

**FINANCIAL LITERACY AND PERSONAL RETIREMENT PLANNING AMONG  
PUBLIC SECTOR EMPLOYEES IN BUKAVU CITY, THE DEMOCRATIC REPUBLIC  
OF CONGO**

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**NOVEMBER 2021**

**DECLARATIONS**

**Declaration by Candidate:**

This project is my original work and has not been presented for a degree in any other University



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**Declaration by supervisor:**

I confirm the work in this project has been done by the candidate under my supervision

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## **DEDICATION**

This work is dedicated to my family members, my friends, and my mentors for assisting me and encouraging me during my entire study period.

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## OPERATIONAL DEFINITION OF TERMS

<b>Computation capability:</b>	The capability to calculate interest on investments and savings and also to make quantitative financial plans.
<b>Financial decisions:</b>	The process of taking an action that is related to money management. This can be saving, investing, lending, or borrowing.
<b>Financial education:</b>	The attainment of a formal or informal education that aims at improving financial decisions or improving financial wellbeing.
<b>Financial knowledge:</b>	The understanding of financial concepts and instruments, understanding how financial instruments work, and the related risks. These instruments are shares, savings options, Stocks, Bonds, Mutual funds, and treasury bills.
<b>Financial literacy:</b>	The possession of skills and knowledge that helps a person to make the right choices related to the management of their financial resources (income, savings, and investment).
<b>Personal retirement planning:</b>	The action of constituting investments or savings with the purpose of having an income during the retirement period. The process of planning is done by an individual during his preretirement period.
<b>Preretirement:</b>	The period before the retirement age which is between 18 and 65 years of age in the Democratic Republic of the Congo. This is the period where an individual plans for his retirement. It depends on the time an individual started working, meaning that this period can be different

from one person to another. In the present study, the age between 50 and 65 years was considered.

**Public sector employee:**

A person working for the public sector (institutions owned by the government) under an employment contract.

**Risk attitudes toward financial products:** The perception of an individual in relation to ease of use of a given financial product, and risk aversion for retirement investments and retirement saving options.

## **ABBREVIATION AND ACRONYMS**

<b>CNSS:</b>	Caisse Nationale de Sécurité Sociale
<b>DRC:</b>	Democratic Republic of the Congo
<b>IMF:</b>	International Monetary Fund
<b>INS:</b>	Institut National de Statistiques
<b>SPSS:</b>	Statistical Package for Social Sciences
<b>UAE:</b>	United Arab Emirates

## ABSTRACT

Many retirees are confronted with the problem of having an insufficient income to sustain their living costs. Pension plans are designed to help retirees to save a part of their income during the working years for future use during their retirement. In the Democratic Republic of Congo, pension schemes are inexistent and many employees have been shifting to personal retirement plans. More than 50% of employees do not have personal retirement plans. The general objective of this research was to investigate the effect of financial literacy on personal retirement preparedness among public sector workers in the Democratic Republic of Congo. The study was carried out in the city of Bukavu, one of the populated cities in the country. The specific objectives were to measure the effect of financial knowledge, computation capability, financial education, and risk attitudes toward financial products on retirement planning among public sector workers in Bukavu city. The population targeted in this study was constituted by public sector employees working for institutions under provincial government control as well as those under national government control. This study used purposive sampling and stratified sampling. The sample size for this study was 396 public sector employees. This study was supported by the life cycle theory, expected utility theory, and the theory of planned behavior. Descriptive and causal research designs were used in the present research. Logistic regression was used to verify the research hypothesis. A survey questionnaire was used to gather the primary data. The data gathered were processed using SPSS 21. The results in the estimated model showed that Financial knowledge is statistically significant with a p-value below 0.05, Computation capability is statistically significant with a p-value of below 0.05, Financial education is not statistically significant with a p-value over 0.05, and Risk attitudes toward the financial product is not statistically significant with a p-value over 0.05. Thus, Financial knowledge and Computation capability influence significantly personal retirement planning. The findings from the study support therefore that retirement planning has been influenced by the level of financial literacy of public sector employees in the city of Bukavu. The study recommends to public sector employees to improve their level of financial literacy for better living conditions during their retirement period and to policymakers to organize financial literacy training for public sector employees in the Democratic Republic of Congo.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Retirement is the period where the labor force exits the working life due to old age, given the reason that old individuals are characterized by a reduced ability to perform the work assigned to them. After working for years, workers shift to the retirement period which is a critical stage of life that most of the workers will go through (Zhan, Wang, & Daniel, 2019). The period of retirement is characterized by a dramatic decline of the income and this situation is more likely to have a negative effect on the financial situation of the retiree(Ackert, 2010).

Social security is a program that collects contributions from individuals during their working period and uses the money collected to make payments to them during their retirement years.

It aims is to make sure people will be receiving a certain income once they retire and therefore it is an important component of retirement planning. Nonetheless, social security does not give enough income to support the living expenses of most individuals. Therefore, additional retirement planning is critical to make sure that people can leave in comfort during their retirement (Jeff, 2004).

In France, people who are more likely to make personal financial plans for the future are financially literate (Arrondel, 2013). There is a need for more research related to the methods for educating individuals with the objective to help them to make informed choices (Agnew, Bateman, & Thorp, n.d.).Studies on financial literacy in many other countries demonstrate that lack of information about financial practices and products could lead to bias in people's savings decisions as well as retirement investment decisions ( Lusardi, Michaud, & Mitchell, 2019)(Lusardi & Mitchell, 2007).

A study conducted in America by Lusardi and Mitchell (2007), shows that Financial literacy is a key determinant of personal retirement preparedness and financially illiterate individuals do not have financial plans for their retirement period. Financially literate individuals are those who plan for their retirement. Investing in financial education is proved to be important and it has an

impact on how people plan for their retirement and consequently their ability to have enough resources during their retirement period (Moure, 2016).

In Africa, the study of Agunga(2016) conducted in Kenya proves that components of financial literacy have a positive effect on retirement preparedness. The chance of not having a plan for retirement is significantly high when a person is financially illiterate (Githui, 2014). Enhancing financial literacy is important for a good retirement, particularly for the most financially vulnerable individuals (Lusardi & Mitchell, 2011). Individuals should be encouraged to plan for their financial future by implementing several policies (Arrondel, 2013).

In a study carried out in Bukavu city, the DRC, Cibangala(2019), shows that financial literacy impacts significantly the financial wellbeing of individuals. Apart from positive social attitudes, individuals that come from a family with a high score of financial literacy are found to have better risk attitudes towards financial plans and financial management. They consider that planning for their projects and for future expenses improves their financial stability and wellbeing.

### **1.1.1 Financial Literacy**

The interest in financial literacy and its capacity to affect financial decisions has attracted many researchers in the past years. It is important to know how the dimensions of financial literacy can improve financial decisions and how individuals can be equipped with the necessary knowledge that can increase their financial literacy. It is one of the key strategies in discussions intending to improve retail financial markets with the objective to alleviate the effects of the financial crisis(Anderson, Baker, & Robinson, 2017).

A person is considered financially literate if he has a certain level of knowledge of important financial concepts; the capacity to use numeracy knowledge for financial choices. Besides that, it's proved that if individuals have negative risk attitudes toward saving or investing for their old age, they will not save or invest. The positive outcomes of having a good level of financial literacy are behavior such as planning for expenses and establishing a financial safety system(Atkinson, 2012). The Organization for Economic Co-operation and Development considers financial literacy as a combination of knowledge, skills, and risk attitudes necessary to

make rational financial decisions with the purpose of achieving financial wellbeing (Meir, Mugerma, & Sade, 2016).

The link between financial literacy and the performance of investments is significant (Jiang, Liao, Wang & Xiang, 2019). According to Grohmann (2018), financial literacy is unconditionally a way of improving financial decision-making. Calcagno and Monticone (2015), showed that the low level of financial literacy among households exposes them to making financial decisions biases and therefore, households with a higher level of financial literacy make better decisions hence, better financial plans.

According to Salleh (2015), enhancing the degree of financial literacy is very important, especially for poor households and those with low earnings. Nonetheless, increasing the degree of financial literacy is critical for all households because it's linked with their financial decisions. Lin, Hsiao, and Yeh (2017) prove that a high level of financial literacy is linked with a subscription to life insurance and retirement planning. According to Aren and Dinç (2015), Financial literacy influences investment choices. Policymakers should consider financial literacy and financial advice needs as critical mechanisms to help people make good retirement investment decisions (Anh, Nguyen, & Rozsa, 2019).

Many studies have proved the important effect of financial literacy on retirement preparedness. These studies were carried out in many parts of the world using diversified methodologies. Different dimensions of financial literacy and retirement planning were investigated. Findings from those studies revealed that people with a high degree of financial literacy are the ones who makes financial plans for their retirement period (Stewart & Jürjens, 2018) (Klapper, Panos, & Klapper, 2011) (Crossan, Feslier, Hurnard, & Crossan, 2015) (Rooij, Lusardi, & Alessie, 2011) (Rooij, Lusardi, & Alessie, 2012) (Boisclair, 2015).

In Africa, a study conducted in Kenya by Githui (2014), investigates the factors affecting the intention to plan for retirement. The purpose of the study is to test the impact of financial literacy and demographic characteristics on the intention to plan for retirement. The findings from the study show that people with the highest degree of financial literacy are more likely to plan for their retirement. Policymakers are urged to promote programs that aim to increase the degree of financial literacy among individuals.

According to the World Bank(2019), In the DRC the general literacy rate for adults was estimated to 77.04% in 2016. This indicator measures the number of individuals aged 15 and above who have the capacity to read and write with understanding a short simple communication about their daily life. However financial education programs are inexistent in the country. The government has approved a national financial education program. This program aims at providing the Congolese population with the financial knowledge that will have a positive effect on their life through improved financial decisions. The implementation of national financial education is slow, and this could result in poor financial decisions making among the population. The World Bank is expected to assist the Central Bank of Congo in putting in practice the important measures to ensure the national financial education program is executed (World Bank, 2018).

### **1.1.2 Retirement Planning**

According to Burns(2019), there are several types of retirement planning that individuals can adopt, the main is the purchase of assets and saving plans. Retirement portfolios are primarily composed of cash, bonds, and stocks, but the way in which these assets are bought, sold and, rebalanced vary among investors. Every investor adopts his preferred method of investment and saving. Individuals purchase assets and constitute savings with expectations of income generation during the retirement period.

Pension funds are the most common form of institutional retirement investment in many countries. The pension funds are accumulated during the working years of the employee and have the purpose of financing an income during retirement. They may be managed by the organization for which the person works. In this case, the organization invests in a certain time to constitute a fund that will be used to provide a retirement income for its workers. Stock market investments in shares and bonds are the common assets within the portfolio of pension funds (Redhead, 2008).

However personal retirement investments can also be constituted by an employee to provide an income in retirement years because employees should be responsible for their personal finances in general and for their retirement preparedness in particular (Halilovic, Zaimovic, Berilo, & Zaimovic, 2019). Retirees are confronted with many problems when they decide about the

distribution of their investing lives. They must first of all design a structure of their portfolio in order to make sure that it will provide sufficient funds for their lifestyle needs during the retirement period (Burns, 2019).

Spending money for consumption purposes aims to provide utility to households while spending money for investment purposes aims to provide better standards of life in the future (Mankiw, Gregory; William, 2008). Investing decisions are about the acquisition of non-current assets. Different sources are used to fund investments: these are institutions that provide funds for example commercial banks, investment bankers, trust companies, equipment vendors, government agencies, life insurance companies, private venture capital companies, mortgage companies, individuals and, shareholders (Pierre G., 2011).

Retirement investments are concerned about investments done within the working years with the aim to provide income during the retirement period. During the accumulation period, pension schemes collect contributions from members and invest the fund in a portfolio of stocks or bonds to constitute funds for retirement (Emms, 2012). Personal retirement investments are done independently by a person through the purchase of Assets. Each individual decides about the amount he wants to invest and how to invest (Aswath, 2012).

Retirement investments are done through the purchase of assets. An asset is anything tangible or intangible that can be valued and that has the capacity to generate cash inflows or to cause cash outflows in the future. In accounting, condition for a resource to be an asset, it must have been purchased in a past transaction and it must be able to measure its future income with precision (Aswath, 2012). A portfolio is constructed by distributing the different assets in different investments in order to meet a retiree's fund needs during retirement years. It is therefore a key retirement planning issue around which there is not a generally accepted opinion (Burns, 2019).

Savings are part of retirement planning. Savings can be understood from different perspectives: private savings are constituted of the total income which remains after households have paid for their taxes and consumption (Gregory, Mankiw; Ronald, Kneebone; Kenneth, 2018). The purpose of saving during the pre-retirement period is to make sure that the purchasing power is extended to the period of retirement. As before the retirement, during the retirement, the retiree will need to cover a certain number of living expenses (Dovie, 2018).

In the DRC due to low retirement benefits, workers have turned to personal retirement plans. In the pre-retirement period, workers constitute savings in microfinance institutions and banks, others buy properties in the real estate market, farms, others set up their own businesses or buy shares in existing enterprises. Given the inexistence of a stock market in the country, shares are bought directly from companies based on announcements done in the medias (Nzenga, 2018).

### **1.1.3 Public Sector Employment in the Democratic Republic of the Congo**

The DRC is a developing country where the public sector contributes significantly to offer employment to the labor force. The employment rate is estimated to be 60.66% and self-employment is dominant with 81.54% followed by wage work 18.45%. Retirement contributions are mandatory only for wage workers(World Bank, 2019). The total of contributions is 7%, the employees are charged 3.5% on their monthly earnings and the employer contributes for their employees 3.5%.75.7% of employees in the DRC are working for the public sector while 24.3% are working for the private sector(Ins, 2017). The public sector is therefore an important employer in the country and deserves particular attention.

Bukavu city is the capital of the province of South Kivu province in the DRC; it is located in the eastern part of the DRC with a population of approximately 1.3 million inhabitants. It was the capital of the former province of Kivu that was divided into three provinces (North Kivu, South Kivu and Maniema)(Mairie de Bukavu, 2018). In the South Kivu province, it is estimated that more than 49% of employees in the formal sector work for the public sector and the private sector employs 50% of the labor force(PNUD, 2009).

The city of Bukavu has several public institutions that contribute to employment in the region. These public institutions are divided into two groups: institutions that depend on provincial government and institutions that depend directly on the national government. The first type of public institution is constituted by institutions that are under the control of the provincial government. These are the provincial parliament, the provincial ministries, the cabinets of ministers, and the municipalities. The other type of public institutions depend on the national government, these are the army, the education sector, the national police, the ports authority, the migration authority, the customs authority, the aviation authority, and the tax authority (Mairie de Bukavu, 2018).

## 1.2 Statement of the Problem

Retirement planning has become a high priority for individuals. The aim of planning for retirement is to have a portfolio that can ensure the person does not run out of income during the retirement period (Sigler, 2006). This helps the retiree to not depend financially on the government or his family during the retirement and ensure that he lives in comfort during his retirement.

According to Luzolo(2016), Sub-Saharan Africa countries have the lowest social security rates compared to other countries in the world. The social security coverage is 15.6%, while the global average rate is 40.2%. Social protection systems need to be strengthened in Africa for the benefit of its population. Millions of older African individuals who worked during their active age are in precarious situations with low pensions and need better social security. They are confronted with poor living conditions while they were employed during their working age.

According to a report from IMF(2014),in the DRC pensions are managed exclusively by the Caisse Nationale de Sécurité Sociale (CNSS). The CNSS is a state-owned organization that collects contributions from employees in order to provide them pensions when they retire. Social security contributions are only mandatory for wage workers but the pensions offered are very low. A Congolese retiree receives the lowest income during retirement in Sub Saharan Africa for the same income and years of contributions. In the DRC the social security coverage rate is low and retirement benefits that can come from alternative retirement plans are considered to be important to improve the life conditions of retirees (Luzolo, 2016).

Pension schemes are inexistent in the country and only the CNSS has the right to collect retirement contributions. Operating expenses of CNSS absorb a big part of the social security contributions. CNSS is the organization supposed to offer social security to retirees in the DRC but unfortunately, it is in precarious financial situation(IMF, 2014).In the DRC, in 2012, the coverage of social insurance programs was estimated to be 3.86%. This indicator measures the percentage of the population subscribing to plans that provide old age contributory pensions and health insurance benefits(World Bank, 2019). There is a need to assess how employees are making personal plans for their retirement.

Luzolo(2016), shows that in the DRC, the CNSS offers low retirement benefits. A Congolese retiree receives 1.67% of his contributions during his entire period of retirement. It is one of the lowest rates in Central Africa and in Sub-Saharan Africa. The republic of Congo offers 2.5%, the Gambia 7.5% and, Morocco 6.25%. In DRC, individuals have turned to personal retirement plans but it is estimated that more than 50% of employees do not have personal retirement plans, and it results in a decline in their income and poor living conditions during their retirement period. Besides that, retirees become a burden for their families and currently, the government does not have any plan to address that problem(Nzenga, 2018).

The population in the world is growing and new concerns on retirement management are rising. The world population projections prove that in 2050 there will be more than two times as many older persons as children under five (United Nations, 2019). In the DRC the retirement age for women and men is 65 (Issa, 2017). Underdeveloped countries have the highest rate of population growth at the same time they have poor policies and social security systems. The present study is based on the DRC with approximately 84 million people, the fourth most populous country in Africa after Nigeria, Ethiopia, and Egypt; a country that raises many concerns on funding retirement(World Bank, 2019). These facts demonstrate the need for personal retirement plans in the country.

Lin, Hsiao and Yeh (2017), and many other authors demonstrated that financial literacy affects positively retirement planning. The more financially literate an individual is, the more he plans for his retirement. While the population is waiting for the implementation of the national financial education program it is important to explore the impact of financial literacy on personal retirement planning among public sector employees in the DRC.

The present study aimed to respond to the question: What is the effect of financial literacy on personal retirement planning among employees of the public sector in Bukavu city in the DRC?

### **1.3 Objectives of the Study**

The present research intended to fulfill the objectives below:

### **1.3.1 General Objective**

This study aimed to analyze whether financial literacy has an impact on personal retirement planning among public sector employees in the Democratic Republic of Congo.

### **1.3.2 Specific Objectives:**

1. To determine the effect of financial knowledge on personal retirement planning among public sector employees in Bukavu city, Democratic Republic of Congo.
2. To examine the effect of computation capability on personal retirement planning among public sector employees in Bukavu city, Democratic Republic of Congo.
3. To investigate the effect of financial education on personal retirement planning among public sector workers in Bukavu city, Democratic Republic of Congo.
4. To investigate the effect of risk attitudes toward financial products on personal retirement planning among public sector employees in Bukavu city, the Democratic Republic of the Congo

### **1.4 Research Hypotheses**

H<sub>01</sub>: Financial knowledge does not affect the personal retirement planning of public sector employees in Bukavu city, Democratic Republic of Congo.

H<sub>02</sub>: Computation capability of retirement benefits has no significant impact on personal retirement planning of public sector workers in Bukavu city, Democratic Republic of Congo.

H<sub>03</sub>: Financial education has no significant impact on personal retirement planning among public sector workers in Bukavu city, Democratic Republic of Congo.

H<sub>04</sub>: Risk attitudes toward financial products have no significant impact on personal retirement planning among public sector employees in Bukavu city, Democratic Republic of Congo.

### **1.5 Significance of the Study**

The present research is a guide for policymakers and social security regulators in the DRC. It brings out key information on the degree of financial literacy among individuals in their preretirement period but also their attitudes and decisions toward retirement planning. This study constitutes a source of knowledge for the public at large and the people who have a high probability to plan for their retirement in particular. This study is a source of knowledge among academicians in contributing to the existing theory on financial literacy and on personal retirement planning in underdeveloped countries.

### **1.6 Scope of the Study**

This research was carried out in Bukavu city, the capital of the South Kivu province in the DRC and it was conducted in 2020. The data was collected from employees of public institutions operating in the city of Bukavu. Public institutions under provincial government control and those under national government control were considered. The study was based on employees who have a valid employment contract with a public institution.

### **1.7 Limitations of the Study**

Few research on financial literacy and personal retirement planning have been conducted in the DRC, most related available data is from developed countries, data from other sources with literature on financial literacy and its relation with retirement planning was used to overcome this limitation. The data was collected during the Covid 19 health crisis period making it difficult to travel from Nairobi to the field (DRC). This challenge was overcome by using flights with stops and by accepting mandatory tests and quarantines in transit countries. Collecting data during a health crisis was also another challenge that conducted to non-responses, data collectors had to respect the health protocols of all the offices visited.

### **1.8 Organization of the study**

The content of this project is organized into the following sections: Background of the study, objectives, research significance, Scope and, limitations of the study constitute the first chapter. Chapter two is based on the Literature review of the study which has the Theoretical Review, Empirical Review, and conceptual framework of the study. Chapter three is the research methodology of the study which has the following sections: Research Design of the study, Target

Population of the study, Empirical Model of the study, Operationalization and Measurement of the study Variables, Sampling Design and Data collection, Reliability, and validity tests, Diagnostic test Data analysis and presentation, research ethics. Chapter four presents the findings and discussions on the effect of financial literacy on personal retirement planning among public sector workers in Bukavu city in the DRC. The first part presents the response rate, the second presents the descriptive findings the third part presents the reliability test, the fourth part presents the multicollinearity test, the fifth part presents the regression analysis and the last presents the summary of hypothesis testing. Chapter five presents the summary of the major results of the research. The first section presents the summary of the study and the second section the policy implications and recommendations.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. Introduction**

This chapter includes in section one the theoretical review and in section two the empirical review. The theoretical review presents different theories related to the present study while the empirical review presents different studies related to our study. Section three presents the summary of the literature review as well as the research gaps and section four presents the conceptual framework.

### **2.2. Theoretical Review**

This section presents the different theories and studies that this research is based on namely, the Life Cycle theory, the Expected Utility Theory and, the Theory of Planned Behavior.

#### **2.2.1. Life Cycle Theory**

The life-cycle theory is a result of the findings of Modigliani published in two research papers in the early 1950s with his graduate student, Richard Brumberg. In the 1950s, Franco Modigliani and his student Richard Brumberg came out with a theory on spending behavior. This theory states that individuals make informed decisions about the amount they want to use for their expenses at each stage of their life. However, these decisions are limited by the availability of resources that individuals can access during their life. By building up and running down assets, employees can make financial plans for their retirement and adapt their expenses to their needs at every stage of their living years. The life-cycle story is the one in which the resource of the country circulate; the young individuals have few resources, the middle-aged individuals have more and the highest level of wealth is possessed by individuals who are about to retire. Through their retirement period, retirees reduce their assets to get food, accommodation and, entertainment (Deaton, 2005).

Blau and Blau, (2007), show that during the retirement period, consumption expenses are reduced in households and life cycle theory can explain that situation. Bodie, Treussard, and Willen(2007), emphasizes that decisions such as the allocation of portfolios for retirement investments, the subscription to a retirement insurance plan are guided by the life cycle theory.

In the present study, life cycle theory would apply as it shows how individuals allocate their income for different expenses depending on their age. This study would like to understand how employees allocate a part of their income to prepare for their retirement. The preretirement include individuals who are close to their retirement and it is important to understand how they plan for their retirement. Based on the life cycle theory during the age before the retirement period individuals should change their financial behavior related to savings and investments and this study want to test whether it is the case for retirement planning in the DRC.

### **2.2.2 Expected Utility Theory**

The principle of probabilities was developed in the seventeenth century by Pierre de Fermat, Blaise Pascal and, Christian Huygens. This resulted in the formulation of the first mathematical theory about deciding with risky alternatives(Thorsten, Marc& Oliver, 2010). Expected utility theory was developed with the purpose to give a definition to rational behavior when individuals are taking decisions on for an uncertain future. This theory shows that individuals should act in a particular manner when they are faced with decision-making under uncertainty. In this point of view, the theory is “normative,” which means that it shows how people should rationally behave. This is in opposition to a “positive” theory, which demonstrates how people actually behave (Lucy, Ackert& Richard 2010).

This theory applies to the current study as when individuals decide on their retirement they are faced with uncertainties on the exact period and the income of retirement. When individuals decide on their retirement planning they have to take into consideration expected future losses and profits. They always behave in such a way that the plan adopted for their retirement will deliver the outcomes it was designed for. The aim is to offer a comfortable income to retirees during their retirement. The plan needs to include strategies to reduce future losses and maximize future profits such as diversification and this involves financial knowledge, computation capability, financial education and, risk attitudes toward financial products.

### **2.2.3 The Theory of Planned Behavior**

The present theory was developed by Ajzen (1991), as a process to understand what is behind the behavior intention and actual behavior towards a financial decision or product. This theory shows that attitudes, social influence and perceived behavioral control or perceived ease or

difficulty are the foundation of intention to adopt a given behavior. Those are the main factors that determine a behavior towards a financial product or decision (Ajzen, 1991). The theory of planned behavior and financial literacy are proved to be positively linked. Behavioral intention in financial literacy have a significant positive impact on the intention to adopt a financial product or a financial decision(Kennedy, 2013).

This theory relates to the present study because financial literacy is proved to have an effect on financial decision making and when individuals are deciding on financial plans to adopt during their retirement, they adopt a specific behavior that can be determined by their perceptions of retirement plans and risk attitudes toward retirement financial plans. In case they perceive retirement plans as important for their future they will be more likely to adopt them and if they do not perceive retirement plans as a way to maintain their living conditions or to improve them during their retirement, they will not be planning.

### **2.3. Empirical Literature Review**

This section presents different studies from authors who previously investigated the factors affecting retirement planning but also the link between financial literacy and retirement preparedness including retirement investments.

#### **2.3.1. Financial Knowledge and Personal Retirement Planning**

Agunga(2016), studies the effect of financial literacy on financial planning for retirement among workers in public companies in Nairobi, Kenya. The purpose of the study was to determine how the knowledge of financial instruments affects retirement planning for retirement. Using a descriptive and inferential approach of means, standard deviations, and multiple regression analysis, the author find out that financial knowledge has a positive impact on financial preparedness for retirement. However, this study was centered Kenya and included only financial knowledge and computation capability to measure financial literacy. To fill this gap, the current research was carried out in the DRC and adds financial education as a measure of financial literacy.

Rooij (2011), assessed the impact of financial literacy on retirement planning in the Netherlands. This study examined how financial knowledge impacts retirement preparedness in the Netherlands. Multivariate ordinary least square was applied and the results revealed that financial knowledge affect significantly retirement planning; therefore, individuals with high

financial knowledge have a high probability to plan for retirement. The research is based on Netherlands. The current empirical analysis is centered on the DRC.

Arrondel (2013), assesses the link between financial literacy and financial planning in France. Using ordinary least square, the author finds out that some subpopulations have a low degree of financial literacy compared to others, women, young, old and people with a low degree of education have a low degree of financial knowledge. The differences in financial knowledge were found to be linked with retirement planning. The current study is based on the DRC, unlike the previous study which is based on France.

Bongini et al. (2019), study university students' involvement in retirement planning. The purpose of the study is to explore the factors predicting university student to have intentions to invest in pension funds. The theory of planned behavior and ordinary least square step-wise multiple regression analysis is used. The results reveal that theory of planned behavior predictors, pension knowledge, and money management influence positively the intention to invest in a pension fund. However this research includes only youth in the sample, the current study included individuals who are close to the retirement period in the DRC.

### **2.3.2 Computation Capability and Personal Retirement Planning**

Klapper et al.(2011), examine the link between financial literacy and retirement preparedness in Russia. Using a Probit model, the results revealed that only 36% of respondents have computational capability plans for their retirement. These individuals could understand interest compounding, and inflation. Financial literacy was proved to have a significant effect on retirement planning and pension funds participation. However this study is centered on retirement planning and pension funds participation in Russia. To fill this gap the current study focuses on an underdeveloped country, the DRC and includes three main constructs of financial literacy: financial education, financial knowledge and computation capability.

Anderson et al.(2017a), investigate the relationship between precautionary savings, retirement preparedness and misperceptions of financial literacy. LinkedIn members were surveyed and questions were asked to assess the level of computation capability. A Probit model was applied and results reveal that computation capability as a construct of financial literacy and retirement preparedness were found to be positively correlated. Individuals who have good command in

computation is more likely to make plans for their retirement. However, this study is based on employees selected on LinkedIn without differentiating the sector of employment. The present study addresses this gap in investigating the case of public sector employees.

Sekita(2015), analyses the effect of financial literacy on retirement planning in Japan. The purpose of this study is to do an evaluation of the level of financial literacy in Japan, to determine which group in Japan has a low degree of financial literacy and to determine the link between financial literacy and retirement planning. A multivariate analysis, a simple linear probability model regression were used to determine the link between financial literacy and retirement planning as well as socioeconomic characteristics. The results revealed that individuals who had a good computation capability of interests and inflation have a high probability to have a saving plan for retirement. The lowest degree of financial literacy was observed among women, the young and people with a low income and a low degree of education. The research was based on Japan, thus the current study fills that gap in studying financial literacy and retirement planning in the DRC.

Lusardi et al.(2011), investigate the impact of financial literacy on retirement preparedness in the United States. The authors used a multivariate model, an Ordinary least squares regression and find out that people with a high score of financial literacy are the ones who plan for retirement. In a set of measures of financial literacy, a good level of computation capability of inflation and interests are found to have a positive impact on retirement planning. However this study is centered on the United States of America, the present study fills that gap in carrying out an investigation on DRC.

### **2.3.3 Financial Education and Personal Retirement Planning**

Folk, Beh, and Baranovich(2012), investigate the impact of financial education on retirement preparedness. The author used a sample of 404 individuals in the preretirement period and hierarchical regression analysis. The results from the study reveal that financial education has a significant effect on financial retirement planning. Individuals who attend financial education programs are found to adopt a planning behavior and are more interested in preparing future financial wellbeing. However, the study was carried out in Malaysia. In addressing the research gap, the present study considers the case of the DRC.

The study of Olivia(2007), analyzes the factors behind the lack of retirement preparedness in the United States of America. Financial literacy was tested in the study as a factor that can hinder retirement planning. While a large interest has been showed by non-profits organizations and governments to enhance financial literacy level, the study reveals that financial literacy has a positive effect on retirement savings. The more an individual is financially literate, the more he constitutes savings for his retirement expenses. However, this study focuses only on the factors that hinder retirement planning. The current study fills that gap in investigating factors that increase or decrease the probability to plan for retirement.

Clark, Ambrosio and Mcdermed(2003), explore the effect of financial education on retirement savings. The author investigates a group of individuals in two surveys carried out before and after the attainment of a financial education program. The finding from the study reveals that after attending a financial education event, individuals are more likely to change their retirement savings plans. They are more interested in finding out the available means that can be used to save for retirement. However, this study is limited to retirement savings. This gap is addressed in the current empirical study in including also retirement investments.

Ntalianis and Wise(2011), explore the impact of financial education on retirement planning. The study shows that governments do not have the capacity to offer enough retirement income in many countries and access to financial education has a positive impact on retirement planning. Attending seminars, receiving written communications and online information are found to be effective methods to access financial education. Recommendations from the study state that individuals should make efforts to access financial education for better retirement planning. This study is limited to financial education. The present study includes financial knowledge and computation capability to explain retirement planning.

In the United States of America, Mitchell(2009) investigates the effect of financial literacy on retirement preparedness. Based on the American life panel measures of financial literacy, the results prove that financial knowledge acquired in schools before entering the labor market has a positive effect on planning for the retirement. It is therefore important to design education programs for youths as a way to equip them with the necessary financial knowledge that will impact positively their financial wellbeing later in their retirement. However this study is

centered on the United States of America which is a developed country. The present study aimed at filling this gap in studying the case of an under-developed country, the DRC.

#### **2.3.4 Risk attitudes toward financial products and personal retirement planning**

Dummann(2008), investigates the relationship between retirement savings and attitudes toward financial intermediaries in Germany. Using a life-cycle hypothesis, the findings from the study show that attitudes toward financial intermediaries and products have a significant effect on retirement savings. Subscribing to life insurance products is influenced by household risk attitudes toward financial products. Individuals avoid risky investments because they expect to lose a significant amount of money. A low level of risk aversion is positively associated with old age savings behavior. However this study is limited to retirement savings. The present study addresses this gap in verifying how attitudes toward financial products affect retirement investment.

Satria and Hutabarat(2020), explore the impact of financial literacy on financial planning for retirement using a sample of 120 university lecturers selected in Indonesia. To achieve the purpose of the research, a linear regression model was applied to test the relationships. The results from the study show that attitudes towards retirement products are significant in making personal plans for retirement. Individuals with positive attitudes for retirement products have a high probability to make pension financial plans. This study focuses on university lecturers who are individuals with a high level of education and who are more likely to be financially literate. This gap was filled in the present study that was based on public sector employees from many domains.

Meir et al.(2016), analyze the impact of financial literacy on retirement preparedness in Israel. An online survey was conducted on 501 Israelis randomly and multiple ordinary least square regressions were applied. Results show that individuals with low-risk aversion toward retirement products have a high probability to plan for their retirement. An individual's risk aversion attitude is proved to determine financial decisions such as retirement saving options and retirement investment options. This study did not show the differences in risk attitudes depending on the age of individuals. The present research addresses that gap in investigating retirement plans in the pre-retirement period.

## 2.4 Summary of Literature Review and Research Gaps

The findings from the literature explored show that four main constructs of financial literacy have an impact on personal retirement planning. The studies analyzed focuses on the important role of financial knowledge, computation capability, financial education and risk attitudes toward financial products on personal retirement planning. This study unlike the studies reviewed uses four components to measure financial literacy it is also based on the age bracket between 50 and 60 years old that was proved to be the period where individuals are mostly interested in retirement planning. The reviewed studies were based mostly on developed countries and countries where the social security system works effectively. Few studies on financial literacy and retirement preparedness have been completed in the DRC, which is a country that presents different characteristics compared to developed countries. Table 2.1 below gives the summary of the literature and research gaps for each study.

**Table 2.1 Summary of Literature Review and Research gaps**

<i>Author and year</i>	<i>Study focus</i>	<i>Research results</i>	<i>Research gaps identified</i>	<i>Address to the gaps</i>
(Klapper, 2011)	Financial literacy and retirement preparedness in Russia.	Financial literacy has a significant effect on retirement preparedness and pension funds participation.	This study is centered on employees in Russia.	The current study focus on retirement planning among public sector workers in an underdeveloped country, the DRC.
Agunga, (2016)	This study investigates the impact of financial literacy on financial	Knowledge of financial instruments has no significant effect on financial	This study is centered on employees in state owned companies in	The present study adds financial education as independent

	planning for retirement among workers public enterprises in Nairobi, Kenya	preparedness for retirement among workers in public enterprises in Nairobi. The constructs concerning computation capability was proved to have a positive impact on retirement preparedness.	Kenya.	variable.
Rooij et al.(2011)	This study analyzes the link between financial literacy and retirement preparedness in the Netherlands.	There is an important and positive relationship between financial knowledge and retirement preparedness; individuals with high level of financial literacy have a high probability to plan for retirement.	This study is centered on employees in Netherlands; it has not showed the differences in planning for each level of financial knowledge.	The present study includes more independent variables: financial knowledge and computation capability.
Anderson et al. (2017a)	This study analyzes the relationship between	Computation capability as a construct of financial literacy	This study was centered on employees selected on	The present study addresses this gap in investigating

	precautionary savings, retirement preparedness and wrong perceptions of financial literacy among LinkedIn members.	and retirement planning are positively linked.	Linkedin without differentiating the sector of employment	the case of public sector employees in the DRC.
( Lusardi et al., 2011)	This research investigates the effect of financial literacy on retirement preparedness in the United states of America.	Using a financial capability approach, the results of this study revealed that individuals who are financially literate have a high probability to plan for their retirement.	This research is centered on employees in the United States of America.	The present study focuses on the DRC and includes retirement plans existing in underdeveloped country.
Sekita(2015)	The purpose of this study is to verify the effect of financial literacy on retirement preparedness in Japan.	The results from this research reveal that financially literate people are more likely to have a saving plan.	This study is centered on employees in Japan.	The present study focuses on the DRC and is based on public sector employees.
(Dummann, 2008)	The relationship between retirement saving	The results from the study show that subscribing to	This study is limited to retirement	The present study addresses in the present

	and attitudes toward financial intermediaries in Germany.	life insurance products is influenced by household risk attitudes on financial products.	savings.	study in verifying how attitudes toward financial products affect retirement investment.
(Meir et al., 2016)	The effect of financial literacy and retirement planning in Israel	Findings demonstrate that individuals with low risk aversion toward retirement products have a high probability to plan for their retirement.	This study did not show the possible attitudes depending on the age of individuals.	The present research addresses that gap in investigating retirement plans in the preretirement period.

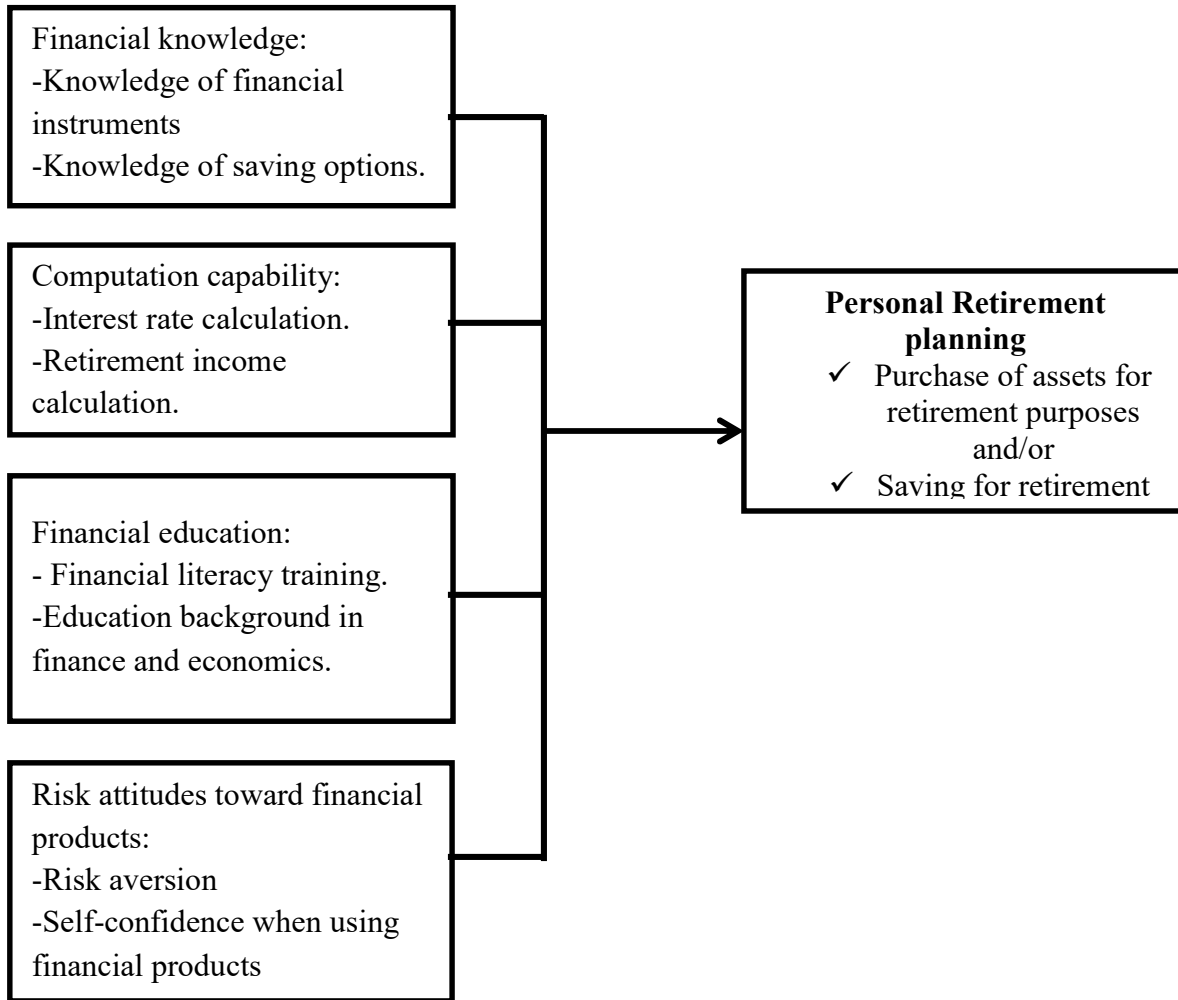
Source: Author, 2020

**2.5. Conceptual Framework**

The conceptual framework of this study presents the relationships between the study’s dependent and independent variables in a diagram. This section explains the link between financial literacy and retirement planning based on the literature review. Retirement planning is the dependent variable, while financial knowledge, computational capability, financial education and attitudes toward financial products constituted our independents variables.

**Independent variables**

**Dependent variable**



Source: Author (2020)

**Figure 2.1: Conceptual Framework**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents different techniques and methods that were applied to get the necessary results to verify the hypothesis of our research. The chapter presents subsequently our research design of the study, the target population of the study, sampling design of the study, empirical model of the study, data collection instruments used in the study, data analysis approaches, reliability, and validity tests, diagnostic tests and Ethical considerations.

### **3.2 Research Design**

Based on the objectives of this study descriptive and causal research designs are used. Descriptive research is the type of research where the purpose is to present in a descriptive way a state of a phenomenon that is existent. Descriptive design is also known as ex post facto research(Sahu, 2013). Descriptive design is used to get a clear picture of financial literacy and retirement preparedness while the causal design was used to ascertain causal effects between financial literacy and personal retirement preparedness.

### **3.3 Target Population**

The population targeted in this research is constituted of employees of the public sector in the city of Bukavu. Specifically employees of public institutions under provincial government control and those under national government control. A sample was extracted from our population to gather the necessary data. The total of employees working for the public sector is estimated to be 48320 individuals in Bukavu city(Cour des comptes, 2019).

### **3.4 Sampling Design**

This research uses two designs, the stratified sampling and purposive sampling. Stratified sampling method is used to divide the population into subpopulations called strata using additional information (Neuman, 2014). Since the public sector has many institutions, in the present study two strata are considered, the first is constituted by public institutions controlled by the national government and the second by those controlled by the provincial government. Purposive sampling also known as judgmental sampling is a method that uses the judgment of an expert in

selecting cases with a specific objective in the mind (Neuman, 2014). In the present study respondents are selected with the purpose of selecting those who are close to their retirement and who are more likely to be concerned by personal retirement planning. Referring to Chakraborty and Bhat(2017), Slovin’s formulas used to compute the sample size.

$$n = \frac{N}{[1 + (N * E^2)]}$$

Where

n, represents the sample size of the study

N, represents the Population size of the study

E, represents the Margin of error, this study use 5%.

In this study, the sample size is given as follow:

$$n = \frac{48320}{[1 + (48320 * 0.05^2)]} = 396 \text{ public sector employees}$$

This sample size is divided using stratified Sampling. Referring to Appendix 4, the half of respondents (198 individuals) was selected from the public institutions controlled by the national government and the other half from those controlled by the provincial government. 198 respondents were selected from each group of institutions, thus the repartition of our sample was done as detailed in Table 3.1. This study adopts purposive sampling to select employees who were surveyed. Hence, based on the studies of Olli-Pekka(2018), Lusardi et al.(2011), and Ntalianis and Wise(2011)the age bracket between 50 and 65 years is considered because it represents the period whereby individuals are mostly interested in retirement planning.

**Table 3.1 Sampling Frame**

Age bracket	Public institutions under national government control	Public institutions under provincial government control
50-65	198	198
Total	396	

### 3.5 Empirical Model

Personal retirement planning can be explained by many factors these are Financial knowledge, computation capability, financial education and attitudes toward financial products. However, these variables are not observed in isolation and so it is important to be able to conduct multivariate analysis to understand the full picture. Referring to Gutsche and Ziegler, (2019); Gerrans, Moulang, Feng, and Strydom(2018); Hassan et al., (2016), the measurement of financial investments and savings chosen is binary and the logistic regression is, therefore, suitable for this study. This helped to distinguish the dimensions of financial literacy that can be attributed or not to people who have invested or saved for their retirement.

A logistic regression model is a model where the predicted variable is categorical. It is therefore a probability model. In the theoretical logistic regression, the probability  $p$  given the values of the explanatory variables  $X$  is as follows:  $P(Y = 1/X) = f(X)$  (Fabozzi, Focardi, Rachev, & Arshanapalli, 2014).

Where  $Y$  = Dependent variable

$X$  = Independent variables

In the present study, the logistic regression is formulated as follow:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

$P_i$  = the probability to purchase assets or constitute savings for retirement purposes

$\beta_0$  = Constant

$\beta_1$  to  $\beta_4$  = Coefficients

$X_1$  = Financial knowledge

$X_2$  = Computation capability

$X_3$  = Financial education

$X_4$  = Risk attitudes toward financial products

$\varepsilon$  = Error term

### 3.5.1 Operationalization and Measurement of Variables

Table 3.2 describes the different variables selected for this study. The category of variables, the type of variables, their indicators as well as the type of measurement is described.

**Table 3.2: Operationalization and Measurement of Variables**

Variable	Type	Operationalization	Measurement
Retirement planning	Dependent variable	Purchase of assets or saving for retirement purposes.	The variable takes the value 1 if the person is investing and/or saving for retirement and 0 otherwise.
Financial literacy	Independent variable	Financial knowledge constructs	Likert scale 1 to 5
	Independent variable	Computation capability constructs	Likert scale 1 to 5
	Independent variable	Financial education constructs	Likert scale 1 to 5
	Independent variable	Risk attitudes toward financial products constructs	Likert scale 1 to 5

Source: Author, (2020)

### 3.6 Data Collection Instruments

The tool used to gather data in this study is a survey questionnaire that was submitted to workers of the public sector in the city of Bukavu. The questionnaire was translated into French (Appendix 2) to be understood by respondents since the field was in a French-speaking country. The questionnaire has two parts: the first part includes socio-demographic and economic information on the study's respondents while the next part includes questions related to financial literacy as well as retirement planning. The questionnaires were submitted to respondents at their workplace by research assistants under the supervision of the researcher and one additional

supervisor. The additional supervisor was hired to coordinate the work of research assistants. The questionnaire is composed of closed-ended questions and Likert scale questions(Appendix 1).

### **3.7 Data Analysis and Presentation**

The data gathered through questionnaires were checked for completeness purposes and compiled in an Excel dataset. For data analysis, *SPSS 21* software was selected which estimated standardized regression coefficients to ascertain relations between the predicted variable and independent variables using logistic regression. Descriptive statistics such as frequencies and percentages were used to summarize data. Inferential statistics via logistic regressions were applied to establish the links between variables. The necessary data for the present study were collected in 2020 and from individuals aged between 50 and 65 years and was mainly based on information on their degree of financial literacy and their financial plans related to retirement. The presentation of data was done in form of tables.

### **3.8 Reliability Test**

#### **3.8.1 Cronbach's alpha**

Referring to Neuman(2014), to test the reliability of our measurements, Cronbach's alpha was applied. It helped to estimate the internal consistency of the questionnaire that includes Likert scale questions. It helped to ensure all the variables included in the regression model are reliable. The Cronbach alpha coefficient cut off of 0.7 and above is recommended as a strong indicator of reliability(Taherdoost, 2017).

### **3.9 Validity Tests**

#### **3.9.1 Hosmer and Lemeshow chi-squared**

Referring to Hu, Shao, and Palta(2006), before interpreting results from the logistic regression, the goodness of fit assessment has to be performed to validate the estimated model. Hosmer and Lemeshow chi-squared and Pseudo R square tests are well fitted to test the overall validity of logistic regression. The Hosmer-Lemeshow test investigates whether the observed proportions of events are similar to the predicted probabilities of occurrence in subgroups of the model

population. The P-value for the Hosmer-Lemeshow test should be below 5% to validate the model.

### **3.8.2 Pseudo R square test**

Pseudo-R<sup>2</sup> statistics is used for assessing the predictive strength of the Logistic Regression model in percentage(Ae, 2013). It is important to test the individual contribution of each independent variable in the overall model. Wald test is applied to test the significance of individual regression coefficients. Variables with a p-value below 5% are considered significant(Rodriguez, 2007).

## **3.10 Diagnostic Tests**

### **3.10.1 Multicollinearity test**

Multicollinearity test was considered to measure the level of correlation between research variables. Specifically, Spearman's correlation was used for its suitability for ordinal variables. Multicollinearity is a high intercorrelation between independent variables. It can alter the quality of a regression, therefore it has to be tested prior to regression analysis and remove highly correlated variables. In the present study a correlation matrix was established to measure the level of multicollinearity(Maddala, 2002). A correlation coefficient above 0.8 or -0.8 implies a high level of multicollinearity. In such a scenario, in the present study, the affected variables were removed from the model(Greene, 2008).

### **3.11 Ethical Considerations:**

Before data gathering, a letter from Kenyatta University graduate authorizing data collection was presented at the Division of Research in DRC to get approval to carry out the study in the public institutions. General applicable rules regarding conducting research in the DRC were followed. All the authors from whom the empirical review was derived are cited and their work is detailed in the reference list. Data were collected following the availability of respondents and the respect of their freedom and point of view.

## **CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS**

### **4.1 Introduction**

The previous chapter presented the methodology used in the present study. This chapter includes in its sections the findings and discussions on the impact of financial literacy on personal retirement planning among public sector employees in Bukavu city in the DRC. The first part presents the response rate, the second presents the descriptive statistics the third part presents the reliability test, the fourth part presents the multicollinearity test, the fifth part presents the regression analysis and the last presents the summary of hypothesis testing.

### **4.2 Response Rate**

This study was based on a sample of 396 public sector employees in the city of Bukavu in DRC. 400 survey questionnaires were distributed and 361 were returned and correctly filled. This resulted in a response rate of 91.1%. Based on the study of Mugenda(2003), a response rate of 70% and above is considered very good, therefore the response rate obtained in the present study is sufficient. The response rate of this study of 91.1% is therefore sufficient to give reliable results.

### **4.3 Descriptive Statistics**

This section depicts the descriptive results as well as the related discussions in line with the study objectives. The description is done using indicators of central tendencies (Mean) and indicators of dispersion (Standard deviation). The items were coded using a five-point Likert scale 1. Disagree to a very little extent 2. Disagree to a little extent 3. Agree to some extent 4. Agree to a great extent 5. Agree to a very great extent.

#### **4.3.1 Age of Respondents**

**Table 4.1 Age of Respondents**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
50-60	218	60.4	60.4
61-65	143	39.6	100.0
Total	361	100.0	

*Source: Research data (2020)*

The results in Table 4.1 above show that the majority of our research respondents in the preretirement period were aged between 50 and 60 years (77.5%). The preretirement period is the period where individuals are more likely to take financial decisions for retirement purposes, the sample of this study included only individuals who are aged between 50 and 65 years and who are employed by the public sector in the city of Bukavu in DRC. Quartey et al. (2016) pointed out that the level of financial literacy is higher for older men and they are stronger in computation.

### 4.3.2 Gender of Respondents

**Table 4.2 Gender of Respondents**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Female	58	16.1	16.1
Male	303	83.9	100.0
Total	361	100.0	

*Source: Research data (2020)*

The results in Table 4.2 above depict that most of the study respondents were male (70%), Females represented 16.1% of respondents. This result shows that there is a predominance of males among public sector employees in Bukavu city in the DRC. The study of Dvorak & Hanley (2010) demonstrated that Females have the lowest level of financial literacy.

### 4.3.3 Marital Status of Respondents

**Table 4.3 Marital Status of Respondents**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Divorced	11	3.0	3.0
Married	326	90.3	93.4
Separated	12	3.3	96.7
Single	12	3.3	100.0
Total	361	100.0	

*Source: Research data 2020*

The results in Table 4.3 depict that the majorities of our respondents were married (70%) and are more likely to have families. Divorced represent the lowest percentage of or respondents (3%). The study of Vivel-búa & Fernández-lópez(2019)showed that marital status is a driving force for

retirement savings. Married individuals have a high probability of saving for retirement since they are living in a committed relationship (Vivel-búa & Fernández-lópez, 2019).

#### 4.3.4 Education Level of Respondents

**Table 4.4 Education Level of Respondents**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Bachelor	249	69.0	69.0
Certificate	3	.8	69.8
High school	77	21.3	91.1
Masters	12	3.3	94.5
Never been to formal school	4	1.1	95.6
Phd	8	2.2	97.8
Primary school	8	2.2	100.0
Total	361	100.0	

*Source: Research data 2020*

The findings in Table 4.4 above depict that most of the study respondents have a bachelor's degree (69.0%) and 21% have a high school level. Dvorak & Hanley (2010), found out that financial literacy is low among low educated employees. The study of Atkinson (2008), demonstrated that there is a significant relationship between high levels of education and high level of financial literacy. Adami, Carosi, Sharma, and Adami, (2018), demonstrated that the low level of education is among the factors explaining the high level of poverty in retirement years.

#### 4.3.5 Income of Respondents

**Table 4.5 Monthly Salaries of Respondents in Congolese Francs**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Below 360000	219	60.7	60.7
Between 1800001 and 3600000	8	2.2	62.9
Between 360000 and 900000	103	28.5	91.4
Between 900001 and 1800000	27	7.5	98.9
More than 3600000	4	1.1	100.0
Total	361	100.0	

*Source: Research data (2020)*

The result in Table 4.5 above depicts that the majority of this study’s respondents have a salary comprised below 3600000 Congolese Francs, and few have a salary above 3600000 Congolese Francs. Dvorak & Hanley (2010), showed that low income and low financial literacy are associated. However, (Atkinson, 2008.), demonstrated that it is possible to have a high level of financial literacy in any income group. He showed that the capacity for someone to acquire knowledge, to adopt attitudes towards his financial comfort, or to adopt positive behaviors is not associated with his income. Income plays a key role in retirement planning, empirical evidence showed that higher-income earners are more likely to make financial plans for their retirement (Vivel-búa & Fernández-lópez, 2019).

#### 4.3.6 Financial Knowledge Level of Respondents

**Table 4.6 Financial Knowledge**

	N	Disagree to a very little extent	Disagree to a little extent	Agree to some extent	Agree to a great extent	Agree to a very great extent	Total
Item1	361	11.1	18.3	27.4	22.4	20.8	100
Item2	361	7.8	21.6	24.1	28.0	18.5	100
Item3	361	12.2	19.4	23.5	25.2	19.7	100
Item4	361	10.0	19.4	24.1	21.3	25.2	100
Item5	361	10.0	18.6	23.5	24.7	23.2	100
fn	361	10.22	19.46	24.52	24.32	21.48	100
Valid N	361						

*Source: Research data (2020)*

Table 4.6 above shows that a large number of public sector employees (24.52%) in Bukavu city, DRC has an average level of financial knowledge. The highest average of frequencies for all the items related to financial knowledge is on the third Likert scale (Agree to some extent). Financial knowledge is proved to be key in making retirement plans (Rooij et al., 2011). This should be increased by participating in financial education programs.

### 4.3.7 Computation Capability Level of Respondents

**Table 4.7 Computation Capability**

	N	Disagree to a very little extent	Disagree to a little extent	Agree to some extent	Agree to a great extent	Agree to a very great extent	Total
Item6	361	19.9	30.5	15.0	13.9	20.7	100
Item7	361	26.6	35.7	11.6	8.6	17.5	100
Item8	361	22.2	31.6	18.0	11.9	16.3	100
Item9	361	24.4	35.7	13.9	12.7	13.3	100
Item10	361	29.9	31.3	15.0	8.6	15.2	100
cc	361	24.6	32.96	14.7	11.14	16.6	100
Valid	361						

*Source: Research data (2020)*

The findings in Table 4.7 above depicted that the majority of respondents (32.96%) disagreed to a little extent on questions related to computation capability, this shows that the level of computation capability of public sector employees in Bukavu city, DRC is low. Computation capability is proved to be an important factor for retirement planning (Lusardi & Mitchell, 2011). Therefore, there is a need to improve the computation capability of retirement benefits among public sector employees in Bukavu city, DRC.

### 4.3.8 Financial Education Level of Respondents

**Table 4.8 Financial Education**

	N	Disagree to a very little extent	Disagree to a little extent	Agree to some extent	Agree to a great extent	Agree to a very great extent	Total
Item11	361	28.5	24.9	5.5	15.2	25.9	100
Item12	361	36.8	23.3	11.9	10.8	17.2	100
item13	361	27.1	18.8	10.8	13.0	30.3	100
fe	361	30.8	22.3	9.4	13.0	24.4	100
Valid N	361						100

(listwise)

*Source: Research data (2020)*

The findings in Table 4.8 above show that the majority of respondents (30.8%) disagreed to a very little extent on questions related to financial education showing that the level of financial education of public sector employees is low among public sector employees in Bukavu city, DRC. There is a need to enhance financial education programs for the profit of all the citizens of DRC as it has been proved that financial education improves financial decision-making among individuals (Meir et al., 2016).

#### 4.3.9 Risk Attitudes Toward Financial Products

**Table 4.9 Risk Attitudes Toward Financial Products**

	N	Disagree to a very little extent	Disagree to a little extent	Agree to some extent	Agree to a great extent	Agree to a very great extent	Total
Item14	361	23.0	19.9	26.9	13.0	17.2	100
Item15	361	31.9	23.8	20.8	7.5	16	100
Item16	361	20.8	23.0	19.4	18.6	18.2	100
Item17	361	13.3	15.2	24.9	12.2	34.4	100
atfp	361	22.25	20.47	23	12.82	21.45	100
Valid N	361						

(listwise)

*Source: Research data (2020)*

Table 4.9 above depicts that the majority of respondents (22.25%) disagree to a very little extent on items related to risk attitudes toward financial products, therefore, the level of risk-taking on financial products is low among public sector employees in Bukavu city, DRC. This situation should be improved by financial education programs to enable individuals to make sound financial decisions, for instance, to make financial plans for retirement purposes as it has been proved that individuals with positive attitudes toward financial products have a high probability to plan for their retirement (Meir et al., 2016)(Satria & Hutabarat, 2020).

### 4.3.10 Retirement Planning

In the present study, retirement planning is measured by the investment and savings of the employee. The descriptive statistics related to the variable are presented in Table 4.10, Table 4.11 and Table 4.12 below.

**Table 4.10 Retirement planning**

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
0	172	47.6	47.6	47.6
1	189	52.4	52.4	100.0
Total	361	100.0	100.0	

*Source: Research data (2020)*

The variable retirement planning takes 1 if the respondent has invested or saved for his retirement and 0 if not. The findings in Table 4.10 above depict that most of respondents (52.4%) have been investing or have been saving for retirement purposes. 47.6 % of public sector employees interviewed do not have financial plans for their retirement, this implies that there is still a large part of employees without financial plans for their retirement and this can result in financial problems during the retirement period.

**Table 4.11 Assets Acquired**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Create a new commercial company	4	1.1	1.1
Create a new manufacturing enterprise	4	1.1	2.2
Farm	4	1.1	3.3
Land for house construction	191	52.9	56.2
Real estate property	150	41.5	97.7
Shares in existing companies	4	1.1	100.0
Total	361	100.0	

*Source: Research data (2020)*

The findings in Table 4.11 above depict that the majority of public sector employees (52.9%) in Bukavu city, DRC has been buying land for house construction as an asset for retirement purposes. The second type of asset acquired by the majority of respondents is real estate property. These results show that very few public sector employees in Bukavu city, DRC have been creating new business ventures or have been buying shares in an existing company as assets for retirement purposes. The limited options of assets is due to the lack of depth in financial markets in the country.

**Table 4.12 Form of Savings**

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Bank saving	127	35.1	35.1	35.1
Informal savings	167	46.2	46.2	81.4
Microfinance savings	67	18.6	18.6	100.0
Total	361	100.0	100.0	

*Source: Research data (2020)*

The results in Table 4.12 above depict that the majority of public sector employees (46.2%) in Bukavu city, DRC have been adopting informal savings for retirement purposes. Others have been using Microfinance savings (18.8%) and Bank saving (35.1%).

#### **4.4 Reliability Test**

It is recommended to test the reliability of a study measurement to ensure internal consistency of the questionnaire is met (Neuman 2014). Table 4.11 below presents the result of the reliability analysis.

**Table 4.13 Cronbach Alpha Test**

<b>Variable</b>	<b>Number of Items</b>	<b>Cronbach's Alpha</b>
Financial knowledge	5	0.815
Computation capability	5	0.853
Financial education	3	0.782
Risk attitudes toward financial products	4	0.712

*Source: Research data (2020)*

The present study used a questionnaire with Likert scale questions, thus Cronbach alpha was used for the reliability test. The results in Table 4.11 above show that all the study constructs have a Cronbach alpha above 0.7. Based on the threshold given by Taherdoost(2017), we concluded that all the constructs used in this study are reliable.

#### 4.5 Multicollinearity Test

Multicollinearity is the situation whereby the independent variables have high correlations coefficients. In the present study, the level of multicollinearity was assessed using the Pearson correlation test and the results from the analysis are shown in Table 4.14 below.

**Table 4.14 Multicollinearity Test**

		Financial knowledge	Computation capability	Financial education	Risk attitudes toward financial products
Financial knowledge	Pearson Correlation	1	.290**	.336**	-.065
	Sig. (2-tailed)		.000	.000	.226
	N	361	357	339	346
Computation capability	Pearson Correlation	.290**	1	.417**	.010
	Sig. (2-tailed)	.000		.000	.849
	N	357	357	339	346
Financial education	Pearson Correlation	.336**	.417**	1	.133*
	Sig. (2-tailed)	.000	.000		.014
	N	339	339	339	339
Risk attitudes toward financial products	Pearson Correlation	-.065	.010	.133*	1
	Sig. (2-tailed)	.226	.849	.014	
	N	346	346	339	346
**. Means the correlation is significant at the 0.01 level (2-tailed).					
*. Means the correlation is significant at the 0.05 level (2-tailed).					

**Source: Research data (2020)**

The findings in Table 4.14 above shows that the pairs of variables were significantly correlated. Computation capability and Financial knowledge were positively correlated; Financial education and Financial knowledge were positively correlated; Financial knowledge and Computation

Capability were positively correlated; Risk attitudes toward financial products and financial education were positively correlated as well. All the significant coefficients of correlation in Table 4.14 above were below 0.8 or -0.8; referring to Greene(2008), this implies that there is no risk of multicollinearity in the regression analysis, therefore all the independent variables are retained for the regression analysis.

#### 4.6 Regression Analysis

Logistic regression analysis was applied using the mean score to determine the impact of financial literacy on personal retirement preparedness. Logistic regression is a probability model; therefore, the analysis below will give the variables related to financial literacy that affect the probability to make personal financial plans for retirement purposes. This section presents the predictive power of the estimated model, the goodness of fit test as well as the variables in the estimated model.

**Table 4.15 Predictive power of the model**

<b>-2 Log likelihood</b>	<b>Cox &amp; Snell R Square</b>	<b>Nagelkerke R Square</b>
428.092 <sup>a</sup>	.111	.149

*Source: Research data (2020)*

The result in Table 4.13 above shows that the Pseudo R square de Nagelkerke is 14.9%. This test is recommended by Ae(2013) to verify the predictive power of the estimated model. In the present study, the results implies that the estimated model have a predictive power of 14.9% of personal retirement planning decisions among public sector employees in Bukavu city in the DRC. This test shows the overall predictive power of the estimated model; however, it is important to assess the individual effect of variables. This assessment is presented in Table 4.13.

**Table 4.16 Goodness of Fit Test: Hosmer and Lemeshow Test**

<b>Step</b>	<b>Chi-square</b>	<b>df</b>	<b>Sig.</b>
1	47.093	8	.000

*Source: Research data (2020)*

The results in table 4.14 above present the result from the test of Hosmer and Lemeshow chi-squared. This test assesses the goodness of fit of the estimated model (Hu, Shao, and Palta, 2006). The results from this study depicted that the Hosmer and Lemeshow chi-square test is significant at the level of 5% with a P-value below 0.000. This shows that the observed

proportions of events are similar to the predicted probabilities of occurrence in subgroups of the model population.

**Table 4.17 Variables in the logistic regression equation**

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
<b>Financial knowledge</b>	.315	.127	6.193	1	.013	1.371
<b>Computation capability</b>	.422	.122	11.932	1	.001	1.525
<b>Financial education</b>	.171	.109	2.465	1	.116	1.186
<b>Risk attitudes toward financial products</b>	-.093	.124	.565	1	.452	.911
Constant	-2.084	.569	13.417	1	.000	.124

*Source: Research data (2020)*

The results shown in Table 4.15 above show the result from Wald test. Referring to Rodriguez(2007), Wald test was applied to test the significance of individual regression coefficients. Variables with a p-value below 5% were considered significant. In the present study, two variables out of four included in the model are significant; these are Financial knowledge and Computation capability. Their coefficient (B) is positive and has a P-value below the significance level of 5%. When the level of financial knowledge increases, the probability to have a personal financial plan for retirement increases as well. When the level of computation capability increases; the probability to make personal financial plans for retirement purposes increases as well. This implies that personal retirement planning among public sector employees in the city of Bukavu in DRC is explained by the level of financial literacy especially the level of financial knowledge and the computation capability of individuals.

#### **4.7 Hypotheses Testing and Discussion of The Findings**

This part presents the objectives of the present research, the hypotheses of the present research, and the related discussion of the results in relation to the hypotheses.

##### **4.7.1 Financial Knowledge and Personal Retirement Planning**

The first aim of the study was to investigate the effect of financial knowledge on personal retirement planning among public sector employees in Bukavu city, DRC. The first hypothesis tested was:

***H<sub>01</sub>: Financial knowledge has no significant impact on personal retirement planning of public sector employees in Bukavu city, DRC.***

The findings from the study proved that Financial knowledge has a significant effect on personal retirement planning of public sector employees in Bukavu city, DRC, thus the first hypothesis was rejected. This result is in line with the study of Agunga (2016), conducted in Kenya that showed that financial knowledge have a significant effect on financial preparedness for retirement. In a study conducted in Netherlands, Van Rooij et al. (2011) assessed the impact of financial knowledge on retirement preparedness. The study found a similar result with the present study, showing that individuals with high financial knowledge have a high probability to plan for retirement. The study of Arrondel (2013) conducted in France, showed that financial knowledge impact significantly retirement planning decisions.

#### **4.7.2 Computation Capability and Personal Retirement Planning**

The second purpose of the study was to examine the effect of computation capability on retirement planning of public sector employees in Bukavu city, DRC. The second hypothesis tested was:

***H<sub>02</sub>: Computation capability of retirement benefits does not have a significant impact on personal retirement planning of public sector employees in Bukavu city, DRC.***

The results from this study showed that Computation capability of retirement benefits has a significant effect on personal retirement planning of public sector employees in Bukavu city, DRC. This finding concurs with the study of Klapper et al.(2011) who examine the link between computation capability and retirement planning in Russia. The results revealed that respondents who have computational capability plans for their retirement. Sekita(2015), explored the impact of computation capability on retirement planning in Japan. The results showed that individuals who possess a good computation capability are more likely to have a saving plan for retirement. Lusardi et al.(2011), carried out a research on the impact of financial literacy on retirement planning in the United States. The research supported that a good level of computation capability has a positive impact on retirement planning.

#### **4.7.3 Financial Education and Personal Retirement Planning**

The third aim of the present research was to investigate the effect of financial education on personal retirement planning among public sector employees in Bukavu city, DRC. The third hypothesis tested was:

***H<sub>03</sub>: Financial education has no significant effect on personal retirement planning among public sector employees in Bukavu city, DRC.***

The findings from this study revealed that Financial education has no significant effect on personal retirement planning among public sector employees in Bukavu city, DRC, thus the third hypothesis was accepted. This result is similar to the finding from the study of Folk, Beh, and Baranovich(2012), which investigate the effect of financial education on retirement financial planning. Individuals who attended financial education programs were found to adopt a planning behavior. The finding from the study of Clark, Ambrosio and Mcdermed(2003), revealed that after attending a financial education event, individuals are more likely to change their retirement saving plans. In the United states of America, the study of Mitchell(2009)supported that financial knowledge has a positive effect on planning for the retirement.

#### **4.7.4 Risk Attitudes Toward Financial Products and Personal Retirement Planning**

The fourth aim of the present research was to examine the impact of attitudes toward financial products on personal retirement planning of public sector employees in Bukavu city, DRC. The fourth hypothesis tested was:

***H<sub>04</sub>: Risk attitudes toward financial products have no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC.***

The results from this study showed that Attitudes toward financial products have no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC; thus the fourth hypothesis was accepted. This result contradicts the study of Dummann(2008),in Germany that showed that attitudes toward financial intermediaries and products have a significant impact on retirement saving. Satria and Hutabarat(2020), in a study conducted in Indonesia showed that individuals with positive attitudes for retirement products have a high probability to make pension financial plans. Meir et al.(2016), in a study conducted in Israel showed that an individual's risk aversion attitude was proved to determine financial decisions such as retirement saving options and retirement investment options.

#### 4.8 Summary of Hypotheses Testing

The present part includes the summary of hypotheses testing which include the aims of the study, the hypotheses, the rule of decision, the P-value obtained and the decision.

**Table 4.18 Summary of Hypotheses**

No	Objective of the research	Hypotheses	Rule of decision	P-value	Decision
1	To determine the impact of financial knowledge on personal retirement planning among public sector employees in Bukavu city, DRC.	H <sub>01</sub> : Financial knowledge has no significant impact on personal retirement planning of public sector employees in Bukavu city, DRC.	Reject H <sub>01</sub> if P-value <0.05	P<0.05	Financial knowledge has an impact on personal retirement planning of public sector employees in Bukavu city, DRC.
2	To examine the effect of computation capability on personal retirement planning among public sector employees in Bukavu city, DRC.	H <sub>02</sub> : Computation capability of retirement benefits has no significant impact on personal retirement planning of public sector employees in Bukavu city,	Reject H <sub>02</sub> if P-value <0.05	P<0.05	Computation capability of retirement benefits has a significant impact on personal retirement planning of public sector employees in Bukavu city,

		DRC.			DRC.
3	To assess the effect of financial education on personal retirement planning among public sector workers in Bukavu city, DRC.	<b>H<sub>03</sub></b> : Financial education has no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC.	Reject <b>H<sub>03</sub></b> if P-value <0.05	P>0.05	Financial education has no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC.
4	To assess the effect of risk attitudes toward financial products on personal retirement planning among public sector employees in Bukavu city, Democratic Republic of the Congo	<b>H<sub>04</sub></b> : Risk attitudes toward financial products have no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC.	Reject <b>H<sub>04</sub></b> if P-value <0.05	P>0.05	Risk attitudes toward financial products have no significant impact on personal retirement planning among public sector employees in Bukavu city, DRC.

*Source: Research data (2020)*

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

The first section of this chapter presents the summary of the major results of the study, the second presents the conclusion of the research and the third section presents the policy implications of the study, the recommendations and limitations of the study.

### **5.2 Summary of the Study**

The present research started with the introduction which gave an overview of financial literacy and personal retirement planning. The second chapter presented the literature review related to the present study with the purpose to understand the underpinned theory of financial literacy and retirement planning as well as the empirical foundations of the study hypothesis. Chapter four presented the descriptive and regression findings of the study and demonstrated that financial literacy especially financial knowledge and computation capability have a significant impact on personal retirement planning among public sector employees in the DRC.

#### **5.2.1 Financial Knowledge and Personal Retirement Planning**

The results from the present research proved that financial knowledge contributes to increasing the probability to invest for retirement purposes and to save for retirement purposes for public sector employees in Bukavu city, DRC. The more financially knowledgeable an individual is the higher the probability to make a personal retirement plan is. This result was in line with several empirical studies reviewed.

#### **5.2.2 Computation Capability and Personal Retirement Planning**

The finding from the present study showed that individuals with a high level of computation capability have a high probability to be involved in personal retirement planning activities. This result was in line with several empirical studies reviewed that supported the impact of individuals' computation capability on personal retirement planning.

### **5.2.3 Financial Education and Personal Retirement Planning**

The results from the study showed that financial education is a key element in personal retirement planning among public sector employees in Bukavu city, DRC. Attending financial education programs does not increase the probability to make personal financial plans for retirement. This result concurred with several empirical studies conducted in various countries around the world.

### **5.2.4 Financial risk attitudes and Personal Retirement Planning**

The results from the study supported that positive risk attitudes toward financial products do not increase the probability to make personal retirement plans among public sector employees in Bukavu City, DRC. In opposition to what has been proved by the empirical studies reviewed, in Bukavu city; individuals with positive attitudes toward financial products are not more likely to make personal financial plans for retirement purposes. This could be explained by the presence of a significant number of public sector employees who lack awareness on the benefits of personal retirement planning.

## **5.3 Conclusions**

From the study results, it was established that financial knowledge and computation capability are the factors that influence personal retirement planning in Bukavu city, the Democratic Republic of Congo. On the one hand, the study supports that having a high level of financial knowledge increases the probability to make personal financial plans for retirement and on the other hand the study shows that a high level of computation capability has a positive effect on personal retirement planning.

Personal retirement planning is important for the wellbeing of retirees; in a context of an underdeveloped country where the social security system is not working effectively, it is key to promote personal retirement planning. Thus, this study supports that in order to increase the level of personal retirement planning; the focus should be put on the strategies to increase the level of financial knowledge as well as computation capability.

## **5.4 Policy Implications, Recommendations and limitations of the study**

### **5.4.1 Policy Implications**

The government of DRC should set up awareness programs on personal retirement planning and encourage initiatives that aim at increasing personal retirement plans. Given the low level of financial literacy identified among respondents, there is a need to take actions that can increase the level of financial literacy among the Congolese population in general and public sector employees in particular.

### **5.4.2 Recommendations**

Investors should take this opportunity to create products that are likely to attract the group of employees in the preretirement period who are potential investors. Given the low retirement benefits received from the CNSS, public sector employees are advised to make personal retirement plans to cope with financial needs in their retirement period. Public sector employers and employees syndicates are advised to educate employees on the importance of personal retirement planning.

### **5.4.3 Limitations and Area for Further Research**

Future research orientations in line with this study can be formulated in two directions. On the one hand, the issue of personal retirement planning in the DRC should be further investigated by future research in studying the burden of retirees on the government and society. On the other hand, it is key to understand how retirees will affect the economy of DRC in the coming years given that the country is populous. The socio-economic impact of the lack of retirement planning on retirees should be also investigated.

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## APPENDICES

### *Appendix 1: Research questionnaire in English*

This questionnaire intends to gather data related to financial literacy and retirement planning among public sector employees in the Democratic Republic of Congo. All the information will be used with confidentiality and only in relation with this research.

#### **Section A: Demographic characteristics**

1. Age:
  - 50-60
  - 61-65
2. Gender:
  - Male
  - Female
3. Marital status
  - Single
  - Married
  - Divorced
  - Separated
4. Education level
  - Never been to formal school
  - Certificate
  - Primary school
  - High school
  - Diploma
  - Bachelor's degree
  - Master's degree
  - Phd
5. Monthly salary equivalent in Congolese Francs:
  - Below 360,000
  - Between 360,000 and 900,000
  - Between 900,001 and 1,800,000
  - Between 1,800,001 and 3,600,000
  - More than 3,600,000.

**Section B: Retirement planning**

1. Respond the following questions by Yes or No

	Yes	No
I have purchased assets with expectations of income generation for my retirement		
I have saved with expectations of income disposal in my retirement		

2. What assets have you purchased with reference to your retirement plans?

- Land
- Real estate properties
- Shares
- Create commercial enterprises
- Create manufacturing enterprises
- Acquire farms

3. Where do you save for your retirement?

- Bank saving
- Microfinance institutions savings
- Informal savings

Respond to the following Items scale by: 1. Disagree to a very little extent 2. Disagree to a little extent 3. Agree to some extent 4. Agree to a great extent 5. Agree to a very great extent.

**Section C: Financial literacy measures**

**1. FINANCE KNOWLEDGE**

Financial knowledge	1	2	3	4	5
I master the meaning of investments instruments (Stocks, Bonds, Mutual funds,...)					
I understand the different types of savings account in financial institutions.					
Investing in companies by buying different types of shares can help to reduce risks.					
Investing in ordinary shares generates a higher long term growth than treasury bills.					
I understand investment options for pension					

## 2. COMPUTATION CAPABILITY

<b>Computation capability</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
It is easy to me to calculate interest rates on my savings, credits and investments.					
I can easily compute benefits due to me on retirement.					
I have done calculations to know how much money I will have saved for my retirement period.					
I know the amount of money I will need for retirement.					
I know the amount of money that I should save every month in order to prevent financials problems during my retirement.					

## 3. FINANCIAL EDUCATION

<b>Financial education</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Have you acquired any economic or finance formal education? (Eg: a training on savings by entities, professional qualifications,...)					
Have you acquired any formal or informal training on financial retirement planning?					
Have you received any formal or informal training on the management of your finances?					

4. If you have received financial education, where did you receive it?

- School
- Online search
- Seminars
- Written communication
- Friends or workmates

## 5. ATTITUDES TOWARD FINANCIAL PRODUCTS

Attitudes toward financial products	1	2	3	4	5
Investments options and saving options on the whole are far too complicated for me					
I avoid investments and saving because you can lose a lot of money with them.					
I cannot save or invest without an investment advisor as an intermediary.					
I prefer an investment that pays off stable interests than an investment that provide the double of interests with 50% of chance to lose the initial investment.					

## *Appendix 2 Research questionnaire in French*

Je suis KULONDWA SAFARI, J'entreprends une étude dans le cadre de mon projet de mémoire de master portant sur **l'éducation financière et la planification personnelle de retraite chez les employés du secteur public en RDC** et Bukavu en particulier. Je sollicite votre assistance en répondant à ce questionnaire. Les données récoltées seront traitées de manière confidentielle.

### **Section A: Identification de l'enquêté**

1. Age:
  - 50-60
  - 61-65
2. Sexe
  - Masculin
  - Feminin
3. Etat civil
  - Celibataire
  - Marrié
  - Divorcé
  - Separé
4. Niveau d'éducation
  - Aucun
  - Certificat formation professionnelle
  - Ecole primaire
  - Ecole secondaire
  - Graduat/Licence
  - Masters
  - Doctorat
5. Salaire mensuel
  - En dessous de 200\$
  - Entre 201\$et 500\$
  - Entre 501\$et 1000\$
  - Entre 1001\$et 2000\$
  - Plus de 2000\$
6. Taille de ménage.....

## Section B: Planification de votre retraite

1. Répondez par Oui ou Non

	Oui	Non
J'ai acheté des actifs avec espoir de générer un revenu pendant ma retraite.		
J'ai épargné de l'argent avec espoir de générer un revenu pendant ma retraite.		

2. Quels sont les actifs que vous avez achetés en rapport avec votre planification de retraite?

- Terrain/Parcelle
- Maison
- Actions dans les entreprises
- Créer ma propre entreprise commerciale
- Créer ma propre entreprise de production
- Acheter une ferme
- Autre.....

3. Par quel moyen épargnez-vous pour votre retraite?

- Epargne dans les banques
- Epargne dans les institutions de microfinance
- Epargne informel

Répondez aux Items suivants par : (1): je ne suis pas du tout d'accord, (2) : je ne suis pas d'accord, (3) : je ne suis ni d'accord ni en désaccord, (4) : je suis plutôt d'accord, (5) : je suis tout à fait d'accord.

### Section C:

#### 1. Questions relatives à la connaissance des notions financières

<b>Connaissance de notions financières</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Je comprends le fonctionnement des instruments financiers (actions, obligations,...).					
Je comprends le fonctionnement de différents types de compte d'épargne dans les institutions financières.					
Investir dans plusieurs entreprises en achetant des actions peut aider à réduire le risque de l'investissement					
Investir dans les actions ordinaires génère une croissance à long terme que les billets de trésorerie.					
Je connais les options possibles d'investissement pour ma retraite.					

#### 2. Questions sur la capacité à effectuer des calculs financiers de base

<b>Capacité à faire des calculs financiers</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Je peux facilement calculer le taux d'intérêt sur mes épargnes, crédits et investissements.					
Je peux facilement calculer le montant que je recevrais de la CNSS(ex INSS) pendant ma retraite.					
J'ai fait des calculs pour savoir combien je dois épargner pour ma retraite.					
Je sais le montant dont j'ai besoin pour vivre pendant ma retraite.					
Je connais le montant dont je dois épargner pour prévenir les problèmes financiers pendant ma retraite.					

3. Questions relative à l'éducation financière reçue

<b>Education financière reçue</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Avez-vous suivi un cursus avec des cours en économie ou finance à l'Université?					
Avez-vous reçu une formation formelle ou informelle sur la planification de votre retraite?					
Avez-vous reçu une formation formelle ou informelle sur la gestion financière?					

4. Si vous aviez déjà suivi un programme d'éducation financière, où l'avez-vous réussi?

- Ecole
- Recherche en ligne
- Séminaire
- Communication écrite
- Amis et collègues

5. Questions relatives aux attitudes envers les produits financiers.

<b>Attitudes envers les produits financiers</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Les options d'investissement et d'épargne sont compliquées à comprendre.					
J'évite les investissements et l'épargne parce qu'il y a un grand risque de perdre beaucoup d'argent avec eux.					
Je ne peux pas épargner ou investir sans un conseiller ou un intermédiaire.					

Je préfère un investissement qui paye des intérêts stables que celui qui produit le double des intérêts avec beaucoup de chance de perdre l'investissement initial.					
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***Appendix 3 List of Public sector institutions in Bukavu***

	Under national government control		Under provincial government control
1	CADECO	1	Gouvernorat de province
2	CNSS	2	Ministère des affaires Intérieur, Sécurité, Décentralisation et Affaires coutumières
3	Direction Générale des impôts (DGI)	3	Ministère des infrastructures
4	Direction Générale des migrations (DGM)	4	Ministère des mines
5	Direction Générale des Douanes et Accises (DGDA)	5	Ministère de l'éducation et sports.
6	Banque Centrale du Congo	6	Ministère de l'agriculture
7	Institut National de Formation professionnelle (INPP)	7	Ministère de l'économie
8	Police nationale Congolaise (PNC)	8	Ministère de la santé et genre
9	Forces armées de la République Démocratique du Congo (FARDC)	9	Ministère du transport
10	Office Général de fret maritime (OGEFREM)	10	Ministère du plan et budget
11	Régie des voies aériennes (RVA)	11	Ministère de la justice
12	Institut national des statistiques (INS)	12	Direction provinciale de mobilisation des recettes (DPMER)
13	Office congolais de control (OCC)	13	Assemblée provinciale.

14	Direction Générale des recettes administratives, judiciaires et de participations (DGRAD)	14	Cadastre
15	Cadre Permanent de concertation économique (CPCE)	15	Mairie de Bukavu
16	Universités et écoles	16	Communes

Source : Mairie de Bukavu 2020

**Appendix 4: University Research Authorization.**



**KENYATTA UNIVERSITY  
GRADUATE SCHOOL**

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Our Ref: D53F/PT/CTY/26043/2018

DATE: 23<sup>rd</sup> October, 2020

Director General,  
National Commission for Science, Technology  
and Innovation  
P.O. Box 30623-00100  
**NAIROBI**

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR KULONDWA SAFARI- REG. NO. D53F/  
PT/CTY/26043/2018**

I write to introduce Mr. Kulondwa Safari who is a Postgraduate Student of this University. He is registered for MBA degree programme in the Department of Accounting and Finance.

Mr. Safari intends to conduct research for a MBA Project Proposal entitled, "Financial Literacy and Personal Retirement Planning among Public Sector Employees in Bukavu City, The Democratic Republic of Congo".

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Elishiba Kimani', is written over a blue ink stamp.

**PROF. ELISHIBA KIMANI  
DEAN, GRADUATE SCHOOL**

EK/enj