UNIVERSITY OF EDUCATION, WINNEBA

THE ROLE OF TECHNOLOGY ON SAVINGS BEHAVIOUR AMONG MARKET WOMEN IN EJISU MUNICIPALITY

MAVIS ARKOH ADU-GYAMFI
(190011653)

A dissertation in the Department of Economics Education, Faculty of Social Sciences Education, submitted to the School of Graduate Studies in partial fulfillment

of the requirement for the award of the degree of
Master of Science
(Economics Education)
in the University of Education, Winneba

DECEMBER, 2020

DECLARATION

Student's Declaration

I, MAVIS ARKOH ADU-GYAMFI, hereby declare that this thesis, with exception of quotations and references contained in published and unpublished works, which have been identified and acknowledged, is entirely my original work, and that it has not been submitted, either in part or whole, for another degree in this University or elsewhere.

Signature: ……

Date: ……

Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

Name of Supervisor: Dr. Gershon Dake

Signature: ……

Date: ……

DEDICATION

I dedicate this work to Prophet Emmanuel Twum-Antwi, my husband; Pastor Gideon Osei Bonsu and to my daughter Elia Onyame Animonyam Tiwaa Sika Bonsu

ACKNOWLEDGEMENTS

This research work has been a great journey for me and has helped me to understand an area of work that is vast and wonderful. It has been completed with months of hard work and dedication and would not have been possible if not for the blessing and guidance I have received from a number of people. For this I am particularly indebted to my supervisor Dr. Gershon Dake who has not only been a guide but also a mentor whom I could depend on for advice, encouragement, and support.

A lot of other people have helped me in completing this work. In particular, I would like to thank my colleague Mr. Oteng Felix who has helped me review and have also provided guidance at crucial times during the research.

In addition, I deem it a duty to express my profound gratitude to the market women at Ejisu Municipality for availing themselves to be used for the study.

And most importantly; I would like to thank my family for their support and understanding given to me during this period.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Over the world, the role of technology in ensuring growth and development cannot be over emphaised. The study seeks to find answer to the problem, savings behaviour and its effect on trade activities among market women within Ejisu Municipality with highlight on the role of technology. The study used a sample size of 250 and adopted a cluster and accidental sample technique with Binary logistic regression as an estimation technique; it was found that Average income, Family size, marriage, and trust are the factors that affect market women's savings behaviour within the Ejisu municipality using technology. The study concluded that technology is capable of improving savings behaviour of market women in Ejisu. It was further found that fraud, poor network, high charges, and complexity in using available technology for savings are the limiting factors. It was recommended that the government through National Communication Authority (NCA) and National Commission for Civic Education (NCCE) should educate citizens through the media on how the activities of the fraudsters, improve network system, reduce transaction charges via tax reduction affect these technology providers.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Globally, technology is essential in promoting growth among countries as it makes work simple, changes individuals lifestyle, makes lives comfortable, increase productivity as well as influence savings behaviour of people (Maurer, 2012). The issue of savings as an engine of economic growth has been a subject of theoretical discourse in both economics and development literature following the works of Harrod Domar in 1946 and Swan Solow in 1956.

Savings means different things to different individuals from different economic status. To a group of people, saving is keeping money in a bank. To another it means buying stocks, securities, jewelleries, real properties, pension plan or insurance. People sometimes believe that individuals with high incomes save more than those with small income. A study by Karlan and Morduch (2009) to find the difference among the rich and the poor in terms of savings shows that, though the poor have fairly low income, it does not imply that they are unable to save at all. Saving is very essential and there is a lot of evidence to demonstrate its benefits to individuals and households, not including low income earners (Chowa, Ansong & Rainier, 2010).

According to GLSS 5 report, 30 percent of all households in Ghana have members owning savings account. Rural areas have the highest number of individuals who do not have saving accounts (78%) as compared to urban areas (61%). Among vicinities, savannah individuals have the highest of 85% without savings accounts, with coastal and forest areas having about 75% and 73%, respectively. Males have higher percentage of savings (59%) with the highest percentage in forest (64%). The saving

behaviour of the individual is influenced by per capita income, interest rate, fiscal policy and government savings. Studies also indicate that the saving behaviour of the individual is influenced by financial literacy (Banks et al. 2009). Economically, savings refers to as income minus consumption. It can be noted that, given a certain income, the decision to purchase goods and services negatively affects savings.

Mathematically, S = Y – C

Where, S= Saving

Y= Income

C= Consumption.

A rise in savings would cause a fall in the percentage of an amount of money charged on it which will lead to an increase in investment, hence always investment would equal savings. Logically, savings encourage investment. To households, saving is about a decision not to spend current income and the motive behind such decisions can be in the form of saving for retirement or precautionary saving. Savings plays an important and positive role in the process of household economic growth and development.

1.1 Statement of the Problem

According to Lipsey and Harbury (1992), the three main motives for which individuals demand money are; transaction motive- for current transaction of the people; precautionary motive-for meeting unforeseen or unpredictable contingencies; and speculative motive- for the purpose of financial gain. Precautionary and speculative purposes induce people to save money. A well institutionalized savings provide several benefits for the individual (Loayza, Hebbel & Serven 2000). These

benefits include interest earned on incomes, induced investment, building of credit rating and the feeling of self-reliance among others.

According to Singh (2009), the growth in savings also stimulates economic growth and development (as a whole) through investment. Even though people benefit from savings, most individual still do not have access to proper financial services. This is because most of the financial institutions are inaccessible in terms of proximity, time and procedures needed to complete transactions which are too much for the individuals.

Determinants of saving behaviour have become a great concern of many researchers, educators as well as the policy makers in recent years. The level of standard of living of people in a country and the technology goes a long way to determine their savings behaviour in a given period of time. Due to lack of knowledge of technology, the savings rate among the people in the country; it has been problem for the individual and the economy as whole.

Recently, there has been influx of new banks in the Ejisu Municipality which has made the people now interested in saving. Despite this, there have been challenges faced by the people towards their savings. The people in the Ejisu Municipality especially market women do not show interest in savings due to inconveniences such as long queue, pressure in the banking halls and lack of trust.

Currently, the market queens appear to be more inclined towards the use of technology in savings in the Ejisu Municipality. This dissertation is set out to discover the extent to which the women use technology in savings and in their financial transactions in the Municipality.

1.2 Research Objectives

The general objective is to examine the role of technology in savings behaviour and how it affects trade activities among market women in Ejisu Municipality

The specific objectives to achieve the general objectives are to:

1. Examine how technology has influenced the savings behaviour of market women in Ejisu municipality.
2. Analyse the role of technology on trade activities among market women in Ejisu.
3. Find out the challenges market women face in using technology for savings in Ejisu Municipality.

1.3 Research Questions

1. How has technology influenced the savings behaviour of market women in Ejisu Municipality?
2. What is the role of technology on trade activities among market women in Ejisu?
3. What are the challenges market women faces in using technology for savings in Ejisu?

1.4 Relevance of the Study

The results of the study will guide policy makers and Development partners in the design of appropriate interventions, as well as identify areas of co-operation with National communication authority to make necessary policies aimed at enhancing people‘s savings behaviour through the adoption and use of technology.

People in the academia will also be beneficiaries of the findings of the study as the study adds up to the existing stock of literature on the Savings behaviour and its

effects on trade activities among market women: the role of technology. It then serves as a source of literature to people who intend to conduct a similar research either in Ghana or elsewhere in the world.

Financial institutions will also gain from the findings of this research since it will expose them to reasons for dissaving and the challenge individuals encounter when saving.

Individuals who are not inclined towards saving due to lack of awareness could improve their financial behaviour to ensure their financial security and general wellbeing.

1.5 Scope of the Study

Geographically, this study covers market women in the Ejisu municipality.

1.6 Organization of the Study

The study is categorized into five chapters.

Chapter one consist of the introduction. It details background to the study, statement of the problem, objectives of the study, research questions, Significance of the study, Scope of the study and organization of the study. Chapter Two consists of literature review of existing works carried out by other researchers on the problem under investigation. Chapter Three focuses on the theoretical model and empirical model and estimation techniques. The fourth chapter centers on the variables, data collection and processing, presentation and discussions of results. Chapter Five provides summary of the study, conclusions and policy recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter deals with earlier research done by qualified scholars, educators and researchers. The chapter begins with the theoretical Literature and also takes a look at a number of empirical works done on the role of technology on savings behaviour among market women. It also further highlight the differences between saving and savings, explanation of the dependent variable (savings), the forms or types of saving, factors that influence savings behaviour and the importance or significance of savings to the people.

2.1 Review of Theoretical Literature

Technology Acceptance Model (TAM)

Technology Acceptance Model has been developed by Davis (1989) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs.

In TAM model, there are two factors perceived usefulness and perceived ease of use is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user‘s subjective probability that using a specific application system will enhance his or her job or life performance.

Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These

two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user‘s evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application.

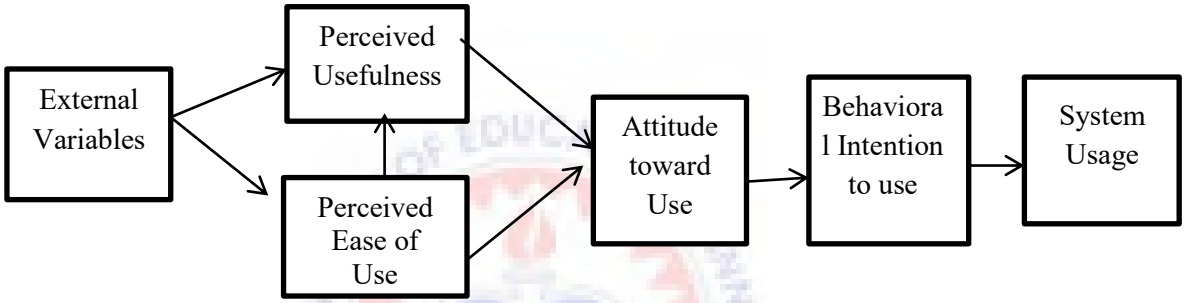

Figure 1: The Original Technology Acceptance Model

Technology Acceptance Model is one of the most popular theories that is used widely to explain Information System usage. So many studies have been conducted which has led to the changes in the originally proposed model. A new model called combined TAM-TPB model which integrated the Technology acceptance model and theory of planned behavior was proposed by Taylor and Todd (1995). Venkatesh and Davis (2000) proposed a new version of TAM called TAM2 which added new variables to the existing model. Venkatesh et al. (2003) in a study published in MIS quarterly proposed the Unified Theory of Acceptance and Use of Technology (UTAUT) Model.

The various studies conducted by researchers have tried to modify the TAM by adding new variables to it. Agarwal and Prasad (1998a, 1998b) modified TAM by adding the construct of compatibility in the Technology Acceptance Model. Moon and Kim (2001) has added a new variable playfulness factors to study acceptance of the World Wide Web. Lim (2000) proposed to modify TAM by adding variables like experience, self-efficacy, perceived risk and social influence. Another study done by Agarwal and Karahanna added cognitive absorption, playfulness and self-efficacy to the TAM model. Chau(1996) in a study reviewed TAM by included two types of perceived usefulness: near-term and long-term. Van der Heijden(2000) after analyzing the individual acceptance and usage of the website added two new constructs to TAM :perceived entertainment value and perceived presentation attractiveness. Chau and Hu (2002) combined the factor of peer Influence with Technology Acceptance Model.

2.1.1 Acceptance Model.

According to study by Franco and Roldan (2005) the relationship between perceived usefulness and behavioral intention was strong among goal-directed users. Chau and Hu (2001) compared three models Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and a decomposed TPB model that is potentially adequate in the targeted healthcare professional setting in Hong Kong. The results indicated that TAM was superior to TPB in explaining the physicians‘ intention to use telemedicine technology. The study conducted by Sun and Zhang (2003) found voluntariness can be factor in determining the behavioral intention to use.

Hun-Pin Shih (2004) combined the TAM and the information behavioural model of Choo (1991 that takes notice of the relevance of the information. Lee (2009) combined the Technology Acceptance Model with Theory of Planned Behaviour, perceived risk and perceived benefit to understand the adoption of internet banking.

TAM has been used by researchers worldwide to understand the acceptance of different types of information systems. Shafeek (2011) in a study tried to evaluate the acceptance of eLearning systems by teachers by using TAM. Zhou et al. has developed a new model based on TAM called online shopping acceptance model (OSAM) to study online shopping behavior. Pavlou (2003) developed a model to predict the acceptance of e-commerce by adding new variables trust and perceived risk.

According to the model developed by Pikkarainen et al.(2004) to understand the acceptance online banking in Finland, perceived usefulness and information in online banking play a very important role.

Hsu and Chiu suggested a model that specifies that the acceptance pattern and role of internet self-efficacy plays an important role in e-service adoption. Ervasti and Helaakoski (2010) have developed a model based on TAM and TPB to understand mobile service adoption which states that perceived useful is the strongest factor in adoption. Muller-Seitz et al. (2009) used the Technology Acceptance Model with security concern to understand acceptance of Radio Frequency Identification (RFID).

2.2 Review of Empirical literature

Deaton A.S.(2010) made a significant contribution to the development of a microeconomic approach to the analysis of agent savings behaviour; he proposed a concept of precautionary saving and liquidity constraint. In a situation where a representative agent may be limited by liquidity, he or she will seek for creation precautionary saving in good times in order to consume his or her labor income in bad times. Consequently, it can be suggested that in the absence or reduction of liquidity constraint, dictated by the expansion of access to financial services through the introduction of digital technology, a representative agent will aim to save.

Jack and Suri (2010), using evidence of the mobile technology M-PESA introduced in Kenya, illustrated how shocks in changing earnings can be shared between subscribers of the digital technology, minimizing loss in consumption. In this case, digital technology is an informal institution that can replace the financial risk insurance service.

Honohan and King (2012), according to the data from eleven surveys in sub Saharan Africa, examined the impact of individual, geographic, and national characteristics on the use of formal financial institutions. The researchers concluded that –financial access is likely to have a slow-burning effect on the household‘s welfare”. At the same time, they proved that income and education are key determinants of access to formal banking.

Ouma et al. (2017) conducted the investigation how mobile technology influences savings in 4 selected countries in sub Saharan Africa. The findings of their research showed that usage of mobile phones to provide financial services promotes the likelihood of saving at the household level. Based on the construction of a logit

model, the researchers evaluated the impact of mobile technologies on the volume and likelihood of savings and concluded that mobile technologies act as a tool to increase savings in Africa. They use the probability of savings as a dependent variable, when building a logit model, and the amount of savings, when they specified OLS regression. The control variables were age, income, formal education, family size, gender, and marital status of respondents. The simulation results showed the significance of the influence of mobile financial service.

A significant part of theoretical and empirical literature advocates the intensification of financial literacy and the implementation of relevant government programs in developing and developed countries (Honohan & King 2012). The main factor that influencing the saving behaviour of individuals and households is the level of income. J.M. Keynes (1936) proved that an agent is inclined to save more by increasing income. Differentiation of individuals by income level leads to the fact that financial information technologies can expand access for low income groups and make financial products more accessible for them. This function of digital technology - financial inclusion - has become widespread in empirical literature. Aizcorbe et al. (2003) showed that financial behavior of households depends on the level of household income. Loans occupy a much larger share in the family budget of low-income households. Servon and Kaestner (2008) empirically tested the impact of online banking on the financial behaviour of customers with low income living in an urban area. The researchers concluded that access to information technology, combined with increased financial literacy, makes household financial behaviour more effective.

2.3 The difference between saving and savings

Saving is income not spent, or deferred consumption. Methods of saving include putting money aside in, for example, a deposit account, a pension account, an investment fund, or as cash. Saving also involves reducing expenditures, such as recurring costs. In terms of personal finance, saving generally specifies low-risk preservation of money, as in a deposit account, versus investment, wherein risk is a lot higher; in economics more broadly, it refers to any income not used for immediate consumption. Saving does not automatically include interest.

Saving differs from *savings*. The former refers to the act of not consuming one's assets, whereas the latter refers to either multiple opportunities to reduce costs; or one's assets in the form of cash. Saving refers to an activity occurring over time, a flow variable, whereas savings refers to something that exists at any one time, a stock variable. This distinction is often misunderstood, and even professional economists and investment professionals will often refer to "saving" as "savings".

In different contexts there can be subtle differences in what counts as saving. For example, the part of a person's income that is spent on mortgage loan principal repayments is not spent on present consumption and is therefore saving by the above definition, even though people do not always think of repaying a loan as saving. However, in the U.S. measurement of the numbers behind its gross national product (i.e., the National Income and Product Accounts), personal interest payments are not treated as "saving" unless the institutions and people who receive them save them.

Saving is closely related to physical investment, in that the former provides a source of funds for the latter. By not using income to buy consumer goods and services, it is possible for resources to instead be invested by being used to produce fixed capital, such as factories and machinery. Saving can therefore be vital to increase the amount of fixed capital available, which contributes to economic growth.

However, increased saving does not always correspond to increased investment. If savings are not deposited into a financial intermediary such as a bank, there is no chance for those savings to be recycled as investment by business. This means that saving may increase without increasing investment, possibly causing a short-fall of demand (a pile-up of inventories, a cut-back of production, employment, and income, and thus a recession) rather than to economic growth. In the short term, if saving falls below investment, it can lead to a growth of aggregate demand and an economic boom. In the long term if saving falls below investment it eventually reduces investment and detracts from future growth. Future growth is made possible by foregoing present consumption to increase investment. However, savings not deposited into a financial intermediary amount to an (interest-free) loan to the government or central bank, who can recycle this loan.

In a primitive agricultural economy, savings might take the form of holding back the best of the corn harvest as seed corn for the next planting season. If the whole crop were consumed the economy would convert to hunting and gathering the next season.

Classical economics posited that interest rates would adjust to equate saving and investment, avoiding a pile-up of inventories (general overproduction). A rise in saving would cause a fall in interest rates, stimulating investment, hence always investment would equal saving.

But John Maynard Keynes (1936) argued that neither saving nor investment was very responsive to interest rates (i.e., that both were interest-inelastic) so that large interest rate changes were needed to re-equate them after one changed. Further, it was the demand for and supplies of stocks of money that determined interest rates in the short run. Thus, saving could exceed investment for significant amounts of time, causing a general glut and a recession.

Within personal finance, the act of *saving* corresponds to nominal *preservation* of money for future use. A deposit account paying interest is typically used to hold money for future needs, *i.e.* an emergency fund, to make a capital purchase (car, house, vacation, etc.) or to give to someone else (children, tax bill etc.).

Within personal finance, money used to purchase stocks, put in an investment fund or used to buy any asset where there is an element of capital risk is deemed an investment. This distinction is important as the investment risk can cause a capital loss when an investment is realized, unlike cash saving(s). Cash savings accounts are considered to have minimal risk. In the United States, all banks are required to have deposit insurance, typically issued by the Federal Deposit Insurance Corporation or FDIC. In extreme cases, a bank failure can cause deposits to be lost as it happened at the start of the Great Depression. The FDIC has prevented that from happening ever since.

In many instances the terms saving and investment are used interchangeably. For example, many deposit accounts are labeled as *investment accounts* by banks for marketing purposes. As a rule of thumb, if money is "invested" in cash, then it is savings. If money is used to purchase some asset that is hoped to increase in value over time, but that may fluctuate in market value, then it is an investment.

In economics, saving is defined as after tax income minus consumption. The fraction of income saved is called the average propensity to save, while the fraction of an increment to income that is saved is called the marginal propensity to save. The rate of saving is directly affected by the general level of interest rates. The capital markets equilibrate the sum of (personal) saving, government surpluses, and net exports to physical investment.

2.4 Dependent Variable- Saving Behaviour

Many scholars and educators have expressed their views on the concept of savings in recent times. The word ‗savings' contains broad-based meaning and many definitions or explanations. According to Thung et al. (2012), and Warnaryd (1999), ―savings in psychological context refers to the process of not using money for future use".

According to Miller and VanHoose (2008), saving is a forgone consumption. They explain forgone consumption as when one does not spend all the income that is earned within a given period. To them, once part of what is earned today is left for future use, there is a saving. Ahmed (2007) put it in a simple language as putting money aside for future use. He argues that saving is the result of careful management of income and expenditure, so that there is something left to be put aside for future use.

Saving behaviour is the combination of perceptions of future needs, a saving decision and a saving action. Generally, saving refers to the money set aside for the purpose of future use. Thus, money or any resource not used for future purpose (Asiedu, 2011).

Miller and VanHoose (2001) stated that, when an individual does not spend all his/her current profit, then there is a practice of savings. They pointed out that, any resource set aside for future utilization can be termed as savings. They further argued that, savings refers to any portion left after consumption in a given period of time.

2.5 Forms of Saving

Individual households have been practicing several forms of savings in the district and across the country as whole. As stated earlier, savings behaviour also constitutes the saving decision of an individual household or a group of people in the economy as a whole. Thus, the saving decision involves where individuals save or store their money for future purpose and this decision differs from one individual or group of people to another. An individual or group of people can decide to save in a bank, or save money in their various homes (where people used to put money under their pillows for future use or other unforeseen occurrences). With this, Aryeetey and Gockel (1998) declared that, practically, savings can be grouped into two forms- thus, informal and formal savings.

2.5.1 Informal savings

Informal savings as a form of savings is normally not structured nor organized. This form of savings usually occurs in the informal sector of the economy where the activities are sometimes not monitored by the government or included in the gross domestic product and gross national product. Individual households decide to save in the informal institutions which do not usually involve any formalities as compared to the formal savings. The decision to practice informal savings is also part of the saving behaviour of individual households. Some of the examples of informal savings practiced in Ghana include saving in the home, group savings where money is given to a trusted individual, walking banks, Susu, welfare societies (Aryeetey & Gockel, 1998).

2.5.2 Formal savings

Unlike the informal savings, formal savings comprises of the formal sector in which activities are monitored by the government and the sources of income are being recognized. Formal savings are normally structured and require formalities. With this, individual households decide to save their money with the available formal financial institutions in the economy. Security and safety is high when an individual engages him or herself in formal savings as compared to informal savings. The monitoring of the government and the established regulations under the formal sector makes it safe for individuals to practice formal savings. Examples of formal savings include saving in commercial banks, rural banks, credit unions, microfinances.

2.6 Determinants of Saving Behaviour

2.6.1 Demographics

The effect of demographic changes on saving can be derived from the life-cycle model when the share of the working population relative to that of retired persons increases (Bosworth, 2003; Higgins & Williamson, 2006; Lahiri, 2009). Demographics, however, are likely to help explain only the long-term trends in saving and not short-term fluctuations. The influence of demographic factors is significant on saving.

2.7 Choice of financial institution by savers

2.7.1 Growth and Saving

The rate of growth of income is an obvious factor for explaining the rate of saving. Saving and growth have been highly correlated over long time horizons as well as for many regions and stages of development (Bosworth, 2003; Schmidt-Hebbel, Serven & Solimano, 2006). The main theoretical foundation for the link between growth and

saving comes from Modigliani's life-cycle hypothesis, which tried to establish a relationship between income and saving by arguing that growth increases saving because it increases the income of the young relative to that of the elderly (Modigliani, 1970). There are additional channels through which growth can positively affect saving, particularly in developing countries. Growth in saving and higher incomes raise more individuals above the subsistence level, below which they cannot save, and make individuals more responsive to changes in the interest rate (Ogaki, Ostry, &s Reinhart, 1996).

2.7.2 External factors

An external factor may not be really seen to have significant effects on saving but in some ways does. For example, where one decides to deposit money will affect saving in terms of the initial amount required saving and the interest rate you might earn for keeping money with a financial institution. Higher interest rates will encourage people to save more. Also, with the availability of appropriate saving schemes, people will be attracted to save more. Advertising though does not have significant effect on saving; financial institutions that advertise more are likely to have more clients. Services offered by the institution and a good customer relations can positively affect saving behaviour. It is worth to note that, when inflation is high, people have less money left with them to save because a major part of their disposable income will be spent to satisfy their needs and wants (Ouattara, 2005).

2.8 Economic Factors influencing Saving Behaviour

2.8.1 Family size

There are multiple definitions formulated based on the particular theoretical perspective that one comes from when the definition of family comes to mind. Winch (2009) defined a family as a group of related persons in differentiated family positions

such as husband and wife, parents and children, aunt and niece, who fulfill the functions necessary to ensure family survival, such as reproduction, child socialization and emotional gratification. To Olson and DeFrain (2011), a family is two or more people who are committed to each other and who share intimacy, resources and decision making responsibilities and values.

The economic impact of the size of a family is vital when the family engages in meaningful saving and investment. Basic to all the functions of the family enumerated in the foregoing discussion is the provision of physical needs of food, shelter, and clothing, among others. For the family to be able to meet these and other needs, it is essential for the family to have a solid financial base that will enable it cater for these needs and as well engage in deliberate and planned saving and investment.

2.8.2 Investment

Several reasons have been advanced as influencing people s decision to invest. However, the main reason why people invest is to earn a return on their invested fund or capital due to their deferred consumption. People invest because they want a return to compensate them for the time, the expected rate of inflation (a general increase in the price of goods and services over time) and the uncertainty of the return (Pollack & Heighberger, 1998). Other reasons advanced by Weirich (1983) are safety of income as well as liquidity of income. He also observed that the primary objective for investing by individuals is the hope of earning a capital gain at the time of sale.

2.8.3 Income level

Households belonging to lower income group may have different saving behavior, middle income households may have different and same as higher income households may have different saving trend (Wen & Ishida, 2001). Saving of higher income

group will decrease comparatively more than other groups specifying that higher income people having higher income always prefer their children to study from well-known institutes of their areas; they will forego their more saving as compared to lower or middle income groups.

2.9 Socio-cultural Factors on Saving Behaviour

2.9.1 Dependency ratio

Ngendakuriyo (2014) identified that the higher the number of persons in the household implies a lower probability that the household would save in Banks. The empirical results of his work suggested that the socioeconomic and socio-cultural characteristics of households in East African Community (EAC) countries could inform the Banks and non-banks financial institutions on the appropriate strategies to mobilize and collect saving especially from the potential micro-savers and poor households.

There are many reasons to believe that the dependency ratio is central for explaining differences in saving behaviour and economic growth across countries. The theoretical underpinnings of this belief are based on the life cycle hypothesis. The argument goes as follows: economic agents have negative saving when young with little or no income, positive saving during their productive years and again negative saving when they are old and retired (Modigliani, 1970). As children constitute a burden for parents and do not contribute to production, an increase in their proportion in the population is expected to reduce the private saving rate (Leff, 1969).

2.10 Financial Technological Factors on Saving Behaviour

2.10.1Automated Teller Machine

Payment systems have developed rapidly in many countries over the past few decades. The use of electronic means of payment has increased at the expense of paper-based payment instruments. For instance, in some countries payment cards have replaced cheques, and Internet banking has become a popular means of paying invoices. Automated Teller Machines (ATMs) are nowadays a very common technology for dispensing notes to cash holders. ATMs have been analyzed in the literature for some thirty years. The earliest studies concentrate on explaining the adoption of this new technology. Mandell (1977) discusses ATM adoption in the USA. The first ATM was installed in the USA in 1969 and according to Mandell, only 10% of all national banks had adopted even one ATM after eight years. Mandell states that a bank‘s adoption of innovation depends on its size, branching status and competitive position. According to Mandell, in those days adoption of new technology was related more closely to competition than to cost saving. Paroush and Ruthenberg (1986) discussed the effects of ATMs on the share of demand deposits in the money supply. The authors use Israeli data and find that the introduction of ATMs increases deposits at the expense of currency holdings. Boeschoten (1992) also discusses the influence of ATMs on cash demand. According to the study, ATMs have a positive effect on the nominal currency growth, but this effect is not very robust

2.11 Factors that Influence Saving Behaviour

Before an individual or a group of people can save, then there have to be a saving decision, saving perception and also a saving action. The perceptions, decisions and actions towards savings are mostly influenced by several factors. According to the

Maps world of finance, the ability to grasp the meaning of savings in an economy defines the saving behaviour of an individual or a group of people in an economy. They further stressed that, saving depends on personal disposable income such that, there will be an increase in savings when an individual‘s income also rises and that a fall in one‘s income will definitely reduce the saving habit of an individual.

Economically, income can be broadly categorized into two forms, thus _national income‘ and _personal income‘. Asiedu (2011), in his book *Current Economics* defined national income as the monetary value of the total volume of goods and services produced by nationals of a country in a year. He also defined personal income as the amount of money received by individuals or households over a given period of time. The level of income can be influenced by several factors such as favourable political circumstances (freedom and peace), the level of education, the type of work one is doing.

Lillard and Karoly (1997) supported by stating that, savings rate will always increase when an individual household has a higher income level. An increase in savings improves the standard of living or the welfare of the people in the country. For instance, Mathias whose monthly income is five hundred Ghana cedis (500gh¢) is likely to save more than Raman whose monthly income is one hundred Ghana cedis (100gh¢). Hence, national and personal income influence the saving behaviour of an individual and the country as whole. Whenever there is full employment in an economy, the active labour employed is paid for his or her services. The amount received as income influence the individual to take decisions and actions towards the improvement of his/her standard of living.

J.M Keynes in his ‗Employment Theory' (1937), emphasized that, when the money given to workers are set below sustenance level, many workers will drop out of labour market which will lead to unemployment. Lack of employment deflates the income of the individual household and the aggregate income of the economy, apparently savings behaviour will be low whenever there is unemployment in the economy. Therefore, a high level of employment in the country will inflate the income level of the people which will likely lead to an increase in the saving behaviour. It can be clearly stated that, all other things being equal, an individual employed will save more than the individual who is unemployed.

J. M Keynes further stated in his Employment theory that, when people are unemployed in large numbers, it hurts the rest of the economy. There will be less money to spend making companies suffer from less consumer demand. On the contrary, when people have more money to spend and save, it will stimulate the economy and job growth. Therefore, stimulation and job growth in the economy will ensure high income leading to high saving behaviour of the people.

Generally, a change in technology will make labour that is less skilled to be laid off leading to low income to the labour. Low income will result in low savings and low investment; this will also reduce the total output (Gross Domestic Product) in the economy.

McKinnon & Shaw (1973), in their Financial Liberation Theory deserved that the elimination of restrictions on financial markets and financial institutions increases interest rates which makes the demand and supply of savings be in equilibrium. McKinnon (1973) concluded that, an increase in interest rates leads to an increase in savings in an economy. With this, then a higher savings rate will improve the level of

growth and investment in an economy. McKinnon & Shaw further suggested that, self-investment will arise when financial liberalization is not practiced which will lead to disequilibrium of demand and supply of savings. Therefore, the levels of interest rate also influence the behaviour of an individual and the economy towards saving. A higher interest rate will push individual households to save more while a low interest rate will not interest people to save part of their income.

J. M Keynes in his Inflationary Theory argued that, the supply of money in an economy had a major effect on inflation, thus increasing prices of goods and services which greatly influence the total amount of money in circulation in an economy. Keynes further stated that, there is a direct relationship between inflation and unemployment, that is, a higher inflation will occur whenever a government attempts to ensure full employment in an economy. With this, an attempt to decrease the level of inflation will decrease the level of employment in an economy. Salaries and wages of workers will be reduce leading to low purchasing power of individual households, low incomes will definitely affects the level of savings of individuals and a group of people in a country.

According to Ghana Statistical Service (GSS) 2017, the annual inflation rate in Ghana dropped to 15.5 percent in November 2016 from 15.8 percent in the previous month. GSS also concluded that, it was the lowest inflation rate since July 2014. Inflation affects different people differently in an economy. The persistence increase of the prices of goods and services in an economy affects the saving behaviour and the wellbeing of the people in the economy. High inflation rate with less interest rate will reduce the purchasing power on an individual‘s account because the money used for savings will be used to cover the additional cost of goods and services.

According to World Finance Corporation (2016), savings behaviour can be influenced by several factors. They stated that, the various determinants shape the economic growth in an economy. They commented that, demographic effect affects the saving decision and action of an individual or a group people in a particular area. Thus, the socioeconomic features of a particular people such as age, sex, education level, marital status, occupation, number of dependents in a family etc. influence the behaviour of the people towards savings.

During their study, they also stressed that, continuous or increase in consumption (consumerism) also influence the saving behaviour of the people in a country. Due to the influx of new financial institutions in the world, it has increase the rate of borrowing which has also increase the purchasing power of consumers. Therefore, increase in consumption negatively affects the saving behaviour of the individual households and a decrease in consumption will also increase the savings of an individual. World Finance also stated that, the level of income, uncertainties, price difference between local and foreign goods as some other factors that influence saving behaviour of the people in an economy.

2.12 Reasons/Importance of Savings

An individual household cannot engage in savings without having a purpose. The saving decisions and perceptions are being influence by the goals set to achieve at the end of the saving process. The decision to save may not necessarily be different from the other. The reason behind savings differ from one individual household or a group of people to another, for instance Kofi‘s motive of saving will be different from Yaw‘s motive of savings. Individual households normally practice savings for future expenses and for retirement.

J. M Keynes in his General Theory, emphasized that savings will always be equal investment thus Savings = Investment (S = I). With this, it brought confusion to other scholars, like the classical school of thought who argued that, interest rate influence savings and investment to be in equilibrium. The rate of interest have to fall whenever savings surpass investments and that the rate of interest have to increase whenever investment exceed saving (with the aim of increasing savings). With this, savings may increase the rate of investment in an economy. Savers in a particular financial institution are given loans to undertake investment in an economy.

According to World Finance Corporation (2016), some of the major reasons that push an individual household to save their money include; to cater for unforeseen circumstances or occurrences, to increase or improve the standard of living of the people, to gain or earn higher interest rates.

2.13 Explanation of Concepts

2.13.1 Financial transaction

A financial transaction is an agreement, or communication, carried out between a buyer and a seller to exchange an asset for payment.

It involves a change in the status of the finances of two or more businesses or individuals. The buyer and seller are separate entities or objects, often involving the exchange of items of value, such as information, goods, services, and money. It is still a transaction if the goods are exchanged at one time, and the money at another. This is known as a two-part transaction: part one is giving the money, part two is receiving the goods.

In ancient times non-financial transactions were commonly conducted through systems of credit, in which goods and services were exchanged for a promise of future recompense. Credit has certain disadvantages, including the requirement that traders or their intermediaries trust one another, or trust that authorities exist who can be relied on to enforce agreements. Debts must eventually be settled either with goods or by payment of money, a substance of agreed value such as gold and silver.

Systems of credit are evident throughout recorded history and from archeology. By contrast little evidence has been found of widespread use of pure barter, where traders meet face to face and transactions are completed in a single swap.

As cities, states, and empires were established, coins and other compact forms of specie were minted or printed as fiat money with set values, permitting the accumulation of assets that would not deteriorate over time as goods might and that had the relatively secure backing of a government which could adjust value by producing more or less of the currency. As fixed currencies were gradually replaced by floating currencies during the 20th century, and as the recent development of computer networks made electronic money possible, financial transactions have rapidly increased in speed and complexity.

Purchases*: This* is the most common type of financial transaction. Goods or services are exchanged for money. This transaction results in a decrease in the finances of the purchaser and an increase in the benefits of the sellers.

Loan: This is a slightly more complicated transaction than others in which the lender gives a single large amount of money to the borrower now in return for many smaller repayments of the borrower to the lender over time, usually on a fixed schedule. The smaller delayed repayments usually add up to more than the first large amount. The

difference in payments is called interest. Here, money is given for not any specific reason.

Mortgage*:* This is a combined loan and purchase in which a lender gives a large amount of money to a borrower for the specific purpose of purchasing a very expensive item (most often a house). As part of the transaction, the borrower usually agrees to give the item (or some other high value item) to the lender if the loan is not paid back on time. This guarantee of repayment is known as collateral.

Bank account: A bank is a business that is based almost entirely on financial transactions. In addition to acting as a lender for loans and mortgages, banks act as a borrower in a special type of loan called an account. The lender is known as a customer and gives unspecified amounts of money to the bank for unspecified amounts of time. The bank agrees to repay any amount in the account at any time and will pay small amounts of interest on the amount of money that the customer leaves in the account for a certain period of time. In addition, the bank guarantees that the money will not be stolen while it is in the account and will reimburse the customer if it is. In return, the bank gets to use the money for other financial transactions as long as they hold it.

Credit card*:* This is a special combination of a purchase and a loan. The seller gives the buyer the good or item as normal, but the buyer pays the seller using a credit card. In this way, the buyer is paying with a loan from the credit card company, usually a bank. The bank or other financial institution issues credit cards to buyers that allow any number of loans up to a certain cumulative amount. Repayment terms for credit card loans, or debts vary, but the interest is often extremely high. An example of common repayment terms would be a minimum payment of the greater of $10 or 3%

every month and a 15–20% interest charge for any unpaid loan amount. In addition to interest, buyers are sometimes charged a yearly fee to use the credit card.

In order to collect the money for their item, the seller must apply to the credit card company with a signed receipt. Sellers usually apply for many payments at regular intervals. The seller is also charged a fee of normally 1–3% of the purchase price by the credit card company for the privilege of accepting that brand of credit card for purchases.

Thus, in a credit card purchase, the transfer of the item is immediate, but all payments are delayed. The credit card holder receives a monthly account of all transactions. The billing delay may be long enough to defer a purchase payment to the bill after the next one. Debit card*:* This is a special type of purchase. The item or good is transferred as normal, but the purchaser uses a debit card instead of money to pay. A debit card contains an electronic record of the purchaser's account with a bank. Using this card, the seller is able to send an electronic signal to the buyer's bank for the amount of the purchase, and that amount of money is simultaneously debited from the customer's account and credited to the account of the seller. This is possible even if the buyer or seller use different financial institutions. Currently, fees to both the buyer and seller for the use of debit cards are fairly low because the banks want to encourage the use of debit cards. The seller must have a card reader set up in order for such purchases to be made. Debit cards allow a buyer to have access to all the funds in his account without having to carry the money around. It is more difficult to steal such funds than cash, but it is still done. See also skimming and shoulder surfing.(en.wikipedia.org)

2.13.2 Mobile technology

According to Taylor., Katie., Takeuchi., and Reed (2017) Mobile technology is the technology used for cellular communication. Mobile technology has evolved rapidly over the past few years. Since the start of this millennium, a standard mobile device has gone from being no more than a simple two-way pager to being a mobile phone, GPS navigation device, an embedded web browser and instant messaging client, and a handheld gaming console. Many experts believe that the future of computer technology rests in mobile computing with wireless networking. Mobile computing by way of tablet computers is becoming more popular. Tablets are available on the 3G and 4G networks. Mobile technology has different meanings in different aspects, mainly mobile technology in information technology and mobile technology in basketball technology, mainly based on the wireless technology of wireless devices (including laptops, tablets, mobile phones, etc.) equipment information technology integration).

2.13.3 Mobile Banking

Mobile banking is the act of making financial transactions on a mobile device (cell phone, tablet, etc.). This activity can be as simple as a bank sending fraud or usage activity to a client‘s cell phone or as complex as a client paying bills or sending money abroad. Advantages to mobile banking include the ability to bank anywhere and at any time. Disadvantages include security concerns and a limited range of capabilities when compared to banking in person or on a computer.

Mobile banking is very convenient in today‘s digital age with many banks offering impressive apps. The ability to deposit a check, to pay for merchandise, to transfer money to a friend or to find an ATM instantly are reasons why people choose to use

mobile banking. However, establishing a secure connection before logging into a mobile banking app is important or else a client might risk personal information being compromised. (www.investopedia.com/term/a/atm/asp)

2.13.4 Mobile money

Mobile money is a technology that allows people to receive, store and spend money using a mobile phone. It‘s sometimes referred to as a 'mobile wallet' or by the name of a specific service such as mPesa, EcoCash, GCash, Tigo Pesa and many more. There are more than 270 different mobile money services around the world, although they are most popular in Africa, Asia and Latin America. Mobile money is a popular alternative to both cash and banks because it‘s easy to use, secure and can used anywhere there is a mobile phone signal.

How does mobile money work?

Mobile money is a service that stores funds in a secure electronic account, linked to a mobile phone number. In some cases, the mobile money number will be the same as the phone number, but not always. Mobile money is often provided by the same companies that run the country's mobile phone services and is available to both pre-pay and contract customers.

The service allows users to store, send, and receive money using their mobile phone. They can buy items in shops or online, pay bills, school fees, and top up mobile airtime. They can also withdraw cash at authorised agents.

If the user wants to pay a bill or send money to another person, they simply select the relevant service from their phone‘s mobile money menu. It‘s really as simple as sending a text message.

What are the benefits of mobile money?

Almost anyone who has a mobile phone can have a mobile money account. It‘s so accessible, which makes it extremely useful in more remote parts of the world, where there aren‘t any banks. Here are its other benefits:

1. Multi-faceted – there‘s so much users can do with a mobile money account. They can receive, store, spend and send money all from the account on their mobile phone.

2. Direct – users can receive money directly to their mobile phones without going through any middlemen.
3. Fast – users can receive, send and spend money instantly.
4. Convenient – mobile money accounts are always to hand as they sit on users‘ mobile phones, Mobile money can be used anywhere there‘s a mobile phone signal.
5. Secure - funds held in a mobile money account are protected by local financial regulations. Users‘ identity must be checked - making it hard for fraudsters and criminals to use these services illegally.
6. Low cost – if you send mobile money with World Remit and you‘ll find our fees are low and we offer bank-beating exchange rates.

Mobile money transfer: A mobile money transfer is a fast, easy and secures transaction whereby a sender sends money from their bank, credit/debit card or own mobile money account to another mobile money account. For a transfer to take place - a recipient needs a mobile money account and the sender requires the recipient‘s mobile money account number. Funds can then be transferred in an instant.

A mobile money operator is a mobile money service provider that develops and delivers financial services through mobile phones and mobile telephone networks. Here are two of the largest mobile money operators in Africa and beyond:

- MTN – MTN delivers mobile money service to 22.2 million people in 15 countries worldwide.
- M-Pesa – (M for mobility, pesa Swahili for money) is a mobile money service delivered by Vodafone for Safaricom and Vodacom. It operates in Kenya, Tanzania, Afghanistan, South Africa, India and Eastern Europe.

- Sending to a mobile money account with World Remit Sending to a mobile money account is easy with World Remit. In fact, we are connected to more mobile money services than any other money transfer provider. What is Mobile Money

Your transfer normally arrives instantly, day or night. And your recipient doesn‘t have to travel anywhere to collect it. They‘ll get a notification on their phone when the money has been added to their account. Plus, you‘ll also receive a confirmation when the transfer is complete. (www.worldremit.com>mobile-money)

2.14 Chapter Summary

The chapter dealt with earlier research done by qualified scholars, educators and researchers. The chapter began with the theoretical Literature and also takes a look at a number of empirical works done on the role of technology on savings behaviour among market women. It also further highlighted the differences between saving and savings, explanation of the dependent variable (savings), the forms or types of saving, factors that influence savings behaviour and the importance or significance of savings to the people.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This Chapter discusses the techniques used in carrying out the study in order to answer the research questions. It provides an outline of the research design, instruments for data collection, methods adopted in the administration of the research instrument, data collection procedure, and data analysis. It also discusses the conceptual framework, the model specification and the measurement of variables.

3.1 Research Design

The study used descriptive and explanatory research designs to determine how technology has influenced the savings behaviour of market women in Ejisu Municipality. According to Mugenda, (2008), descriptive research design gives report on the way things are. He suggests that, the design describe possible behaviour, attitudes, values and characteristics. Descriptive research design is more appropriate because the study seeks to build a profile about how technology influenced savings behaviour of market women in Ejisu Municipality in the Ashanti Region of Ghana. The explanatory research design also refers to as analytical research design aims at identifying the causal links between the factors or variables (technology and saving behaviour) that pertain to the research problem.

The study however adopted quantitative methods in analysing the data obtained from the field. The quantitative method was used in order to quantify attitudes, opinions, behaviours and other defined variable by way of creating statistical data that can be changed into useable statistics.

3.2 Theoretical Model Specification

The theory underpinning this study is Technology Acceptance Model (TAM) developed by Fishbein and Ajzen, (1975). The TAM shows how individuals react to a particular technology. It further explains consumer‘s behaviour in accepting and embracing new technology.

With Mobile technology or ATM as independent variable, individuals are willing to embrace it based on several indicators such as ease of use, trust and transactional cost. Market women use these indicators as a baseline for its adoption. Technology adoption and usage was measured using the items of intention to use and user satisfaction as stipulated by Venkatesh, Morris, Davis, and Davis (2003). These items were used as standard measures under the TAM model for study of technologies in promoting access to financial services such as savings (Mas & Morawczynski, 2009).

3.2.1 TAM Model

For the purpose of this study, the TAM model can be operationalized to explain the adoption of technology on savings behaviour among market women. With regards to ease of use, the model measures the relative advantage and benefits of the innovation to users. Siddik (2014) further explained ease of use as if customers perceive advantages that are provided by technology, they are more likely to develop a positive attitude towards adopting the service for making transactions like savings.

The perceived ease of use measures the degree of complexity and compatibility of the service to customers and hence requires no mental or physical effort to its use relative to other services. Perceived ease of use has been hypothesized as a predictor of

perceived usefulness. All these variables are consistent with a given innovation, hence, making the model an appropriate one for this study.

Mathematically,

$TA = f(X_i)$…….. (1.0)

Where TA is Technology Adoption and X_i indicates the factors that enable individuals to accept a particular technology.

TA= f (perceived ease of use, trust and transactional cost)…….. (1.1)

The Binary Logistics model is used to examine how technology affects savings behaviour of market women within Ejisu municipality. With Binary Logistics models, the response variable is dichotomous in nature and can take two responses say, yes or no. The choice of the binary logistic model is because, the binary logistic model has a better interpretation since it models log odds and the normally distributed error terms are not assumed. Here, the dependent variables _x' and _y' represent payment and receipt respectively WHICH are binary in nature. The objective is to find the probability of an event happening, hence the study seeks to find the likelihood of a person using technology for savings.

With this, the model to be estimated was adopted and adapted from Domeher D., Frimpong M. and Appiah T. (2013) who studied on adoption of financial innovation in the Ghana using logit regression estimated technique. The model to be estimated is specified below.

$P_i=f(X_i)$ ……. (1.2)

In terms of log odds, equation (1.2) is specified as:

$\log\left(\frac{Pi}{1-pi}\right) = f(Xi, Y)$..(1.3)

Where; f is the functional form of the model and X_i denotes the control variables where Y indicates other factors that affect P_i. That is, it indicates the relationship between P_i and control variables in addition to other factors that affect P_i. Hence, the model will be given as;

logit (P_i)=$\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+\cdots+\beta_n X_{ni}$.. (1.4)

3.3 Empirical Model Specification

Logit:$[p(Y=1)]=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\beta_9X_9+\beta_{10}X_{10}+\beta_{11}X_{11}+e$......(1.5)

Y= dependent variable which is binary in nature and takes _1' if a person uses technology (mobile or ATM) for savings and _0' if a person does otherwise.

X_1= perceive ease of use

X_2= transactional cost

X_3= trust

X_4= financial literacy

X_5= Age

X_6= Employment status

X_7= Education

X_8= Income

X_9= Marital status

e= Error term

3.4 Definitions, Measurement of Variables and their expected Signs

Dependent Variables

Savings

Savings is defined as the part of income that is not consumed but put aside for future use. In this is context, savings refers to the use of a particular technology to keep money for future use. The variable _y‘ (savings) is the dependent variable, where an individual could be saving for predictable and unpredictable purposes. Savings is a dummy assuming the value of 1 if a person saves (either with a particular technology) and 0 if a person doesn‘t save.

Independent Variables

Perceived ease of use

Perceived ease of use refers to whether a person finds a given technology an easy way of doing financial transaction or not. It is a dummy variable which take _1‘ if a person thinks the service is convenient and _0‘ if otherwise. According to Carter & Belanger, (2005) one motivating factor that accounts for the adoption of a particular technology across the globe is the Perceived ease of use of that technology. A new system is likely to be welcomed by individuals if it easy and convenient to operate. With this, it is expected that, Perceived Ease of Use should have a positive significant relationship with individual‘s intention to use a particular technology for financial transaction such as Savings.

Trust

The issue of trust is an essential element in all business and financial transaction as far as a given technology. Trust refers to whether or not a person finds technology a secured way of doing financial transaction. It is a dummy variable that takes the form _0‘ if a person doesn‘t find the service secured and _1‘ if a person finds it secured. The use of technology in making financial transactions like savings should overcome user distrust in addition to fraudulent activities (Siau et al, 2003). The adoption of a particular technology is based on how secured that system is perceived to be. For the purpose of this study, trust is defined as a measure of consumer‘s levels of assurance that technology usage in making transactions like savings is secured. Users of a particular technology need to have confidence and belief that it is safe in under taking transactions. Several studies have found that, trust is a significant determinant influencing consumers‘ intention in adopting a particular technology for savings (Kim et al., 2009). With this, it is expected that, Trust should have a positive significant relationship with usage of technology for savings.

Transactional Cost

Another factor that has been acknowledged in the technology adoption environment is cost of transaction. It refers to whether an individual finds the usage of a particular technology costly or otherwise for savings. It is coded as dummy where _0‘ means a person finds it less costly and _1‘ if otherwise. Cost of transaction with using a particular service is a key factor that influences individual‘s intention to use a particular technology for savings. A major economic consideration for using a particular technology include the transaction fees and time one spent in making transactions. (Koenig-Lewis et al. 2010). According to Tobbin (2012), the main factor that makes individuals especially market women to accept a particular technology for

making financial transaction like savings is the cost of usage of that technology. With this, it is expected that, cost of transaction will have a negative influence on people‘s intension to use it for savings.

Financial literacy

Financial literacy refers to the ability of a person to understand and make decision about their financial resources. Financial literacy is a dummy variable which take _0‘ as financial illiterate and _1‘ as financial literate. In terms of making financial transaction such as savings with technology, all things being equal, individuals who are financial literates are more likely to use technology to embark on financial transactions such as savings than those who are financial illiterate. This means that, financial literacy is expected to have a positive sign on using technology for savings.

Educational Status

Education refers to whether a person has attained at least a minimum of basic education to the tertiary level or uneducated. Educational status is a categorical variable that take the following form; _0‘ if uneducated, _1‘ if basic education, 2‘ if secondary and _3‘ if tertiary. The educational status of individuals plays an essential role in adopting a particular technology. The probability of a person with high educational status to use technology for making financial transaction such as savings is higher than their low or uneducated counterpart. This is because persons with high education have knowledge and can understand various modes of making financial transactions. With savings, Persons with low level of education are less likely to save with a particular technology and so gives a positive sign whiles those with low or no education is less likely to use technology for savings and this gives negative.

Technology usage

Technology usage refers to whether a person is accepts and uses a particular technology in making financial transaction like savings. Technology usage was a dummy variable and it was described as _1' if one is uses a particular technology and _0' if one does not use. An individual who uses a given technology have a chance of making financial transaction like savings with it than those who do not uses any technology. With this, the coefficient for technology usage is expected be positive for those uses and negative for those who do not use it.

Average income level

Income simply refers money generated from engaging in any economic activity and it is a continuous variable. In terms of making financial transaction such as savings with technology, individuals with relatively high incomes are more likely to make financial transaction than relatively low income earners, all things being equal. This can be attributed to the fact that, relatively high income earners engage in series of transactions and so are more likely to saving with a particular technology or any financial institutions. According Keynes (1936), income is a key determinant of savings. With this, individuals who have relatively high and constant income are likely to save with a particular technology or bank than people with relatively low and unstable income. This means that, average income is expected to have a positive sign on using technology for savings.

Marital Status

Marital status is whether a person is married or not married. Marital status is a dummy variable that takes _1' if married and _0' if single. Marital status is expected to have an ambiguous effect on individual's intention to adopt a particular technology for savings. Individuals who are married may be saving either in their bank accounts or a

particular technology like mobile technology for predictable purposes such as family projects and unpredictable purpose than those who are single so gives positive sign. On the other hand, married individuals may find it difficult to save due increase pressure on family income as a result of a rise in consumption, hence negative sign.

Family size

Family size refers to the total number of people within a particular household. Family size is a continuous variable. In terms of making financial transaction such as savings with technology, all things being equal, individuals with a large family size are less like to use technology to embark on financial transactions such as savings than those with small family size. This means that, family size is expected to have an ambiguous sign on using technology for savings.

3.5 Sources of Data

Primary source of data collection method was adopted in order to obtain a reliable data to help achieve the stated objectives of this study. Primary data are data collected with a given purpose in mind (Yin, 2003). Primary data sources consist of data originated by the researcher for the specific purpose of addressing the research problem.

Primary data was collected by means of structured questionnaires. This form of data collection is chosen because it provides an efficient means by which statistical quantifiable information could be collected. It also allows easy access to respondents within a given time frame.

3.6 Population

A population is the total of all the elements of a study (Blumberg 2008). In this study, the population is composed of all market women who are capable of using technology in making financial transaction specifically savings within the Municipality.

3.7 Sample Techniques

Sampling refers to observing a part in order to gather information about the whole (Corbetta, 2003). Saunders (2009) further argued that a sampling process is required to aid in organizing the study to a controllable size. Sampling techniques can be categorized into probability and non-probability sampling. A multi-stage sampling technique was adopted for the study and these include cluster and accidental sampling techniques. A cluster sampling technique was used to group the sub-market areas within each community in the municipality based on geographical location. This enabled the researcher to obtain information from one or more areas within the various communities.

Finally, accidental sampling technique was used to select market women who use technology either phone or ATM in making transaction like savings. The major motivation of the accidental sampling technique was due to the fact that samples have to be determined on the research field and the researcher also considered the availability and readiness of the respondents.

3.8 Sample Size

This study focuses on how technology has affected savings behaviour of market women within Ejisu municipality. However, due to time and financial constraint, the study was not able to cover the entire population in the municipality. With this, a representative sample was selected according to Green (1991) rule for modeling

multiple regressions. Green (1991) postulated that the sample size (n) must be greater than 50+8P, where P is number of independent variables. This study used nine independent variables in the empirical model and with reference to the equation; the sample size for this study should be > 50 +8(9) = 122.

However, this study used 250 respondents which is greater than 122 [that is; (n= 250) > 122]. This means that the sample size used for this study satisfies the rule proposed by Green (1991) for modeling multiple regression.

3.9 Data Collection Method

Data collection is used when trying to derive data that will be used for making decisions and keeping records and has different methods which comprise of interview, questionnaire, and observation (Tashakkori & Teddlie, 2003). Data was collected using questionnaire approaching respondents made up of traders at various market centers who embarking on transaction with technology. The interview guide was translated to Twi (a native language) to enable them to understand.

3.10 Method of Data Analysis and Presentation

Data analysis is a process, started even before the collection of data ends (Porter 2008). According to Saunders (2009) data analysis has to do with gathering, summing, and collating the collected data, with the results reflecting important aspects relating to the problem under study. After data has been obtained from the field, it was verified and edited for completeness and consistency. The quantitative data is analysed through descriptive statistics which comprise of frequency tables, mean and standard deviation. The data is presented using tables for ease of comparison and understanding.

The study further uses binary logistics regression model to establish the relationship between technology and saving behaviour among market women within Ejisu municipality with the help of Stata corp. (14.0) and Statistical Package for Social Sciences (SPSS) version (10).

3.11 Chapter Summary

The Chapter discussed the techniques used in carrying out the study in order to answer the research questions. It also provided an outline of the research design, instruments for data collection, methods adopted in the administration of the research instrument, data collection procedure, and data analysis. It also discussed the conceptual framework, the model specification and the measurement of variables

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter highlights on the analysis and discussion of the results of the study. The chapter employed descriptive statistics and regression analysis in presenting the results obtained. The chapter is made up of various sections namely; descriptive analysis, mode of savings using particular technology and regression analysis of the effect of technology on savings behaviour of market women in Ejisu municipality.

4.1 Descriptive Analysis

This section deals with the demographic analysis of characteristics of respondents thus, educational level, marital status and employment status. The demographic characteristics results are analysed and presented in table 1. Table 2 shows the descriptive statistics of the continuous variables such as age, income level and family size whiles Table 3 shows the mode of savings among market women using various types of technology.

4.2 Background Information of Respondents

This section discusses the personal information of respondents which include the following categories; educational level, marital status and employment status. This is presented in Table 1.

Table 1: Background Information of respondents

	Category	Frequency	Percentage
	None	57	22.8
Education Level	Basic	120	48.0
	Secondary	64	25.6
	Tertiary	9	3.6
	Total	**250**	**100.0**
Marital Status	Married	214	85.6
	Single	36	14.4
	Total	**250**	**100**
	employed	249	99.6
Employment status	unemployed	1	.4
	Total	**250**	**100**

Source: Field survey 2020

The results from Table 1 above show that, the educational level of the respondents is dominated by individuals with basic education and they are defined as the class that has access basic education thus primary and junior high school. They constitute 120 out of 250 respondents representing 48%. This is followed by individuals who have access and attained some level of secondary education within the study area constituting 64 out 250 respondents representing 25.6%. Individuals with no education were 57 out of 250 representing 22.8% and the least respondents were individuals with tertiary education constituting 9 out of 250 representing 3.6%. The educational background shows that nearly 80% of the respondents can read and are equipped to use technology in saving and business financial transactions and marketing activities.

On marital status, out of 250 respondents 214 representing 85.6% are married whiles the remaining 36 representing 14.4% are single.

Employment status is another important demographic characteristics, the employed category dominates the respondents as they constitute 249 representing 99.6% whiles the remaining 1 respondent is unemployed representing .4%. with the 0ne unemployed women was just managing her sister‘s business for her and she was not receiving any payment as well.

Table 2: Descriptive statistics of Continuous Variables

	Observations	Mean	Std. Dev.	Min	Max
Age	250	37.992	10.48502	19	70
Income Level	250	3134.4	6932.371	100	10000
Family size	250	5.68	2.111738	2	13

Source: Field Survey 2020

The results from Table 2 above show the descriptive statistics of Age, income level and family size of the respondents. Age, income level and family size are continuous variables. The results indicate that, out of 250 respondents sampled, individuals with the least age from the data obtained were 19years and the highest age was 70years. However, the average age obtained from the respondents was 38years.

It is also clear from Table 2 above that, out of 250 observations, the lowest income level of the respondents obtained from the data was GH₵100 and the highest income level was GH₵10000. Conversely, the average income level obtained from the data gathered from the respondents was GH₵3134.4.

Also, the least family size obtained from the sampled respondents was 2 and 13 individuals was the largest family size. The mean family size obtained from the data was 6 people.

Table 3: Mode of savings by market women using various types of technology

Types of technology	Frequency	Percentage
Mobile technology	220	88.0
ATM	25	10.0
Credit and debit cards	1	.4
others	4	1.6
Total	**250**	**100.0**

Source: Field survey 2020.

The results from Table 3 above show that, market women within the study area use mobile technology more as compared to any other type of technology in making financial transaction such as savings. It is clear that, out of 250 respondent sampled, 220 of them representing 88% use mobile based technology such as mobile money in making financial transaction like savings. Also, 25 respondents representing 10% of the market women sampled uses ATM (banks) for making transaction whiles 1 respondent uses credit and debit card in making savings. The remaining 4 respondents representing 1.6% do not use any form of technology in savings but resort to the rotating system of Susu.

Table 4: Logistic Regression Results on how technology has influenced the savings behaviour of market women in Ejisu municipality

Savings	Odd ratio	Robust Std. Err.	Probability P>|Z|	Marginal effect (dy/dx)
technology usage	1.434522	.7003996	0.460	**.0039046**
Education: None (reference category)				
Basic	3.86338	3.359811	0.120	**.0153916**
Secondary	.7105281	.5259079	0.644	**-.0040287**
Tertiary	.8670607	.984557	0.900	**-.0016479**
Average income	1.000665	.000264	0.012	**7.19e-06**
Family size	1.62073	.2253012	0.001	**.0052253**
Trust	1.75856	.6001716	0.098	**.0061085**
Cost	.4676261	.2793175	0.203	**-.008225**
Marital status:(ref single)				
Married	.2392791	.1475865	0.020	**-.0100932**
Literacy (ref: no lit)				
Literacy	1.974429	1.365725	0.325	**.0086863**
_cons	.4100413	.9731763	0.707	

Logistic regression Number of obs = 250

Wald chi2(10) = 31.47

Prob > chi2 = 0.0005

Log pseudolikelihood = -43.431315 Pseudo R2 = 0.2967

The overall savings model is significant because chi-square is significant at 1% level and about 30% of the variation in the probability of savings is explained by variables average income, family size, trust in the usage of technology and marital status (married).

From the table above, the results for the savings model shows that, average income is significant at 5% level and has a positive relationship with savings using a particular technology. Average income in the model was a continuous variable and the level of an individual income can influence the use of technology for financial transaction such as savings. The results indicate clearly that, there is a positive or direct

relationship between average income of the respondents and savings with the given technology. With this, average income in the study area of the respondent increases the probability of using technology for savings since the coefficient of these variables are significant. This means that, the higher one‘s average income level the higher that person saves using a particular technology. The results also show that, if a person uses a particular technology such as mobile technology, then the probability of the person savings with that technology increases by 0.007%(marginal effect=7.19e-06). The implication is that relatively high income earners are more likely to save than low income earners using a particular technology. This result confirms the works of Sivapragasam (2011) who concluded that higher income earners are more likelihood to save for unforeseen circumstances using a particular technology.

The result further shows that family size of the respondents is significant at 1% and has a positive relationship between savings with technology. This means that an addition of extra member to the family of the respondent will increase the rate of savings using a given technology. Family size was a continuous variable and it indicates the number of people who are dependent on the respondent. The result shows that if a person saves given a particular technology, then the productivity of the person saving with that technology increases by 5.0%(marginal effect=.0052253). This implies that, as an extra dependent person is being added to the respondent the higher one saves to cater for unforeseen circumstances using a particular technology. This results does not confirm the studies conducted by Ouma, Odongo and Were (2017) who also concuded that, famiy size affects savings inversely.

Trust as a variable of interest was measured as the level of extent to which the respondent believes in the usage of a particular technology for making financial

transactions such as savings. The result of the study indicates that, trust is significant at 10% and has a positive relationship between savings with a particular technology. This means, the more a person believes in the usage of a given technology the more one uses it in making transaction such as savings and it also means the less likely one uses a particular technology when he or she doesn‘t believe in the usage of that technology. The results also show that, if a person believes in the usage of a particular technology such as mobile technology, then the probability of the person savings with that technology increases by 0.6% (marginal effect=.0061085). This result also confirms the studies of Abel, Mutandwa and Pierre (2018) who found trust as a major factor as afr as savings with technology is concern.

Finally, marital status was a variable of interest which was a dummy variable with single to be _0' and married to be _1'. Using single as the base or reference outcome, the results found out that married is significant at 5% level and has a negative relationship with savings using a particular technology. This means that, as one is married, the less likely he or she saves with technology for unforeseen reasons as compared to respondents who are single. With this it‘s clear that, if a person is married, then the probability of the person savings with a given technology falls by 10% (marginal effect=-.0100932). The results of this study does not confirm the works Gu, Lee and Suh who also found that, marital status inversely affect individuals savings behaviour.

Role of Technology in Enhancing trade activities among the women in Ejisu and the implication for savings.

This section discusses the various roles that technology play in ensuring efficient trade activities among market women in Ejisu municipality. This is illustrated in the bar graph below.

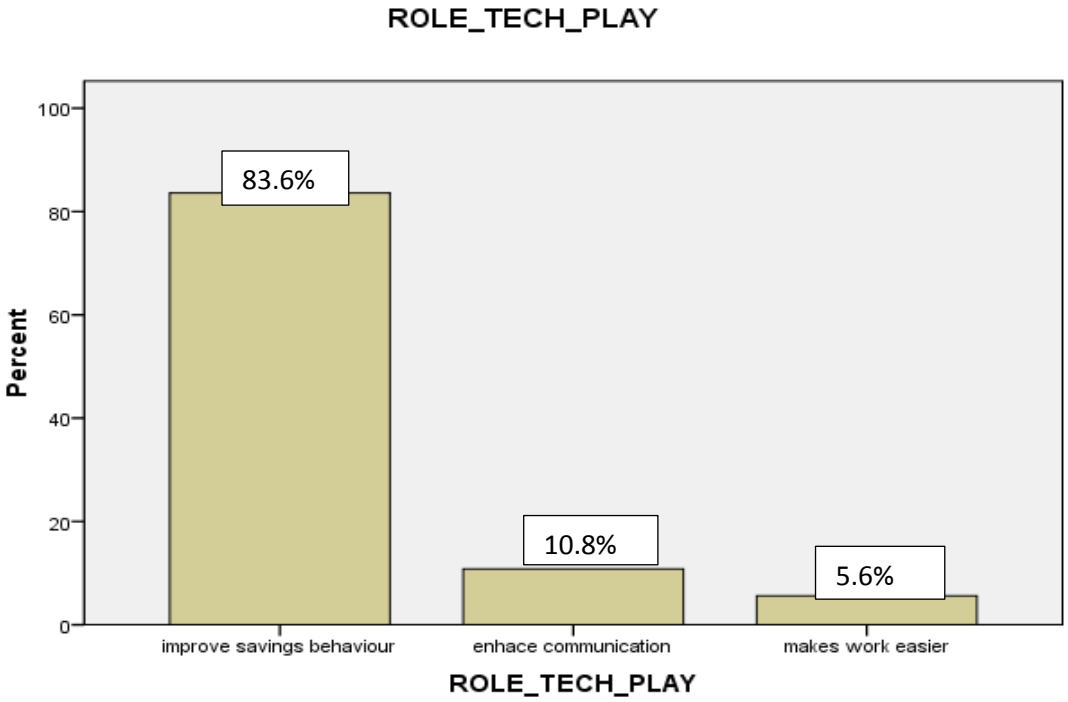

Figure 2: The role of technology on trade activities among market women in Ejisu

Source: compute by the researcher herself using SPSS 15.0

The statistics above indicates that out 250 market women who were sampled, 209 representing 83.6% use various technologies such as mobile technology, ATM and others to making financial transaction like savings. This indicates that technology has brought some sort of relief by saving transportation cost and time visiting financial institution to make deposits. However, 27 respondents representing 10.8% uses technology in communication, thus it enables them to talk to customers so as to know their preferences in terms of buying and selling of goods and services whiles the

remaining 14 women representing 5.6% indicated that technology makes their work more easier and faster. All these help improve income and lead to higher level of savings.

Challenges of market women in Ejisu Municipality

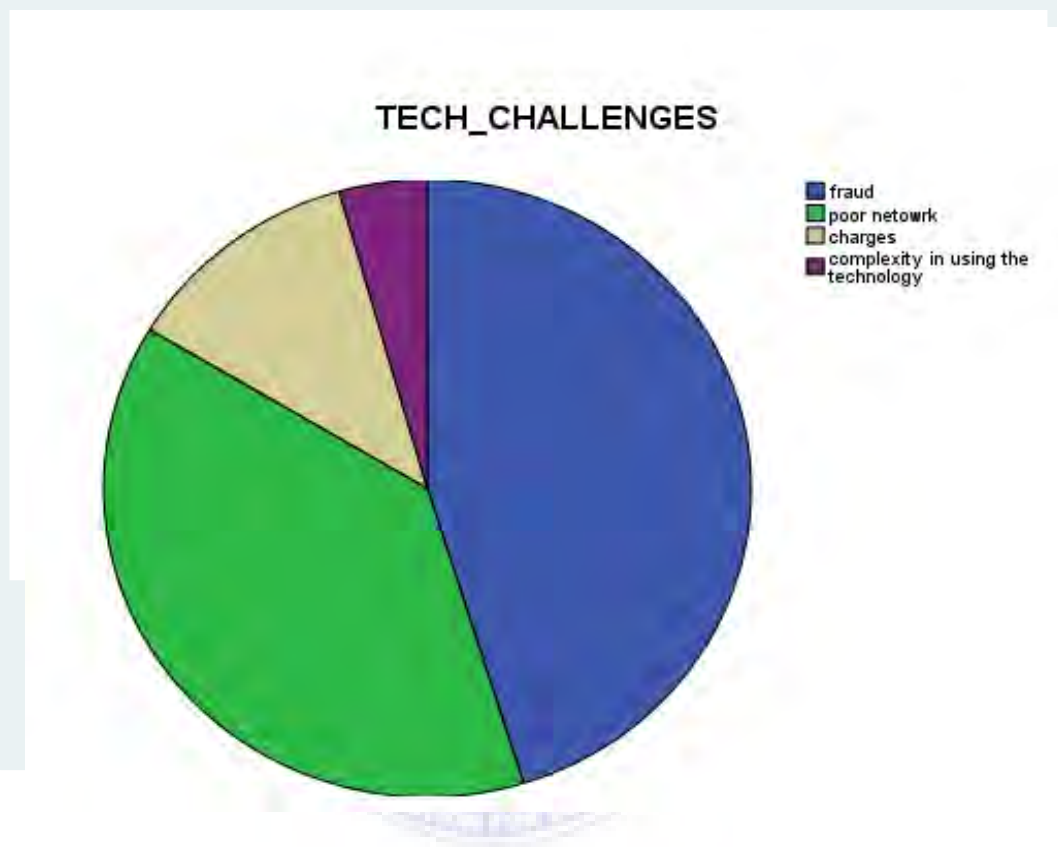

Figure 3: Challenges market women face in using technology for savings

Source: compute by the researcher herself using SPSS 15.0

From Figure 3 above, the main challenge faced by the respondents in using the technology for savings is fraud. This problem was spelt out by 113 market women out of 250 as the major setback in using technology to embark on their personal savings and it constituted 45.2%. The fraud from some of the network providers makes it difficult for the women to trust the system. Due to this lack of security from some of

the network providers there is always leakage of information to third party and this had made the system not to be trusted.

Also about 96 respondents out of 250 representing 38.4% stated clearly poor network as another challenge that affects the usage of technology such as mobile, ATM and others for savings. Other challenges such as high charges and complexity in using certain technologies in making savings constitute 12.02% and 4.4% respectively. These challenges were the main setbacks given by the respondent as far as using technology to embark on savings is concern within the Ejisu municipality in the Ashanti region of Ghana.

4.3 Chapter Summary

The chapter highlighted on the analysis and discussion of the results of the study. The chapter employed descriptive statistics and regression analysis in presenting the results obtained. The chapter was made up of various sections namely; descriptive analysis, mode of savings using particular technology and regression analysis of the effect of technology on savings behaviour of market women in Ejisu municipality.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the results of the study as well as discusses the conclusions drawn based on the findings. It further gives the recommendations based on the findings discussed.

5.1 Summary

The summary of results is done based on the research questions of the study which was stated as: How has technology influenced the savings behaviour of market women in Ejisu municipality? What is the role of technology on trade activities among market women in Ejisu and what are the challenges markets women are facing in using technology for savings?

The results of the study show that, technology does not affect savings behaviour of market women in Ejisu municipality. The results indicated that, trust in the usage of technology, family size, marital status that is married and average income of market women in the municipality are significant and positively affect the usage of technology for savings. Findings from the study shows that, market women within Ejisu municipality employed various mode of savings using various types of technology such as mobile technology, ATM, credit and debit cards as well as other. With mobile technology consisting about 220 out of 250 respondent representing 88%, ATM consisting 25 out of 250 respondent representing 10% and the remaining 2% constitute 5 respondent used credit and debit cards and other type of technologies.

Despite the essential role played by the technology on the trade activities of these market women in Ejisu municipaity, there are some challenges the individuals face in

using the technology Among the challenges are Fraud, network problems, high transaction charges and complexity in using the certain technology like credit and debit card for making financial transactions.

5.2 Conclusions

The study focused on the role of technology in savings behaviour and its effect on trade activities among market women in the Ejisu municipality. Using a sample size of 250 respondents, the study employed a binary logistics regression estimation technique to analyse the results.

Technology is capable of growing the economy; improving lives in addition to poverty reduction. It can also help to strengthen global competition. The study found out that, technology such as mobile technology, ATM and others has the tendency to encourage savings behaviour of individuals especially the market women. It has also been seen that, technology has helped to save time and reduce overcrowding in banking halls and other financial institutions. This had made people drop small or huge amounts conveniently anytime and anywhere due its perceived trust.

5.3 Recommendations

The introduction of the technology like mobile technology and others across the globe has been a blessing to many people especially the market women in the Ejisu municipality. It has contributed immensely in bridging the financial services to people within the municipality. With reference to the results obtained from the study, the following recommendations are made;

- Firstly; there should be an improvement in the network system in order to enhance convenience, reliability and user-ability of the mobile technologies. This will make financial transaction to be fast and effective so as to increase

productivity. The study wish to recommend that, there should be advancement in the network system by the National Communication Industry through the Telecom companies to make the service easy, convenient and reliable anytime a customer wants to undertake financial transaction like savings.

- Also; there should be an improvement in the security system to check the activities of fraudsters from getting access to customer‘s asset. This will allow the general public to develop confidence in the security and reliability in using a particular technology. Service providers should be informed to assist improve network in Ejisu Municipality.
- There should be mass education by the National communication authority via the media in country to enable individuals know how to deal with the activities of the fraudsters as well as to make people especially market women to appreciate the usage of these technology.
- Again; there should also be a reduction in transaction charges in addition to providing a standard interest on savings by the National Communication Industry through the Telecom companies which is equivalent to banks to entice people to save on their own using technology such as mobile technology.

5.4 Limitations of the Study

- The study is limited by time and resource constraints because for a study of this nature bigger sample size are required and a substantial amount of time and money is needed to achieve such a target.
- It was difficult for the respondents to disclose accurate information about their income due to the activities of fraudsters, but I was able to convince them since I always supply some of them goods so I was able to get some information from them.

5.5 Direction for Further Studies

The study examined savings behaviour and its effect on trade activities among market women in the Ejisu municipality; the role of technology. It is recommended that future research should:

- Expand the scope to other market women within Ashanti region in order to find out the savings behaviour and its effect on trade activities among market women the role of technology.

REFERENCES

Agarwal, R., & Prasad, J. (1998a). A conceptual and operational definition of personal innovativeness in the domain of Information technology. Information *System Research, 9*(2), 204- 215.

Ahmed, M. S. (2007). *Management in living for senior secondary schools* (2nd ed.). Ghana, Kumasi: Bayoba Graphics Limited.

Aryeetey, E., & Gockel, F. A. (1998). *Mobilizing domestic resources for capital formation in Ghana:* The role of informal financial sectors, AERC research paper 3.

Asiedu, R. (2011). *Current economics: National income concepts*. Ghana: Kumasi.

Aizcorbe, A. M., Kennickell, A. B., & Moore, K. B. (2003). Recent changes in U.S family finances: evidence fromm 1998 and 2001 survey of consumer finances. *Federal Reserve Bulleting, 89*(January), 1-32.

Banks, J., Cormac O'Dea, & Zoë, O. (2009). Cognitive function, numeracy and retirement saving trajectories. *Economic Journal 120* (November): F381-F410.

Blumberg, B. (2008). *Business research methods.* Berkshire: McGraw-Hill Higher Education.

Bosworth, B. (2003). *Saving and Investment in a Global Economy*. Washington: Brookings Institution.

Carter, L., & Belanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal, 15*(1), 5-25.

Chau, P. & Hu, P. (2001). Information technology acceptance by individual professionals: A model of comparison approach. *Decision Sciences*, *32*(4), pp.699-719.

Chau, P. Y. K. (1996). An empirical assessment of a modified technology acceptance model. *Journal of Management Information Systems, 13*, 185-204.

Chowa, G., Ansong, D., & Rainier, M. (2010). *Assets and child well-being in developing countries*. Children and Youth Services Review.

Corbetta, P. (*2003*). *Social research theory methods and techniques*. London: SAGE Publications Ltd.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-339.

Davis, F. D., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology, 22*(14), 1111-1132.

Davis, F. D., Bagozzi, P. R., & Warshaw, P. (1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*, 982-1003.

Deaton, A. (2010). Growth and saving: What do we know, what do we need to know, and what might we learn. A research programme in development studies. Princeton: Princeton University.

Dell'Amore, G. (1983). Household propensity to save. In Arnaldo Mauri (ed.), *Mobilization of household savings, a tool for development.* Finafrica, Milan.

Domeher D., Frimpong M. & Appiah T. (2013) *Adoption of financial innovation in the Ghanaian banking industry.* African Journal Online. Available at http://www.ajol.info/ index.php/ifep/cart/view/23668/20166 (accessed 13 September 2018).

Ervasti, M. & Helaakoski, H. (2010). Case study of application-based mobile service acceptance and development in Finland. *Int. J. Information Technology and Management, 9*(3), 243-259.

Ervasti, M. A. (2007). The development of mobile service concepts - technologies, adoption and use', Master's thesis, University of Oulu, Department of Electrical and Information Engineering, Finland.

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research.* MA: Addison-Wesley.

Ghana Statistical Service (2008). *Ghana living standards survey*. Report of the Fifth Round (GLSS5).

Ghana Statistical Service (2017). *Annual inflation rate.* Accra: GSS.

Green, S. B. (1991). Multivariate behavioural. *Research*, *26*(3), 499-51.

Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications, 36*(9), 11605-11616.

Honohan, P. & King M. (2012). *Causes and effect of financial access: cross country evidence from the finscope surveys.* Cambridge: MIT Press.

Higgins, M., & Williamson, J. (2006). *Asian demography and foreign capital dependence, NBER Working Paper 5560*. Massachusetts: National Bureau of Economic Research.

Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly, 23*(2), 183-213.

Kim, G., Shin, B. & Lee, H.G. (2009).*Understanding dynamics between initial trust and usage intentions of mobile banking.* Information Systems Journal, 19(3), 283-311.

Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers take up of mobile banking services. *International Journal of bank marketing, 28*(5), 410-432.

Jack, W. & Suri, T. (2010). Mobile money: The economics of M-Pesa", NBER

Working Paper Series National Bureau of Economic Research 1050

Massachusetts Avenue Cambridge, MA 02138

Karlan, D., & Morduch, J. (2009). *Access to finance: Ideas and evidence*. New York: Financial Access Initiative.

Keynes, J. M. (1936). *The general theory of employment, interest and money*. Hampshire England: Palgrave Macmillan.

Lee, E. J., Kwon, K. N., & Schumann, D. W. (2005). Segmenting the non-adopter category in the diffusion of internet banking. *The International Journal of Bank Marketing, 23*(4), 414-37.

Leff, N. H. (2009). Dependency rates and saving. *The American Review, 59*(5), 886 – 896.

Lillard, L., & Karoly, L. (1997). *Income and wealth accumulation over the lifecycle.* Manuscript, RAND Corporation.

Lipsey, G. R., & Harbury, C. (2004). *First principles of economics* (2nd ed.). Oxford University Press.

Loayza, N., Schmidt-Hebbel, K., & Serven, L. (2000). What drives private savings around the world? *The Review of Economics and Statistics, LXXXII* (2), 165-181.

Mandell, L. (1977). Diffusion of EFTS among National Banks. *Journal of Money, Credit and Banking*, *9*(2), 341– 348.

Mas, I., & Morawczynski, O. (2009). *Designing mobile money services: Lessons from MPESA*. Boston: Massachusetts, USA.

Maurer, B. (2012). Mobile money: Communication, consumption and change in the payments space. *Journal of Development Studies, 48*(5), 589-604.

McKinnon, R. I. (1973). *Money and capital in economic development.* Washington: The Brookings Institution.

Miller, R. & VanHoose, D. (2008). *Money, banking and financial markets*. Mason, Ohio: Cengage Learning.

Modigliani, F. (1970). The life cycle hypothesis of saving and intercountry differences in the saving ratio. In W. Eltis, M. Scott, & J, Wolfe, (Eds.). *Induction, growth, and trade*. London: Oxford University Press.

Modigliani, F. (1988). The role of intergenerational transfers and the life-cycle saving in the accumulation of wealth. *Journal of Economic Perspectives, 2, 1988.*

Mugenda, A. (2008). *Quantitative and qualitative approaches.* Nairobi Africa Centre for Technical Studies.

Ngendakuriyo, F. (2014). *Household saving mobilization across EAC Countries. An exploratory analysis in financial sector development and regionalization project.* Arusha: Tanzania.

Ogaki, M., Ostry, J., & Reinhart, C. (2006). Saving behavior in low- and middle-income developing countries. *Staff Papers, International Monetary Fund, 43*, 38-71.

Ouattara, B. (2005). Modelling the long run determinants of private investment in senegal, Credit Research Paper, Centre for Research in Economic Development And International Trade, pp: 8846. University of Nottingham, pp: 04.

Ouma, S.A, Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Review of Development Finance 7*(1).

Paroush, J., & Ruthenberg, D. (1986).Automated Teller Machines and the Share of Demand Deposits in the Money Supply, the Israeli Experience. *European Economic Review, 30,* 1207 - 1215.

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce, 7*(3), 69-103.

Pollack, K., & Heighberger, E. (2002). *The real life investment guide*. Toronto: McGraw Hill.

Porter, S. (2008). Validity, trustworthiness and rigour: Reasserting realism in qualitative research. *Journal of Advanced Nursing, 60,* 79–86

Sanchez-Franco, M., & Roldan, J. (2005). Web acceptance and usage model: A comparison between goal-directed and experiential web users. *Internet Research, 15*(1), 21-48.

Saunders, A. (2009). *Wired for innovation: how information technology is reshaping the economy.* Cambridge: The MIT Press.

Serven, L., & Solimano, A. (2006).Saving and investment: paradigms, puzzles, policies. *World Bank Research Observer, 11,* 87-117.

Servon, J., & Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of Consumer Affairs, 42*(2), 271-305.

Shaw, E. (1973). *Financial deepening in economic development.* New York: Oxford University Press.

Siau, K., Lim, E. & Shen, Z. (2001). Mobile commerce: Promises, challenges and research agendas. *Journal of Database Management, 12,* 3, 310.

Siddik, M. (2014). Financial inclusion through mobile banking: A case of Bangladesh. *Journal of Applied Finance and Banking, 4*(6), 109.

Singh, T. (2009). Does domestic saving cause economic growth? A time – series evidence from India. *Journal of Policy Modeling, doi:10.1016/j.jpolmod.2009.08.008*

Sivapragasam, N., Agüero, A., & Silva, H. D. (2015). The potential of mobile remittances for the bottom of the pyramid: findings from emerging Asia. Info-*The Journal Of Policy, Regulation and Strategy for Telecommunications, 13*(3), 91-109.

Sun, H., & Zhang, P. (2003). A new perspective to analyze user technology acceptance. *Working Paper*, Syracuse University.

Surendran, P. (2012). Technology acceptance model : A survey of literature. *International Journal of Business and Social Research, 2*(4), 175–178.

Tashakkori, A. & Teddlie, C. (2003). *Handbook of mixed methods in social & behavioral research.* Thousand Oaks: Sage.

Taylor, S. & Todd, P. A. (1995). Assessing IT usage. *MIS quarterly, 19*, 561-570.

Taylor, S., Katie, H., Takeuchi, L., & Reed, S. (2017). Mapping the daily media round: novel methods for understanding families mobile technology use" *Learning, Media and Technology, 43*, 1-15.

Tobbin, P. (2012). *Towards a model of adoption in mobile banking by the unbanked: a qualitative study*. London: Sage.

Van der Heijden, H. (2000). Using the technology acceptance model to predict website usage: Extensions and Empirical Test. *Serie Research Memoranda, 5,* 88-80.

Venkatesh, V., Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science, 46*, 186-204.

Venkatesh, V., Morris, M. G, Gordon, B., Davis, F., & Davis, D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly,* 425-478.

Warneryd, K. E. (1999). *The psychology of saving: A study on economic psychology*. Cheltenham, UK: Edward Elgar.

Weirich, J. L. (1983). *Personal financial management*. Scott, Foresman & Company, USA.

Yin, K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks: Sage Publications.

Zhou, L., Dai, L. & Zhang, D. (2007). Online shopping acceptance model — A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, *8*(1), 41-62

APPENDICES

APPENDIX A

Questionnaire

I am a student at the Department of Economics Education of the University of Education, Winneba reading a degree programme in Master of Science (Economics). As an academic requirement in partial fulfilment for the award of the degree, I'm conducting a research on the topic **"the role of technology on Savings behaviour among market women in Ejisu Municipality:".**

Therefore, I will be grateful if you could answer the questions below to enable me successfully conduct the study. The information given is purposely for academic study and will be treated with utmost confidentiality.

DEMOGRAPHIC INFORMATION

1. Age …….

2. Educational level: None [ ] Basic [ ] Secondary [ ] Tertiary [ ] others specify…….

3. Marital status: Single [ ] Married [ ]

4. Employment Status Employed [ ] Unemployed [ ]

5. What type of economic goods do you trade in? ……

6. How much on average do you earn in a month? …….

7. Household size: ……..

8. Do you own bank account? Yes [ ] No [ ]

9. If NO why?
…….

10. Which of the following financial transaction(s) do you perform with bank?

a) Money tranfers [ ]
b) loans [ ]
c) savings and deposits [ ]
d) None of the above [ ]

11. Which of the following do you use in undertaking financial transaction like savings?

a) Mobile technology [ ]
b) ATM [ ]
c) Debits and credit cards [ ]
d) None of the above [ ]

12. How much do you save averagely in a month?
……

13. Do you find the usage of these technologies reliable in making financial transaction?

Yes [ ] No [ ]

14. Do you have knowledge and skillsets in reading and understanding the financial products on the market using technology in making transactions? Yes [ ] No [ ]

15. If no, who helps you in understanding the financial product?

a) Son/Daughter [ ]
b) Spouse [ ]
c) Friend [ ]
d) mobile money agent [ ]
e) Others
specify……

……

The questions below are based on a scale of 1 to 5. With 1 being the lowest rating and 5 being the highest rating, please rate the extent to which you agree with the following statement.

16. To what extent do you perceive the ease of using technology for making financial transaction like savings?

1	2	3	4	5

17. To what extent do you find the transactional cost of using technology for making financial transaction less expensive?

1	2	3	4	5

18. To what extent do you trust financial service providers to keep records when you perform financial transaction with technology?

1	2	3	4	5

19. What role does technology plays on trade activities among market women?
……

……
……

20. What are the challenges you face as a trader when using technology to undertake financial transaction like savings?

……
……
……
……
……
……

21. Give any suggestions to help improve the technology system in order to help improve savings among women in the district?

……
……
……

Thank you!!!

APPENDIX B

Logistic regression

		Number of obs =	250
		Wald chi2(10)=	31.47
		Prob > chi=	0.0005
Log pseudolikelihood = -43.431315		Pseudo R2 =	0.2967

FINANCIAL_TRANSACTION	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
USING_TECHNOLOGY	1.434522	.7003996	0.74	0.460	.5509494	3.735106
basic	3.86338	3.359811	1.55	0.120	.7026111	21.2432
sec	.7105281	.5259079	-0.46	0.644	.1665527	3.031173
tert	.8670607	.984557	-0.13	0.900	.0936485	8.027831
AVERAGE_INCOME	1.000665	.000264	2.52	0.012	1.000148	1.001183
FAMILY_SIZE	1.62073	.2253012	3.47	0.001	1.234193	2.128325
FINANCIAL_TRUST	1.75856	.6001716	1.65	0.098	.9008533	3.432892
TECHNOLOGY_COST	.4676261	.2793175	-1.27	0.203	.1450334	1.50775
mar	.2392791	.1475865	-2.32	0.020	.071431	.8015355
lit	1.974429	1.365725	0.98	0.325	.5089325	7.659898
_cons	.4100413	.9731763	-0.38	0.707	.003914	42.95727

Note: 0 failures and 2 successes completely determined.

. mfx

Marginal effects after logistic

y = Pr(FINANCIAL_TRANSACTION) (predict)

= .98905913

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]	X
USING_~Y	.0039046	.00621	0.63	0.529	-.008258 .016067	3.72653
basic*	.0153916	.01243	1.24	0.215	-.008962 .039745	.485714
sec*	-.0040287	.00987	-0.41	0.683	-.023379 .015322	.257143
tert*	-.0016479	.01386	-0.12	0.905	-.028819 .025523	.036735
AVERAG~E	7.19e-06	.00000	1.97	0.049	3.5e-08 .000014	3188.57
FAMILY~E	.0052253	.00382	1.37	0.171	-.002258 .012708	5.69388
FINANC~T	.0061085	.00562	1.09	0.277	-.004906 .017123	4.26122
TECHNO~T	-.008225	.00811	-1.01	0.310	-.024115 .007665	4.00816
mar*	-.0100932	.00822	-1.23	0.219	-.026202 .006016	.861224
lit*	.0086863	.01215	0.71	0.475	-.015136 .032509	.722449

(*) dy/dx is for discrete change of dummy variable from 0 to 1