ASSESSING THE EFFECTS OF FINANCIAL LITERACY ON RETAIL STOCK MARKET PARTICIPATION IN ZAMBIA. A CASE OF INDO ZAMBIA BANK.

BY

PAUL BULE

A Dissertation submitted to the University of Zambia in partial fulfilment of the requirements of the degree of Masters in Strategic Management.

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DECLARATION

I, **Paul Bule** do hereby declare that this work is my original work achieved through personal reading and research. This work has never been submitted to the University of Zambia or any other Universities. All sources of data and literature on related works previously done by others, used in the production of this dissertation have been dully acknowledged. If any omission has been made, it is not by choice but by error

Signature: ----------------------------   Date ------------------------------

APPROVAL

This dissertation by Paul Bule is approved as fulfillment of the requirements for the award of the degree of the Masters in strategic management.

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Chairperson Board of examiner	Signature	Date
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ABSTRACT

Generally, shares offer better average returns than one can achieve from alternative investment products such as bonds and savings accounts. However, the participation of retail investors on the stock market (share ownership) by adult Zambians was found to be very low, standing at 0.3% of all financially included as per survey conducted in 2017.Low financial literacy levels have been cited as the main reason for poor stock market participation among retail investors elsewhere. As such, the study undertook to understand whether low levels of financial knowledge impede on retail stock market participation. The key objectives were to examine the state of financial literacy in Zambia, identify the leading factors in financial literacy and to establish the effect of the leading financial literacy factors on stock market participation. With a randomly selected sample size of 175 among employees of Indo Zambia Bank to whom a structured questionnaire was administered, the study used SPSS and employed the Binary logistic regression framework to analyze the data. The study finds elevated levels of financial knowledge among participants with average scores on financial literacy and stock market questions standing at 83.9% and 71.3%, respectively. Despite heightened levels of financial literacy among the studied adult Zambians, stock market participation was found to be very low and stood at only 11.2%. Nonetheless, 70% of the non-shareholding participants indicated intentions or plans to do so in the future. Using gender, age, education, income level and one's social network as correlates of financial literacy as per empirical literature and surveys elsewhere, the study finds that all the aforementioned mattered in the decision to participate in the stock market except for the level of education. In particular, Income level was found to be the most important factor, followed by age, social networks and gender. In view of a better participation rate, and in this regard among an overly financially literate sample compared to the national figure, the results in this study provide evidence of the positive relationship between financial literacy and its correlates on stock market participation.

Key words: *financial literacy, stock market, participation, Zambia.*

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LIST OF ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
BoZ	Bank of Zambia
EFA	Exploratory Factor Analysis
FDI	Foreign Direct Investment
FinLit	Financial Literacy
FSDP	Financial Sector Development Plan
GDP	Gross Domestic Product
IFC	International Financial Corporation
IPO	Initial Public Offering
KMO	Kaiser-Meyer-Olkin
LASI	LuSE All Share Index
LuSE	Lusaka Securities Exchange
MoF	Ministry of Finance
NFIS	National Financial Inclusion Strategy
NGOs	Non-Government Organizations
NSFE	National Strategy on Financial Education
OECD	Organization for Economic Co-operation and Development
PCA	Principal Component Analysis
SEC	Securities Exchange Commission
SPSS	Statistical Package for Social Sciences
ZMW	Zambian Kwacha

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

This study provides an assessment of the impact of financial literacy in influencing the decisions of individual investors in participating in the stock market in Zambia. Financial literacy is taken to mean knowledge of the existence of the stock market, how it operates, how one can go about buying shares of a particular company, and the potential returns as well as risks associated with such choices. It focuses on the individual investor and makes use of Indo Zambia bank as a case in point with particular attention to its employees as primary units of inspection.

In what follows, this chapter starts with providing the background of the study covering the importance of the stock market in general as well as trends and overview of the stock market in Zambia. Based on the background of the research, the statement of the problem is formulated where an overarching question necessitating this study is asked. The rest of the chapter contains the research's objectives, questions, aim, significance and the scope.

World over, national economies have long been making progressive efforts aimed at developing and deepening the financial sector. Broadly, the financial sector or market is just a mechanism whose fundamental economic function is facilitating the transfer of funds from savers and lenders to the borrowers and spenders (Mishkin, 2004). The stock market is one of the most significant submarkets of the financial sector, which receives a lot of attention from financial analysts covered in both the print and electronic media.

The stock market is important to firms as it offers them an opportunity to raise capital for expansion projects. This happens through an Initial Public Offering (IPO) during which a previously privately owned company offers stocks/shares for sell to the public for the first time. Besides, a company whose stocks are already being publicly traded on the stock market can raise funding by performing a seasoned issue, which involves issuance of additional stocks to the public (Armitage, et al., 2014).

This mechanism allows capital to be efficiently allocated among firms with productive economic projects thereby promoting investment and growth. Interestingly, funds raised through issuance of shares/stocks are much cheaper than accessing credit lines from the lenders (Botosan & Plumlee, 2002; Chen, et al., 2009; SEC, 2014).

For investors, both institutional and retail, the stock market offers a range of benefits. Primarily, it stands as an avenue for growing money through investment gains accrued over time despite short-term fluctuations in the prices of stocks (Micheal, et al., 2010). Gains from investing in stocks come in two ways. Firstly, investors receive dividend payments when companies in which the hold stocks declare profits. Secondly, the invested amount gains value when the prices of the stocks go up, of which is known as capital gains, and are largely associated with the good performance of the company (Brealey, et al., 2006).

Other benefits that stock market investors enjoy include diversification of the investment portfolio(Aslanidis & Savva, 2011; Savva & Aslanidis, 2010), tax incentives on capital gains, given they are taxed lower than regular income (Ajay & Julia, 2016) as well as helping them to manage their liquidity needs(Gaurav & Arun, 2015). Besides, the presence of the stock market encourages the attitude of saving among individual investors as the return via dividends and capital gains are usually higher than the rates banks offer on savings accounts(Cherif & Gazdar, 2010; Ebele, 2016).

The Lusaka Securities Exchange (LuSE), formerly known as the Lusaka Stock Exchange, was established in 1993 with the help of the World Bank in collaboration with the International Finance Corporation (IFC) but only opened its doors for business on February 21st, 1994 (LuSE, 2014). Fundamentally, the need to have a stock market in Zambia was born out of the need to have an enabler of easier access to resources for the private sector as a critical engine in Zambia's economic growth prospects. Other objectives included attraction of Foreign Direct Investment (FDI), encouraging share ownership among citizens as well as enabling local business to raise affordable long term funding.

Any company, whether domiciled in Zambia or not is allowed to list on the Lusaka Securities Exchange as long as it meets the stated requirements. Although there are many requirements that a company must meet before listing on LuSE, the basic and principal requirements are that the company must have a minimum subscribed capital of K 250, 000.00 and the total number of issued shares should be at least 10 million of which at least 25% should be held in public hands. In addition, LuSE demands that the number of shareholders in the company should not be less than 300 and should have 3 years of profit listing (SEC, 2017).

It is important to note that there are other companies whose shares are actively traded on LuSE but do not meet all the listing requirements. These are known as quoted or second tier companies, a category deliberately created to encourage participation on the stock market for those entities/companies that are relatively small and are still on the emergent and growing path. According to the Securities and Exchange Commission (SEC), this is done with the hope that such companies will work towards meeting the requirements thereby getting listed later on.

The first company to list on LuSE was Lafarge Zambia Plc (formerly Chilanga Cement) on May 22, 1995. Over the years, the number of company listings on LuSE has been on the rise. Figure 1.1 shows that the number of listed companies on LuSE was six-fold at 12 in 2004 from 2 in 1995. Fifteen years later, 12 more companies listed on the exchange taking the total number to 24 as at the end of December 2019.

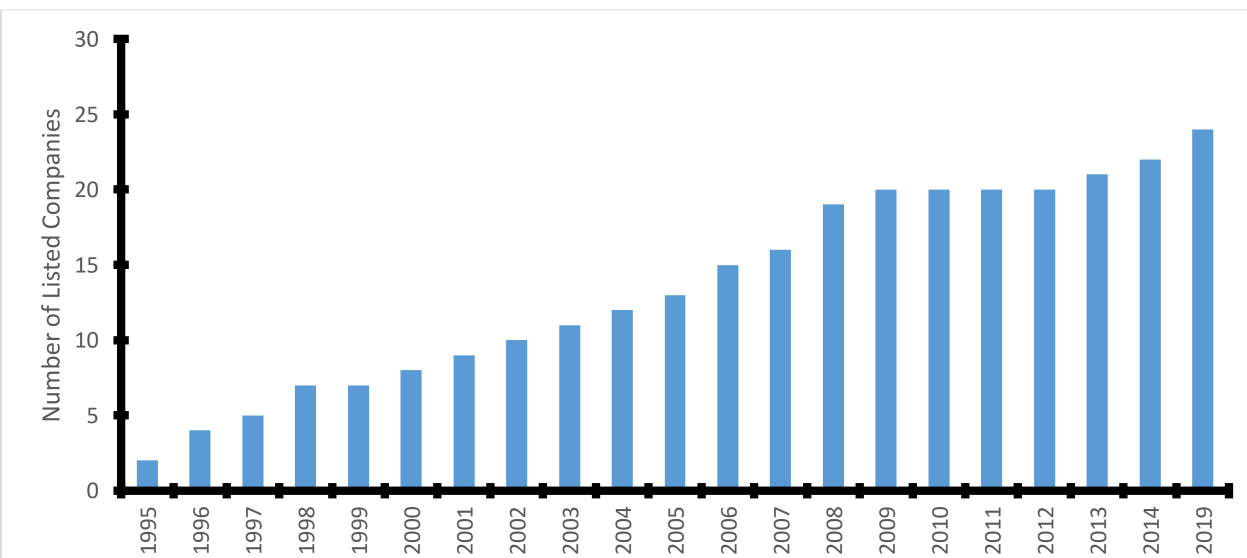

Figure 1.1: Company Listing on LuSE

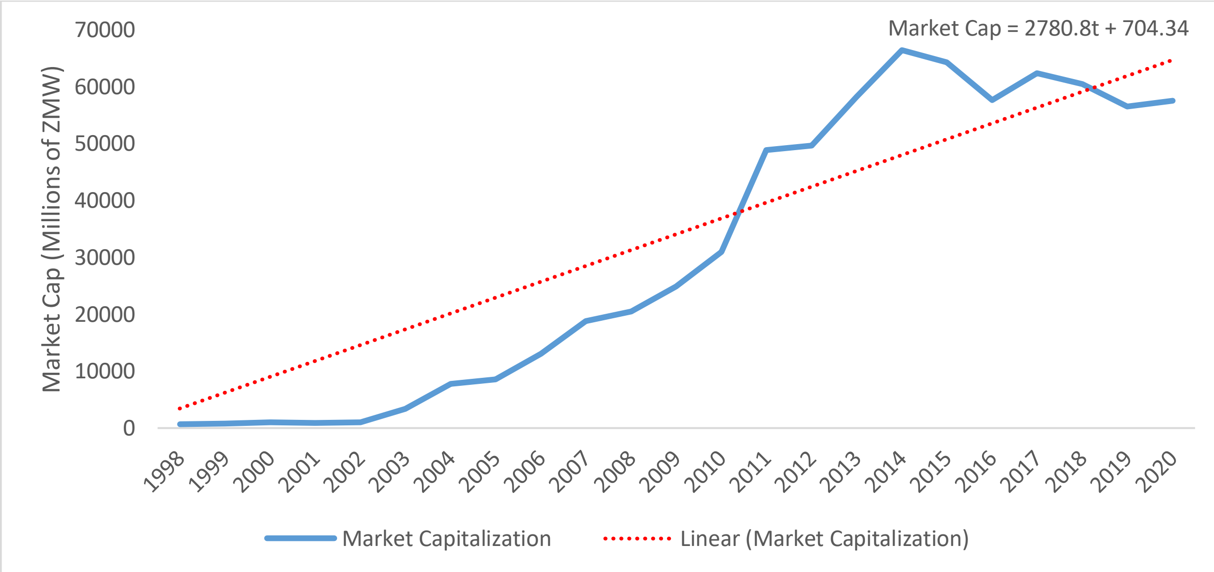

Figure 1.2: LuSE Market Capitalization Trend

In line with the increasing number of companies listing on the stock market, the market capitalization which is used as a measure of the size of the stock market has been rising. Defined as the total value of shares of all companies on the exchange (Brealey, et al., 2006), LuSE's market capitalization rose to an average of ZMW 0.90 billion between 1998 and 2002 to ZMW 5.9 billion between 2016 and 2020. The increase in the size of LuSE has been due to both an increase in the volume of shares floated on the exchange and the price of the shares as tracked by the LuSE All Share Index (LASI) which, according to data from SEC (2017), rose to 5327.58 at the end of 2017 from a base value of 100 in 1997.

Companies that are listed on LuSE come from various sectors of the economy but those from the manufacturing sector dominate standing at 5 followed by those from the banking sector with 3 listed companies. The energy, mining, investments, agricultural processing and retail trading sectors each have 2 listed companies while sectors of finance, insurance, mobile telecommunication, oil marketing, hospitality and property have 1 listed company respectively.

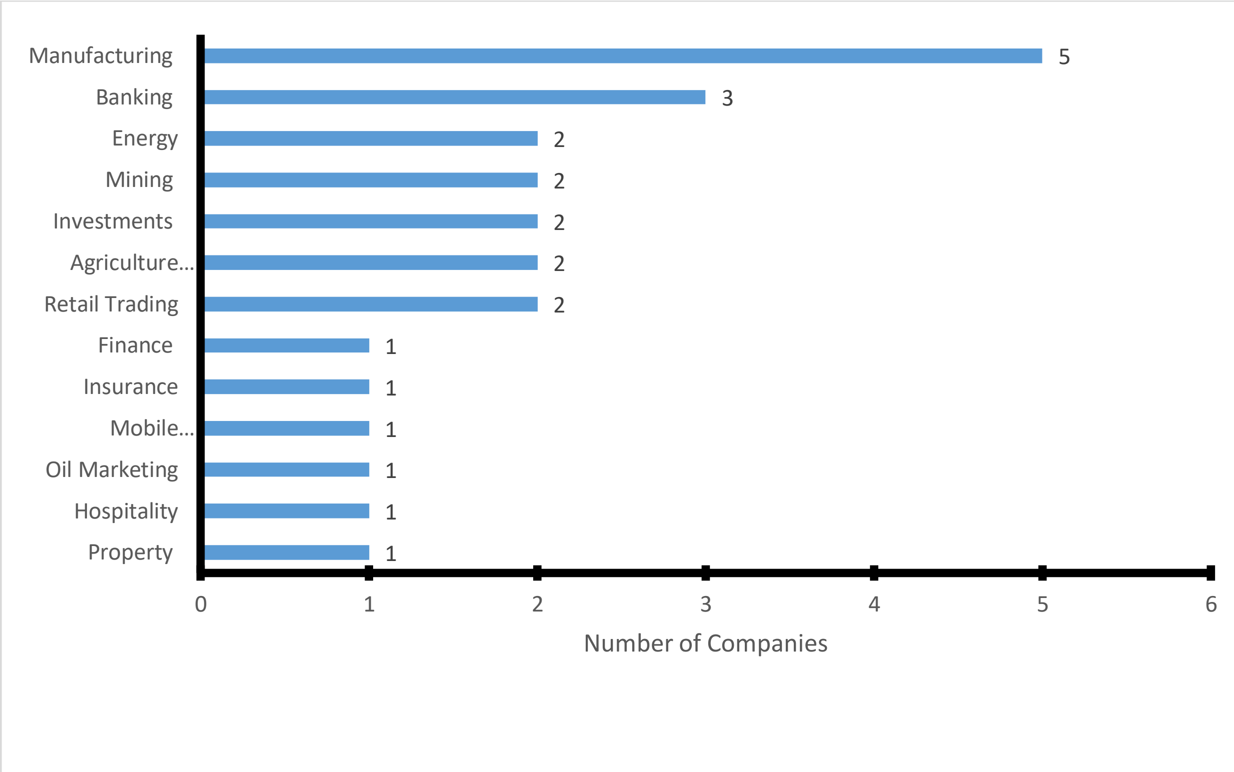

Figure 1.3: Sectoral Distribution of Listed Companies

Buying of shares by investors on LuSE is done through a stockbroker whose choice is purely left to the investor. Stockbrokers are firms licensed by Zambia's Securities and Exchange Commission (SEC) to buy and sell shares on behalf of the investor. Once an investor identifies a stockbroker through whom they want to invest, they are required to open an account with them. Although the brokerage fee can be negotiated especially for high valued transactions, stockbrokers are guided by LuSE to charge a standard brokerage fee of 1.375%of the transaction's total value (SEC, 2017).

Though the liberty of which stocks to buy is left to the investor, stockbrokers also offer advice on what stocks are performing well on the exchange. Once the broker finds the stocks demanded by the investor and the transaction is successfully executed, it takes an average of three business days for stock ownership to be formally changed to the new owner (ibid).

At the same time, LuSE has also seen increased trading activity commensurate with the increasing size of the stock market. Figure 1.4 below shows the value of traded shares as a percentage of the market capitalization. As can be seen, market activity has improved from an average of less than 2% between 2002 and 2013 to 9.5% between 2016 and 2020. This shows that, over time, LuSE has become a relatively more liquid market thereby indicating that those holding stocks now find it easier to sell them(Odera, 2012).

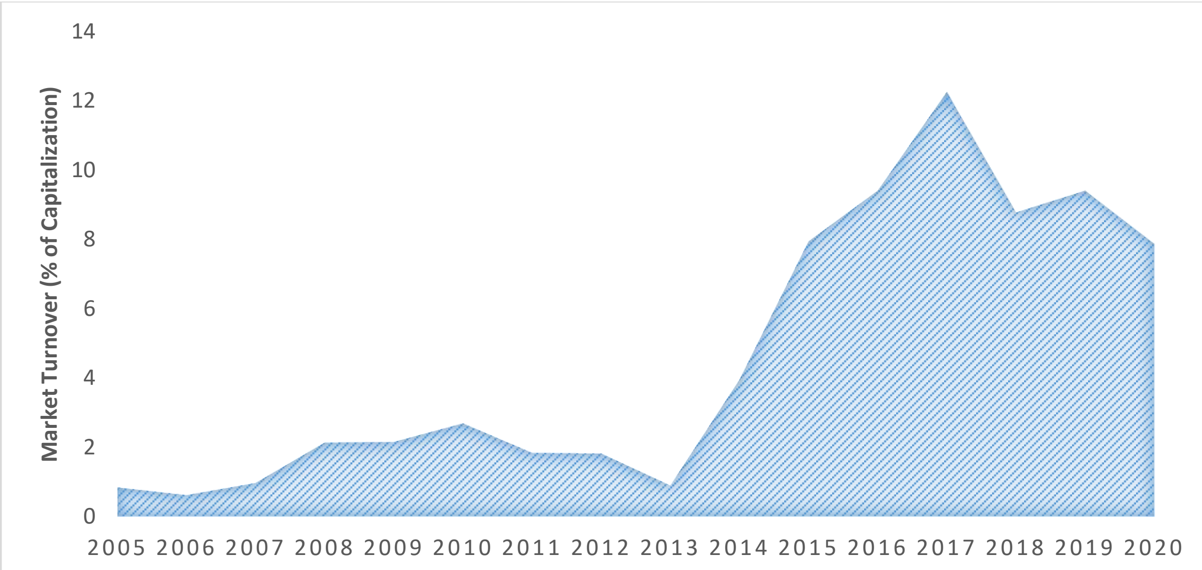

Figure 1.4: Evolution of Market Activity on LuSE

Participation in the stock market especially by retail investors is one critical area of financial inclusion that has become a topic of great concern amongst not only scholars but also policy makers and other stakeholders from different spheres. This is particularly so in less developing countries where financial inclusion is relatively lower than that in developed countries. While others have, in the past, narrowly thought of financial inclusion as mere ownership of a bank account(Allen, et al., 2016), it broadly refers to all initiatives that make formal financial services available, accessible and affordable to all segments of the population(AfDB, 2013).

Parthadwan (2017) contends that in the light of complex growth in financial products, financial inclusion and financial literacy go together such that without the right information, people are less likely to invest in the financial market. Therefore, in order for a person to make the decision to use and appreciate financial products and services, one must be aware of the existence of these products, not only aware but also have an understanding of how these products and services work. In other words, one must be financially literate (Grohmann, 2018).

According to Welsh (2010), financial literacy is the ability to correctly read, analyze, manage and communicate financial material. She views a financially literate person as one who is able to plan for future events, and make every day financial decisions. When people are well educated on financial matters, they find the motivation and are encouraged to participate in the financial market through utilization of the offered products (Van Rooij, et al., 2011; World Bank, 2017; FINCA, 2019).

Zambia has made significant strides towards financial inclusion, with the percentage of the adult population who are financially included rising to 59.3% in 2015 from 37% in 2009(FinScope, 2015) and 21.3% in 2005 (World Bank, 2017). This achievement follows commitment and efforts from government, private sector players and other stakeholders aimed at raising awareness on the importance of participating in the financial market in securing favorable financial results for themselves.

At national level, the National Strategy on Financial Education (NSFE) is the main driver of these efforts through the Financial Sector Development Plan (FSDP) and the National Financial Inclusion Strategy (NFIS) (Ministry of Finance, 2017). Predominantly, financial sector awareness programs involve financial literacy activities by various stakeholders such as SEC, LuSE, Banks and NGOs among others through different media and platforms. A study by the World Bank (2017) indicates that the financial literacy score among adult Zambians falls into the medium category at 3.7 out of a maximum of 7.

1.1 Statement of the Problem

Although progress has been made in financial inclusion amid continued financial literacy activities, the proportion of adult Zambians who participate on the capital market remains very low. According to SEC (2017), only 0.3% of the financially included adult Zambians participate on LuSE through share ownership. This is despite the mean return on stock ownership being generally higher than on other alternative investment products (Mankiw & Zeldes, 1991; Haliassos & Bertaut, 1995; Guiso, et al., 2003; SEC, 2017).

Elsewhere, low participation on the stock market has been blamed on low levels of financial literacy especially in developing countries (Grinblatt & Keloharju, 2009; Balloch, et al., 2014; Grohmann, 2018). There is evidence in empirical literature that better financial knowledge is positively correlated with stock market participation (Van Rooij, et al., 2011; World Bank, 2017).

Although the case of low financial literacy levels has previously been cited by (LuSE, 2014)and (SEC, 2017), there is no empirical study in Zambia which has validated these claims amid increasing financial education activities by different stock holders and World Bank's (2017) classification of adult financial literacy level as medium. As such, an important question with regards stock market participation among retail investors arises; is low financial literacy the reason why there is low uptake of stock market products from individual adult Zambians?

1.2 Aim of the Research

The aim of this study is to assess the effect of financial literacy on stock market participation by individual investors on LuSE.

1.3 Research Objectives

The following are the objectives this study undertakes to achieve;

I. To examine financial literacy in a segment of Zambia.
II. To identify the leading factors in financial literacy that enable investors participate on the stock market.
III. To establish the effect of the leading financial literacy factors on stock market participation.

1.5 Research Questions

I. What is the level of financial literacy amongst Employees at Indo Zambia Bank?
II. What are the factors that contribute to financial literacy?
III. What effect do the factors that influence financial literacy have on stock market participation by individual investors in Zambia?

1.6 Significance of the Research

Given the importance of the stock market to investors, companies and the overall economy as an enabler of efficient resource allocation, the significance of this study cannot be overemphasized. Amid increased activity on financial education as far as the stock market is concerned, the findings in this study will be beneficial to policy makers and other stakeholder in shaping policy and efforts aimed at encouraging participation of individual investors on the stock market.

The findings of this study will be useful to various industry stakeholders among them the Capital Markets Authority, The Lusaka Securities Exchange, Academia, Policy Makers and individual retail investors among many others. The Capital Markets Authority, which is tasked with supervision, licensing and monitoring the activities of market intermediaries will find the results of this study useful, as stock market participation levels are an indicator of a well-functioning capital market in any country. It will also provide a clear indication, whether there is a need for thorough collaboration with other market stakeholders to implement a comprehensive awareness and public education programme that targets both supply and demand of securities. Reviewed studies have recommended that it should implement a specialized proficiency certification programme targeting both the market intermediaries and the public to enhance financial literacy.

This research paper will make a contribution to academia as it extends current research on the effects of financial literacy on stock market participation. This study, sought to establish the nature of the relationship between financial literacy and stock market participation. The researchers and academicians will find this study useful for further discussion and research so that they can explore and further develop their studies on financial literacy and stock market participation. The study will help tertiary education institutions in understanding the significance of financial literacy. It will also help academicians in evaluating the relevance of curriculum taught in business schools to the actual business world.

Financial institutions such as stock brokerage firms, asset managers and investment banks will understand financial literacy effect on stock market participation. As intermediaries between the LuSE and retail investors, they will formulate targeted financial literacy programmes, especially on stock market and its dynamics to enable understanding of investing in various financial assets. Retail investors will find the results of this paper useful, as it will indicate their level of financial literacy and identify areas that they need to improve on. This has the potential of increasing stock market participation especially by local investors, unlike the current situation, which is largely dominated by foreign investors. LuSE stands to benefit as levels of participation in stock markets is a good indicator of a well performing securities exchange. Recommendation from this study will help improve the low levels of stock market participation among retail investors in Zambia, and hopefully see the number of firms listing on the LuSE increase.

1.7 Scope of the Research

This study particularly focuses on assessing the role of financial literacy in explaining individual investor participation on LuSE by adult Zambians. Utilizing primary data collected in 2020, it uses Indo Zambia bank employees as a case study across their entire branch network countrywide. The analysis is limited to data as furnished by the respondents who participated in the study.

1.8 Outline of the Dissertation

Having provided the introduction in this chapter, the rest of the dissertation is organized as follows: In chapters, two and three, empirical and theoretical literature related to this study is reviewed respectively, thereafter the conceptual framework, while chapter four explains the methodology. The findings of the study together with the discussion of the results are presented in chapter five. Lastly, the summary of the study, conclusion and recommendations are given in chapter six.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Having introduced the study in terms of the background, the problem under investigation and the scope in the foregoing chapter, this chapter provides a review of literature, which is of particular interest to this study. In the first part, and in line with research questions, the empirical literature first focuses on the state or level of financial literacy globally, then the developing world (Africa in particular) and lastly Zambia. Subsequently, it delves into what the determinants of financial literacy are as well as how those factors together with financial literacy influence the likelihood of participating in the stock market at an individual level. In the second part, three theories are reviewed explaining financial literacy, what pushes people to pursue or not to pursue it as well as the role it plays in the utilization of financial products.

2.1 Financial Literacy from a Global Perspective

At global level, the Standard and Poor's (S&P) Financial Literacy (FinLit) survey is currently the largest and most comprehensive single undertaking that covers the largest proportion of countries in the world. Latest results from this survey indicate low levels of financial literacy at a global level with only 33% of the adult population found to be financially literate (Klapper, et al., 2015). This result implies that many of the adults who use financial products do not have adequate understanding of what they consume as observed by (Lusardi & Mitchell, 2011) and that access to financial products is in itself not an end in ensuring financial literacy among adults (Demirguc-Kunt, et al., 2015).

Despite financial literacy levels being as aforementioned, there are a number of variations among different country groupings and sub-categories of individuals. At country level, financial literacy levels are higher in advanced economies (high income) than in their emerging or developing counterparts (Klapper, et al., 2015). Even then, there are disparities either within or across regional groupings. For example, financial literacy scores in Africa and Asia (excluding China) average 33% and 32% while those in the EU block and the US stand at 50% and 57% respectively. However, this is not true from an individual country perspective because Portugal and Italy who are advanced economies have lower financial literacy levels at 26% and 37% respectively compared to Botswana's 52% or even South Africa's 42% (Klapper, et al., 2015).

However, and more generally, the poor and women are more financially illiterate than their richer and male counterparts are and these gaps cut across different economies (Lusardi & Mitchell, 2014). Globally, the level of financial literacy among men stands at 35% while that of women is 5 percentage points adrift of their male counterparts' at a figure of 30% (Klapper, et al., 2015). As such, observed differences from the income level or poverty lens do not only explain why financial literacy levels are higher in advanced economies but also reveals the existence of such disparities between different segments of populations within specific countries. In addition, it is noted globally that among the different basic financial concepts, inflation and numeracy are the most understood among individuals who are financially literate while risk and its diversification rank the lowest (Klapper, et al., 2015).

2.2 Financial Literacy Landscape in Africa

In the foregoing section, it was noted that developing economies lag their developed counterparts in financial literacy. Among all the seven continents in the World, Africa ranks the lowest in financial literacy in mirror of other measures of economic progress (Klapper, et al., 2015). With exception of Botswana which is competing with most affluent countries in advanced economies at 52% as earlier indicated, literacy levels in countries like Somalia and Angola are highly concerning at 15% and 17% respectively.

This sorry picture is true even in the case of some of the leading economies on the continent like Nigeria (26%) and Egypt (27%) and in part, underlies lack of any relationship between income and financial literacy among countries falling below the median GDP per capita level. In countries like Mozambique and Malawi, the problem is as deep as lack of knowledge, among many people, of the existence of financial products such as loans, savings accounts and insurance (Xu & Zia, 2012). Based on this, many have attributed high rates of financial exclusion in Africa to low financial literacy levels (Refera, et al., 2016).

Arguably, it is almost impossible to have an exhaustive list of explanations as to why this is the case but a number of plausible explanations do exist for this disparity based on several studies that have been conducted on the continent. The first major impediment to achieving competitive levels of financial literacy in Africa lies in the low levels of education in general. Up until most recently, financial concepts in the education systems of most African countries were being introduced in schools during advanced grades by which time a good number of learners may have dropped out of the formal school system (Messy & Monticone, 2012). Even in current times, the OECD (2013) notes that insufficient human expertise and other resources are among key challenges.

Given low school progression rates in developing countries, Africa inclusive, a larger pool of the population is in most cases unreachable as regards financial education. In fact, the picture of financial illiteracy is sorrier in rural areas (Sholpan & Lyazzat, 2017) that house the majority of the population in Africa. Outside the formal school systems, attempts to reach out to a wider audience are usually concentrated in urban centers and mostly in official languages not understood by many.

While poverty is widely looked at as a result of lack or low financial literacy across the globe (Refera, et al., 2016), it also can act as a hindrance. To start with, and as was already indirectly touched on in the preceding paragraph, poverty constrains access to financial education as it is mostly offered through formal educational channels that the majority poor do not access due to affordability concerns. Even in cases where they access financial education, it is reported to be mostly of inferior standard and insufficient (Piprek, et al., 2004).

In some cases, the problem of low literacy levels in developing countries is compounded by the fact that financial service providers who are supposed to be in the forefront of championing financial education do shun away from the mass of the poor. Reasons like the high costs of reaching out to them, their lack of financial access capability and potentially low returns on such efforts are widely cited for such behavior (Muñoz, et al., 2013).

This lack of interaction between the suppliers of financial services and the potential consumers suggests that the majority of the poor people are financially excluded. What this entails is that such individual groupings of people do not even get a chance to learn financial concepts while consuming financial products. After all, people will almost certainly cultivate interest in learning more of something in which they are participating and this has been found to be true even in the financial literacy debate (Klapper, et al., 2015).

Notwithstanding the foregoing, African countries have seen increased policy frameworks and external interventions that are aimed at strengthening financial education for both adults and school going children. In principle and theoretically, these are targeted for the entire population but a bias towards people such as those characterized by low incomes, the financially excluded, women, youth/students, children as well as people living in rural areas and farmers is highly noticeable. Largely, intended delivery channels comprises courses or short workshops and printed material, multi-media, websites, road shows and other public events (Messy & Monticone, 2012).

However, concerns of limited effectiveness of previous interventions have been raised and partly reveal how different players in the financial literacy space may have misunderstood the problem at hand. Among the key issues identified by Linder and others are wrongly treating the financially illiterate as a homogenous group as well as lack of harmonization between key financial literacy messages and financial product and service attributes.

Another overarching issue that has been identified is that previous interventions have concentrated on enhancing financial awareness with no dimensions that invoke behavior. For example, OECD (2020) contends that concentrating on awareness alone may not create long lasting financial knowledge unless it is accompanied by strategies that enable the development of more responsible financial habits and behaviors that would improve financial sector participation on the demand side.

2.3 Financial Literacy in Zambia

In Zambia, the proportion of the adult population that is financially literate was above the world's average at 40% in 2014 (Klapper, et al., 2015). At this number, Zambia leads a number of European countries such as Serbia (38%), Italy (37%), Portugal (26%) and Turkey (24%) while elsewhere, China, Russia, Malaysia, Indonesia, South Korea, Brazil, Argentina and Mexico are among notable laggards of Zambia. In Africa, only four countries were ahead of Zambia among over forty states that participated in the FinLit survey.

A separate study conducted by the World Bank finds that adult Zambians are able to correctly answer about 3.7 or just over 50% of the 7 financial literacy questions covering interest rates, inflation, compound interest, risk diversification and the main purpose of insurance products. Notwithstanding, Zambians are reportedly faring poorly in choosing financial products and identifying better financial bargains as compared to their peers in the SADC region especially (World Bank, 2017).

The implications of having a larger population that is financially illiterate are manifesting themselves in gloomy statistics. For example, the percentage of Zambian adults who are financially included at 59.3 remains shy of the average percentage in other lower middle income countries ; only a quarter of adult Zambians try to save; more than 80% of Zambian adults are in informal debt (which is very unfairly priced) and mainly utilized by those in rural and poorest segments; only 21% of adults have heard about and know the meaning of shares; and less than 10% of adults are aware of BoZ (central bank) and its mandate (World Bank, 2017) among others.

Given the longstanding existence of such statistics as above and recognizing the importance of financial literacy/education, Zambia came up with a policy framework aimed at improving financial literacy levels in the country dubbed the National Strategy on Financial Education (NSFE) in 2012. The framework that is now in phase II covering the period 2019 to 2024 was born out of the Financial Sector Development Plan (FSDP), which is a national policy document for financial sector development in the country (MoF, 2017).

During NSFE phase I which ran from 2012 to 2017, a number of achievements were scored, and they included the integration of financial education topics in certain subjects of all general education grades (1-12); engagement of NGOs, employers and other development partners in reaching out to the adult population; piloting of financial educational programmes on small scale farmers and the wider Micro, Small and Medium Enterprises (MSMEs) especially in numerical skills and financial record keeping; and utilization of such annual commemorations as the Financial Literacy Week, Insurance Week, World Investor Day and World Savings Day (BoZ, 2018).

Despite the foregoing achievements, implementation of the NSFE has so far done little in improving financial literacy levels in the country due to a number of challenges (MoF, 2017). Among them are inadequate resources (both human and financial) channeled towards carrying out educational activities; little to no outreach to the rural population by both public and private stakeholders; limited and fragmented engagement of the general population; and lack of willingness especially from employees to attend employer-organized trainings especially in the absence of allowances. These challenges and other newly identified needs are now sought to be addressed in the current phase II of the NSFE.

2.4 Financial Literacy and Stock Market Participation

Generally, and in mirror of the financial literacy landscape, there are very few people or households that participate in the stock market even when its returns are relatively higher on average when compared to other investment alternatives such as risk-free government bonds (Mehra & Prescott, 1985). This has been widely referred to as the stock market puzzle (Mauricas, et al., 2017).In this regard, there have been attempts to establish whether there is a relationship between financial literacy and stock market participation.

A study focusing on financial literacy and stock market participation by van Rooij, et al. (2011) finds a strong positive relationship between one's financial literacy score and stock ownership. Placing financial literacy level in quartiles, the find that stock ownership is concentrated among those with high literacy (fourth quartile), while the first and second quartiles housed 8% and 15% of all stock market participants. This was true for both basic and advanced financial literacy categories even after controlling for many other determinants of stock ownership. Confirmation of the foregoing observation is seen in other studies

In this regard, Guiso and Jappelli (2005) and Graham, et al. (2009) have concluded that low levels of stock ownership among households are a mirror of generally low financial literacy levels. After all, it is highly unlikely for households that are aware of their limited investment skills to have any funds invested in the stock market (Campbell, 2006). This is because just like many other financial decisions that people make whether for the short or long term, participation in the stock market requires knowledge of how to do so, what to expect under different circumstances as well as what the potential benefits or risks are in reference to other comparable opportunities.

Even so, this is in no way suggestive that financial literacy is the only determinant of stock market participation. Some factors are demographic such as age and gender (Klapper, et al., 2015; Xu & Zia, 2012) while others are socio-economic such as income, wealth, education level and social networks (Duflo & Saez, 2003; Christelis, et al., 2010; Mitchell, 2015; Jamie, 2019). With the aforementioned, and as shall be seen in latter sections, these factors are strong correlates of financial literacy and may not be very independent in influencing the decision of stock market participation.

2.5 Factors Affecting Financial Literacy

There is increasingly growing literature that has documented the drivers or determinants of financial literacy around the globe and these are mainly coming from the employment of the multiple regression frameworks to cross-section data from surveys. A wide range of determinants identified key demographic and socio-economic ones which include gender, age, income and education level (Grohmann, 2018; Demirguc-Kunt, et al., 2015; Klapper, et al., 2015; Lusardi & Mitchell, 2014; OECD, 2010) while others are purely social in nature such as people's social networks (Christelis, et al., 2010; Duflo & Saez, 2003; Van Rooij, et al., 2011), of which are as follows

2.5.1 Financial Literacy and Gender

The issue of the gender gap already came up in the discussion of the financial landscape with the financial literacy level among women lower at 30% as compared to 35% of men and this gap is seemingly unchanged across country income groups (Klapper, et al., 2015). Not only are women lagging men in financial skills, they also have been found to be overly unaware of many of the financial concepts on account of a larger proportion of them indicating an "I don't know" answer to many questionnaire questions (Lusardi & Mitchell, 2014; Klapper, et al., 2015).

Previously, this gender gap in financial literacy has been linked to cultural factors. A study by (Rink, et al., 2015) focusing on financial literacy gender gap and the role of culture in India finds that women in matrilineal states were more financially educated than from patriarchal ones. In qualifying this, the OECD (2013) notes that in certain cultural and societal setups, men hold primary or exclusive responsibility aspects of financial decision making and asset ownership thereby making women disinterested in issues of finance. In some cases, the gender gap reflects imbalances in education levels between men and women (Hsu, 2011) as well as institutional barriers to financial access for women that reduce opportunities for experiential learning (Muravyev, et al., 2009).

2.5.2 Financial Literacy and Age

The role of age in influencing financial literacy is a matter of debate in empirical literature, and in most cases, the relationship is not linear. For example, in a study that focused on financial literacy in OECD countries, young people (18-29 years) where found to have lower financial literacy scores and this observation is similar among those aged at least 60 years. On the other hand, those in the age 30-59 age bracket tend to have significantly higher scores in financial literacy and its elements (OECD, 2020). Generally, this suggests a positive relationship between age and financial literacy but only up to a certain age threshold, of which similar observations were found in the FinLit survey as well as Lusardi and Mitchell (2014).

While this threshold is higher in advanced economies, it tends to be lower in emerging and developing economies. For example, Xu and Zia (2012) find that the relationship between age and financial literacy turns negative at 40 and 45 years in India and Indonesia respectively. This may partly explain why the FinLit survey report indicates that relatively young people in emerging economies score higher than their older counterparts in financial literacy assessments (Klapper, et al., 2015).

2.5.3 Financial Literacy and Education Level

Apart from demographic factors of age and gender, studies have shown financial literacy differs substantially across individuals with different education levels. In particular, financial literacy levels are particularly acute among the less educated (without college education) and this is true even when one controls for other influencing variables (Mitchell, 2015; Lusardi & Mitchell, 2014; Lusardi, et al., 2012; Monticone, 2010). For example, Monticone (2010) argues and finds that financial literacy levels are lowest in low-income countries owing to relatively low school enrollment ratios and later on progression. Besides, financial numeracy is especially poor for those with low educational attainment (Christelis, et al., 2010; Lusardi & Mitchell, 2014).

Largely, the financial literacy level disparity between the more educated and the less educated find explanation in a number of issues. McArdle, et al. (2009) finds that the positive relationship between the two variables may lie in cognitive ability, in that people that are more educated have higher ability to comprehend financial concepts. Elsewhere, the explanation comes from how financial literacy messages are packaged and delivered to the populations targeted by mostly financial educators. Up until recently, financial education packages have largely been delivered in official languages such as English, which is not known to the uneducated in non-English speaking populations (GAO, 2010).

Besides, more educated people edge their less educated counterparts because they have greater excess to more detailed financial education than those that leave the formal education system earlier (Coady & Dizioli, 2017). In the case where providers of financial services to encourage uptake are propagating financial education, such institutions usually target the educated on account of possessing higher utilization capabilities (Muñoz, et al., 2013).

2.5.4 Financial Literacy and Income

The influence of income level on financial literacy was already indirectly touched on in the review of financial literacy around the globe. There, it was noted that advanced or developed economies that have higher per capita income tend to fair better in financial literacy than developing countries (Klapper, et al., 2015). The disparity is not just on the geographical basis because even within developed or even developing countries, individuals that have higher income levels tend to have higher literacy scores based on survey data (Monticone, 2010; Jamie, 2019). People with higher incomes are more likely to acquire financial knowledge on their own while those with lower incomes find it too costly or do not have the same incentives to do so (Monticone, 2010). On the contrary, people with low-income levels find it difficult to access financial education and later on practice financial behaviors such as saving and investing (Mauldin, et al., 2016). Since the poorest in society are also the least educated, one is easily persuaded to think that low income and low education levels may unfortunately be reinforcing each other in perpetuating financial illiteracy.

2.5.5 Financial Literacy and Social Networks

Despite being relatively new, there is already ample empirical literature that has explored the relationship between financial literacy and one's social networks (friends, co-workers, club mates, etc.). The benefits that individuals get from their social networks have been described as a form of social capital. According to Portes and Sensenbrenner (1993), this social capital consists of three interrelated dimensions of structural social capital (gains from interacting with people possessing a setting level of knowledge); cognitive social capital (creation of shared visions through sustained relationships; and relational social capital (relating to social factors that guide the exchange of knowledge).

In financial literacy literature, it has been found that having peers who are financially ambitious and are financially literate themselves tends to produce favorable spillover effects on individuals (Christelis, et al., 2010; Changwony & Tabner, 2014). Beneficial social interactions also come from belonging to certain social clubs or organizational interactions for those who are employed. These social networks are not only crucial sources of financial information (van Rooij, et al., 2011) but are also highly likely to shape behaviors that increase the likelihood of consuming financial products thereby helping to deepen financial knowledge (Duflo & Saez, 2003).

2.6 Financial Literacy Determinants and Stock Market Participation

Leading determinants of financial literacy have already been discussed in the foregoing section but do these factors sip through to the decision or intention of whether to participate or not in the stock market? If yes, this paper would like to uncover which ones are the most important in the Zambian context. While these questions are to be answered later on in this paper, currently existing literature presents a mixed picture when it comes to how determinants of financial literacy affect the stock market participation aspect.

On one hand, there is a group of scholars that finds that individuals that possesses most of the favorable correlates of financial literacy; the richer, the more educated and the males; participate more in the stock market than those sitting on the opposite (Hurd, 1990; Haliassos & Bertaut, 1995; Lusardi & Mitchell, 2007; van Rooij, et al., 2011; Behrman, et al., 2012).

Indirectly, these findings do suggest existence of evidence that being financially literate increases the chances of participating in the stock market. The arguments for the positive correlation between financial literacy and financial market participation have revolved around a better understanding of the potential opportunities in the market (Grinblatt, et al., 2011), high levels of craft in averting potential risks posed by the market (Guiso & Jappelli, 2005) as well as low information costs associated with seeking financial advice from market experts (Christelis, et al., 2010).

While these explanations are sound, it is also important to note that richer individuals have more access to financial resources that act as an enabler of participation. Likewise, there is evidence that individuals that are more educated have more access to financial resources than less educated counterparts have because, on average, higher levels of education are positively correlated with higher labor incomes and wealth (Coady & Dizioli, 2017; Corak, 2013).

It is argued that the wealthy participate in the stock market not because they are financially literate or smart but because they are able to hire experts who invest on their behalf. Besides, there is a large proportion of people that participate in the stock market through mutual funds and therefore do not face the task of knowing each bit of the stock market (Kedia, 2015; Pozen & Hamacher, 2015).

As such, this group of scholars that have failed to attribute stock market participation to financial literacy and therefore have raised questions on external validity of such results (Duflo & Saez, 2003; Cole & Shastry, 2009). They find that interventions aimed at improving the literacy levels among adults do little in influencing financial decision-making and later on stock market participation when compared to other factors such as the influence of their peers and psychological bias.

The role of peers or social networks in influencing decision to participate in the stock market has found favor in a number of other studies (Hong, et al., 2004; Christelis, et al., 2010; van Rooij, et al., 2011). For example, having a close relative or friend who has previously invested in the stock market increases the chance of doing the same by 30% by purely riding on the financial knowledge of those peers (Li, 2014). In some cases, individuals who are less financially literate could compensate for their lack of knowledge by seeking advice from others and still be able to participate in the stock market (Delavande, et al., 2008).

Others such as Caskey (2006) have argued that financially literate people may participate more on the stock market not just because of their knowledge but because they were highly motivated to do so even prior to acquiring that knowledge. That is, there is a high chance that the relationship may be flowing in the opposite direction. As such, he questions intentions of taking financial education to people in a view to changing their financial behavior.

2.7 Lessons Learnt from Empirical Literature

From the review of empirical literature, it has been noted that the level of financial literacy is generally low globally with only one in three adults considered financially literate. Although this is the case, adults in advanced economies perform better than their counterparts in emerging and developing countries in addition to observations of the existence of the gender gap (men are more financially literate than women) as well as the superiority of middle-aged adults over younger and oldest individuals.

Closer to home, Africa is a laggard of all continents in mirror of all measures of economic progress and development with only Botswana accommodating more than half of its adult population, which is financially literate. High poverty levels and low educational levels especially among the majority rural populations are the major culprits of this disparity. Back home, Zambia's financial literacy level among adults stands at 40% and this figure is ahead of some notable names such as Italy, Portugal, Malaysia and China. Notwithstanding, Zambians are faring poorly in choosing financial products and identifying better financial bargains as compared to their peers in the SADC region.

Despite the sorry picture in developing countries, and in Africa in particular, there are many efforts that are aimed at improving financial literacy levels both inside and outside mainstream education systems. However, capacity challenges (financial and human resources) are still limiting the scope in both scale and intensity.

As regards drivers of financial education and therefore stock market participation, it is agreeable among many researchers that employ multiple regression frameworks that gender, age, education and income levels have important and significant effects on financial literacy levels. Other factors are social in nature such as having friends or relatives who are financially ambitious. Largely, determinants of financial education are also drivers of decision to participate in the stock market, as high levels of financial literacy are likely to aid individuals in identifying market opportunities.

However, some have argued that financial literacy is not always a mediating variable because people with high-income levels or belonging to an investing social network also decide to invest in shares even in the absence of financial education pursuit. After all, low levels of financially literate people in advanced economies with lower levels of financial exclusion imply that there are a significant proportion of adults who are utilizing financial products even when they lack financial knowledge.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORKS

3.1 Theoretical Literature

3.1.1 A Theory of the Accumulation of Financial Knowledge

The theory of accumulation of financial knowledge was developed by (Delavande, et al., 2008) primarily in contrasting a portfolio choice model by (Merton, 1969) and standard microeconomic consumption models that predict that individuals are fully rational and well-informed such that they will consume less than their income in times of high earnings, thus saving to support consumption when income falls (Lusardi & Mitchell, 2014). The Merton model assumes that individual households are able to buy and sell stock without any transaction cost, that they have well-formed probability beliefs about the distribution of stock returns and that they have the knowledge to obtain these returns through their stock market transactions.

In contrast, the theory of accumulation of financial knowledge assume that people may not be able to know how to optimally make such decision and later on construct a sound investment portfolio. They draw from findings from (Campbell, et al., 2007) showing the existence of heterogeneity in the efficiency of the portfolios held by individual households and welfare losses originating from investment portfolio choice inefficiencies. As such, and by suppress considerations of variation in probabilistic beliefs about general stock market returns, it focuses on investment in the acquisition of financial knowledge.

According to (Campbell, et al., 2007), people who are financially illiterate lack access to a wide range of professional financial advice from private or public sources, amateur advice, self-help books, newspapers and magazines. Without this access, they are unable to obtain useful knowledge about the potential risks, returns and costs of available financial product offerings, the tax implications as well as institutional means to undertake an optimal investment strategy. At the same time, the financial market is has very unfairly priced or overly risky assets (in some cases risks that are hidden from view of unsuspecting consumers) that suppliers excitedly sell.

Recognizing that people with more sophisticated levels of financial knowledge may be better able to consume sophisticated financial products that maximize expected returns by constructing their own portfolios from scratch, people will be motivated to invest in financial knowledge. Here, the rate at which one acquires new financial knowledge is a function of the allocated time and purchased inputs.

Meanwhile, the productivity of own time depends on the stock of financial knowledge the person has accumulated in the past because financial knowledge is self-productive in the sense that greater current knowledge enhances the efficiency with which future knowledge may be obtained. Besides, total factor productivity in the investment process depends on general intelligence (Delavande, et al., 2008). Interestingly, the theory gives cognizant of inputs that are not marketable and related to one's environment including the knowledge of family and friends, news provided by television and newspapers.

Of course, individuals have a choice of not investing in financial education, which would then result in avoidance in investing in risky assets. However, the theory of the accumulation of financial knowledge predicts that such a choice leads to lower returns and therefore the individual's lifetime welfare in comparison to those that decide to invest in financial knowledge to purposes of participating in riskier but highly rewarding financial products.

3.1.2 Theory of Planned Behavior (TPB)

The theory of planned behavior has its roots in the field of psychology and was developed in the 1980s by Ajzen (1985) and is an extension of the theory of reasoned action (Ajzen & Fishbein, 1980). Over the years, the theory has found itself being applied in a wide range of disciplines ranging from medicine to finance. Principally, the theory of planned behavior explains drivers of intentions that lead people to implicitly and explicitly take particular courses of action given information available to them.

Particular focus is paid to three determinants or antecedents of intentions and these are attitudes, subjective norms and perceived behavioral control. Broadly, the aspect of attitude relates to self-evaluation that an individual performs prior to engaging in a particular activity. This is done in a manner that weighs pros and cons and that the greater the degree by which the pros outweigh the cons, the higher the chance of engaging in an activity. Subjective norms on the other hand relate to social pressure as regards the personal belief that one holds about whether most people close to him or her would approve or disapprove of the action of interest. Meanwhile, perceived behavioral control refers to a person's perception of the ease or difficulty of engaging in the activity of interest and therefore speaks to ability (Ajzen, 1991).

Putting the three basic determinants of intentions (and behavior) together, the theory predicts that the likelihood of engaging in a particular activity is higher if their self-evaluation points to a positive outcome (if the return on financial education is higher than the cost); there is significant social pressure to perform that action (people we hold dear feel we should pursue financial education); and when they are highly convinced that they have the capability and opportunity to do so (we have money, time and the right set of skills).

It is important to note that the relative importance of each of the three determinants of intentions varies from one circumstance to the other and sometimes from one individual to the other for a given circumstance. A graphical representation of the theory of planned behavior is as given in Figure 3.1 below. Although the three drivers of intention are conceptually deemed as independent, it can be seen from the graphical representation of the theory that they can influence or reinforce each other.

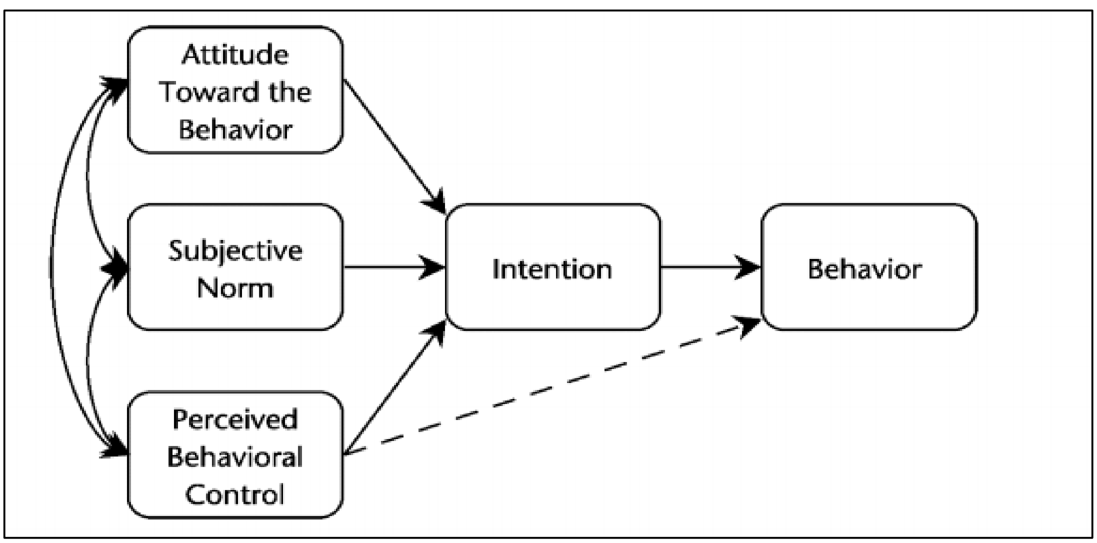

Figure 3.1: Theory of Planned Behavior

Further, Ajzen (1991) contends that accurate information and knowledge are key in shaping the three basic determinants of intentions (and behavior) and this has been confirmed in empirical studies (Chavas, et al., 1991; de Nooijer, et al., 2003; Ajzen, et al., 2011). This is because poorly informed individuals are more likely to make biased perceptions about something. It is important to note that while recognizing information and knowledge as important elements in the theory of planned behavior, Ajzen et al. (2011) hold the view that its possession guarantees neither good judgment nor its absence a precursor of bad decisions.

Another important dimension that helps in the formulation of the antecedents of intention to perform or engage in an activity is experience. Own experience aids an individual in evaluating the potential outcomes of an action (attitude) as well as in perceived behavioral control. However, some individuals may not have prior experience of the action they are about to or not to take and therefore will indirectly rely on the experiences of their acquaintances through the subjective norm or social pressure route (Ajzen, 1991; Koropp, et al., 2014).

3.1.3 Modern Portfolio Theory (MPT)

The 1990 Nobel Prize winner, Harry Markowitz, in a seminal paper titled "portfolio selection" in the early 1950s, pioneered the modern portfolio theory (Markowitz, 1952). It is a theory that explains how an investor makes a choice on a wide range of investment products in the world of uncertainty. It acknowledges that the process of portfolio selection involves observation and utilization of experience in forming beliefs about the future performance of an investment option.

The theory focuses on two financial concepts of risk and return associated with the investment product as key characteristic variables an investor looks at when considering whether to invest in it or not (Brealey, et al., 2006). Chief assumptions of the theory are that the investor seeks to maximize the expected return on the overall investment; all investors are risk-averse such that they are only willing to take on more risk only at the compensation of a higher expected return; and that the investor has perfect existing information about the risk-return profile of the investment options. In addition, it is worth noting that there is a level of uncertainty attached to the return on each investment option in any given option. As such, an investor is assumed to make reasonable probability beliefs for each of the expected return of a security but also suggests use of historical data in estimating probabilities (Markowitz, 1952).

Given the risk-return profile and the associated probabilities of occurrence, the role of the investor is therefore to choose a portfolio that maximizes the expected return for a given level of risk (measured as the variance or the standard deviation of the expected returns) or equivalently choose a portfolio that presents minimum risk for a given level of expected return. In achieving this objective, the theory emphasizes the importance of portfolio diversification where a portfolio should have a combination of stocks that are affected differently by a given set of market conditions. That is, the investment basket should contain securities whose returns share weak positive correlation or are have negative correlation(Sazali, et al., 2004) such as shares in companies operating in different sectors(Markowitz, 1952) or even different asset classes such as bonds and shares(Li, et al., 2003).

In view of its implications, the MPT provides an important theoretical explanation as regards stock market participation of investors, both institutional and retail. That is, by weighing the expected return of stocks against their risk, investors will choose to stay away from the stock market if they believe that the expected return is not enough to justify the inherent risk of investing (Guiso & Sodini, 2013). The converse is, of course, true if the expected return is high enough to compensate the high risk associated with equity.

However, the decision to either stay away or participate in the stock market varies from one investor to the other. The differential is largely driven by the level of optimism or probabilities that different investors attach to each of the expected returns as well as the level of trust that investors may hold on the stock market.

Now, being able to properly understand the two key choice variables in this theory (risk and return) requires that one understands the mechanics of the different types of financial products. Without doubt, this understanding heavily relies on the degree to which one is financially literate. That is, a person who is highly financially literate is more likely to better ably identify products that offer risk reflective returns than one who is financially illiterate. Since the financially illiterate are likely to invest in toxic products owing to their limited knowledge, it is not surprising to see that they are also the majority of the financially excluded population (OECD, 2013).

Lessons Learnt from Literature

In the theoretical part of literature review, the study looked at three theories that have been developed or applied in studies of financial literacy and subsequent utilization of financial products. The first of these theories, theory of the accumulation of financial knowledge, provided an explanation why a large proportion of people may be financially literate. It also argues for why it is beneficial for people to invest in financial education than not. Secondly, the theory of planned behavior borrowed from the field of psychology and gave an overview of what drives individuals to engage in certain courses of action (investing in financial education and subsequently participating in the stock market). The third and final theory relates to how individuals make decisions of which financial products are worth participating in given their risk and return profiles. This theory fits this study because sound evaluation of such profiles implies that one must be financially knowledgeable otherwise they risk consuming toxic financial products, an outturn which would discourage their participation in subsequent periods if not forever.

3.2 Development of Conceptual Framework

3.2.1 Introduction

The previous chapter provided a detailed review of both empirical and theoretical review of literature. Drawing on the lessons learnt, the current chapter develops the conceptual framework by looking at the concept of financial literacy, its measurement, how different variables relate to each other. Before concluding, the chapter outlines the research hypothesis that is to be statistically tested in later chapters.

3.2.2 Determinants of Financial Literacy and Stock Market Participation

The empirical literature review has shown that that the drivers of financial literacy are either demographic (gender and age), socio-economic (education and income levels) or motivation or pressure from social networks. From the theoretical review, the study adopts all the three theories reviewed as they offer varying (although overlapping in some cases) insights and explanations on financial literacy and stock market participation. The theory of accumulation of financial knowledge has shown that people pursue financial education because not doing so comes at a greater cost of picking toxic investment options; the theory of planned behaviors postulates that people may choose to invest in financial knowledge based on peer effect/influence (social norms) as well as their own capabilities (perceived control); while the modern portfolio theory states that the decision on whether to invest in stocks depends on the superiority of the expected benefits (return) over the expected costs (risk).

From an empirical angle, we have already noted that some studies (Hong, et al., 2004; Lusardi & Mitchell, 2007; Christelis, et al., 2010; van Rooij, et al., 2011; Behrman, et al., 2012) argue that socio-economic factors and social networks may have a direct influence on stock market participation (or general financial products utilization) even in the absence of financial literacy as a mediating variable.

How all these variables network given the different views in literature is represented in in Figure 3.2 below. The reader is reminded to pay particular attention to the key of the framework provided at the bottom right corner of the chart so as to fully appreciate how the relationships flow.

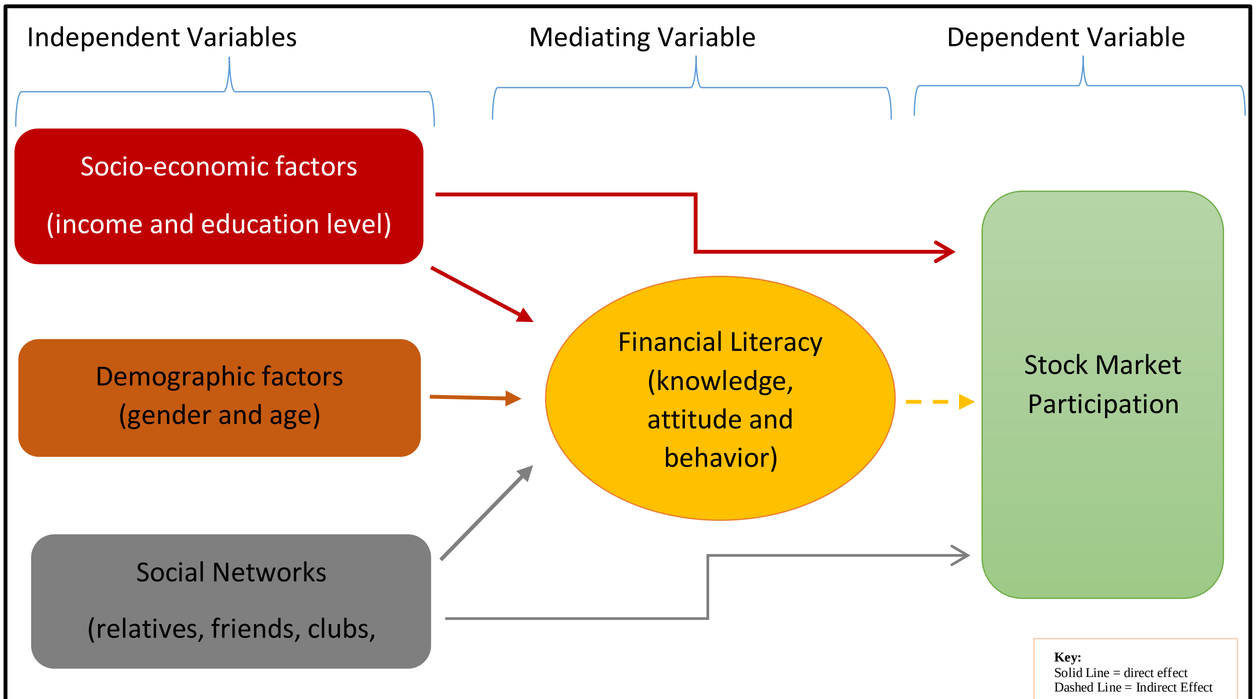

Figure 3.2: Conceptual Framework

3.2.3 Conceptual Definitions and Measurement

Financial Literacy

Different people have provided different definitions but the concept of financial literacy generally relates to knowledge of financial concepts such as interest rates, inflation, exchange rate, financial risk and other knowledge dimensions that aid in financial decision making (Campbell, 2006; Lusardi & Mitchell, 2007; van Rooij, et al., 2011; Lusardi & Mitchell, 2014).In addition to having financial knowledge, the OCED (2020) also incorporate, in the definition of financial literacy, the attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.

The most widely recognized approach for measuring financial literacy involves asking multiple-choice questions around the aforementioned concepts included in a survey research tools such as questionnaires. Whether someone is considered financially literate or not depends on the number of questions one correctly answers from a given set (Lusardi & Mitchell, 2014).

Stock Market Participation

Stock market participation is defined as the state of owning shares in a company that is listed on Lusaka Securities Exchange (LuSE). At any particular time, an individual either participates (own shares) or do not (have not bought any shares in a LuSE listed company) and therefore it is a non-overlapping (mutually exclusive) and will be captured as a dichotomous variable.

Income

In this study, an individual income is defined as the flow of money to an individual acting as an enabler of consumption and contributed to the process of wealth accumulation through savings and undertaking of investment decisions. Its measurement takes a monthly frequency and after all the statutory obligations such as taxes and pension, contributions have been deducted. Beyond income from employment, it will include other flows such as profits from businesses or any other sustained income generating engagements.

Education Level

This refers to the highest level of formal academic qualification that an individual possesses. The measurement follows the widely accepted academic hierarch ranging from having a high school certificate (or lower) to having postgraduate qualification such as master’s degree or even a PhD.

Demographic Factors

While demographic factors are many, the study will only consider age and gender on account of being the key ones that are covered in literature. Age refers to the number of fully completed years a study participant has from the time they were born while gender/sex refers to a biological state of being either male or female.

Social Network

As per this study, a social network will relate to a network of social interactions and personal relationships that one shares with people they are mostly found with. These can be family relations, friends, and coworkers as well as close club members.

3.2.4 Research Hypotheses

Based on the relationships depicted in the conceptual framework above, the following hypothesis can be stated as displayed in the table.

Demographic Factors	H_0: Demographic factors do not affect financial literacy and stock market participation
	H_1: Demographic factors affect financial literacy and stock market participation
Socioeconomic factors	H_0: Socioeconomic factors do not have a positive influence on financial literacy and stock market participation
	H_1: Socioeconomic factors have a positive influence on financial literacy and stock market participation
Social Networks	H_0: Social networks are not important factors in explaining financial literacy and stock market participation
	H_1: Social networks are important factors in explaining financial literacy and stock market participation

CHAPTER FOUR

METHODOLOGY

4.0 Introduction

The preceding chapter provided a review of the theoretical literature on financial literacy and stock market participation while also presenting the conceptual framework of the study. The current chapter gives the methods and techniques employed in conducting analysis. Specific aspects covered include the research design, sample size determination, sampling techniques of participants as well as the description of the data collection tool and its administration approach. Later, the chapter covers data analysis techniques and concludes with the summary of the chapter.

4.1 Approach and Design of Research

Broadly, a research design refers to blueprint of the study which guides on how to achieve the set objectives and therefore answer the questions raised (Saunders, et al., 2009). In order to meet the objectives set out in the first chapter, the study adopted the philosophy of positivism in which the key tenet lies in limiting the role of the researcher to data collection and objective interpretation of results (Kothari, 2010). This is purely based on a quantitative approach, in which a correlational research design was employed in order to establish the existence of the possible relationship between intention to participate in the stock market and financial literacy, as well as its correlates.

4.2 Population Description and Sample Size

Although the goal of the study is to examine the nexus between financial literacy and stock market participation in Zambia, the study narrows its population focus on employees of Indo Zambia Bank as a case in point, whose total workforce stands at 320 employees across its branch network. This comprises of clerical, middle and senior management staff as at the end of November 2020. Resource constraints were the major reason behind limiting the study to one firm whose selection was motivated by easy accessibility of participants on account of the author being an employee of the Bank.

Since the size of the population was known, a formula proposed by Krejcie and Morgan (1970) was used to determine the size of the sample that is large enough to be representative of the population. The formula is presented in equation (1) and its parameters explained below.

$$n = \frac{\chi^2_{0.05} NP(1-P)}{d^2(N-1) + \chi^2_{0.05} P(1-P)} \quad (1)$$

Where;

$n =$ optimal sample size

$\chi^2_{0.05} =$ Chi-Square value at 1 degree of freedom=3.841

$N =$ Population size = 320

$P =$ Population proportion set at 50% to generate the largest sample size

$d =$ degree of accuracy taken as 0.05

Substituting the above parameter values into the above formula, an optimal sample size of 175 was obtained.

4.3 Sampling Technique

The study made use of the probability sampling technique in order to draw a sample that is representative of the population thereby enabling statistical inference of the results. Since the sampling frame, defined as a list of all members of the population (Kothari, 2010), was available in an excel format, the inbuilt function of the simple random sampling technique was used. Simple random sampling is a technique, which ensures that each member of the population stands an equal chance of selection as part of the sample (Graham & Ian, 2014). Note that instead of names, random selection was done on employee email addresses as a means to share the questionnaire electronically.

4.4 Data Collection Instrument and Approach

For the purpose of primary data collection in this study, a structured questionnaire containing only closed questions was utilized and the content was largely informed by literature observations. For easy electronic distribution and answering on the end of the respondent, the questionnaire was created in Google docs and subsequently shared with each of the selected participants through their respective work email addresses. For each question, the answer options were offered through the provision of the dropdown list which respondents used to select what was applicable to them or their preferred response.

Meanwhile, secondary data used in the background and literature review sections of the paper were obtained from published journal articles, books, technical reports and other government official papers.

4.5 Data Preparation and Analysis

With respondents electronically furnishing the responses through the shared questionnaire, the data was then extracted to an excel file and later uploaded in SPSS. The data was then coded, checked for consistency and cleaned to ensure that it was of the quality and form to enable statistical analysis.

Having prepared the data, analysis followed beginning with descriptive statistics, using charts, figures and tables. In the subsequent sections of data analysis, the study implemented the binary logistic regression model that assessed how financial literacy and its correlates influence the likelihood of participating in the stock market. Prior to running the logistic regression model, three indices or scores of financial literacy, stock market knowledge and social networks were constructed as explained below.

4.5.1 Financial Literacy and Stock Market Knowledge Indices

An index of financial literacy was constructed to represent the score of the respondent on questions of financial literacy. For each participant, the score was computed as the number of correctly answered questions as a percentage of all questions using the formula given in equation (2). This approach of computing the financial literacy index or score was used following recommendations from OECD-INFE (2016) which has been used in a series of survey-data-based financial literacy studies conducted by the two organizations.

$$litindex_i = \frac{x_i}{Z} * 100 \quad (2)$$

Where,

$litindex_i$ is the financial literacy index for respondent i

x_i is the number of correctly answered financial literacy questions by respondent i

Z is total number of financial literacy questions in the questionnaire.

In the same spirit, the statistical mechanics of equation (2) were used to come up with an index of stock market knowledge shown in equation (3).

$$smindex_i = \frac{x_i}{Z} * 100 \qquad (3)$$

Where,

$smindex_i$ is the stock market knowledge index for respondent i

x_i is the number of correctly answered stock market questions by respondent i

Z is total number of stock market questions in the questionnaire.

4.5.2 A Measure of the Social Network

In capturing the social network variable, a total of four statements measured on a 5-point Likert scale were included in the questionnaire. In order to determine that they measured the same thing (social networks) and that the scale was valid, reliable and responses internally consistent, these statements were subjected to Exploratory Factor Analysis (EFA). On satisfaction of the foregoing, the statements' responses were, for each respondent, compacted into one variable through the Principal Component Analysis (PCA) approach and scores extracted with the use of the regression method embedded in EFA.

4.5.3 The Binary Logistic Regression Model

Finally, the following binary logistic regression models were estimated using the maximum likelihood method. This framework has widely been used in studies that have investigated stock market participation where the dependent variable is dichotomous (examples include Bogan, 2008; Kaila, 2016; Vohra & Kaur, 2018). In equation (4), the goal is to examine whether aggregate measures of financial literacy and stock market knowledge have an influence on the intention to participate in the stock market while equation (5) unpacks financial literacy by replacing $litindex$ by its correlates. Since correlates of financial literacy were configured as categorical in the data collection instrument, the entered the model as dummy variables.

$$P(int = 1 \mid litindex, smindex) = \alpha_0 + \alpha_1 litindex + \alpha_2 smindex + \epsilon \qquad (4)$$

$$P(int = 1 \mid sex, age, edu, inc, sn, smindex) = \beta_0 + \beta_1 sex + \beta_2 age + \beta_3 edu + \beta_4 inc + \beta_5 sn + \beta_6 smindex + v \qquad (5)$$

Where;

$$int = intention\ to\ participate\ in\ the\ stock\ market = \begin{cases} 1\ if\ respondent\ intends\ to \\ 0\ if\ respondent\ does\ not\ intend \end{cases}$$

sex = gender of the respondent

age = age bracket of the respondent

edu = highest education level of the respondent

inc = income bracket of the respondent

sn = social network score of the respondent

Notice the inclusion of ϵ and v which are respective model error terms capturing the influence of all other factors that affect the likelihood of participating in the stock market but not explicitly included in the model.

4.6 Chapter Summary

The chapter presented the methods and procedures that were followed to answer the research questions raised and therefore addressing the objectives of the study. It covered the research philosophy and design while also describing the population and the random sampling technique used to select 175 participants of the study. Further, statistical mechanics of constructing financial literacy, stock market knowledge and social network indices/scores were explained after which two binary logistic regression models were explained while also stating the method of their estimation. In the analysis chapter that follows, the methodology will be subjected to implementation given the collected data.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.0 Introduction

With the methodology spelt out in the foregoing chapter, the different techniques and procedures were implemented in the current chapter to produce, present and analyze the results from the collected data. It starts with univariate analysis that provides the background characteristics of the study participants followed by analysis of self-reported financial knowledge level and stock market participation in sections 5.1 and 5.2, respectively. In section 5.3, the study examines the level of assessed financial literacy and stock market knowledge while section 5.4 conducts EFA on social network statements. Lastly, section 5.5 delves into multivariate analysis through employment of a binary logistic regression framework in order to uncover factors of stock market participation.

5.1 Response Rate and Background Characteristics

5.1.1 Response Rate

Initially, the study reached out to a total of 175 respondents in its questionnaire distribution exercise as per the scientifically determined optimal sample size. Of this total, only 169 participants were able to successfully fill in the questionnaire thereby representing a response rate of 96.6%. Among those that did not successfully take part in the study, two had only filled in the background section of the questionnaire while the rest (4) did not attempt to answer the questionnaire despite follow-up attempts.

Table 5.1: Participants Response Rate

Target (optimal) sample size	175
Successful respondents	169
Response rate	96.6%

5.1.2 Gender

Figure 5.1 below shows the distribution of respondents by gender. As can be seen, the majority of the participants were male at 90, equivalent to 53% of the total, were 79 or 47% were females.

This observation is not different from patterns in many places of work as a reflection of labor force statistics where there are more employed males in formal setups than female counterparts. Actually, the gender imbalance of 3 percentage points looks to be minimal, an indication that for the type of population studied here one almost always likely to find either gender. The moderate dominance of males in this study is similar to that found in a study by Van Rooij et. Al (2011) but is in contrast with Changwony and Tabner (2014) whose sample had 55.3% females.

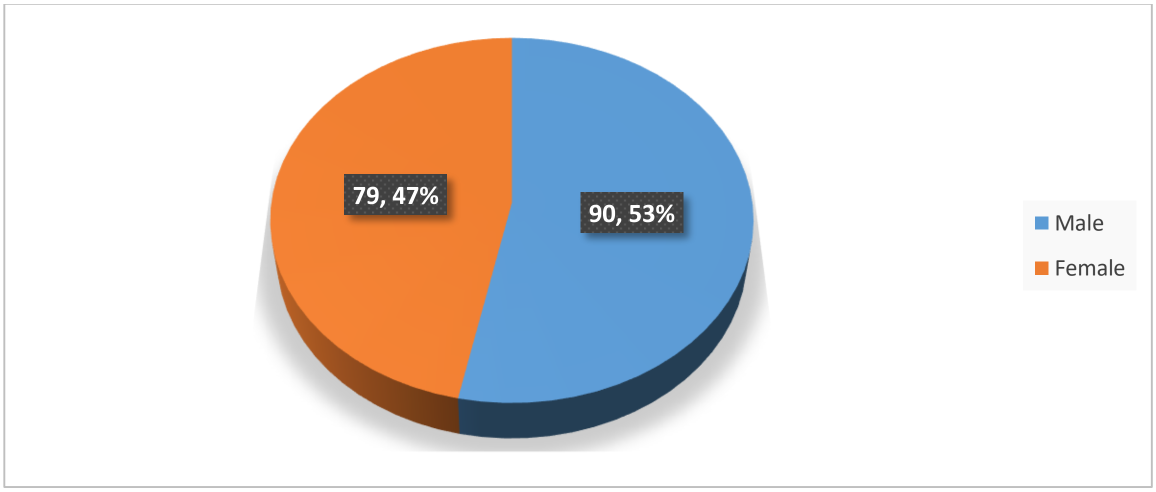

Figure 5.1: Distribution of Respondents by Gender

5.1.3 Age

In terms of age distribution, the majority of the participants were aged between 30 and 44 years standing at 105 (62.1%). Those below 30 years were only 37 (21.9%) while those aged 45 and above were the least at 27 (16%). The peak of the age distribution in the 30-34 age groups does reflect the distribution of Zambia's adult population and that youths dominate the labour market while those above 45 are few and largely occupying senior management positions. However, many studies reviewed in this study have mean age values falling in the 45-55 age range (Van Rooij, et al., 2011; Klapper, et al., 2015) and this was especially so considering that most of them were conducted in advanced economies where the elderly dominate their populations.

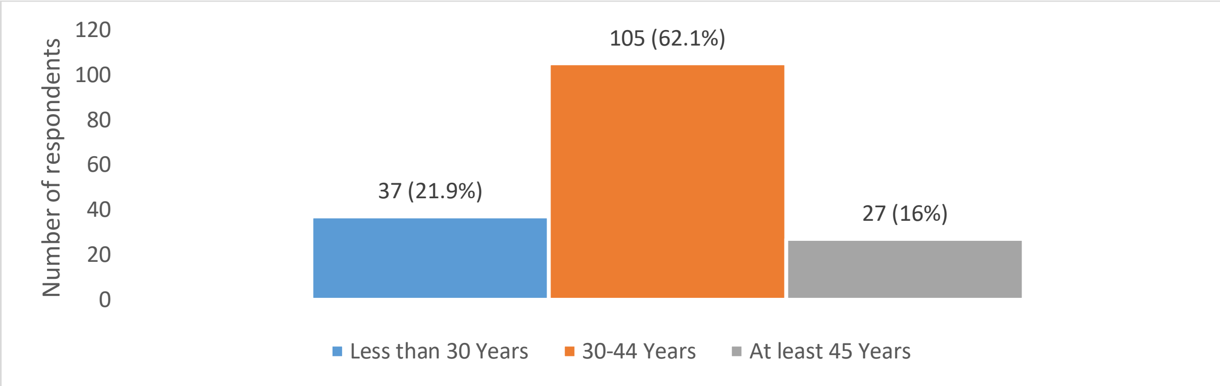

Figure 5.2: Age Distribution of Respondents

5.1.4 Highest Level of Education

Given the nature of the banking industry, it was interesting to note that the respondents only comprised those with tertiary level education. Particularly, a total of 53 participants were in possession of either a certificate or a diploma while those with a bachelor's degree were the majority standing at 76. Meanwhile, only 40 respondents were holders of a postgraduate qualification.

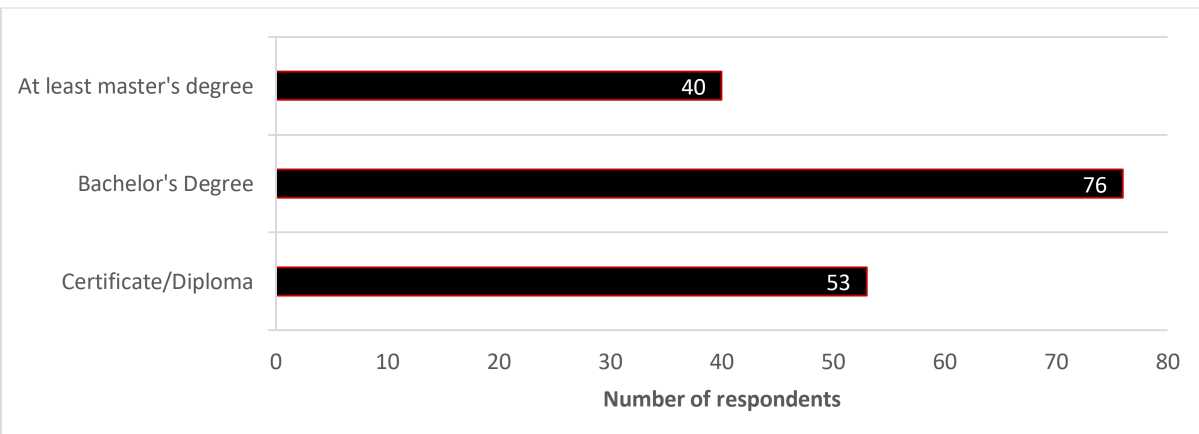

Figure 5.3: Distribution of Respondents by Highest Education Level

5.1.5 Average Income

Figure 5.4 below shows the distribution of respondents by their average level of monthly income. As can be seen, 6 in every 10 respondents (60%) earn at least ZMW 10 000 per month with those exclusively earning between ZMW 5, 000 and ZMW 10, 000 standing at 23% (39) of the total respondents. Respondents whose monthly average income fell below ZMW 5, 000 were the least and their share was 17%, equivalent to 29 of them. The skewness in the distribution of income towards the higher end of the radar seemingly speaks to higher education levels for many, as the two variables are generally positively associated.

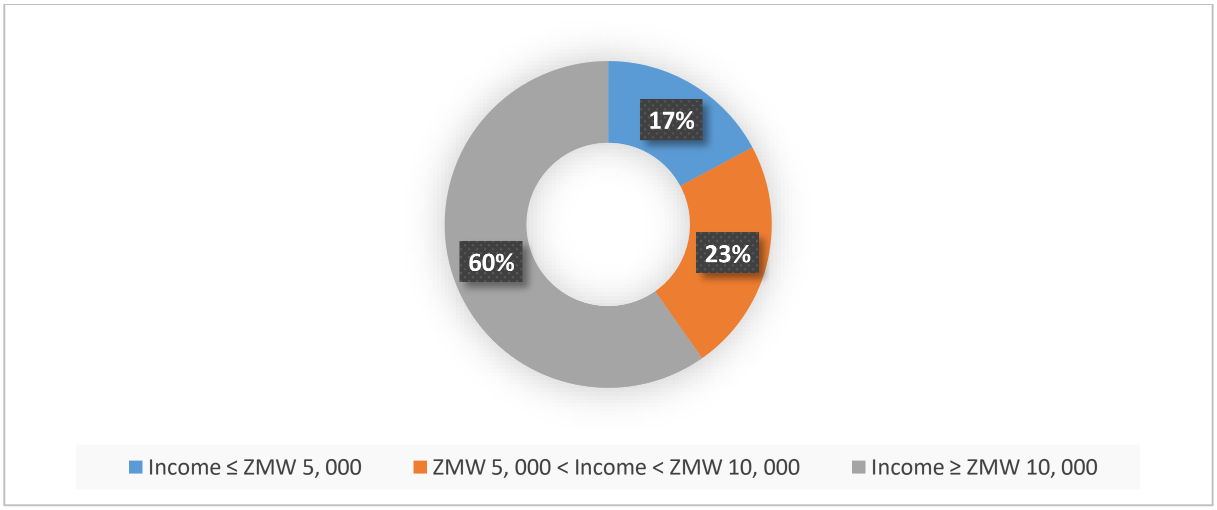

Figure 5.4: Monthly Income Distribution of Respondents

5.2 Self-Reported Financial Literacy and Stock Market Participation

Having looked at the background characteristics of the respondent, the study examined self-reported financial literacy levels as well as their participation or the intention to do so in the stock market. As regards financial literacy and knowledge on how the stock market works, the data reveals that the respective average rankings obtained from a 5-point Likert scale measure stood at 4.14 and 3.75. Since these averages were closer to a rating of 4 than either 5 or 3, this indicates that the respondents generally agreed to being financially literate and having knowledge on how the stock market operates. Besides, the variability of the responses was moderate standing at less than unit in both cases.

Table 5.2: Self-Reported Financial Knowledge

Statement	N	Mean	Standard Deviation
I consider myself financially literate	169	4.14	0.895
I know how the stock market works	169	3.75	0.937

The foregoing observation was not surprising given that out of a total of 169 participants; nearly 80% (135) of them had done a business course before. This result is in line with findings from Fatoki and Oni (2014) who found a positive relationship between having done a business course and financial knowledge level. Of course, and as expected, hiring in the banking sector is mostly biased towards business graduates as it is easier for the them to understand and execute business functions of the bank thereby explaining such a big number of employees who have previously done a business course.

Despite high self-reported levels of financial literacy as well as healthy levels of knowledge on how the stock market operates, participation of the respondents through ownership of shares was found to be very low. Of a total of 169 study participants, only 11.2% (19) of them participate in the stock market. The finding was in no deviation from a pattern that is common in both developed and developing nations (Mauricas, et al., 2017).

Beyond existing levels of participation, the study made attempts to understand intentions to participate among those who were outside the stock market. Interestingly, a total of 106 (70.7%) of respondents who did not own shares in the stock market indicated intentions to do so in the future. If current intentions are to be used as a predictor of future financial decisions, this finding points to a tremendous improvement in the level of stock market participation.

Table 5.3: Stock Market Participation

Variable	Category	Frequency	Percentage
I have done a business course	Yes	135	79.9
	No	34	20.1
	Total	**169**	**100**
I have heard of the stock market	Yes	169	100
	No	0	0.0
	Total	**169**	**100**
I participate in the stock market through share ownership	Yes	19	11.2
	No	150	88.8
	Total	**169**	**100**
I intend to participate in the stock market through share ownership	Yes	106	70.7
	No	44	29.3
	Total	**150**	**100**

5.3 Assessment of Financial Literacy and Stock Market Knowledge

Although self-reported knowledge has widely been used as an approach for assessing the state of affairs for a given phenomenon, measures or metrics generated from such data usually suffers from a special kind of response bias called the desirability bias. This bias arises because of the respondents' tendency to give a positive answer to a positive question thereby portraying themselves in the best light possible (Janne & Gary, 2003).

In order to avoid this kind of bias and therefore making faulty conclusions, respondents were subjected to financial literacy and stock market knowledge questions. Questions on financial literacy focused on the time value of money, compound interest, inflation, understanding of purchasing power and diversification. As results show in Figure 5.5, the financial literacy level was above average for all the aspects assessed in this study with a minimum of 80% of respondents revealing understanding of real returns on savings (95.3%), compound interest (92.3%), diversification (89.3%) and time value of money (83.4%).

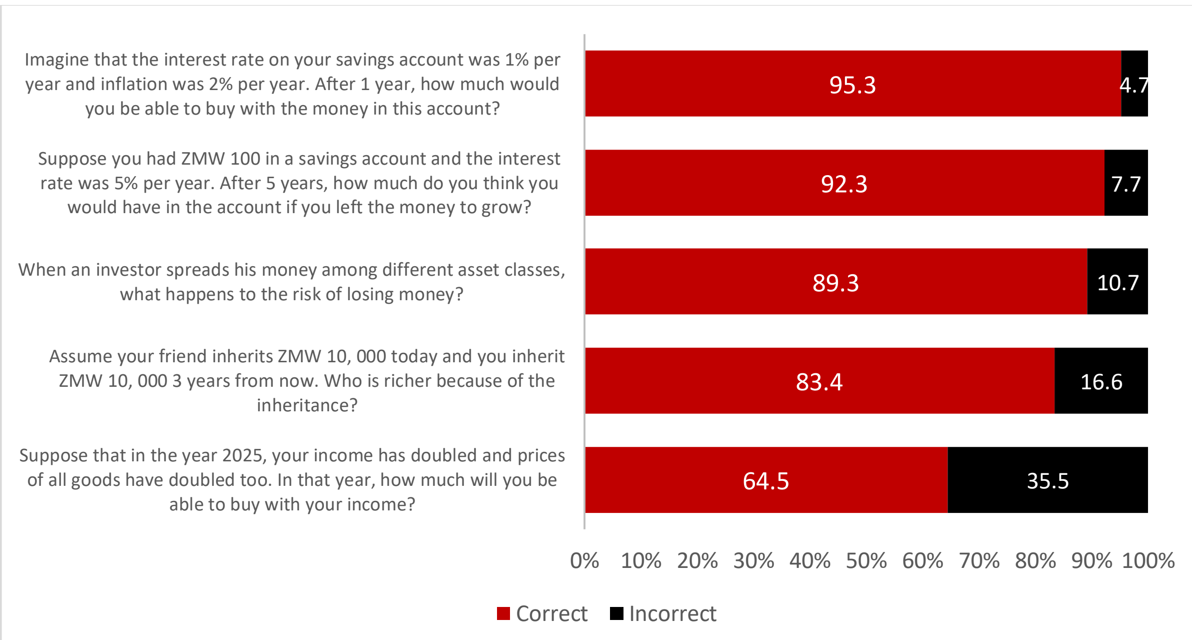

Figure 5.5: Financial Literacy Scores of Respondents

However, money illusion was found to be elevated at 35.5%, equivalent to 60 of the 169 respondents failing to grasp the implication of simultaneously doubling money and prices on the quantity of goods and services one can purchase. This shows that even when respondents were able to apply their understanding of inflation in the context of real return, a significant proportion of them failed to grasp its application in identifying bargains. This is in line with the observation of the World Bank (2017) which noted poor performance of Zambians in bargain evaluation compared to their peers in SADC.

As regards stock market knowledge, questions covered the key function of the stock market, the meaning of share purchasing as well as the risk-return profile of the market. Implication of buying shares in a company listed on the stock market was the most understood with 93.5% of the participants correctly answering the question. It was also interesting to note that about 7 in every 10 people knew the main function of the stock market as bringing buyers and sellers of stocks together while as many as 78.7% of the respondents understood that shares were the most volatile asset class compared to bonds and savings accounts.

However, only 53 (31.4%) were aware that shares offered a better return over a long period of time when compared to bonds and savings accounts. Results from elsewhere also show that the superiority of returns on shares over a long period in comparison those on bonds and savings accounts is not known by many. In the US, for example, only 47.2% of the population was found to be aware of this fact (Van Rooij, et al., 2011).

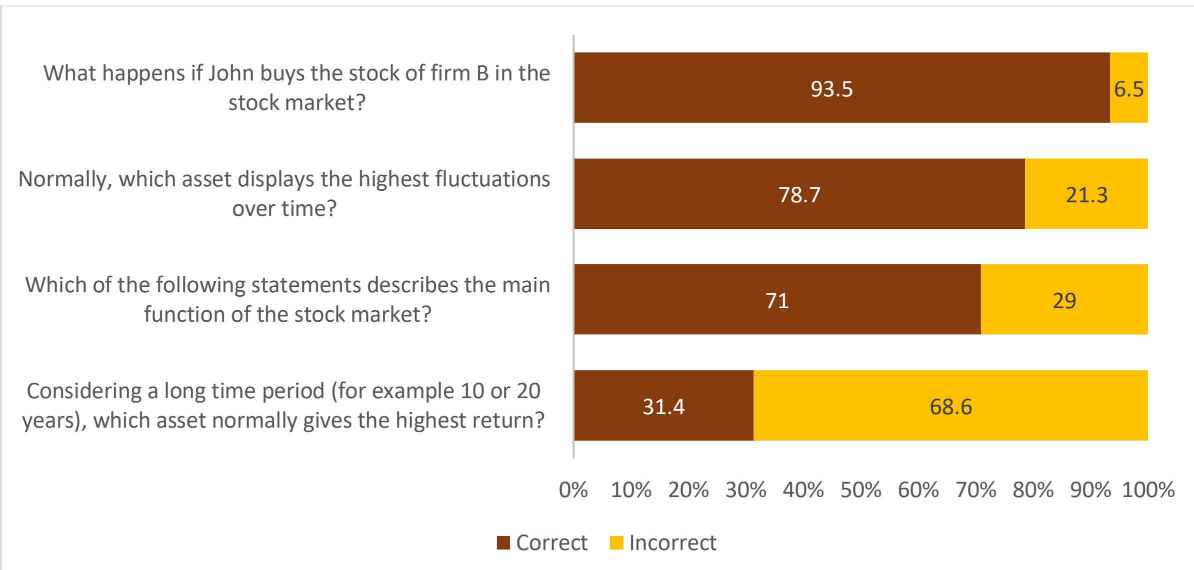

Figure 5.6: Stock Market Knowledge Scores of Respondents

To get an aggregate understanding of the financial literacy and stock market knowledge levels, two indices for each were computed and were denoted as $litindex$ and $smindex$, respectively. As was described in the methodology chapter, the score of each respondent on the two concepts was the ratio of the correctly answered question (s) as a percentage of the total questions asked. The distribution of scores for the participants are presented in Table 5.3.

From the results table, it is easy to see that the levels of financial literacy and stock market knowledge were high among participants with their respective scores averaging 83.9% and 71.3%. The apparent 12.6 percentage point performance gap of the respondents on the two concepts becomes visible when one considers the number of those that scored a minimum of 75%. In particular, there were 146 (86.4%) respondents that had a score of at least 75% on financial literacy question while the corresponding number on stock market knowledge stood at 115 (68.1%). This gap is largely attributable to an overly poor performance on return perception of shares relative to what one can achieve from holding bonds or owning a savings account over a longer period of time as was earlier noted.

Another interesting observation here is that the levels of financial knowledge found here are not so different from those found in self-reported data. This therefore gives us confidence that any possible existence of the desirability bias may not be very serious in our self-reported data analyzed in the preceding section.

Table 5.4: Distribution of Financial Literacy and Stock Market Knowledge Levels

Score/Index Value	$litindex$		$smindex$	
	Frequency	Percentage	Frequency	Percentage
00	0	0.0	1	0.6
25	2	1.2	20	5.9
50	21	12.4	43	25.4
75	61	36.1	74	43.8
100	85	50.3	41	24.3
Mean Score	83.9		71.30	
Standard Deviation	18.60		21.9	

5.4 Participant's Social Network

Having looked at financial literacy and stock market knowledge scores in the foregoing section, the paper now looks at the social network of the study participants as an increasingly emerging variable in studies of financial knowledge and decision-making. Specifically, it pertains to the influence that close relatives, friends and associates such as coworkers play in one's pursuit of action.

To measure this variable, four statements were included in the research instruments looking at different dimensions of a social network. The responses to these statements were placed on a 5-point Likert scale to solicit the level of agreement or disagreement with each of them. To prove the appropriateness of these scale and respondent consistency across all the statements, they were subjected to an Exploratory Factor Analysis (EFA). This is a prerequisite analysis stage that is widely used on Likert scale items if one intends to use the data so obtained in further analysis beyond observed frequencies for each category (Costello & Osborne, 2005).

The EFA results for the social network statements are provided in Table 5.5. First, it is important to note that the analysis produces a Kaiser-Meyer-Olkin (KMO) value of 0.66 and well above the 0.5 threshold recommended by Tabachnick and Fidell (2019). Together with the observation that the Bartlett's test of sphericity was statistically significant, this implies that sampling was adequate and that the four items were correlated with each other thereby pointing to the fact that they measured the same thing.

The strength of togetherness for these items is captured by the loading values (factors) as measures of strongly belonging to a construct called social network. As can be seen, the loading values were in excess of 0.3 minimum suggested by Kline (2011) ranging from 0.525 to 0.873.

Table 5.5: EFA Results for Social Network Statements

Statement	Loading Value	KMO Value	Bartlett Test Significance	Explained Variance
The people in my life whose opinions I value are financially literate	0.787	0.657	0.000	54.88%
My friends consider it important to invest in the stock market	0.734			
Most people who are important to me are fond of discussing stock market participation	0.873			
People who I consider important or who's opinion I respect influence my attitude towards pursuit of financial knowhow	0.525			

While as many as four factors/variables (equal to the number of statements) are theoretically possible to extract, the goal of EFA is to compact these statements into the fewest number possible. After all, the sphericity test and factor loadings already showed they are highly correlated and therefore measure the same thing. Employing the Principal Component Analysis (PCA) method of extraction, factors/variables in combination with the rule that a factor is meaningful if only its eigen value is not less than one, only one factor with an eigen value of 2.195 was identified and extracted. This factor was able to explain a total of 54.9% of variation in the social network construct as the underlying.

To validate internal consistency of the items that formed up the extracted factor, a reliability test was performed. With a Cronbach's alpha of 0.716, the scale used to measure the responses on these statements was found to be reliable. Finally, the scores of the factor were computed using the regression method on account of its ability to ensure validity maximization (Thurstone, 1935). Despite the responses to the original statements being categorical, the computed scores are continuous and follow a normal distribution with a mean of zero and standard deviation of unit (Beauducel & Hilger, 2017).

To understand the extent to which respondents viewed their social network as one that influences financial behavior, the study classified the above scores for each as either falling in the agreement or disagreement zone. Particularly, all negative scores (below the mean value) were treated as indicating disagreement while the positive ones (above the mean) signaled a general agreement with statements on social networks. Note that none of the scores was exactly equal to zero and so each of the scores was classified in either of the two categories.

An analysis of this new dichotomous variable shows that 61 respondents in every 100 were agreeable with the statements on social networks. This result reveals largely that people close to us usually do influence our financial behaviours and decisions in line with the subjective norm view of the theory of planned behavior. This is usually common in all spheres of life because humans generally associate themselves with those with whom they share values, beliefs and behaviours as bases of cohesion (Pahl, 2000).

Table 5.6: Percentage of Respondents Influenced by their Social Network in Financial Decisions

Variable	**Level of Agreement**
Social Network	60.9%

5.5 Factors Affecting Stock Market Participation

With analysis on the background characteristics of respondents, the level of financial knowledge, stock market participation and the social network done, the study now looks at the factors that affect stock market participation. While it would be interesting to model actual participation itself, the number of those that reported owning shares in firms listed on the stock market was very small (19) relative to the entire sample size (169). Instead, the study asked respondents on whether they had intention of participating in the stock market through share ownership in the future and the data on this question was reported in section 5.2.

Since the variable of interest (intention to participation) is categorical and binary in nature, use was made of the binary logistic regression model. This is a framework that models the likelihood (odds) of something happening given a set of predictors or independent variables.

The first model looks at the role of financial literacy and stock market knowledge in shaping intentions to participate in the stock market. This model's results are presented in Table 5.7 below. For starters, the insignificance of the Hosmer and Lemeshow test indicates that the model fits the data to which it was subjected. Actually, the model correctly classifies or predicts 76.7% of the cases as either having intentions to participate in the stock market or not.

With that said, the results confirm prior expectations that there is a positive relationship between financial knowledge and the likelihood of participating in the stock market. Particularly, and holding all other influencing factors constant, the study finds that a one percentage point increases in one financial literacy score improves chances of participating in the stock market by 3.7%. In similar fashion, a one-percentage point increase in the stock market knowledge score increases the likelihood of stock market participation by 2.3%. The importance of the financial literacy and stock market knowledge becomes clearer in the observation that a person without financial knowhow only has 2.7% change of participating in the stock market.

As already indicated, existence of a positive relationship between stock market participation and the level of financial knowledge was expected and find literature support in a number of studies that focus on awareness and consumption of a product or service (Van Rooij, et al., 2011; Parthadwan, 2017; World Bank, 2017; Grohmann, 2018). For example, Parthadwan (2017) and Grohmann (2018) recognize that financial products have grown in complexity over time to the extent that people with no or little knowledge on how they work, their associated gains and potential risks are less likely to consume them.

In implication, this means that improving retail investor participation on the stock market requires deliberate efforts that are aimed at enhancing levels of financial knowledge. This will help to get rid of misconceptions that people may have either through hearsay or even total ignorance of opportunities found in share ownership in listed companies.

Table 5.7: Binary Logistic Regression Results for Model One

Variable	Odds Ratio	Wald	P-Value
Constant	0.027	13.645	0.000
$litindex$	1.037	11.551	0.001
$smindex$	1.023	5.974	0.015
Hosmer and Lemeshow Test	$\chi^2 = 6.221$	$df = 6$	$p - value = 0.399$
Overall Classification Percentage	76.7%		

Good as the foregoing analysis can be, it only reveals an aggregate picture of how financial literacy or knowledge influences the decision to consume of a financial product at an aggregate level. Beyond this, information on how different investor attributes affect the decision to participate in the stock market gives a richer and deeper perspective on the aspect being modeled. For example, this information can allow one to decode market participation pattern differentials among investors of different social classes, for instance.

In what follows, the study unbundles financial literacy into its constituent correlates as was identified in empirical literature discussed earlier. These correlates of financial literacy are gender, age, education level, income level and one's social network. Being categorical in nature, these correlates entered the model as dummy variables with one of the categories for each treated as a reference category to avoid the dummy variable trap because the model included a constant term (Gujarati, 2004).

Similar to what was observed in the preceding model, the Hosmer and Lemeshow test reveals that that model fits the data well. In fact, the current model outperforms the foregoing with the proportion of correctly classified cases as either having or not having intentions to participate in the stock market standing at 81.3%.

In show of robustness in results obtained above, it is noted that stock market knowledge remains an important predictor of the intention to participate in the market. Particularly, a one-percentage point increase in the score on stock market knowledge improves the likelihood of participating in the stock market by 2.6%, an estimate not so different from the one found earlier.

In like manner, unbundling of financial literacy into its constituent correlates does not change the role that it plays in the making of financial decisions. Among the five financial literacy determinants included in the model, four were found have a statistically influence on the intention to participate in the stock market. These are gender, age, income level and one's social network while education level was found not to influence the decision to participate in the stock market. In what follows, the results on the statistically important factors influencing financial decisions are interpreted and analyzed.

Gender and Stock Market Participation

In mirror of its influence on the level of financial literacy knowledge, gender was found to be a significant factor in the decision to participate in the stock market. Everything being equal, the study finds that females are 77.5% less likely to participate in the stock market compared to their male counterparts.

This not only speaks to the financial literacy gap between males and females where the latter are laggards, but also reflects cultural factors that limit the participation of female in investment decision making processes especially among those that are married (OECD, 2013; Rink, et al., 2015). For example, OECD (2013) notes that in some cases, men are given primary if not exclusive responsibility to financial decisions and asset ownership. Such cultural biases have the tendency of diffusing the motivation of most women to think personal finance and later on taking a deliberate stance on investing or general consumption of financial products.

Table 5.8: Binary Logistic Regression Results for Model Two

Variable	Odds Ratio	Wald	P-Value
Constant	0.012	12.564	0.000
$smindex$	1.026	4.913	0.027
Gender (Ref = Male)			
Female	0.225	7.618	0.006
Age (Ref = Less than 30 Years)			

30 – 44 Years	4.389	6.282	0.012
At Least 45 Years	61.12	11.056	0.001
Education Level (Ref = Certificate/Diploma)			
Bachelor's Degree	2.245	1.694	0.193
At Least Master's Degree	0.503	1.101	0.294
Income Level (Ref = At Most ZMW 5, 000)			
ZMW 5, 000 < Income < ZMW 10, 000	6.796	6.412	0.011
Income ≥ ZMW 10, 000	15.733	13.193	0.000
Social Network (Ref = Disagree)			
Agree	4.391	8.851	0.003
Hosmer and Lemeshow Test	$\chi^2 = 3.986$	$df = 8$	$p - value = 0.838$
Overall Classification Percentage	81.3%		

Age and Stock Market Participation

The age of respondent found to be positively related to one's likelihood of participating in the stock market. Using those younger than 30 years, the study finds that participants in the 30-44 age range were about 4.4 times more likely to buy shares on the stock market while the odds for those older than 44 were multiples higher at 61.1. This result suggests that one's willingness to own shares in a listed company improves as they get older.

In a working environment, age is also used as a proxy of experience. In our case, Indo Zambia Bank being a financial service provider, their lies the persuasion to conclude that the older employees may have better understanding of financial products, thereby encouraging investment behavior. Besides, older people are more likely to be concerned with life after working years and therefore tend to generally have a higher propensity to invest than young people who may still be in a more consumption-inclined lane (Mankiw & Zeldes, 1991).

Income and Stock Market Participation

Similar to the observation on age, the relationship between an individual's income level and their intentions or likelihood to buy shares in the stock market was positive. On an income comparative basis, it was found that individuals that earned above ZMW 5, 000 but less than ZMW 10, 000 when compared to those who earned a maximum of ZMW 5, 000 per month were 6.8 times more likely to participate in the stock market. The likelihood differential was even bigger when considering those with a monthly income in excess of ZMW 10, 000 having been found to have odds of investing in shares of 15.7.

Unsurprisingly, this result reaffirms the notion that income is an enabler of investment, such that those with higher incomes are more likely to participate in various investment instruments than those with lower disposal incomes. Individuals with higher income levels are not only more enabled to invest but also have higher savings rate compared to poorer ones (Karen, et al., 2004). It is these savings that they latter channel into various investment products including stocks.

Social Network and Stock Market Participation

However, relatively new, the role of social networks in investment decisions has received enormous attention from empirical scholars as was already discussed. Using scores computed from EFA, the study attempted to uncover the role that social networks play in one's probability to invest in the stock market through share purchases. Covering their stance on opinions of financially literate close associates, views and discussions of their friends on stock market participation and the overall influence of their friends/relatives/coworkers on own life's decisions, EFA found those that agreed with the foregoing traits and those that did not depending on the sign of their extracted score.

Using the foregoing as a predictor of intentions to participate in the stock market, the study finds those with financially literate and stock market praising/discussing social circles are 4.4 times more likely to participate in the stock market than those that do not. This result is similar to findings from Duflo and Saez (2003) and Van Rooij et. Al (2011). Social networks are not only a medium of information transfer for personal finance but also a source of pressure for certain behaviors such as investment decision.

5.6 Relative Importance of Factors of Stock Market Participation

In the analysis conducted in the foregoing section, the factors that affect the intention to participate in the stock market were identified. The significance of each examined variable was on the basis of the p-value while a variable with a less than 0.05 value was deemed to be statistically significant.

However, what was not known was the relative importance of each variable in influencing the decision to participate. In order to do this, the study adopted the use of the Wald Statistic values following Lu (2019). In the case of age, education and income were there are more than one dummy variable, the overall Wald Statistic is used and the ranking of the importance of the variables in presented in Table 5.9 below.

As can be seen, and for individual reasons already discussed in the foregoing sections, income is the most important determinant of stock market participation followed by age, the level of stock market knowledge (smindex), one's social network and gender. Yet again, the finding of income as the most important factor indicates that before anything else, individuals look at their financial capabilities first. After all, there is usually little motivation for someone to be concerned with something they cannot afford to participate in.

Table 5.9: Factor Relative Importance in Stock Market Participation

Variable	Wald	Rank
Income	13.2	1
Age	13.116	2
smindex	12.564	3
Social Network	8.851	4
Gender	7.618	5

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Summary and Conclusion

Inspired by a very low stock market participation rate by retail investors in Zambia and citations of low financial literacy levels as the main reason elsewhere observed, the study undertook to understand whether low levels of financial knowledge impede on stock market participation. Areas of focus as objectives were to; examine the levels of financial literacy levels among a segment of Zambian adults; identify factors that affect financial literacy levels; and to establish the effect financial literacy determinants on stock market participation.

In order to address the above objective, a sample of 175 randomly selected respondents from Indo Zambia bank were administered with a structured questionnaire out of which 169, comprising 90 males and 79 females successfully responded. With all of them having attended tertiary education (116 have a minimum of a bachelor's degree), 6 in every 10 of these respondents were aged 33-44 and 60% of them earned at least ZMW 10, 000 per month.

Interestingly, and not only from self-reported, participants were found to have elevated levels of financial knowledge with average scores on financial literacy and stock market questions standing at 83.9% and 71.3%, respectively. This was not surprising given that nearly 80% of them had previously done a business course and that their daily work routines were in the financial services sector. Notwithstanding, returns on stocks compared to bonds or savings accounts were found to be overly misunderstood with only 31.4% correctly reporting that share ownership offers a higher return over a long period of time. Besides, levels of money illusion were also concerning having been noticed in 35.5% of the respondents.

Despite heightened levels of financial literacy among the studied adult Zambians, stock market participation was found to very low with only 11.2% (19) of the study participants reporting to have purchased shares in a listed company. Although this was the case, it was way above the 0.3% participation rate among the entire population of Zambia has financially included individuals (SEC, 2017). Furthermore, the proportion of non-participants with intentions to participate in the stock market in the future was high at 70.7% and pointing to improved participation rates if intentions are anything to go by.

Using the binary logistic regression model, the study sought to understand factors that influence share ownership in listed companies. As per prior expectations, improved financial literacy in general and stock market knowledge were found to have a positive influence on the one's likelihood of participating in the stock market.

Unbundling financial literacy into its leading and widely acceptable determinants that included gender, age, education, income and social networks, only the level of education was found to be immaterial in explaining the likelihood or probability of participating in the stock market. With the use of the magnitude of the Wald Statistics as measures of the degree of importance for a particular factor in the model, revealed that income was the most important followed by age, stock market knowledge, and social networks while gender had the least influence on the participation decision.

6.2 Recommendations

Based on the insights that have been generated from this study, the following are the key recommendations thus drawn.

I. From the findings, the participant's level of financial literacy was found to be high; deducting from this it is expected that financial literacy would be lower among those individuals who are not exposed to financial markets. The researcher recommends that the Capital Markets Authority, which is tasked with supervision, licensing and monitoring the activities of market intermediaries, should implement a comprehensive awareness and public education programme that targets the wider non-stock market participating public.

II. Secondly, the mainstream education system should introduce financial education to learners at lower grades while also incorporating courses that cover fundamentals of financial education across all disciplines.

III. Furthermore, the study adds to the growing literature on financial literacy and stock market participation. The findings of this research will also help tertiary educations institutions in understanding the significance of financial literacy and assist academicians in evaluating the relevance of curriculum taught in business schools to the actual business world.

IV. In addition, while current efforts are appreciated, there is need to widen the coverage of stock market education in both the benefits and risks so as to encourage participation in view of balanced enlightenment.

V. Lastly but not the least, beyond knowledge itself, there is need to create an economic environment that offers greater and decent employment and business opportunities so that individuals should make income levels that can enable them to invest in the stock market

6.3 Limitations and Suggestions for Future Research

Although the study was based on a sample selected through probability random sampling techniques, there are two key limitations that the reader should be aware of, with regards the utilization of the study findings.

I. The sample was not representative of Zambia's adult population and therefore the findings are not generalizable at national level.

II. The results are not time invariant as they were based on cross-section data which only gives the state of affairs only at the time of conducting the study.

On the basis of the above limitations, and speaking to suggestions for future research, it would be interesting and beneficial to see how results from a non-financial service provider firm compare with what the current study has brought out. Besides, this study did not pursue the specific question on why, despite high levels of financial literacy, there are still low levels of stock market participation

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Appendices

Appendix I: Questionnaire

Research Questionnaire (Google Doc)

Dear respondent,

I am a post-graduate student at the University of Zambia pursuing a Master of Science degree in Strategic Management. I am undertaking a research on the topic; **ASSESSING THE EFFECTS OF FINANCIAL LITERACY ON RETAIL STOCK MARKET PARTICIPATION IN ZAMBIA. A CASE OF INDO ZAMBIA BANK**. You have been randomly selected as a participant to the aforementioned study of which your response to the questionnaire below will be most appreciated

Be assured that your anonymity is guaranteed and data supplied by you will be treated with utmost confidentiality, and will only be used to aggregate statistical tables, analysis and interpretation of results for academic purposes/research only.

Thanking you in advance for taking time off from your Busy Schedule.

Yours Sincerely,

Paul Bule

RESPONDENTS CONSENT

I do hereby declare that I have freely allowed the said Paul Bule to administer this questionnaire to me. I understand that the responses I am going to give in this questionnaire will be used for purely academic purposes.

Part A: Background Characteristics	
1. Gender:	☐ Male ☐ Female
2. Age:	☐ Less than 30 years ☐ 30-44 years ☐ At least 45 years
3. Highest level of education:	☐ At most grade 12 ☐ Tertiary certificate/diploma ☐ Bachelor's degree ☐ At least a master's degree
4. Average income per month	☐ ZMW 5, 000 or less ☐ More Than ZMW 5, 000 but less than ZMW 10, 000 ☐ ZMW 10, 000 or more

Part B: Knowledge Self-Reporting and Participation	
5. I have done a business course before	☐ Yes ☐ No
6. I consider myself financially literate	☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
7. I have heard of the stock market	☐ Yes ☐ No
8. I know how the stock market works	☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
9. I participate in the stock market through share ownership	☐ Yes ☐ No
10. If your answer to question 10 is No, do you intend to participate in the stock market through share ownership?	☐ Yes ☐ No

Part C: General Financial Literacy Assessment	
11. Assume your friend inherits ZMW 10, 000 today and you inherit ZMW 10, 000 3 years from now. Who is richer because of the inheritance?	☐ Your friend ☐ Yourself ☐ We are equally rich
12. Suppose that in the year 2025, your income has doubled and prices of all goods have doubled too. In that year, how much will you be able to buy with your income?	☐ More than today ☐ The same ☐ Less than today

13. Suppose you had ZMW 100 in a savings account and the interest rate was 5% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?	☐ More than ZMW 105 ☐ Exactly ZMW 105 ☐ Less than ZMW 105
14. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	☐ More than today ☐ Exactly the same ☐ Less than today

Part D: Stock Market Knowledge Assessment	
15. Which of the following statements describes the main function of the stock market?	☐ The stock market helps to predict stock earnings ☐ The stock market results in an increase in the price of stocks ☐ The stock market brings people who want to buy stocks together with those who want to sell stocks
16. What happens if somebody buys the stock of firm B in the stock market?	☐ He/she owns a part of firm B ☐ He/she has lent money to firm B ☐ He/she is liable for firm B's debts
17. Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return?	☐ A Savings account ☐ Stocks ☐ Bonds
18. Normally, which asset displays the highest fluctuations over time?	☐ A Savings account ☐ Stocks ☐ Bonds

19. Suppose that in the year 2025, your income has doubled and prices of all goods have doubled too. In that year, how much will you be able to buy with your income?	☐ More than today ☐ The same ☐ Less than today
20. When an investor spreads his money among different asset classes, what happens to the risk of losing money?	☐ Increases ☐ Decreases ☐ Remains the same
21. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	☐ More than today ☐ Exactly the same ☐ Less than today

Part E: Social Networks					
Indicate your level of agreement/disagreement with each of the following Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
22. The people in my life whose opinions I value are financially literate					
23. My friends consider it important to invest in the stock market					
24. Most people who are important to me are fond of discussing stock market participation					
25. People who I consider important or who's opinion I respect influence my attitude towards pursuit of financial knowhow					

END OF QUESTIONNAIRE