \beta_0 + \beta_3 IL_t + \beta_4 NoD_t + \beta_5 ATR_t + \beta_6 AGE_t + \beta_7 CS_t + \mu_{ij} \qquad (3.8)$$

Where IL_t, NoD_t, ATR_t, AGE_t and CS_t represent income level of a customer, number of dependants on a customer, a customer's attitude towards risk, the age of a customer, and the civil status of a customer respectively at a point in time. All of the μ_{ij} are independent and identically distributed by the type 1 extreme value distribution.

3.6. Definition of Variables

The focus of this study was on the rate at which deposits grows in YARB (treated as the explained variable) with the following explaining variables: interest rate on deposits, customers' income level, educational status of customers, attitude toward risk, demographic features (here, age of customers), family size of customers, and inflation rate in the economy.

a. Deposit (Savings) Growth

As stated earlier, the performance of YARB was measured in terms of the growth rate of its deposits mobilisation. Deposit is a form of financial asset in which funds are place into an account at a depository institution for safekeeping and to increase the credit balance of the account. Deposit options available to YARB's customers include: current account, savings account, fixed deposits, E-Zwich, and Susu. Savings or deposit growth can be defined as the rate of change in deposits at a particular period of time. This change can be either positive or negative depending on prevailing conditions including management efficiency, economic factors, and demographic characteristics of customers. Favourable conditions betters the performance of banks whiles banks' performance is marred by unfavourable conditions.

b. Level of Income

It is a well-established fact that saving is the residual of income after consumption spending. Income is considered the total cash flow that an individual earns at a given period of time. The marginal propensity to save, as argued by Keynes, increases with income. That is to say, higher income translates into higher savings. The opposite will be the case when income is low. A positive relationship therefore is expected between households' income and saving. The income classification (into low, middle, and high income earners) employed by this study was the one defined by Ghana Revenue Authority as a benchmark for taxing workers.

c. Deposit Rate

Also termed as interest on deposit, deposit rate serve as the price received by account holders for making available their surplus funds which then becomes tradable stock for the banks. A rise in interest on deposits serves as an incentive for economic agents: individuals, corporate institutions, and even governments to increase their marginal propensity to save out of income after consumption spending. This stems from the fact that the increase in deposit rate makes saving a relatively more attractive form of investment and hence the need to divert funds into it. In the same vein, a fall in deposit rate is expected to cause a decline in savings rate. A positive relationship is thus anticipated between deposit rate and growth rate in deposits. The annualized monthly average interest on deposit as quoted by YARB will be used by this study.

d. Inflation Rate

Defined as a persistent rise in general price level in an economy at a specified period of time, inflation rate is believed to impact negatively on saving. Two reasons can be advanced for this assertion. One, inflation increases the transactions demand for money. That is, when there is an inflation in an economy, individuals, corporate institutions and even governments requires much more funds to undertake whatever transactions they engage in than before. Much of income generated, thus, get spent and little is left for

saving. Two, the value of accumulated saving falls (i.e. purchasing power gets eroded) if the general price level increase cannot be compensated by interest earned on savings.

Rational economic agents then tend to keep their surplus funds in non-financial assets whose values are relatively stable in times of inflation. This, undoubtedly, reduces saving. A negative relationship, therefore, is expected between deposits growth rate and inflation rate. This study will use the year-on-year monthly averaged inflation rate quoted by the Bank of Ghana from 2013 to 2015.

e. Age Distribution

The generalized Life-Cycle Hypothesis implies that the saving ratio of an individual household depends on the age of the household, ceteris paribus. Thus, the aggregate household saving ratio depends on the relative share of households of certain ages in the total number of households. Young people (i.e. those below 18 years in the case of Ghana) and the Aged (i.e. above 60 years) are expected not to save as much as those in the working age (i.e. those between 18 to 60 years). Even those within the working age, the marginal propensity to save vary considerably. People in their early stage of work tend to safe less because they accumulate wealth during that stage. It is difficult to draw clear cut conclusion of the relationship between age distribution and saving because some empirical studies have found savings rate increasing among the Aged. But, in general, higher saving is expected when one falls within the working age whiles the Aged and those below 18 years are expected to save less or nothing at all.

f. Number of Dependents

In the Life-Cycle Hypothesis, the decision unit is treated as consisting of a constant number of people. However, in reality the membership over the life cycle of normal household varies which is likely to influence their consumption time profile and consequently, saving. It has been argued that the higher the household size, the higher the consumption pattern and all things being equal, the lower the excess money left after consumption expenditure for saving. A negative relationship, therefore, is expected between number of dependents and savings growth rate.

g. Level of Education

Education has a tool to inculcate analytical ability and skills in students. Schooling may enable people to appreciate the finer things in life thereby making them efficient in their consumption and saving decisions decision making process. Fisher (1965) provided a list of personal characteristics, influenced by education, that would seemingly influence time preferences and hence savings. These are: self-control, foresight, a habit of thrift, concern for heirs, concern over the uncertainty of life and concern for fads and fashion. Highly educated persons are more farsighted and therefore have stronger retirement motives for saving. Education is, thus, expected to positively relate to saving.

h. Attitude towards Risk

This has to do with the degree of risk aversion (proxied in whether or not a customer has ever fallen victim of a collapse of a financial institution he/she had transactions with) of individuals. Due to management inefficiencies, inter alia, some financial institutions become insolvent and collapse as a result. Talk of the case of Noble Dream Financial Services, the Bank for Housing and Construction, Royal Winners, the Co-operative Bank among others. All these occurrences were at the expense of customers and are therefore likely to lose confidence in depository institutions especially emerging ones. In the light of this, risk averse individuals are likely to save less in financial assets. Attitude towards risk is, thus, expected to relate negatively with savings growth rate.

3.7. Estimation Techniques

In order the measure the unique effect of the regressors on the regressand in the OLS model, a multicollinearity test, adopting the Pearson product-moment correlation between each pair of the independent variables was performed. This was estimated using equation (3.2) below.

$$r = \frac{N \sum xy - \sum(x)(y)}{\sqrt{[N \sum x^2 - \sum(x^2)][N \sum y^2 - \sum(y^2)]}} \qquad (3.2)$$

Where r stands for the Pearson product-moment correlation coefficient with N representing the number of values in each set of data. The x and y represent the scores of

the two variables under consideration. The following are the underlying assumptions of the Pearson r: one, there should be no heteroscedasticity; two, there must be no outliers in the data set; three, the variables must be normally distributed; and four, the variables must be related to each other linearly.

The logit model considered the probability that a customer with a set of certain socioeconomic and demographic characteristics (X) will save out of his or her income at a particular period of time. For a multinomial logit, we have a $K - 1$ equations where each equation models the odds of influence relative to a reference category.

Therefore, $Y = 1$ is the probability that a customer saves a proportion of current income. This can algebraically expressed as:

$$\log\left[P(Y = 1|X)\right]/P(Y = K|X) = a_1 + b_1 X$$

$$\ldots$$

$$\log\left[P(Y = K - 1|X)\right]/P(Y = K|X) = a_{K-1} + b_{K-1} X \qquad (3.9)$$

Where K represents the number of categories in the dependent variable, Y. This implies that, $Y = 0$ is the probability that a customer's saving behaviour, subjected to same set of socioeconomic and demographic characteristics, is not affected.

To predict the probabilities of the factors that determine the degree of influence on saving, the odds ratio needs to be estimated. This can be done by finding the exponentials of the each coefficient. Solving for the system of equation for the set of probabilities gives:

$$P(Y = 1|X) = exp(a_1 + b_1X) / [1 + exp(a_1 + b_1X) + \cdots + exp(a_{K-1} +$$

$$b_{K-1}X) \tag{3.10a}$$

$$P(Y = K - 1|X) = exp(a_{K-1} + b_{K-1}X) / [1 + exp(a_1 + b_1X) + \cdots +$$

$$exp(a_{K-1} + b_{K-1}X) \tag{3.10b}$$

$$P(Y = K|X) = 1 - P(Y = 1|X) - \cdots - P(Y = K - 1|X) \tag{3.10c}$$

In each of these probabilities, there is going to be a function of all the coefficients of the model. The probability of the dependent variable represents each one of the categories.

The assumption that underlies the logistic regression model is the Independence of Irrelevant Alternatives (IIA). The model stipulates that: one, the odds of outcome, j, versus outcome, k, do not depend on what other outcomes (say, $l, m, n, \ldots$) are available; and two, relative changes do not depend on having all of the options (for this study, influence on saving) available.

3.8. Method of Data Analysis

The study sought to investigate three main questions based upon which the objectives were formulated. The study employed statistical tools including descriptive statistics. Difference in means (t-test or on the basis of the p-values that turned out) was used statistically to determine the extent to which the mean deposit rate and inflation rate are significant in the determination of savings growth. Chi-square test was also used to envisage whether or not some associations existed between some of the variables. The

elasticity of saving to proportionate variations in deposit rate and the rate of inflation were determined by their respective coefficients whiles the overall variation in the dependent variable was explained by the goodness of fit.

DATA PRESENTATION AND ANALYSIS

4.1. Introduction

The sub Saharan African countries, not excluding Ghana, have been characterized by low savings growth rate which has, in one way or the other, accounted for low growth and development in such economies. Several factors come into play to cause the low saving in these countries. On the basis of the principal objective of this study, empirical analysis has been conducted in this chapter. Due to the varying nature of data used that necessitated the estimation of two different regression models to investigate the contributing factors of customers' saving behaviour, this chapter has been put into two major sections: that of the OLS analysis and the logistic regression analysis. Also, saving decomposition and deposit growth rate at YARB received attention in this chapter. The findings from them have been presented in tables and charts.

4.2. Ordinary Least Square Analysis

4.2.1. Descriptive Statistics

The measures of central tendency, peakness, heaviness of tail, measure of dispersion, minimum and maximum values of deposits, interest on deposits and inflation rate are taken and the results are presented in Table 4.1.

Table 4.1: Summary Statistics on Inflation, Deposit Rate, and Deposit Growth

	LN DEPOSITS	LN INFLATION	LN DEP. RATE
Mean	14.50399	2.171438	2.739208
Median	14.64467	2.197225	2.747086
Maximum	15.51068	2.197225	5.046002
Minimum	12.78330	2.119863	2.174752
Std. Dev.	0.730946	0.036986	0.441500
Skewness	-0.735659	-0.707107	3.968065
Kurtosis	2.615565	1.500000	22.07621

Data Source: YARB and Bank of Ghana, 2015.

The table shows clearly that deposit rate assumes positive values when subjected to the all the statistical measures. The case of deposits and inflation rate differs a bit as they are negatively skewed. Deposit rate has the highest range (i.e. maximum value less minimum value) followed by deposits and inflation and in that order. Also, there is high possibility of the actual values deviating from the expected value in deposits because it has the highest standard deviation. The variable with the lowest fluctuations around its mean is the rate of inflation.

4.2.2. Behaviour of Deposits, Deposit Rate, and Inflation Rate over Time (2013M01–2015M12)

In general, deposits, average deposit rate, and the rate of inflation exhibit an upward trend throughout the period under review. Although deposits witnessed monthly fluctuations, it increased at a decreasing rate. This state of affairs is manifested in Figure 4.1(Panel I). Deposit rate (averaged) rose sharply by 12.97 percent after the early twelve months and stayed at the higher level for the subsequent months understudied as can be seen in Figure 4.1(Panel II). The time series characteristics of inflation rate is observed in Panel III of Figure 4.1. The rate, except for the sharp rise in the eleventh month of 2013, fell in the subsequent month and assumed a gradual increase over the rest of the 36-month period.

Figure 4.1: Time Series Characteristics of Deposits, Inflation, and Deposit Rate

Panel I   Panel II   Panel III
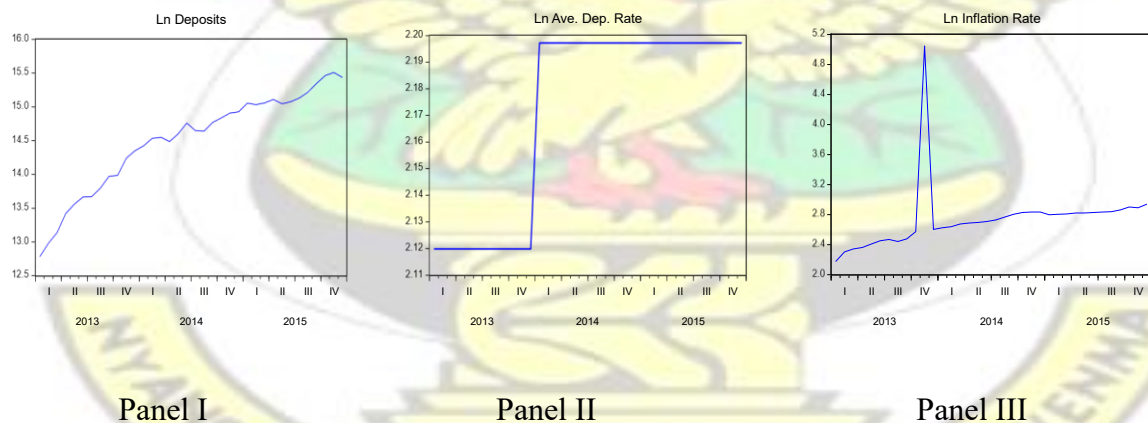
Data Source: YARB and Bank of Ghana, 2015.

4.2.3. Multicollinearity

The results, depicted by a correlation matrix, in Table 4.2 is the multicollinearity tests.

Table 4.2: Correlation Matrixes

	LN DEPOSITS	LN INFL	LN DEPR
LN DEPOSITS	1		
LN INFL	0.456591	1	
LN DEPR	0.816865	0.239585	1

Data Source: YARB and Bank of Ghana , 2015.

As depicted in Table 4.2, the correlation between the two independent variables is less than 0.8. The implication here is that multicollinearity is not a problem in the model. As expected, deposit rate is positively related to inflation rate. This implies that, to compensate surplus lending units for making funds available when there is inflation in the economy, the interest on deposits must be raised.

4.2.4. Ordinary Least Square Estimates

The ordinary least squares estimates in Table 4.3 indicates that interest on deposit and inflation rate each has some degree of significance in explaining deposits mobilization at 5 percent margin of error. This is made evident in the high R-square value of 79.36% as well as the F-statistic which is significant at 5 percent significance level. It is worth concluding that, 79.36 percent variation in deposits can be explained by inflation rate and the interest offered on deposits. The coefficients of the regressors should be interpreted as proportionate changes as they represent elasticities.

From the table, it can be inferred that a proportionate rise in deposit rate can cause deposit growth rate to increase more than proportionately. As expected in a priori sense, a positive relationship has been established between deposit rate and deposit growth rate. This finding lends support to that of an empirical study conducted by Mashamba et al. (2014) which analysed the relationship between banks' deposit interest rates and deposit mobilisation in Zimbabwe for the period 2000 – 2006. Also affirming the positive relationship between interest on deposits and deposit growth rate was the study carried out by Ojeaga et al. (2013) in which an investigation of the impact of interest rate on customer saving behaviour in the Nigerian banking sector was undertaken.

Table 4.3: Regression Results (Dependent Variable: Ln Deposits)

Regressors	Coefficient	Standard Error	T- Ratio	Probability
C	-21.63678	3.400519	-6.362786***	0.0000
LN INFL	0.408476	0.132765	3.076682***	0.0042
LN DEPR	16.12842	1.584821	10.17681***	0.0000
$R^2 = 0.7936$		$R^2 = 0.7811$		$N = 36$
$F(2, \ 33) = 63.45$		$Pr(F - Stats.)$ = 0.0000	D-W Stat = 0.9198	

Data Source: YARB and Bank of Ghana , 2015.

Note: *** Significant at 1 percent level of significance

Although inconsistent in theoretical expectations, the regression result shows that there exist positive relationship between inflation rate and deposit growth rate. This may be as a result of insensitivity of the saving behaviour of YARB's customers to changes in the general price level in the Ghanaian economy. A percentage increase in inflation rate can then lead to a 40.85 percent growth rate in deposits at the Yaa Asantewaa Rural Bank Limited. The significance influence posed by inflation rate on deposit growth rate justifies the finding of the study undertaken by Ngula (2012) which employed time series data

covering 1980 and 2010 to examine the determinants of saving mobilisation and the role savings play in promoting economic growth in Ghana.

4.2.4.1. Residual Diagnostic Test

In order to investigate the validity of the regression model estimated in Table 4.3 above, the following null hypothesis were tested: one, the residuals are multivariate normal; two, there is no heteroscedasticity in the residuals; three, there is no serial correlation in the regression model; and four, the model is not wrongly specified. The null hypothesis, in each case, was not rejected at 5 percent error level; implying the model is potent on the basis of the classical linear regression assumptions tested and this is desirable statistically.

Table 4.4: Residual Diagnostic Test

Variable	F Version	LM Version
Serial Correlation	$F(2, 31) = 2.144320*$ [0.3013]	CHSQ(2) = 4.574981* [0.2517]
Functional Form	$F(2, 12) = 1.456129*$ [0.2364]	CHSQ(1) = 1.601968* [0.2056]
Normality	NA	CHSQ(1) = 0.783713* [0.6758]
Heteroskedasticity	$F(2, 33) = 1.719954*$[0.1947]	CHSQ(5) = 3.398381* [0.1828]

Data Source: YARB and Bank of Ghana, 201 5.

NB: ***** We fail to reject the null hypothesis at 5 percent level of significance

Serial correlation: based on Lagrange multiplier test using Breusch-Godfrey test

Functional forms: tested using Ramsey's RESET test

Normality of residual: based on Skewness and kurtosis using Jarque-Bera

Heteroscedasticity: tested using Breusch-Pagan-Godfrey test

4.3. Multinomial Logistic Regression (MLR) Analysis

The preceding subsections discuss the findings of the multinomial logistic regression estimated. Generally, customer's level of income, number of dependants, attitude towards risk, and age of the customer were found to have significant effect on saving habit. Level of education (civil status) does not impact significantly on saving. This state of affairs can be seen in Table 4.5.

4.3.1. Descriptive Statistics

Presented in Table 4.5 is the descriptive statistics for the logistic regression model estimated. The table shows the respective frequencies, the percentage constituents, and the level of significance of the variables involved. For instance, 55.2 percent of the respondents engaged in the study have ever falling victim to a collapse of a financial institution there were once customers with the remaining 44.8 percent never suffered from such occurrence. Also, in responds to question posed to investigate the monthly income level of customers of YARB, 26.4 percent indicated that they fall into the low income (i.e. GH¢ 475.00 - GH¢2,754.00), the percentage of those who indicated to fall within the

middle income range was 22.3. High income earner (those with income level of GH¢3,240.00 and above) constituted the greatest percentage of 51.2.

Table 4.5: Descriptive Statistic of Variables used in the MLR Analysis

Variable	Category	Frequency	Percent	Chi Square
ATR				
	Yes	213	55.2	14.214**(2)
	No	173	44.8	[0.001]
AGE	< 18 yrs.	0	0.0	7.647**(2)
	18 – 60 yrs.	265	68.7	[0.022]
	> 60 yrs.	121	31.3	
CS	Primary	88	22.8	7.324 (8)
	Secondary	92	23.8	[0.502]
	Tertiary	127	32.9	
	Vocational	44	11.4	
	None	35	9.1	
NoD	Only 1	96	26.4	56.885**(2)
	2 – 4	207	22.3	[0.000]
	5 & Above	83	51.3	
IL (GH¢)	475 – 2,754	102	26.4	5.761*(2)
	2,755 – 3,239	86	22.3	[0.056]
	3,240 & Above	198	51.2	
INFLUENCE ON SAVING	No Influence	76	19.7	NA
	Moderate Influence	194	50.3	

| | Significant Influence | 116 | 30.1 |
| N | | 386 | |

Data Source: Field Survey, 2015.

Note: ( ) Degrees of Freedom   [ ] Level of significance

    ** Variable significant at 5 percent error margin

    * Variable significant at 10 percent error margin

4.3.2. Multinomial Logistic Regression Estimates

Presented in Table 4.6 is the result of the multinomial logistic regression (MLR) model. The Nagelkerke Pseudo R-square of the estimated model was 25.7 percent implying the independent variables together can explain 25.7% of the variation in the dependent variable. Also, appropriate in assessing the validity of a model of this sort is the test statistics based on the likelihood ratio (LR). The statistical significance of the LR is an indication that the MLR model follows the chi-square distribution with 16 degrees of freedom. The higher p-values (greater than 0.05) of Pearson and Deviance test is desirable as they suggest the goodness of fit of multinomial logistic regression model. A conclusion, therefore, can be drawn that the data are sufficiently explained by the Logit model. That is to say, there exists enough evidence suggesting the entire model's goodness of fit.

It must be stated that responses omitted from Table 4.6 were set as the dummies and for that their parameters were redundant and set to zero. Customer's income level was found to have moderate influence and significant influence on saving at 10 percent and 5 percent error level respectively. Consistent in a priori sense is the positive coefficients of income

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level of customers. The implication is that saving increases with income. This finding lends support to empirical works by Horioka *et al.* (2007), and Kodom (2013). On the basis of the odds ratio, it can be concluded that the level of customer's income is more likely to influence the saving behaviour, in each case, compare to no influence.

Table 4.6: Multinomial Logistic Regression Estimates

Variable	Coefficient	S.E.	z-Stat.	Prob.(z)	O.R.
MODERATE INFLUENCE					
Intercept	3.137	0.704	4.456***	0.000	NA
IL	0.328	0.176	1.864*	0.061	1.231
NoD	-1.771	0.277	-6.394***	0.000	0.170
ATR (Yes)	-0.805	0.335	-2.403**	0.016	0.447
Age (18-60)	-0.490	0.334	-1.467	0.142	0.613
CS (Prim.)	0.598	0.561	1.065	0.286	1.818
(Sec.)	0.262	0.548	0.478	0.633	1.299
(Ter.)	0.601	0.513	1.172	0.241	1.824
(Voc.)	1.499	0.668	2.244**	0.025	4.476
SIGNIFICANT INFLUENCE					
Intercept	2.085	0.780	2.673***	0.007	NA
IL	0.455	0.198	2.297**	0.021	1.576
NoD	-1.810	0.295	-6.135***	0.000	0.164
ATR (Yes)	-1.300	0.358	-3.631***	0.000	0.273
Age (18-60)	0.213	0.377	0.565	0.571	1.238
CS (Prim.)	0.752	0.626	1.201	0.230	2.122
(Sec.)	0.272	0.620	0.438	0.661	1.313
(Ter.)	0.580	0.584	0.993	0.320	1.786
(Voc.)	1.206	0.660	1.827*	0.063	3.339

DIAGNOSTIC TEST			
No. of Obs.	386	Pearson	311.544
Pseudo R-squared	0.257		[0.401]
Likelihood Ratio Test	97.774 [0.000]	Deviance	320.593 [0.272]

Data Source: Field Survey, 2015.

Note: The reference category is: NO INFLUENCE   [ ] p-value

        ***, **, and * indicates 1%, 5% and 10% level of significance respectively. Significant at 1 percent margin of error, the number of people who financially depend on a customer has been revealed to reduce his/her saving remarkably. Any residual income after consumption spending gets eroded and this adversely affects the tendency of increasing customers' saving. This is evident in the near zero p-value and its coefficient bearing a negative sign. The odds of moderate influence and significant influence are relatively 81.9 percent and 84.9 percent lower than no influence respectively. This confirms the findings in the study by Mumin *et al.*, (2013).

Consistent in *a priori* sense, attitude towards risk (proxied in a customer falling victim to a collapse of a financial institution he/she once transacted business with) has a negative significant influence on the saving behaviour of YARB customers. This is due to the fact that some of the customers have insufficient knowledge about the class of bank a depository institution belong and thus rate all such institutions equally risky. They are, therefore, deterred and hardly allow their monies to sit in an account for long. As indicated

by the odds, customers who have once falling victim compared those who have never had such an experience are less likely to be influenced.

The saving behaviour of a customer who fall within the age bracket of 18 years to 60 years was found to have no influenced at 5 percent error. There is empirical evidence that people who are above 60 years of age save more in order to bequeath to their descendants (Kodom, 2013). The odds ratio indicates that no influence is higher than a moderate and a significant influence by 44.7 percent and 9.1 percent respectively. This is quite inconsistent with life-cycle hypothesis.

Civil status was believed to have significant impact on saving behaviour of individuals. In his study, Solmon (1975), pointed out that it is possible that people with the same income can purchase equally good investment data and advice. However, it would seem that an educated person can do whatever the less analytical person can do and more. A study by Kodom (2013), revealed that the probability of saving increased remarkably, in 1991-92, among those who had attained higher levels of education (tertiary) but this situation changed in late 1990s. The result from this study lends support to the assertion held by Kodom. It is only vocational education that turn out to have influence on saving behaviour of YARB's customers. Compared to a customer with no education, there is greater likelihood for a customer with vocational education to save.

4.4. Awareness of Interest on Deposits

A strong positive correlation and statistical significance have been established between deposit rate and deposits growth rate as can be seen in Table 4.2 and 4.3 above respectively. Meanwhile, when the questions as to whether or not a customer is aware of additional income earned on his/her savings in the form of interest, it was surprising to know that a good number (i.e. 42.5 percent) of respondents were unaware of the existence of such benefit for them. The question is: how would such a customer who views saving, beyond the safekeeping motive, as investment opportunity be motivated to save more? This state of affairs is shown in Figure 4.2 below.

Figure 4.2: Customers' Awareness of Interest on Deposits
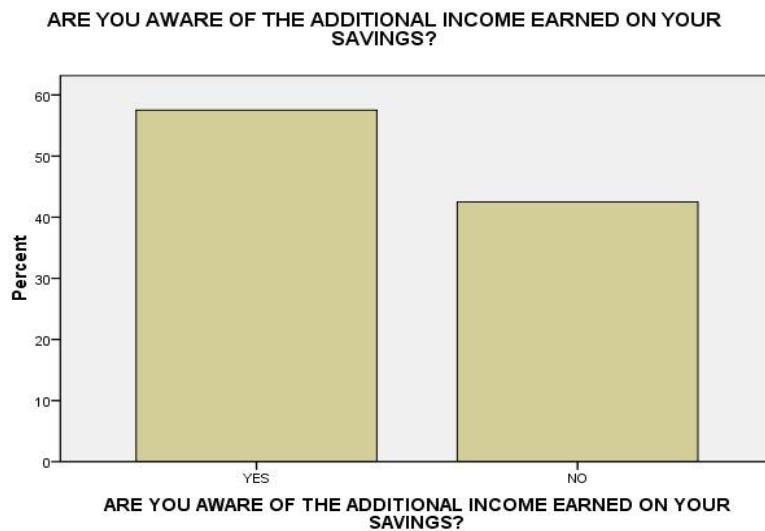
Data Source: Field Survey, 2015.

This was particular about those holding the Susu account. Some of those who claimed to know about the additional income generated from their saving, lamented that the interest on their deposit is so small and sees other investment opportunities – real estate, operating commercial transport, to mention a few, more profitable than just allowing the money to sit in a savings account that attract small returns. They, thus, used the bank mobilise targeted savings for more profitable ventures available to them. This can be the reason why sub-Saharan African countries have been acclimatised by low savings rate as interest on deposit in these countries is generally low.

4.5. Inadequate Incentive Packages for Customers

Moreover, the field study revealed that there is no or little incentive packages designed for customer to boost their morale in saving. The decline in deposit growth can be attributed to this situation. This is because some of the existing customers expressed their dissatisfaction about the fact that no such incentives as: T-shirts, calendars, birthday wishes, etc. has been received from YARB since when they started saving at the bank. Some customer recounted and compared YARB to other financial institutions they transact with who had provided them with calendars, T-shirts, and the rest.

4.6. Savings Decomposition of YARB

In this section, the respective contributions to deposit growth by the various saving products available to customers has been provided. As can be seen in Figure 4.3, fixed deposit has been the most significant contributor to deposit growth (constituting 29.97%) at YARB which may be due to the relatively high interest (of 15%) offered. It is followed by current account with 27.84%. The contributions from savings and Susu cannot be relegated to the background as they, individually, have a remarkable share in deposits (22.13% and 20.03% respectively). The minimal contribution (i.e. 0.01%) of E-zwich may be as a result of its late introduction. In general, all the constituents of deposits at YARB exhibited an upward trend over the period.

Figure 4.3: YARB's Savings Decomposition
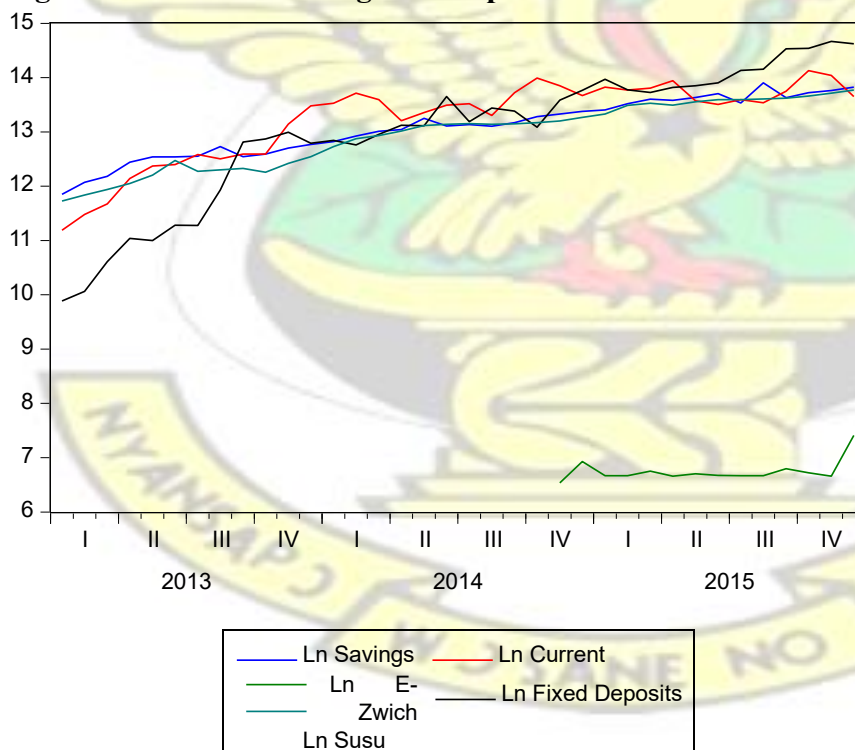
Data Source: YARB, 2015.

4.7: Growth Rate of Deposits at YARB

In spite of the fluctuations in deposits growth chalked by the bank, a general downward trend can be observed in the growth rate of deposits (See, Figure 4.4). The downward trend of savings growth rate at YARB is as a result of interplay of factors which this study has touched on some. Undoubtedly, the situation has a significant impact on the performance of the bank. That is to say, it retards the growth of the bank. This is because accumulated saving serves as tradable stock for the banks.

Figure 4.4: YARB's Deposits Growth Rate
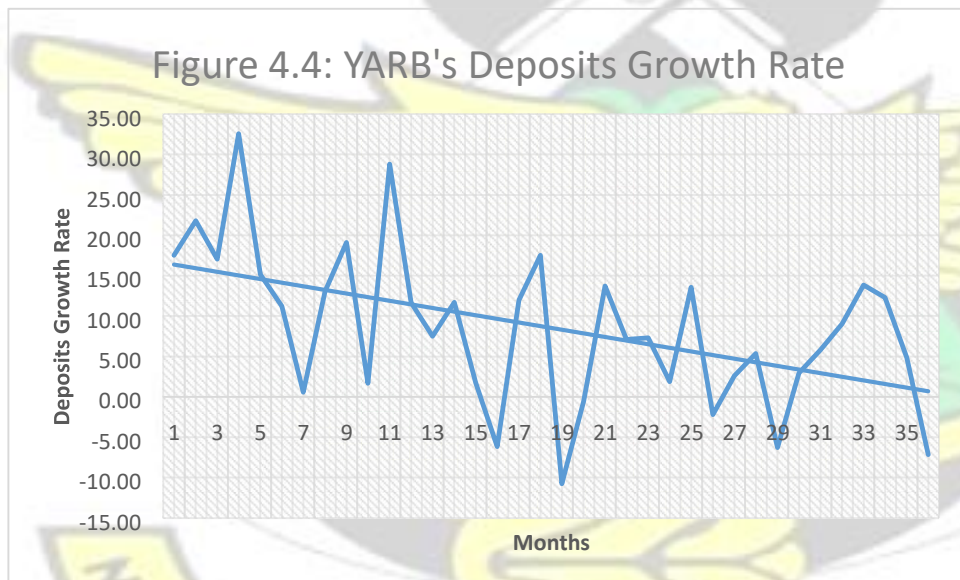
Data Source: YARB, 2015.

CHAPTER FIVE

SUMMARY, RECOMMENDATION AND CONCLUSION

5.1. Introduction

This chapter provides the summary of findings from the study, pertinent

recommendations, challenges encountered by the researcher, and conclusion. Provided in

the summary are: overview of the objectives, methodologies adopted by the study, and the

findings. The section that contains the recommendations suggests measures to help raise

the growth rate of deposits at YARB. A conclusion then is drawn to close curtains on the

study.

5.2. Summary of Findings

The main objective of this study was to find out savings behaviour of customers of Yaa Asantewaa Rural Bank Limited and its influence on the bank's performance. Savings serve as the core means of raising funds for operation in any depository institution. The growth rate in savings, thus, reflects significantly in how well a bank is doing. Both primary and a thirty-six month secondary data were employed in the various estimations to arrive at the findings of the study. Quantitative and qualitative data analysis were then performed.

The multicollinearity test performed proved the absence of perfect correlation between inflation rate and the rate of interest on deposits. The OLS model revealed significant deterministic effects of inflation rate in the economy and deposit rate on deposits growth at YARB. The model was found to be potent on the basis of the diagnostic test performed in which there were no such problems as: heteroscedasticity, autocorrelation, residual normality, and was correctly specified.

In the multinomial logistic regression, age and civil status (generally) were found not to have significant impact on the customer's saving habit at YARB but customers' level of income, customers' attitude toward risk, and number of dependants were revealed to significantly influence the saving decision of customers. The saving behaviour of customers with vocational education was found to be influenced by their educational background. Again, diagnostic checks done on this model proved that the model is potent as the test results were desirable.

A remarkable percentage of customers contacted were unaware of the additional income generated on their savings. Some of those who claim to be aware, considers the rate very small and are not moved by it to save more. Fixed deposit appeared to be the most significant contributor to deposit growth at YARB. Also revealed in the study, was a general decline in the YARB's savings growth rate over the period.

5.3. Recommendations

With regards to the findings from the study, this section has been designated for the discussion of measures aimed at inculcating savings culture in customers. Creation of awareness about the additional income generated on savings by customer is one way to inculcate savings culture. As revealed from the field survey, a good number of the customers that transact business with Yaa Asantewaa Rural Bank Limited are ignorant about the interest earned on their deposits. Awareness creation, therefore, will help sensitize such customers. That is, an initiative of such sort will enlighten them on how lucrative it is to save with the bank instead of keeping their monies under their pillows or spending extravagantly and as well educate them on the need to set aside some portion of current income for future consumption. As a tool of awareness creation, interest payment on deposits can be done monthly instead of being effected on annual basis to serve as an incentive to improve the saving habit of customers. The monthly interest will be helpful as it will provide a short term notice of the additional income generated on their savings.

Also, the study sees the need for creation (or adequate provision) of incentives, besides interest paid on deposits, to customers as this will make them feel cared for or part-owners of the bank in the sharing of corporate profit. Not only will the move motivate existing customers but as well serve as means of marketing the bank as these customers are into one or two commercial activities and has customers that transact with them. Existing customers can recommend the bank to their customers and other relatives which will help sells the bank, thus, serving as a way of gaining popularity.

Expansion of credit facility to customers with profitable investment opportunities will be another way to create savings culture in customers of YARB. This facility will serve as an increase in their working capital which eventually increase their income and profit levels. The potential rise in net income will, in the long run, raise the volume of savings if not the marginal propensity to save. To ensure repayment, the group-lending strategy in which the functions of screening, monitoring, and enforcement are to a large extent transferred from the bank credit agents to group members is one possible way forward. This is because members of such groups would want to maintain their integrity and credit worthiness for subsequent opportunities and for that will hardly allow any suspected bad nut on board.

5.4. Limitations of the Study

The study was constrained both financially and terms of time. Poised to gather a more accurate and informative data from respondents involved, the researcher had to spend

sufficient funds and time. Inefficient bookkeeping on the part of some customers surfaced as a major challenging factor because they could hardly give accurate information regarding their income level. Thus, the difficulty relating to data acquisition was a challenge the study had to battle with.

A strict generalization from the findings can be misleading since the study investigated only the case of Yaa Asantewaa Rural Bank. That is to say, data used may be peculiar to YARB. Also, several other factors, besides those considered in this study, come into play to determine the saving behaviour of economic agents.

5.5. Conclusion

It is a well-established fact that savings mobilisation is a primal to the achievement of a sustained growth and development in an economy. Hence, initiatives geared towards the determinants which influence the individuals saving habit which in turn impact positively on the financial life of customers and the economy as a whole will be a move in the right direction. The positive impacts of saving with financial institutions, of which YARB is not an exception, is foreseeable because they have the expertise to ensure the effective management of funds than the individual customers. That is, the multiplying effect that emanates from financial management by financial institutions is greater than that of the individual customers.

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APPENDICES

A: OLS ANALYSIS

I: SUMMARY STATISTICS ON SOME VARIABLES

	LN DEPOSITS	LN AVE. DEP. RATE	LN INFL. RATE
Mean	14.50399	2.171438	2.739208
Median	14.64467	2.197225	2.747086
Maximum	15.51068	2.197225	5.046002
Minimum	12.78330	2.119863	2.174752
Std. Dev.	0.730946	0.036986	0.441500
Skewness	-0.735659	-0.707107	3.968065
Kurtosis	2.615565	1.500000	22.07621
Jarque-Bera	3.468853	6.375000	640.3258
Probability	0.176501	0.041275	0.000000
Sum	522.1435	78.17175	98.61147
Sum Sq. Dev.	18.69989	0.047878	6.822264
Observations	36	36	36

II: REGRESSION ESTIMATES

Dependent Variable: LN DEPOSITS

Method: Least Squares

Sample: 2013M01 2015M12

Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-21.63678	3.400519	-6.362786	
				0.0000
LN AVE. DEP. RATE	16.12842	1.584821	10.17681	0.0000
LN INFL. RATE	0.408476	0.132765	3.076682	0.0042

R-squared	0.793615	Mean dependent var	14.50399
Adjusted R-squared	0.781107	S.D. dependent var	0.730946
S.E. of regression	0.341980	Akaike info criterion	0.771529
Sum squared resid	3.859371	Schwarz criterion	0.903489
Log likelihood	-10.88752	Hannan-Quinn criter.	0.817587
F-statistic	63.44779	Durbin-Watson stat	0.919892
Prob(F-statistic)	0.000000		

III: RESIDUAL DIAGNOTIC TEST

NORMALITY OF RESIDUALS

	Series: Residuals
	Sample 2013M01
	2015M12
	Observations 36
	Mean 1.68e-15
	Median 0.055785
	Maximum
	0.733784
	Minimum -0.658310
	Std. Dev.
	0.332066
	Skewness
	0.087524
	Kurtosis 2.298691
	Jarque-Bera
	0.783713
	Probability
	0.675801
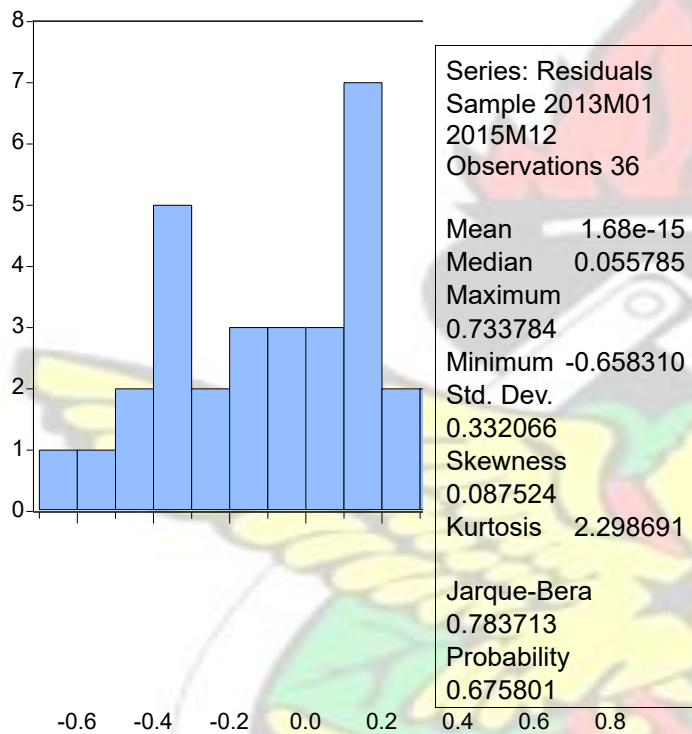
AUTO CORRELATION

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.144320	Prob. F(2,31)	
			0.3013
Obs*R-squared	4.574981	Prob. Chi-Square(2)	0.2517

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Sample: 2013M01 2015M12
Included observations: 36
Pre sample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t- Statistic	Prob.
C		2.722371		
	0.543267		0.199557	0.8431
LN AVE. DEP. RATE	0.022460	1.267332	0.017722	0.9860
LN INFLATION RATE	-0.209779	0.115135	-1.822019	0.0781
RESID(-1)	0.381622	0.162865	2.343185	0.0257
RESID(-2)	0.478138	0.169732	2.817008	0.0084

			1.68 E-15
R-squared	0.404861	Mean dependent var	
Adjusted R-squared	0.328068	S.D. dependent var	0.332066
S.E. of regression	0.272199	Akaike info criterion	0.363680
Sum squared resid	2.296864	Schwarz criterion	0.583614
Log likelihood	-1.546248	Hannan-Quinn criter.	0.440443
F-statistic	0.172161	Durbin-Watson stat	1.466116
Prob(F-statistic)	0.262336		

HETEROSCEDASTICITY

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.719954	Prob. F(2,33)	0.1947
Obs*R-squared	3.398381	Prob. Chi-Square(2)	0.1828
Scaled explained SS	1.854261	Prob. Chi-Square(2)	0.3957

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 2013M01 2015M12
Included observations: 36

Variable	Coefficient	Std. Error	t- Statistic	Prob.
C	2.312811	1.207462	1.915431	0.0641
LN AVE. DEP. RATE	-1.003349	0.562741	-1.782967	0.0838
LN INFLATION RATE	-0.009819	0.047142	-0.208291	0.8363

R-squared	0.094399	Mean dependent var	0.107205

Adjusted R-squared	0.039515	S.D. dependent var	0.123904
S.E. of regression	0.121431	Akaike info criterion	-1.299286
Sum squared resid	0.486601	Schwarz criterion	-1.167326
Log likelihood	26.38714	Hannan-Quinn criter.	-1.253228
F-statistic	1.719954	Durbin-Watson stat	0.686348
Prob(F-statistic)	0.194740		

FUNCTIONAL FORMS

Ramsey RESET Test
Equation: UNTITLED
Specification: LN_DEPOSITS C LN_INFLATION_RATE
    LN_AVE__DEP__RATE
Omitted Variables: Squares of fitted values

	df
	32

	Value		Probability
t-statistic	1.206702		0.2364
F-statistic	1.456129	(1, 32)	0.2364
Likelihood ratio	1.601968	1	0.2056

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.167973	1	0.167973
Restricted SSR	3.859371	33	0.116951
Unrestricted SSR	3.691398	32	0.115356
Unrestricted SSR	3.691398	32	0.115356

LR test summary:

	Value	df
Restricted LogL	-10.88752	33
Unrestricted LogL	-10.08654	32

Unrestricted Test Equation:
Dependent Variable: LN_DEPOSITS
Method: Least Squares
Sample: 2013M01 2015M12
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C		854.2043		
	1009.125		1.181362	0.2462
LN INFLATION RATE	-14.06347	11.99370	-1.172571	0.2496
LN AVE DEP. RATE	-562.3887	479.4227	-1.173054	0.2494
FITTED^2	1.257692	1.042256	1.206702	0.2364

R-squared	0.802598	Mean dependent v ar	14.50399
Adjusted R-squared	0.784091	S.D. dependent var	0.730946
S.E. of regression	0.339641	Akaike info criterion	0.782586
Sum squared resid	3.691398	Schwarz criterion	0.958532
Log likelihood	-10.08654	Hannan-Quinn criter.	0.843996
F-statistic	43.36856	Durbin-Watson stat	1.024217
Prob(F-statistic)	0.000000		

B: LOGISTIC REGRESSION ANALYSIS

Model Fitting Information

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	508.975	516.886	504.975			
Final	443.200	514.405	407.200	97.774	16	.000

Goodness-of-Fit

	Chi-Square	Df	Sig.
Pearson	311.544	306	.401
Deviance	320.593	306	.272

Pseudo R-Square

Cox and Snell	.216
Nagelkerke	.257
McFadden	.118

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Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	Df	Sig.
Intercept	443.200	514.405	$4.072E2^{a}$	.000	0	.
INCOMELEVEL	444.961	508.254	412.961	5.761	2	.056
NUMBEROFDEPENDANTS	496.086	559.379	464.086	56.885	2	.000
AGE	446.847	510.141	414.847	7.647	2	.022
CIVILSTATUS	434.524	474.082	414.524	7.324	8	.502
VICTIMTOACOLLAPSEOFA FINANCIALINSTITION	453.414	516.707	421.414	14.214	2	.001

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

HOW DOES FACTORS INFLUNC TO SAVE?[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
MODERATE INFLUENCE	Intercept	3.137	.704	19.841	1	.000			
	INCOMELEVEL	.328	.176	1.370	1	.061	1.231	.869	

		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
	NoD	-1.771	.277	40.951	1	.000	.170	.099	1.742 .293
	[AGE=1]	-.490	.334	2.154	1	.142	.613	.319	1.178
	[AGE=2]	0^b	.	.	0	.	.	.	.
	[CIVILSTATUS=0]	.598	.561	1.137	1	.286	1.818	.606	5.459
	[CIVILSTATUS=1]	.262	.548	.228	1	.633	1.299	.444	3.801
	[CIVILSTATUS=2]	.601	.513	1.373	1	.241	1.824	.667	4.985
	[CIVILSTATUS=3]	1.499	.668	5.033	1	.025	4.476	1.209	16.580
	[CIVILSTATUS=4]	0^b	.	.	0	.	.	.	.
	[ATR=0]	-.805	.335	5.783	1	.016	.447	.232	.862
	[ATR=1]	0^b	.	.	0	.	.	.	.
SIGNIFICANT INFLUENCE	Intercept	2.085	.780	7.149	1	.007			
	INCOMELEVEL	.455	.198	5.287	1	.021	1.576	1.069	2.323
	NoD	-1.810	.295	37.654	1	.000	.164	.092	.292
	[AGE=1]	.213	.377	.320	1	.571	1.238	.592	2.589
	[AGE=2]	0^b	.	.	0	.	.	.	.
	[CIVILSTATUS=0]	.752	.626	1.444	1	.230	2.122	.622	7.237
	[CIVILSTATUS=1]	.272	.620	.193	1	.661	1.313	.390	4.420
	[CIVILSTATUS=2]	.580	.584	.988	1	.320	1.786	.569	5.609
	[CIVILSTATUS=3]	1.206	.660	2.518	1	.063	3.339	.753	14.801
	[CIVILSTATUS=4]	0^b	.	.	0	.	.	.	.
	[ATR=0]	-1.300	.358	13.209	1	.000	.273	.135	.549
	[ATR=1]	0^b	.	.	0	.	.	.	.

a. The reference category is: NO INFLUENCE.
b. This parameter is set to zero because it is redundant.

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF GRADUATE STUDIES DEPARTMENT OF ECONOMICS

(QUESTIONNAIRE ADMINISTERED TO CUSTOMERS OF YAA ASANTEWAA

RURAL BANK)

The study is meant for academic purposes and has no bearing on anyone or

institution. Confidentiality of respondents is assured.

1. Sex   [   ] Male   [   ] Female

2. Age   [   ] Below 18 years   [   ] 18 years to 60 years   [   ] Above 60 years

3. What is your level of education?

    [   ] Primary   [   ] Secondary   [   ] Tertiary   [   ] Vocational   [   ] None

4. What is your monthly level of income?

    [   ] GH¢475.00 - GH¢2,754.00   [   ] GH¢2,755.00 - GH¢3,239.00

    [   ] GH¢3,240.00 and Above

5. How many people financially depend on you?

    [   ] Only one   [   ] Two – Four   [   ] Five or more

6. Have you ever falling victim of a collapse of a financial institution you were a

    customer?   [   ] Yes   [   ] No

7. Are you aware of the additional income earned on your saving?

[   ] Yes   [   ] No

8. How does these factors influence your decision to save?

[   ] No Influence   [   ] Moderate Influence   [   ] Significant Influence

9. What suggestion do you give to the bank to encourage customers to improve on their

savings?

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