EVALUATION OF THE GROWTH OF NAPSA'S INVESTMENT PORTFOLIO FROM 2015-2020

BY

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LUSAKA

YEAR: 2023

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DECLARATION

I, ***Cliff Mapena Simwami***, hereby declare that "to the best of my knowledge", this Dissertation is my original work and has not been presented before by anyone else at University of Zambia or at any other University except where due acknowledgement has been made in text as will be seen in the document.

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CERTIFICATE OF APPROVAL

The dissertation of ***Cliff Mapena Simwami*** *entitled*: "Evaluation of the growth of NAPSA's investment portfolio from 2015-2020" is approved as fulfilling the requirement for the award of Master of Business Administration of the University of Zambia.

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DEDICATION

I would like to dedicate my Dissertation to my Parents **Rhodah Muleya Mudenda and the Late Jonah Simwami** who always wished me the best in life as their son. Not forgetting my siblings both deceased and alive.

ACKNOWLEDGEMENTS

I wish to acknowledge my dear wife **Vetrine M. Lumamba** and children: **Constryness, Cliviness, Chipo Chabota** as well my nephew **Blessed Moonga** who supported me throughout during my studies. My supervisor **Dr. Norman Kamanga** for his relentless efforts in correcting my work whenever I called upon him, my employers at NAPSA, for according me time to study during residential schools. I would be failing in my duties not to ultimately acknowledge the good LORD Almighty for remaining faithful and for having given me the grace and knowledge to complete my studies.

ABSTRACT

This study delved into the comprehensive evaluation of the growth trajectory of the National Pension Scheme Authority's investment portfolio spanning the years 2015 to 2020. NAPSA, as a significant player in pension fund management within the designated period, has witnessed notable transformations in its investment strategies, reflecting on the overall growth of its portfolio. The research aimed to analyze this growth, focusing on three specific objectives: understanding the investment diversification patterns, assessing the performance of key investment sectors, and examining the impact of external factors on portfolio growth through regression analysis. The first objective entails an in-depth exploration of NAPSA's investment diversification strategies during the stated period. Through meticulous analysis, it uncovered the allocation patterns across various asset classes such as equities, fixed income securities, real estate, and alternative investments. This examination provided insights into the risk management practices adopted by NAPSA to optimize returns while mitigating potential risks. The second objective involved a comprehensive assessment of the performance of key investment sectors within NAPSA's portfolio. By employing appropriate financial metrics and benchmarks, the study evaluates the relative performance of sectors such as equities, bonds, and real estate. This assessment shaded light on the contribution of each sector to the overall growth of NAPSA's investment portfolio and identifies areas of strength and opportunities for improvement. The third objective employed regression analysis to examine the impact of external factors on the growth of NAPSA's investment portfolio. By identifying key macroeconomic variables such as GDP growth, inflation rates, interest rates, and exchange rate fluctuations, the study investigated their relationship with the portfolio's performance. Through regression modeling, it quantifies the influence of these external factors on portfolio growth and provides valuable insights for strategic decision-making. Overall, this study offered a comprehensive evaluation of the growth of NAPSA's investment portfolio from 2015 to 2020, addressing three specific objectives: investment diversification patterns, performance of key investment sectors, and the impact of external factors through regression analysis. The findings contributed to a deeper understanding of NAPSA's investment strategies, aiding in enhancing portfolio performance and ensuring long-term sustainability.

Key words: NAPSA, investment portfolio, diversification, performance evaluation, regression analysis.

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List of Abbreviations

NAPSA - National Pension Scheme Authority

GDP - Gross Domestic Product

IDE – Institute of Distance Education

DRGS – Directorate of Research and Graduate Studies

CPI - Consumer Price Index

ROI - Return on Investment

CAGR - Compound Annual Growth Rate

ETF - Exchange-Traded Fund

PE - Price-to-Earnings Ratio

NAV - Net Asset Value

GDP - Gross Domestic Product

CAGR - Compound Annual Growth Rate

ROE - Return on Equity

EPS - Earnings Per Share

P/E - Price-to-Earnings Ratio

P/B - Price-to-Book Ratio

FDI - Foreign Direct Investment

ETF - Exchange-Traded Fund

IPO - Initial Public Offering

NAV - Net Asset Value

AUM - Assets Under Management

YTD - Year-to-Date

CDS - Credit Default Swap

SWOT - Strengths, Weaknesses, Opportunities, Threats

CDO - Collateralized Debt Obligation

CDS - Credit Default Swap

ROR - Rate of Return

UNZA – University of Zambia

UNZAZOU – University of Zambia, Zimbabwe Open University

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CHARPTER ONE

1.1 Introduction

This chapter seeks to provide the background to the study indicating the statement of problem, research questions and the necessity for carrying out this research.

1.2 Background

According to Merton (1983) the main purpose of the Pension was to provide an improved standard of living effectively and efficiently to members after retirement comparable to one enjoys during his or her work life. Such aim, however, stems from the time of the Roman Empire under Emperor Augustus. During his reign, it was observed that retired soldiers were involved in looting to earn a living. To avoid this problem, the emperor decided to give legionary veterans a pension equal to their thirteen years of services. This brought among other things peace and stability in the Empire as veteran soldiers were no longer looting as a way of avoiding poverty. As the number of pension beneficiaries grew, Augustus started preparing a separate budget to meet the pension needs. He decided to capitalize the pension by selling some property to fund it. However, the number of pension beneficiaries grew as more legionary soldiers retired. This forced the Emperor Augustus to do among other things, reducing the number of beneficiaries and the selling of the palace furnishing to meet the demand (Phang, 2008).

To resolve the problem of funding and capitalization of the pension over the years many Pensions schemes around the world have decided to invest in various portfolios such as stock market, government bonds, real estate, and asset acquisition. The growth of the pension schemes has attracted many sectors such as businesses, governments, and the academic circles regardless of whether the growth is measured by the number of registered members or beneficiaries, assets a Pension Scheme has, or any other dimensions. Some public pension

schemes like in the United States of America (USA), the marginal annual return of the pension scheme from investments is larger in magnitude than annual contributions from both employee and employer. These higher returns came because of the Pension fund's portfolio allocation in different broad classes of assets, which are the determinant of the higher investment return (Viceira, 2010). Hence, the pension's investment policy plays a major role in the growth of investment portfolio of pension schemes.

According to the Organization for Economic Cooperation and Development (OECD) Global Pension Statistics, pension funds in 18 of the 27 OECD economies held more than 75% of their investments in equities and bonds. For example, in countries such as Australia, Poland, Hong Kong, China, and Namibia, equities accounted for more than half of pension fund portfolios.

Despite the sustained low interest rate setting, pension funds continue to invest heavily in bills and bonds, especially in Central and Eastern European countries such as the Czech Republic, Hungary, Serbia, and Slovak Republic and in Latin American countries like Chile, Costa Rica, Dominican Republic, Mexico, and Uruguay economies, where bills and bonds account for more than half of the pensions schemes' investment portfolio (OECD, 2017).

The OECD also discovered that large pension funds, provident funds, and social security funds have a high concentration of bonds and cash in their portfolios. These are often the largest potential source of domestic, long-term capital in developing countries' economies.

In 1996, Zambia sought to improve pension administration by coming up with the Act of Parliament which is known as the NAPSA Act of 1996 or simply NPS Act of 1996. It is this Act which led to the creation of the National Pension Scheme Authority (NAPSA). The National Pension Scheme Authority was created by an Act of parliament of 1996 to provide social security to the people by collecting contributions, invest the money and pay out benefit as and when it falls due. It became operational in February 2000.

According to the NPS Act No 40 of 1996, the authority may invest any liquid assets of the scheme not immediately required to meet any charges or obligations in:

a. A savings account on any bank or institution which is governed by any written law of Zambia or by the law of the United Kingdom of Great Britain and Northern Ireland or any fixed deposit or at a call with any such bank or institution.
b. Real Estate.
c. Stocks, securities, or funds issued by or on behalf of the government or funds guaranteed by the government or
d. Such other investments as may be approved generally or specially by the Authority.

Currently the mission statement of the National Pension Scheme Authority (NAPSA) states that "Securing the social economic wellbeing of the people of Zambia", and the Vision says "A trusted partner that protects people's future and brings pride to the nation" respectively. As a pension scheme, NAPSA's main purpose is to secure the social economic wellbeing of their members (contributors) as well as protecting their future.

Therefore, NAPSA is mandated by law to collect and invest its members' funds to generate stable returns and secure people's future`. NAPSA's investments are managed by a special purpose vehicle called NAPSA Investment Holdings (NAPSA-IH). This company is mandated to oversee all the investments that the Authority has. For this reason, it is imperative to evaluate the extent to which NAPSA has grown its investments from 2015 to 2020 and assess how secure contributing members' resources are.

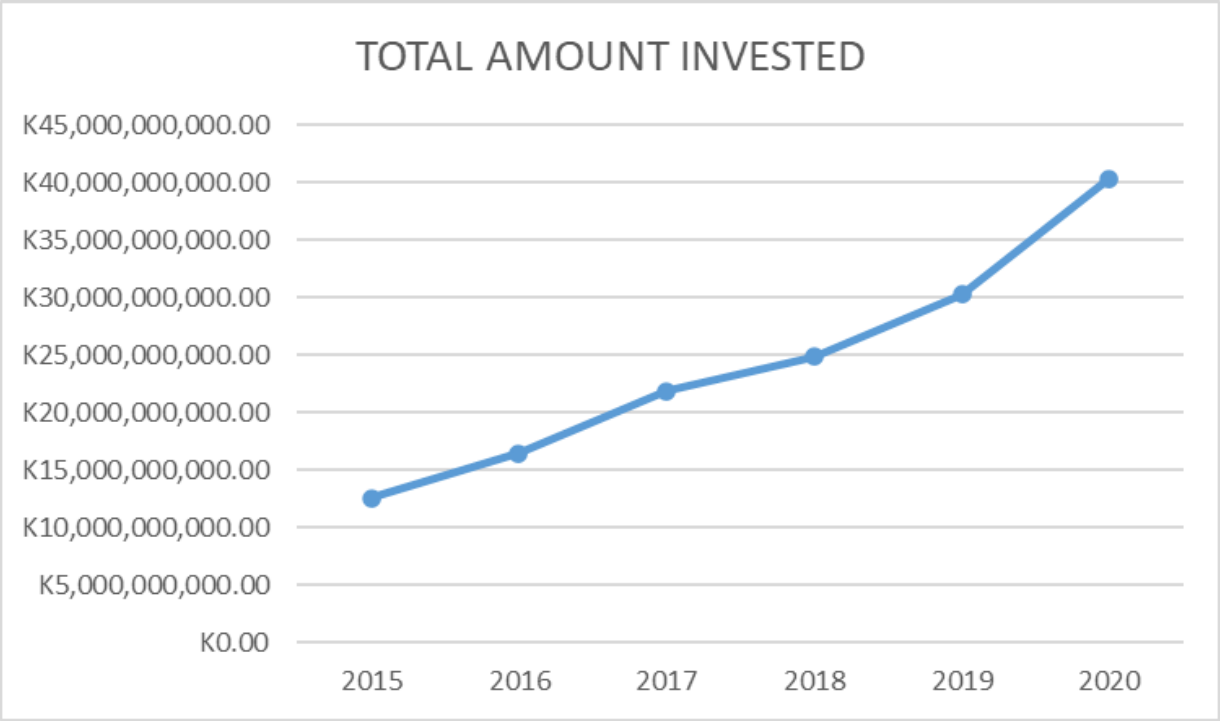
1.3 Graphical Presentation of NAPSA's Investments

	A	B	C	D	E	F	G	H	I	J	K	L
1	TOTAL NAPSA INVESTMENT PER ANUM FROM 2014 TO 2020											
2				AMOUNT IN ZMK							CUMMULATIVE	CUMMULATIVE
3	YEAR			2014	2015	2016	2017	2018	2019	2020	TOTAL 1	TOTAL 2
4	INVESTMENT CLZMK											
5	GOVERNMENT S			K3,690,246,074.00	K5,561,217,424.00	K8,533,363,338.00	K10,859,553,377.00	K12,609,075,153.00	K15,658,086,768.00	18,247,969,749.00	K75,159,511,883.00	K71,469,265,809.00
6	Bonds			K3,528,792,815.00	K4,106,317,718.00	K4,868,874,829.00	K7,922,210,236.00	K12,165,991,952.00	K13,097,803,229.00	16,416,232,592.00	K62,106,223,371.00	K58,577,430,556.00
7	Treasury Bills			K161,453,259.00	K1,454,899,706.00	K3,664,488,509.00	K2,937,343,141.00	K443,083,201.00	K2,560,283,539.00	1,831,737,157.00	K13,053,288,512.00	K12,891,835,253.00
8	SHARES/STOCK			K1,387,239,156.00	K1,828,052,463.00	K1,385,872,999.00	K1,579,362,879.00	K1,312,402,110.00	K1,121,099,640.00	3,078,863,724.00	K11,692,892,971.00	K10,305,653,815.00
9	BANKING			K2,832,771,310.00	K2,557,561,636.00	K3,384,901,859.00	K4,198,139,672.00	K4,972,397,213.00	K6,536,808,980.00	6,384,372,028.00	K30,866,952,698.00	K28,034,181,388.00
10	MINING (ZCCM-			K570,000,000.00	K964,801,720.00	K916,661,634.00	K919,561,634.00	K687,421,226.00	K686,938,825.00	935,857,668.00	K5,681,242,707.00	K5,111,242,707.00
11	ENERGY			K432,090,842.00	K63,727,405.00	K56,204,854.00	K1,614,124,465.00	K1,563,811,621.00	K51,813,571.00	47,372,746.00	K3,829,145,504.00	K3,397,504,662.00
12	INFRASTRUCTU			K0.00	K0.00	K0.00	K3,429,679.00	K535,195,312.00	K56,784,007.00	124,000,000.00	K719,408,998.00	K719,408,998.00
13	REAL ESTATE			K390,000,000.00	K434,433,733.00	K374,776,313.00	K305,979,096.00	K218,924,145.00	K157,799,941.00	136,753,801.00	K2,020,667,026.00	K1,630,667,026.00
14	FORESTRY			K0.00	K0.00	K0.00	K0.00	K0.00	K0.00	212,000,000.00	K212,000,000.00	K212,000,000.00
15	INSURANCE			K12,460,314.00	K10,013,561.00	K23,854,415.00	K10,731,019.00	K8,000,000.00	K18,468,371.00	17,983,958.00	K101,511,638.00	K89,051,324.00
16	AGRICULTURE			K107,441,808.00	K98,187,073.00	K77,660,924.00	K77,660,924.00	K87,182,335.00	K34,467,471.00	38,787,591.00	K521,388,126.00	K413,946,318.00
17	TOURISM			K2,582,056.00	K2,582,056.00	K2,582,056.00	K2,582,056.00	K2,582,056.00	K2,582,056.00	2,582,056.00	K18,074,392.00	K15,492,336.00
18	MANUFACTURING			K466,999,415.00	K394,818,731.00	K176,226,591.00	K110,564,056.00	K100,347,651.00	K108,388,933.00	111,068,328.00	K1,468,413,707.00	K1,001,414,292.00
19	TOTAL ASSETS			K10,482,265,660.00	K13,429,377,564.00	K17,712,067,966.00	K22,947,157,661.00	K25,594,423,170.00	K32,076,377,598.00	42,071,220,739.00	K164,312,890,358.00	K153,830,624,698.00
20	TOTAL LIABILITIES			K209,483,727.00	K321,018,001.00	K430,299,541.00	K548,435,695.00	K345,107,389.00	K380,586,354.00	1,111,311,607.00	K3,346,242,314.00	K3,136,758,587.00
21	NET ASSETS			K10,272,781,933.00	K13,108,359,563.00	K17,281,768,425.00	K22,398,721,966.00	K25,249,315,781.00	K31,695,790,934.00	40,959,909,132.00	K160,966,647,734.00	K150,693,865,801.00
22	PROJECTS IN PROGRESS			K1,062,000,000.00	K774,903.00	K1,302,970.00	K1,874,535.00	K2,375,019.00	K2,776,123.00	3,053,603.00	K1,074,157,153.00	K12,157,153.00
23	TOTAL			K9,840,380,491.00	K12,594,257,000.00	K16,463,916,000.00	K21,861,593,097.00	K24,835,725,080.00	K30,261,359,912.00	40,319,481,694.00	K156,176,713,274.00	K146,336,332,783.00
24	CONTRIBUTIONS				K2,538,654,794.00	K2,934,587,755.00	K3,270,016,159.00	K3,473,600,842.00	K4,260,318,932.00	4,078,526,334.00	K20,555,704,816.00	K20,555,704,816.00
25	BENEFITS WITHDRAW				K244,975,889.00	K270,379,226.00	K247,592,111.00	K243,817,112.00	K3,087,474,481.00	2,764,568,569.00	K6,858,807,388.00	K6,858,807,388.00
26	ADMIN EXPENSE			K64,743,820.00	K81,173,028.00	K119,737,188.00	K140,642,601.00	K143,688,141.00	K182,259,605.00	196,225,634.00	K928,470,217.00	K863,726,397.00

Sheet1 | Sheet7 | Sheet3 | Sheet2 | Sheet4 | Sheet5 | Sheet6

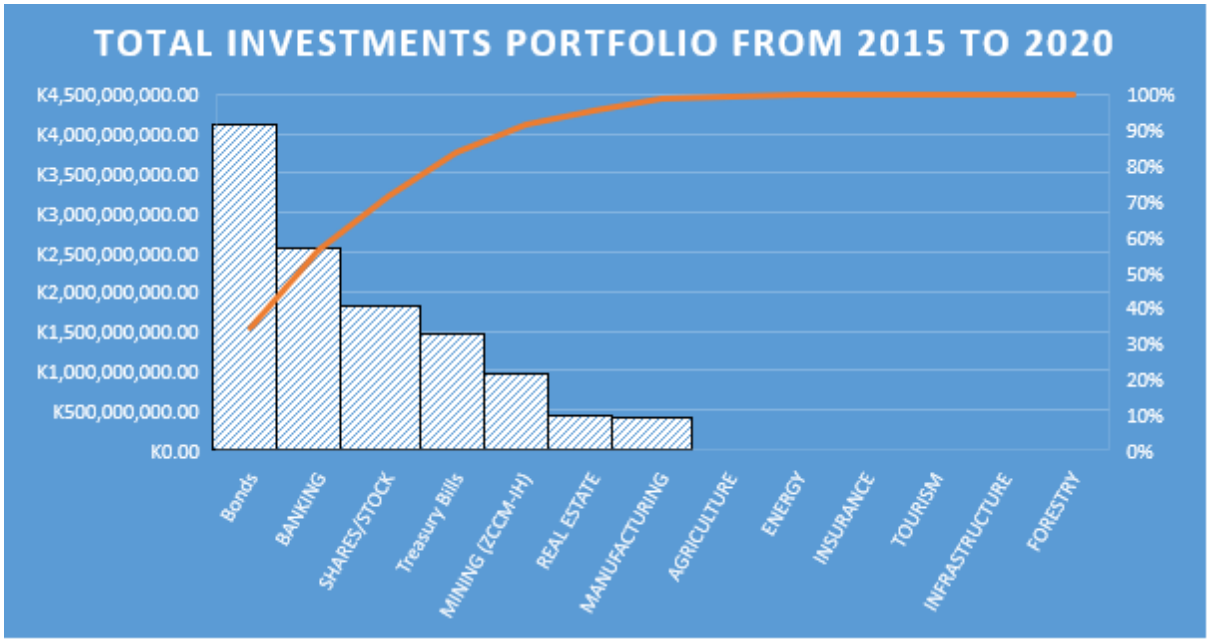
Fig 1.3 compiled from NAPSA annual Reports from 2014 to 2020

Total investment per year 2015 – 2020



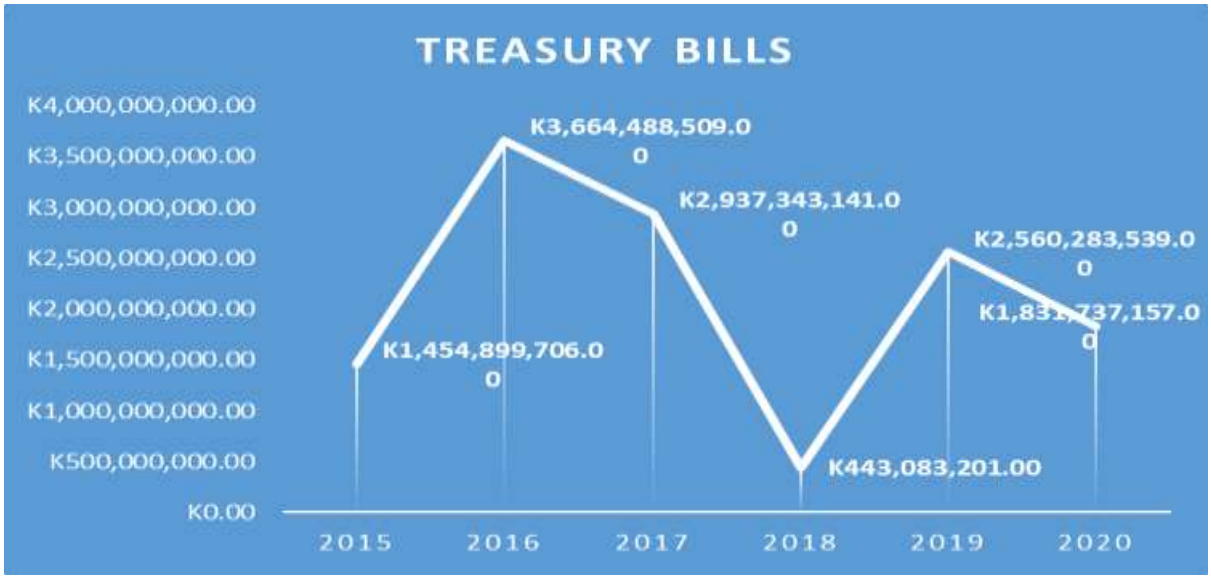
This graph indicates that there has been a general increase in allocation of resources to investments for the under consideration as compiled.

Compiled from NAPSA annual Reports from 2015 to 2020.



(NAPSA annual Report of 2015 – 2020).

According to this graph NAPSA invested more in government bonds, banking, and in stocks and less in agriculture, energy, insurance, tourism, infrastructure, and forestry for the period from 2015 to 2020.

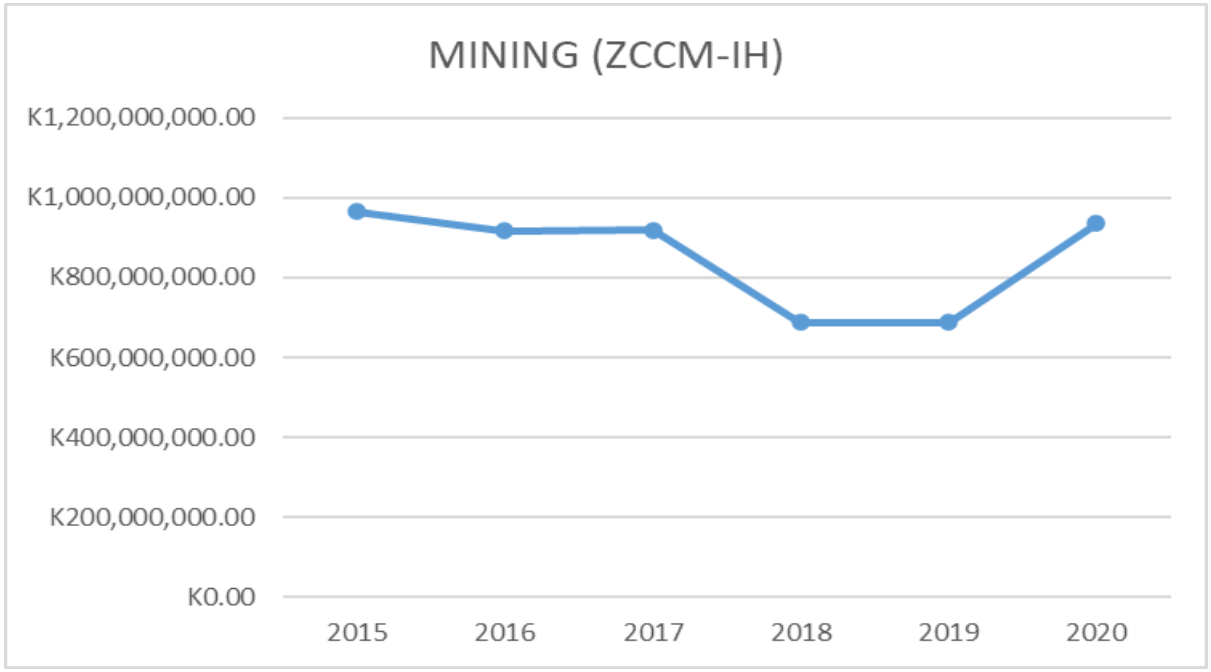


(NAPSA annual Report of 2015 – 2020).

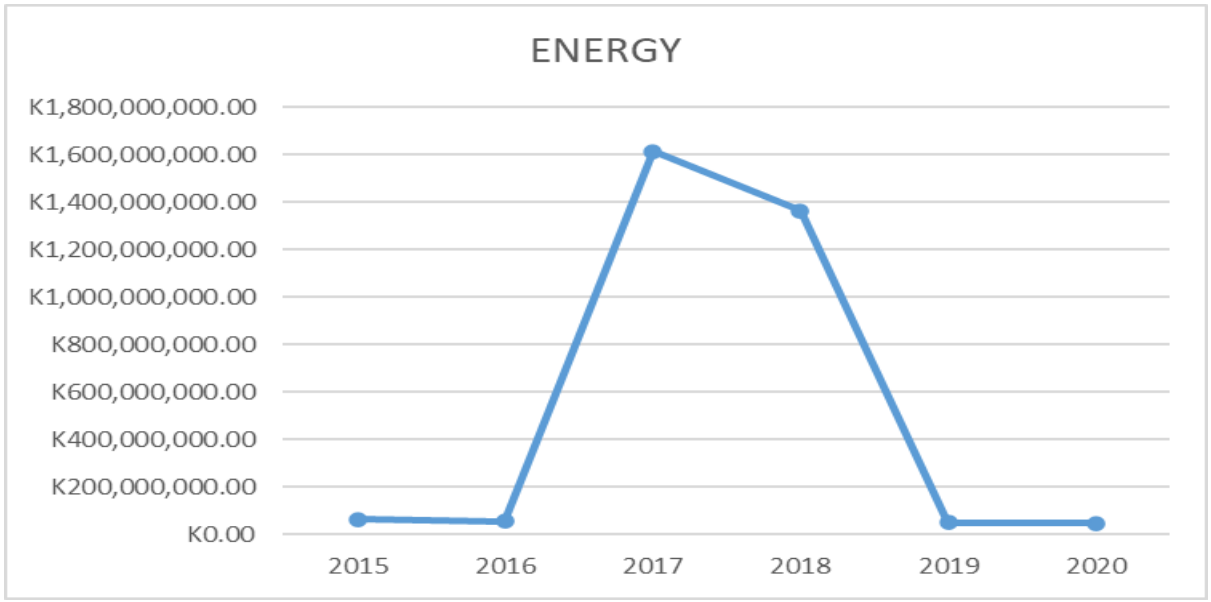
Graph showing fluctuation of investments allocated in treasury bills. For instance, investments in Treasury Bills reached the highest in 2016, and the lowest in 2018.

(NAPSA annual Report of 2015 – 2020).

Graph indicating steady decrease in resource allocation to stocks and a sharp increase in 2020.

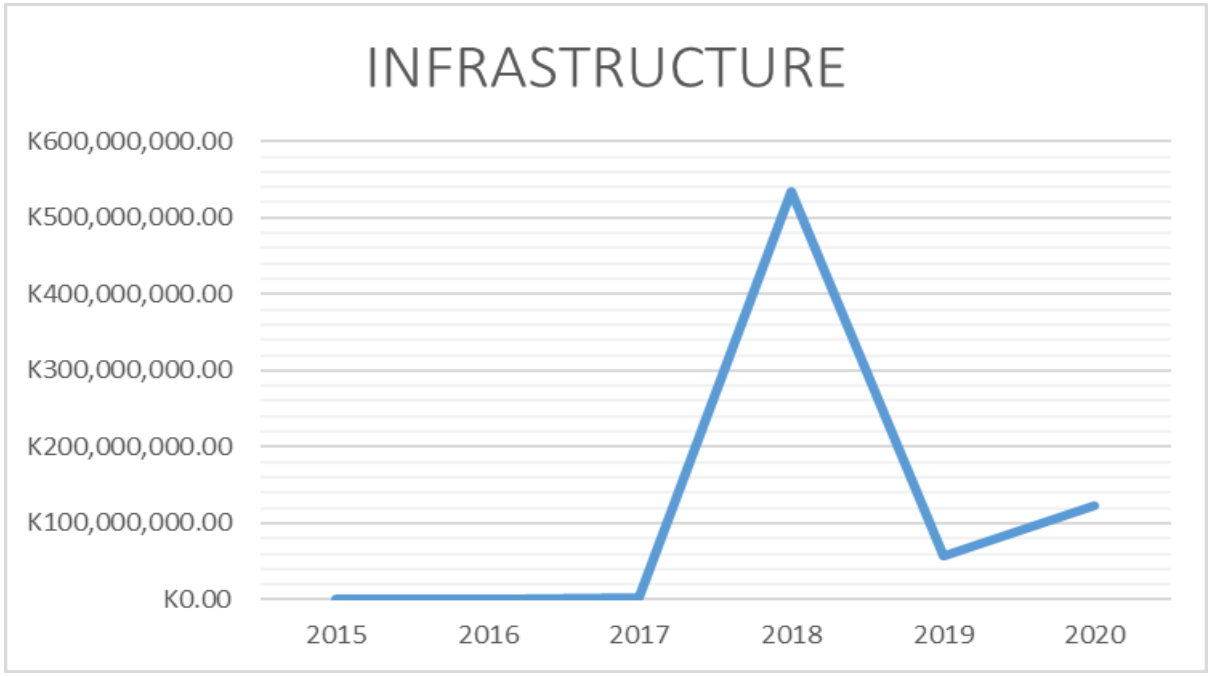


(NAPSA annual Report of 2015 – 2020). Investments in decreased steadily and reached lowest in 2018 and 2019. And improvement was recorded in 2020.

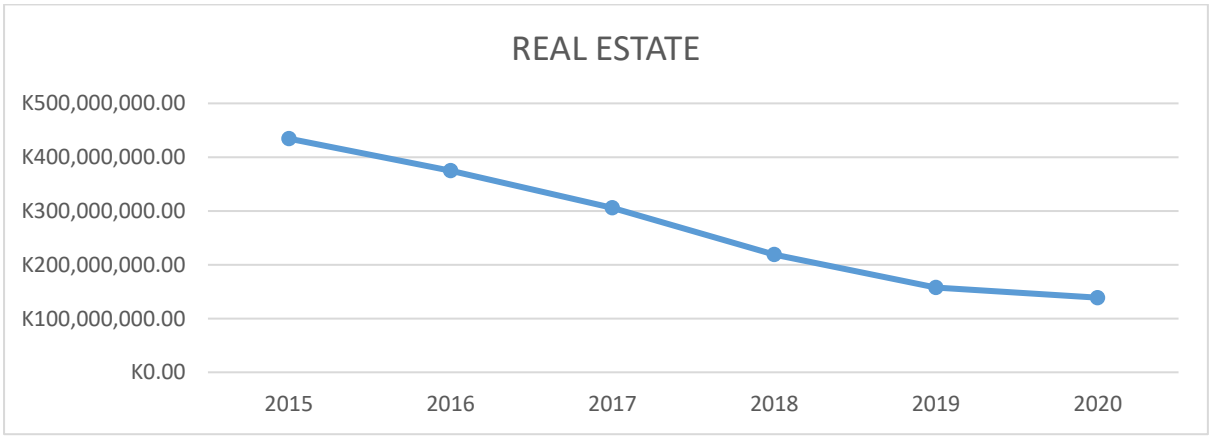


(NAPSA annual Report of 2015 – 2020).

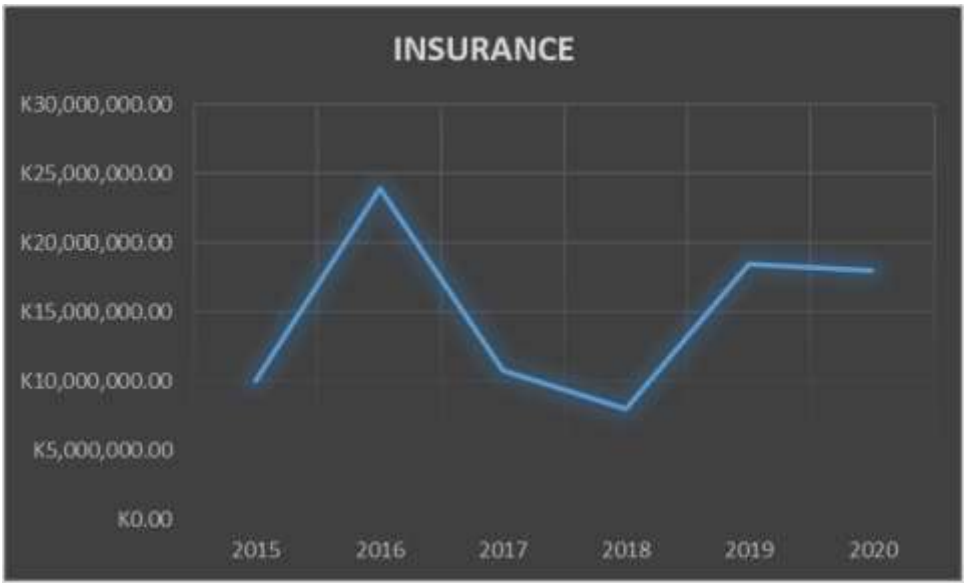
The graph indicates that the investments in energy increased sharply in 2017 and a sharp decrease was recorded in 2019 and remained unimproved until 2020.



(NAPSA annual Report of 2015 – 2020). Sharp increase recorded in 2018 and a sharp decrease in 2019 in infrastructure.

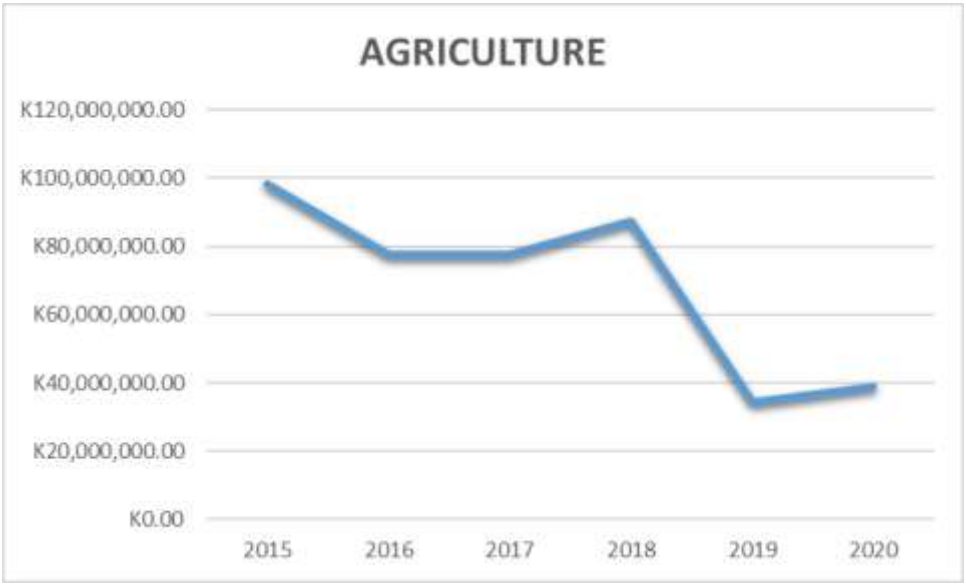


(NAPSA annual Report of 2015 – 2020). It indicates steady decline.

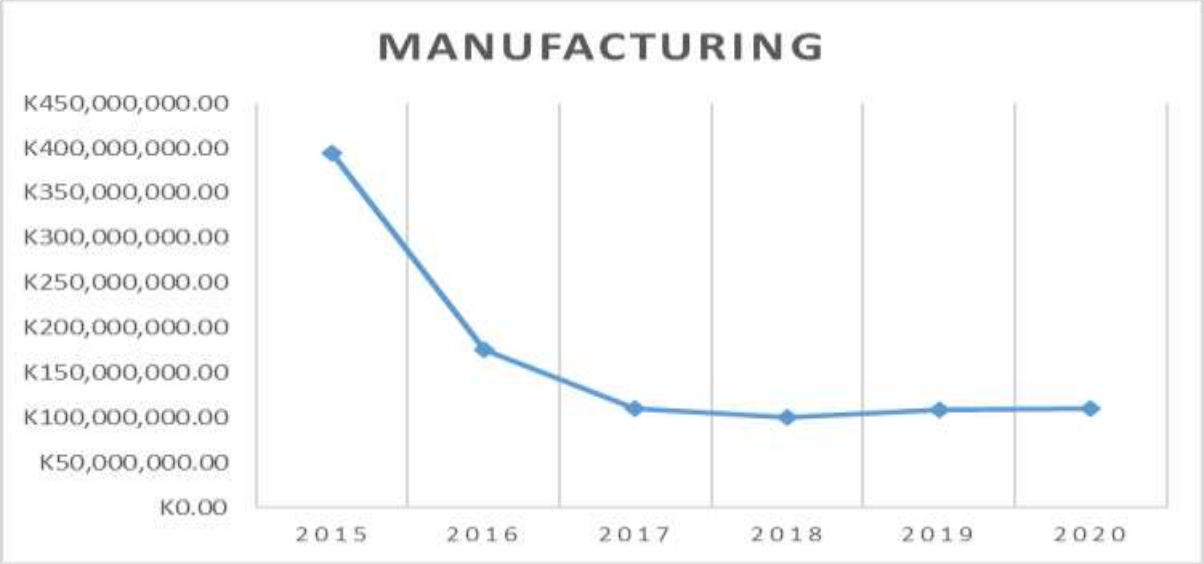


(NAPSA annual Report of 2015 – 2020).

Improvement was recorded in 2016, sharp decline in 2017 and 2018, and then improved in 2019.



(NAPSA annual Report of 2015 – 2020). Fluctuations in investments channelled to agriculture.



(NAPSA annual Report of 2015 – 2020). Indicates decline in investments from 2016 until 2020.

1.4 Statement of the Problem

The conundrum at hand revolves around the growth of NAPSA's investment portfolio from 2015 to 2020. NAPSA, a significant player in investment sectors ranging from agriculture to tourism, laid out an ambitious goal of achieving an annual growth of 19% through a well-diversified investment portfolio. This strategic aspiration was communicated by NAPSA's Head of Corporate Affairs, Mr. Cephas Sinyangwe, in 2017, with a commitment to prudent investment practices aimed at yielding returns and enlarging the overall asset base (Daily Mail, 2017).

However, a meticulous examination of the investment data uncovers a perplexing situation. Despite a consistent infusion of resources into investments, key sectors crucial to NAPSA's portfolio, including real estate, mining, energy, manufacturing, treasury bills, and shares in listed

companies, all exhibited significant declines over the specified period. Intriguingly, the tourism sector remained immobilized, devoid of any growth throughout this timeframe.

This disparity between the strategic intent of robust growth and the observable downturn in crucial investment segments gives rise to a pressing and multifaceted problem. It prompts an essential query: Did NAPSA truly realize its envisioned growth targets and strategic objectives during the 2015-2020 duration? Furthermore, it compels an exploration into the underlying reasons driving the pronounced contractions within the noteworthy investment sectors.

In essence, the problem encapsulates an evaluation of whether NAPSA's investment strategy effectively translated into the envisaged portfolio growth, and if not, delving into the factors contributing to the divergence between strategic intent and actual outcomes. This analytical pursuit holds the potential to offer insights into the efficacy of NAPSA's investment decisions, shed light on the dynamics influencing investment performance, and provide valuable lessons for future strategic planning.

1.5 Aim

The aim of this study is to comprehensively evaluate the growth trajectory of NAPSA's investment portfolio during the period from 2015 to 2020. This evaluation is essential to understand the extent to which NAPSA's strategic goal of achieving a 19% annual growth in investments, as communicated by Mr. Cephas Sinyangwe, was realized. By delving into the dynamics of the investment sectors encompassing agriculture, energy, banking, mining, insurance, government securities, shares, real estate, manufacturing, infrastructure, and tourism, this study seeks to ascertain the alignment between NAPSA's stated objectives and the actual outcomes.

The significance of this study was underscored by the substantial gap between NAPSA's articulated growth objectives and the observed declines in pivotal investment sectors. The justification for this study rested on the following points:

1. **Transparency and Accountability**: As a custodian of pension funds, NAPSA is accountable to its contributing members for the prudent management of investments. Evaluating the actual growth against the intended growth is crucial to maintain transparency and ensure that members' funds are managed in alignment with the organization's promises.
2. **Strategic Decision-Making**: The findings of this study will inform whether NAPSA's strategic decisions and investment allocations were effective in realizing growth objectives. Understanding what worked and what did not can guide future decision-making and enhance the precision of investment strategies.
3. **Lessons for Improvement**: An in-depth analysis of the factors contributing to the declines in specific investment sectors can provide valuable insights. These insights can serve as lessons for refining investment strategies, mitigating risks, and capitalizing on growth opportunities in the future.
4. **Member Confidence:** Demonstrating a thorough evaluation of investment performance bolsters members' confidence in NAPSA's management of their funds. Positive outcomes could reinforce members' trust in the organization's ability to secure their financial futures.

1.6 Objectives

1.7 General Objective

To Evaluate the Growth of NAPSA's Investment Portfolio from 2015-2020.

1.8 Specific Objectives

i) To Evaluate the growth of NAPSA’s investments portfolio.

ii) To Evaluate NAPSA’s investment classes.

iii) To Evaluate NAPSA’s financial stability in securing its members’ future.

1.9 Research Questions

1.10 General Research Question

What is the Growth of NAPSA's Investment Portfolio from 2015-2020?

1.11 Specific Research Questions

i) What is the current size of NAPSA's investment portfolio?

ii) Which investment classes does NAPSA have?

iii) What measures has NAPSA taken to ensure the financial stability of its members' future?

1.12 Significance of the Study

The findings of this research are expected to provide an insight to NAPSA about the growth of its investments. It also gave an evaluative relationship between the contributions collected, proceeds from investments and the benefits withdrawn through which the institution may act upon. Further, the growing number of claimants was of a great concern hence, the result of this research gave comparison to the growth of the investments in proportion to the growing number of claimants.

The results of this study provide a vivid understanding of the importance of the growth of the investment portfolio for the pension scheme upon which it may act as building blocks for further research studies. This study was also a requirement for a partial fulfillment of the award of the MBA.

1.13 Theoretical Framework

This study used Modern Portfolio Theory (MPT) to understand principles guiding NAPSA's choice of investments.

1.14 The Modern Portfolio Theory (MPT)

Modern Portfolio Theory (MPT), developed by Markowitz in 1952, is a method that allows an investor to mathematically trade risk tolerance and reward preferences, resulting in the optimal portfolio. This theory is based on two central concepts:

1. Any investor's goal is to maximize return for a given level of risk.

2. Risk can be reduced by diversifying a portfolio of unrelated securities.

It must be noted that MPT is based on the assumption that risk-averse investors prefer a portfolio with lower risk for a given level of return. According to this theory, investors will only take on high-risk investments if they can expect a higher return.

An investor may hold a high-risk asset, mutual fund, or security if all underlying assets offset the risk. Risk is defined as the average range of an asset's price variation. According to MPT Individual stock returns have two components of risk and these are:

1) **Systematic risk** refers to market risks that cannot be mitigated by diversification. MPT does not claim to be able to mitigate this type of risk.

2) **Unsystematic risk**, also known as real risk, is unique to individual stocks and can be diversified as the portfolio grows.

In a fully diversified asset mix or portfolio, the risk of each asset contributes relatively little to total portfolio risk. Individual asset covariances, on the other hand, account for a larger portion of overall portfolio risk.

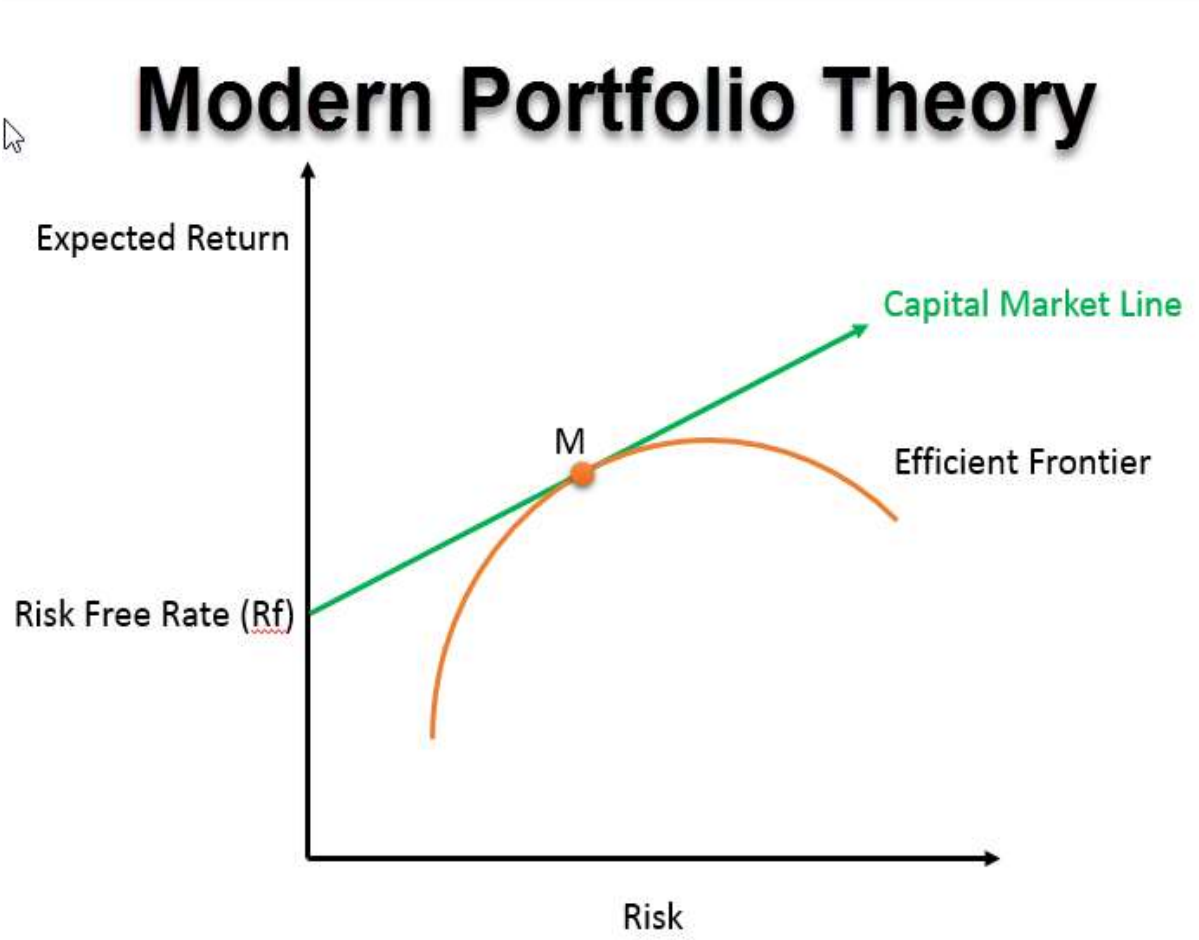
1.15 The Efficient Frontiers

Although the benefits of diversification are obvious, investors must determine the level of diversification which is appropriate for them. To assess this, investors use the Efficient Frontier, a graphical representation of all possible combinations of risky securities for an optimal level of return given a certain level of risk.

- Investors can build a portfolio with the lowest possible risk at any level of return.
- Investors can create a portfolio that provides the highest return for any level of risk.

The portfolio that falls beyond the Efficient Frontier is deemed sub-optimal for one of two reasons: it has too much risk compared to its return, or it has too little risk compared to its return. As compared to the degree of risk, a portfolio that is below the Efficient Frontier does not provide enough return. For the given rate of return, portfolios found to the right of the Efficient Frontier have a higher level of risk while the portfolio near the top of the curve is profitable because it offers the highest potential return for a given level of risk. Therefore, at each point on the Efficient Frontier, investors should build at least one portfolio from all available investments that includes the estimated risk and return for that point.

The Efficient Frontier is a powerful example of the power of diversification. It is important however to note that there is no single Efficient Frontier because investors can change the number and characteristics of assets to meet their needs.



Adapted from wallstreetmojo.com.

1.16 Independent and dependent variables in the study on NAPSA’s Investment portfolio

In the context of evaluating the growth of NAPSA's investment portfolio from 2015 to 2020, the independent and dependent variables can be defined as follows:

Independent Variable: The independent variable is the factor that is manipulated or controlled by the researchers and is assumed to have an effect on the dependent variable. In this case, potential independent variables could include:

a. Time (Year): This variable represents the passage of time from 2015 to 2020. Each year served as an independent data point. Time was often considered an independent variable because it's not influenced by other factors within the study but may influence the dependent variable, which in this case was the growth of NAPSA's investment portfolio. For instance, NAPSA's investment strategies, economic conditions, and market performance might change over time, impacting the growth of the investment portfolio.

b. Investment Strategies: NAPSA might employ various investment strategies over the years, such as diversification, asset allocation, active or passive management, etc. These strategies can be considered independent variables as they are chosen by NAPSA and are assumed to influence the growth of the investment portfolio.

c. Economic Indicators: Economic indicators such as GDP growth rate, inflation rate, interest rates, and unemployment rate can influence investment performance. These indicators can be treated as independent variables because they are external factors that may impact the growth of NAPSA's investment portfolio.

Dependent Variable: The dependent variable is the outcome or response that was measured and expected to be influenced by the independent variable(s). In this context, the dependent variable was:

a. Growth of NAPSA's Investment Portfolio: This variable represents the increase or decrease in the value of NAPSA's investment portfolio over the specified period (2015-2020). It was the focus of the study and was influenced by the independent variables mentioned above. Growth can be measured in terms of percentage increase in the portfolio's value, total monetary value, or any other relevant metric. By analyzing the relationship between the independent variables (such as time, investment strategies, economic indicators) and the dependent variable (growth of NAPSA's investment portfolio), researchers can gain insights into how different factors contribute to the performance of the portfolio over time. This analysis can help NAPSA make informed decisions regarding its investment strategies and portfolio management techniques.

1.17 Applications to the Study

In the context of this study, the application of Modern Portfolio Theory was twofold:

1. **Strategic Investment Allocation**: NAPSA's investment choices across various sectors, such as agriculture, energy, banking, mining, insurance, government securities, shares, real estate, manufacturing, infrastructure, and tourism, can be assessed using MPT's principles of diversification. The theory suggests that an effective portfolio should encompass a mix of assets with varying risk-return profiles to achieve a balance between growth and risk mitigation. By applying MPT, this study evaluated whether NAPSA's investment classes align with diversification principles and whether the chosen allocation optimized the portfolio's risk-return balance.

2. **Risk and Return Evaluation:** MPT's core concept involves analyzing the efficient frontier, which represents the set of portfolios that offer the maximum return for a given level of risk or the minimum risk for a desired level of return. By employing MPT, this study evaluated how NAPSA's actual investment growth compares to the efficient frontier predicted by the theory. This shed light on whether the achieved growth rates aligned with the portfolio's inherent risk profile and whether any deviations from the efficient frontier were strategic or necessitated adjustments.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter sought to review related studies conducted by other scholars to establish their contributions, and gaps which this study attempted to build on. It began with world view followed by the studies conducted in Africa. It was further attempted to bring out general related studies conducted in Zambia, if there was any, and narrow it down to NAPSA.

2.2 Global Perspective

The research conducted at Prague University in Czech by Jan Hlavac in (2009), found that the level of future pensions is directly related to the annual rates of return generated by the assets of scheme participants. The scheme's achievement is determined by its ability to generate enough returns to enable adequate pension. He supported the long-term investments on both traditional and nontraditional assets by pension schemes.

Further he stated that the State Contributory Supplementary Pension Insurance Act (SCSPIA) allows Pension Funds (PF) in Czech to invest in a wide range of assets, including state bonds, corporate bonds, mutual funds, stocks, and real estate. However, the Act imposes constraints on portfolio structure as well as the amount of assets that a Pension Fund can invest in. These legal regulations limit the Pension Funds' portfolio to the various classes of assets.

Since 1999, the combined share of PF investments in stocks, unit certificates, real estate, and other potentially higher-yielding instruments has remained below 16%. He discovered that despite the constraints imposed by SCSPIA, Pension Funds achieved the highest share of bonds and treasury bills in 2008, when it reached 85 percent. In 2009, the lowest percentage of these instruments in

a pension fund's portfolio was 6.2 percent. Since then, Czech pension funds owned more than 6% of Czech's GDP.

Michiel Bijlsma etal (2018) concur with the Hlavac and further revealed that greater pension savings can result in deeper capital markets, which should boost economic growth, especially for companies that rely on external financing. Using data from 69 industrial sectors in 34 OECD countries from 2001 to 2010, they found that pension assets have a significant impact on growth in sectors that are more dependent on external funding.

As a supplement to public- sector pensions, many countries promoted private-sector pensions. Furthermore, they observed that institutional investors are expected to play a larger role in financial intermediation in the future.

Critique

The two studies above were conducted in countries whose economies are more developed than Zambia which is still a developing country. As result, their findings cannot provide a good reflection of the pension industry in Zambia.

Pennacchi and Rastad (2010) in their research presented a model of public pension fund asset allocation that could be used to guide a municipality's pension investment decisions. The model was also extended to a scenario in which a pension fund's portfolio managers' behavior is dictated by career concerns. Their empirical findings appear to be consistent with such agency behavior. They discovered that the Board of Trustees and staff of a public pension fund tend to allocate assets based on the performance of peer pension funds rather than hedging the pension plan's liabilities.

As a result, the portfolio choices of public pension schemes that deviate significantly from the risk-mitigation strategies proposed by many scholars appear difficult to explain on public

policy grounds. They observed that accounting standards that are opaque and deceptive can encourage public pension funds to stick to their 'traditional' investment strategies. Therefore, asset-liability mismatches in these strategies pose a potential burden to taxpayers (contributors).

Fiona Stewart, Romain Despalins and Inna Remizova (2019), under the umbrella of World Bank Finance and Markets Global Practice Group, conducted a study which examined possible regulatory barriers to long-term investment by pension funds, as well as international diversification and the development of domestic investment opportunities. The main purpose of their study was to aid Pension Funds to take keen interest in portfolio diversification, and ultimately, enhance the delivery of stable and sufficient pensions.

They theoretically argued and empirically demonstrated that Pension funds have ability to contribute to stock markets and thus economic development. After studying 27 OECD countries' pension schemes, they found out that reforms aimed at increasing the number of sponsored pension plans, on the other hand, have not had the desired economic impact in some countries. This is because in some cases, pension fund investments have relied too heavily on short-term assets such as bank deposits and short-term government bonds. As a result, investment returns have been relatively low, which may have an impact on retirement income adequacy.

Critique

The above literature did not clearly state the growth rate of the pension funds investment portfolio of the countries they studied and did not clearly state what really constituted the investment classes of the Pension Funds they studied. This study stated clearly what constitutes NAPSA investment classes for the period studied. The studies failed to holistically assess whether investment portfolios within pension funds aligned with the strategic goals and

targeted growth rates set by the institution. For this reason, this study sought to understanding the extent to which growth objectives are realized and provide insights into the effectiveness of investment strategies.

While most researchers in pensions' investments supported investing in different sectors, Georg Inderst, in his research of 2009 which he presented as a working paper in the OECD, took a different view of pensions' investment portfolio. He argued that infrastructure is the most lucrative sector which most of the pension funds should endeavor to invest. He noted that institutional investors were attempting to diversify their portfolios across a broader range of asset classes. Furthermore, he observed that pension funds have become interested in investing in infrastructure. He adopted a simple definition of the term infrastructure as defined by OECD. The OECD as cited in his study defines infrastructure as the system of public works in a country, state, or region, which includes roads, utility lines, and public buildings.

Inderst further stated that the investment industry decides to invest in infrastructure due to perceived benefits derived from them such as: consistent and predictable cash flows, long-term revenue streams, frequently linked to inflation (helping with liability-matching), tax-effective in some countries, returns unaffected by fluctuations in business, interest rates, and stock markets, and relatively low default rates.

He brought two types of infrastructure such as primary and secondary market in infrastructure. According to him, primary market refers to the financing of an infrastructure project's start-up phase, such as the construction of a school. It entails acquiring the asset, then building and delivering it. While secondary market refers to the operational phase of an infrastructure asset, such as a toll bridge. A financial investor, for example, may purchase shares of the project special purpose vehicle (SPV). Under the secondary market the investors are primarily interested in the project's potential for growth of their investments. The primary market is

typically riskier and demands a higher rate of return than the secondary market. Secondary market investors are primarily interested in strong and consistent dividends. This is comparable to traditional real estate or bond income sources.

According to conventional investment style classifications, secondary market investments would suit income-style investors, while primary market investments would suit growth-style investors. Pension funds have expressed an interest in increasing their exposure to this sector as they transition into alternative investments. Such investments can be made in a variety of programs, ranging from economic infrastructure such as transportation to social infrastructure such as hospitals.

Critique

Pension Fund Challenges in Developing Countries: The unique challenges faced by pension funds in developing countries, such as regulatory constraints, market volatility, and economic instability, have not been extensively explored within the context of investment portfolio growth and management.

Later, the idea for pension schemes or funds investing in infrastructure was supported by Della Croce and Amadou in their studies of 2012 and 2017, respectively.

Della Croce in 2012 conducted research on ‘Trends in Large Pension Fund Investment in Infrastructure’ which was presented as an OECD working paper on finance, insurance and private pensions. After studying pension funds of two groups of pension funds each comprised of fourteen (14) countries, she observed that pension fund investment in infrastructure was still limited, even though it was increasing significantly. The main reason for this was due to regulatory changes and renewed interest in green investments. As part of their overall portfolio, Group One pension funds had a separate infrastructure allocation as well as a target allocation.

Infrastructure was primarily accessed through unlisted equity instruments (infrastructure funds, direct investment in projects, etc.).

Group two, on the other hand, was made up of pension funds with no specific infrastructure allocation. Infrastructure could be included in both the fund's equity and fixed income allocations, depending on the type of asset or investment chosen (mainly bonds and listed corporate equities). This organization's fourteen Latin American and European pension funds managed USD 299.4 billion in assets in 2010, with total assets ranging from USD 2.1 billion to USD 88.8 billion.

Della discovered that the first infrastructure funds that began investing in the sector more than a decade ago had amassed a sizable allocation to the sector since then (from 4 to 16 percent of the total portfolio).

Only in the last five years have European investors begun to increase infrastructure allocations, recognizing infrastructure as a separate allocation (or as a subsector of real estate or private equity), with allocations ranging from 1% to 3% of the total portfolio.

Previously, pension funds in Latin America were subject to quantitative investment limits on unlisted equities based on credit ratings, as well as limits on bonds issued by new firms and projects. Pension funds prefer to invest in large, mature-running assets that generate cash flows. They would also consider taking part in Greenfield projects. She then advised pension funds to invest in infrastructure as a new asset class.

Critique

Studies conducted by Inderst and Della often concentrate on specific asset classes or sectors. They did not comprehensively evaluate the growth of investment portfolios spanning a diverse

range of sectors, such as agriculture, energy, banking, mining, insurance, government securities, shares, real estate, manufacturing, infrastructure, and tourism, as undertaken by NAPSA.

2.3 Regional Perspective.

Moreover, Amadou in his research conducted in Africa in 2017 noted that pension funds in Africa can set aside money for investment, including in infrastructure. He investigated the key issues surrounding pension funds as a source of funding for African infrastructure such as reforming the continent's pension schemes, legal barriers, outlining Africa's infrastructure deficiencies and financial resources available. For instance, he discovered that apart from a few southern African countries such as Botswana, Namibia, and South Africa, as well as two countries from East and West Africa such as Kenya and Nigeria respectively, pension assets as a percentage of GDP are low because pension funds are limited and dominated by mostly ineffective pay-as-you-go (PAYG) schemes for public sector workers.

Even when pension reform is implemented, as in Nigeria, and assets are available for investment, governance, and regulatory barriers, as well as a lack of appropriate financial instruments, limit pension funds' allocation to infrastructure.

He realized that some experts argued that pension funds are too risk averse to invest in risky, multi-decade infrastructure. Hence, they prefer investing in stocks, bonds, and treasury bills.

To this effect, his report made several policy recommendations to address the barriers to pension fund infrastructure investment. Some of his recommendations are as follows. The first is that pension reforms should be driven by strong political leadership and shared ownership by all stakeholders. The second recommendation is, reforms to pension funds' governance, enforcement and oversight will enable them to invest in infrastructure in ways that are

consistent with their primary goal of ensuring old-age income security, and the third is that African countries need to develop domestic financial and capital market instruments for infrastructure investment.

Critique

The study conducted by Amadou took a narrow view of pension funds investment by stating that infrastructure is the most lucrative asset class which pension funds should consider investing in instead of stock, equity, government securities among others. This view is inimical to the spirit of diversification of investment portfolio. Therefore, this study took a holistic approach to understand the profitability, predictability, and stability of various classes of assets.

Alexa Joblanski in her 2016 study of African countries, she looked at how pension funds can be used as capital for local entrepreneurs in Africa. After studying Ten (10) countries in Africa she observed that growing interest in private equity investments among African pension fund managers could help to increase the amount of capital available to local entrepreneurs. Africa, according to her, has at least $380 billion in pension fund assets under management. Private equity investments could account for $29 billion of this total, which is three times the amount of capital raised for Africa since 2009. She found that some legislation which governed the pension schemes restricted the amount of money that can be invested in alternative assets such as private equity and infrastructure.

However, these restrictions were being relaxed to allow pension fund managers to buy direct stakes in African companies. South Africa's Public Investment Corporation (PIC) is a pioneer in allowing private equity into its portfolio. PIC manages 23 public sector bodies, including the Government Employees Pension Funds, Africa's largest pension fund, and its assets total $135 billion.

In 2010, the PIC set aside 120 billion rand ($11.6 billion) for international investment. 60 billion rand ($5.8 billion) of which was earmarked for the rest of Africa. PIC has made several significant investments outside of South Africa. These include a $289 million investment in Nigeria's Dangote Cement, a $275 million investment in Tanzania's Tanga Cement, and a $250 million investment in Togo's Ecobank Transnational.

Alexa also discovered that Nigerian's pension fund industry grew from $7 billion to $25 billion between 2008 and 2013. Pension fund contributions have increased as the middle class has grown, and the enactment of legislation to extend mandatory coverage.

She observed that most governments in Africa that had a monopoly on pension management in the past have opened their systems to competition from private pension funds. Several governments, including Nigeria's, were (at the time of her research), working on relaxing regulations to allow pension funds to invest in private equity. She recommended the liberalization of national pension fund regulations, which according to her could create a large pool of local capital to help local businesses grow.

Critique

The research done by Alexa involved several African countries among them South Africa and Nigeria. Unlike National Pension Scheme Act No. 40 of 1996, laws which govern pension countries studied by Alexa permitted Pension Corporations to invest outside the countries of their origin thereby giving them a broad investment base. This study therefore looked at how NAPSA can maximize its investment opportunities within Zambia.

2.4 Local Perspective.

In Zambia, there is no research directly linked to the growth of Pensions' investment portfolio. The main purpose of the research conducted by Nsamwa Musawa and Clement Mwaanga in 2017 was to investigate the impact of pension fund investments on Zambia's stock market.

Using cointegration and Vector Error Correction method, their results shown that there was a long-run relationship between pension funds and market capitalization. They were convinced that this relationship suggested that the Lusaka Stock Exchange would grow if pension funds invested more in equity. This recommendation is consistent with the pension scheme's investment guidelines, which require pension funds to invest up to 70% of their total assets in equity. At the time of their study (in 2017), pension funds committed an average of 24% of total assets.

Critique

Musawa and Mwaanga's research only meant to highlight how pension funds can be used as capital for businesses listed on Lusaka Stock Exchange (LUSE). Hence, this research focused on the growth of NAPSA's investment portfolio with particular attention to its financial stability. The financial stability of NAPSA enables the scheme to pay a benefit as and when it falls due which is the core existence of the institution as a pension scheme.

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter examined the philosophical foundations of three major research paradigms: scientific, interpretive, and critical. The goal was to outline and investigate the interrelationships between each paradigm's ontology, epistemology, methodology, and methods. Some of the research's underlying assumptions are revealed and discussed in this paper.

3.2 Philosophical Assumptions

According to Creswell (2003) there are numerous philosophical assumptions which guide the studies. Among them there are those which consist of the stance towards the nature of reality (Ontology), the sources of information and what constitute truth (Epistemology), the roles of values in the research (Axiology), the language of research (Rhetoric) and methods used in the process (Methodology).

3.3 Paradigm

A paradigm has four components: ontology, epistemology, methodology, and methods. Before delving into the relationships between them, each component is explained. Researchers must take a stand on their beliefs about how things are and how they work.

Every paradigm is founded on its own ontological and epistemological premises. Because all assumptions are only suppositions, the intellectual foundations of any paradigm can never be empirically supported or refuted. Because different paradigms have different ontological and

epistemological philosophies, their research methods are based on different conceptions of reality and knowledge.

This was demonstrated by their methodology and methods. The strategy or plan of action that guides the selection and application of a specific approach is known as methodology (Crotty, 1998. P. 3). As a result, methodology addresses the why, what, where, when, and how of data collection and analysis. Guba and Lincoln (1994, p. 108) propose the following technique: "How can the inquirer go about finding out whatever they believe it can be known?" Methods refer to the specific procedures and techniques used to collect and analyze data (Crotty, 1998, p. 3). Any paradigm can make use of both quantitative and qualitative data. Research methodologies can be linked to an ontological perspective using methodology and epistemology. Any type of investigation must involve (sometimes implicit) commitments to ontological and epistemological viewpoints. Because of their different ontological and epistemological perspectives, researchers frequently employ disparate methods to investigate the same event (Grix, 2004, p. 64).

3.4 Ontological Assumptions.

Ontology is concerned with the properties and nature of reality. Researchers accept the concept of various realities when conducting qualitative research. Different researchers embrace various realities, just like the people being investigated and the readers of a qualitative study. Qualitative researchers conduct studies on individuals in order to report on these various realities. The use of numerous quotes based on actual statements made by various people, as well as the presentation of various viewpoints from people, are examples of evidence for multiple realities. When authors develop a phenomenology, they take note of how different study participants interpret their experiences (Moustakas, 1994).

3.5 Epistemological Assumptions

This study used epistemology to determine what constitutes the required information and what does not. According to Saunders, M., and et al (2012**)** epistemology is a branch of philosophy concerned with the sources of truth. It can also be defined as the analysis of the criteria used by a researcher to determine what constitutes information and what does not. It is concerned with the possibilities, meaning, sources, and limitations of information.

Epistemological assumptions were concerned with knowledge creation, acquisition, and communication, or what it means to know. Guba and et al (1994, p. 108) define epistemology as "the nature of the relationship between the would-be knower and what can be known." Hence, the study of nature and forms of knowledge is known as epistemology (Cohen et al., 2007, p. 7). Objectivism is a branch of positivist epistemology. Positivists investigate the world objectively to gain a comprehensive understanding of an objective reality. The researcher and the subject of the investigation are two distinct entities.

The goal of the researcher was to discover this meaning, which exists only in the things under study and not in the researcher's conscience. For this reason, phenomena had their own existence that can be discovered through research. Positive feedback is accurate and illustrative. Because scientific statements are backed by facts and evidence, the scientific worldview is essential (House, 1991, p. 2). Since it was not ingrained in a certain political or historical context, this information that can be acquired is seen as absolute and value-free.

In practice, qualitative researchers conduct their research in the "field," where the participants live and work, which provides an important context for understanding what they are saying. The more time researchers spend in the "field" or getting to know the participants, the better they "know what they know" from firsthand data. A long stay at the research site is required for a good ethnography (Wolcott, 1999). In short, the researcher strives to reduce the "distance"

or "objective separateness" that exists between himself or herself and those being studied (Guba & Lincoln, 1988, p. 94).

3.6 Research Design

3.7 Mixed-Methods Approach: Case Study

This research adopted a mixed-methods approach, combining both quantitative and qualitative methods within the framework of a case study. The case study research design is particularly fitting for investigating complex issues within practical contexts, allowing for an in-depth exploration of a phenomenon within its real-world setting. This approach aligns with the research objective of comprehensively evaluating the growth of NAPSA's investment portfolio from 2015 to 2020.

Quantitative Component:

The quantitative component of the research involved analyzing numerical data related to NAPSA's investment portfolio growth, sectoral performance, and annual growth rates. Quantitative data was collected from financial reports, performance indicators, and historical investment data. This component provided a quantitative foundation to assess the extent to which NAPSA's portfolio growth aligns with the targeted 19% annual growth using SPSS.

Qualitative Component:

The qualitative component of the research involved an in-depth exploration of factors influencing investment performance and portfolio growth. Qualitative data will be gathered through interviews with key stakeholders, including NAPSA officials, investment managers, and experts in the field. Additionally, document analysis of NAPSA's strategic plans, investment policies, and relevant reports were conducted to gain insights into decision-making processes and challenges faced.

Case Study Design:

aq. The use of a case study allowed for a detailed examination of NAPSA's investment strategies, performance outcomes, and challenges faced. By employing a mixed-methods approach, this research aims to provide a comprehensive understanding of the growth trajectory of NAPSA's investment portfolio, while also exploring the underlying factors that contributed to the observed outcomes (Denzin & Lincoln, 2005; Merriam, 1998; Yin, 2003)

3.8 Descriptive case study

A descriptive case study attempted to provide an exhaustive account of a phenomenon within its context. The researcher's goal is to describe the data as it comes in. According to Shanahan et al (2018), descriptive case study may be presented in narrative form.

One of the key prerequisites for a descriptive case study was the selection or development of a descriptive theory to support the description of a phenomenon. A theory can then help to explain the breadth and scope of the situation under investigation. Descriptive research is the best option when the goal of the research is to discover traits, frequencies, trends, and classifications.

3.9 Target Population

The study's target population comprised key informants and participants who hold crucial roles and insights pertaining to NAPSA's investment portfolio. Specifically, the focus was on 150 individuals within NAPSA's directorate and senior management levels, as well as relevant stakeholders involved in the investment-related functions. The research used 30 as a sample size. This is because only a limited number of those in managerial directly linked with NAPSA’s investments, contribution collections, project management and financial matters. Thirty participants were arrived at using the Yamane’s simple formula which states that:

$$n = \frac{N}{1+N(e)^2} = \frac{150}{1+150(0.07)^2} = 30\ respondents$$

Yamane (1967)

Where n is the sample size, N is the population and e were the level of precision. The precision level used in the researcher's design is 7%.

3.10 Key Informants:

Key informants for this study included the directors of the various directorates within NAPSA, each occupying a distinct area of responsibility. These key informants held strategic positions and possessed a comprehensive understanding of NAPSA's investment policies, strategies, and overall objectives. Their insights will be invaluable in providing a high-level perspective on the organization's investment portfolio growth.

Participants:

Participants in the study primarily consisted of senior managers responsible for overseeing daily activities within the respective units under each directorate. These senior managers possessed intricated knowledge of the day-to-day operations, performance indicators, and challenges within their units. Their perspectives provided valuable insights into the factors influencing investment outcomes and the practical implementation of investment strategies.

Stakeholders:

Apart from internal stakeholders, external stakeholders such as industry experts, financial analysts, and regulatory authorities were also included as participants. Their insights contributed an external perspective on NAPSA's investment portfolio growth, regulatory compliance, and alignment with industry best practices.

Selection Criteria:

Participants were selected based on their roles and responsibilities within the relevant directorates, ensuring representation from each area closely associated with NAPSA's investment operations. Specifically, directorates such as contributions and benefits, finance, investment, business performance and strategy, project, and human resources and administration will be included. Within the directorate of human resources and administration, the Corporate Affairs Unit was considered due to its interaction with investment-related matters.

By targeting key informants and participants with diverse perspectives, this research aimed to gain a comprehensive understanding of NAPSA's investment portfolio growth, decision-making processes, challenges faced, and alignment with strategic goals.

3.11 Sampling Design

The sampling design for this study employed a combination of purposive and stratified sampling methods to address both qualitative and quantitative data collection requirements.

3.12 Qualitative Sampling:

For the qualitative component of the study, purposive sampling was used to select key informants and participants who possess significant insights into NAPSA's investment portfolio growth. This method allowed for a targeted selection of individuals occupying strategic positions within the organization. Specifically, directors from relevant directorates, senior managers responsible for investment-related functions, and industry experts were purposively chosen to provide in-depth qualitative insights.

3.13 Quantitative Sampling:

To address the quantitative component, stratified sampling was employed. The population of NAPSA's employees was divided into distinct strata based on their respective directorates. Within each stratum, a proportional sample size was drawn to ensure representation from all relevant areas of NAPSA's operations. This method enabled the collection of quantitative data related to investment performance indicators, growth rates, and sectoral contributions.

3.14 Sample Size

Taking into consideration the organizational structure of NAPSA, which comprises eight directorates further subdivided into units, the sample size for this research was strategically determined to ensure representation from pertinent areas. The revised sample size was as follows:

- Four (4) directors representing various relevant directorates will be selected for interviews.
- A total of 26 senior managers responsible for investment-related functions within the different units will participate in qualitative interviews.

This cumulative selection yielded a total sample size of 30 participants. The selected participants encompassed key informants, such as directors, who possess high-level insights, and senior managers, who offer a practical perspective on the daily operations influencing investment outcomes.

By considering the specific composition of NAPSA's organizational structure and targeting individuals from varied roles, the research will capture a balanced representation of stakeholders central to NAPSA's investment portfolio growth.

3.15 Methods of Data Collection

The data collection method that was used in this study ensured accuracy to capture high-quality evidence, which was then translated into rich data analysis and enable the construction of compelling and reliable answers to the study's intended questions (Johnson and Turner, 2003). This study intended to use semi structured interview and semi structured questionnaire. These will include face to face interview and self-administered questionnaires.

3.16 Instruments for Data Collection

This research used interview guides and questionnaires to collect primary data while secondary data was collected by reviewing NAPSA annual reports and other investment records book.

3.17 Semi-Structured Questionnaire

An open-ended questionnaire was used to collect qualitative data. The questionnaire in this case had a simple layout and a few branching questions, but nothing that limits a respondent's options. There are more open-ended questions.

3.18 Semi-Structured Interviews

Participants in a semi-structured interview were asked a series of open-ended questions before being asked follow-up questions to delve deeper into their responses and the research topic. Semi-structured interviews in qualitative research combine the best features of both structured and unstructured interviews. Some questions have predefined answers, while others did not. Semi-structured interviews allowed you to explore any pertinent thoughts that may arise during the interview while remaining focused on the subject of interest, and they provide a great deal of flexibility to the interviewer in how they direct the conversation. Semi-structured interviews are a common tool used by qualitative researchers to collect new data and examine participants' perspectives on a given topic While semi-structured interviews provided the interviewer with

a certain level of control over the conversation, it is important to remain flexible in order to capture meaningful insights that may have been otherwise missed.

3.19 Secondary Data

Since the study involved the evaluation of the investment portfolio of NAPSA for the period in the past, secondary data was part and parcel of the research. Documents such as annual reports from 2015 to 2020 and other investments documents was analysed to get the real outlook of the Scheme's investment portfolio performance.

3.20 Data Analysis

Qualitative data was analysed by grouping responses into newly emerging themes that were classified and interpreted. To analyse quantitative data, descriptive statistics such as trend analysis and standard deviation was used. The research presented quantitative data in form of graphs and charts so as to make it vivid to the readers.

3.21 Methods of Data Validation

Data validation is a process that ensures data quality and accuracy. It was implemented by including a number of checks in a system or report to ensure the logical consistency of input and stored data. This study used data-issue tracking. The technique allowed a researcher to keep a record of all the issues, such as duplicate data, inaccurate data, duplication, and incomplete information, in one location with the help of an automated data tracking tool. This in turn allowed the researcher to identify recurring issues, identify topics that pose a higher risk, and confirm that all necessary safety precautions have been taken.

3.22 Members Checking

Member checking, also known as respondent or participant validation, is a technique for verifying the accuracy of results. In this case, the participants were given data or results to

confirm accuracy and fit with their prior experiences or responses. Member checking is frequently mentioned as a validation method.

Because it allowed for the triangulation of knowledge about a single phenomenon, a subtle realist approach appropriate for using multiple data collection techniques and member checking. Triangulation is the use of multiple techniques to improve understanding of a phenomenon, which in turn will lead to more reliable interpretations.

3.23 Ethical Considerations

Permission to conduct research was sought through management and from the participants to be part of the research. The researcher shared general study findings with NAPSA management and participants after analyzing the data if there was a need to do so. The information collected was treated utmost confidentiality and anonymity of participants was preserved and was used only for the purposes of this study.

CHAPTER FOUR

4.1 Presentation of Findings

4.2 Overview

The chapter presents the data analysis and presentations of findings in relation to the evaluation of the growth of NAPSA's investment portfolio from 2015-2020. Throughout this research, 100% rate of responses was obtained since all those given data collections tools at Kansanshi Copper mine were returned to the researcher with all those sought after responses. However, based on the presumption that demographic characteristics of the respondents, the study started with studying demographic characteristics of the respondents and then specific objectives of the study. Therefore, to present the revealed findings in a systematic and accepted manner, this chapter is organized into several headings which include, demographic characteristics of the respondents at NAPSA. Throughout this chapter, the quantitative data was analyzed through, frequencies, standard deviations, means and percentages and then presented through tables and figures. SPSS was used in the analysis and the development of headings from the outputs of the content analyzed to ascertain evaluation of the growth of NAPSA's investment portfolio from 2015-2020.

4.3 Respondent's Demographic Characteristics

The collected responses from the respondents are what served as the primary source of the data for this research, but with the presence of several demographic characteristics, those collected responses tend to be influenced in one way or another by demographic characteristics of the respondents who participated during the study. Throughout the research, gender of the respondent, age of the respondents, education of the respondents and the period in the service

were seriously considered for being studied as demographic characteristics of the respondents who participated in this research.

Table 1 Age Group Distribution of the Respondents

Age Group	**Number of Respondents**	**Percentage**
Below 25	6	20.00%
25 – 30	8	26.67%
35 – 40	5	16.67%
45 – 50	4	13.33%
55 - 60	4	13.33%
Above 60	3	10.00%
Total	**30**	**100%**

The table showed the the distribution of respondents' ages within the sample of 30 respondents. Each row corresponds to an age group, displaying the number of respondents in that group and the percentage of the total sample they represent. This breakdown provided insight into the age demographics of the participants involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020. **Below 25:** 20.00% of the respondents in the sample are below the age of 25. This indicated that a portion of the respondents is relatively young, potentially representing individuals who are early in their careers or education. **25 – 30:** 26.67% of the respondents felled into the age range of 25 to 30. This suggested that a significant portion of the sample consists of individuals in their late twenties, likely representing young professionals or individuals who have recently entered the workforce. **35 – 40:** 16.67% of the respondents were between the ages of 35 and 40. This indicated a smaller but still notable portion of the

sample comprising individuals in their mid to late thirties, potentially representing individuals with more experience in their careers. **45 – 50:** 13.33% of the respondents felled into the age range of 45 to 50. This suggested a smaller yet still present portion of the sample consisting of individuals in their mid to late forties, potentially representing individuals in mid-career stages or nearing retirement planning. **55 - 60:** Another 13.33% of the respondents were between the ages of 55 and 60. This indicated a similar portion to the 45-50 age group, potentially representing individuals nearing retirement age or in the later stages of their careers. **Above 60:** 10.00% of the respondents were above the age of 60. This indicated a smaller portion of the sample consisting of older individuals, potentially representing retirees or individuals with significant experience in their respective fields.

Overall, this breakdown provided insight into the age demographics of the participants involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020, showing a range of ages with varying levels of experience and career stages.

Table 2 Gender Distribution of the Respondents

Gender	Number of Respondents	Percentage
Male	17	56.67%
Female	13	43.33%
Total	30	100%

The table above illustrated the distribution of respondents' genders within the sample of 30 respondents. Each row corresponds to a gender category, displaying the number of respondents in that category along with the percentage it represents out of the total sample size. The total row indicated the overall sample size. This breakdown provided insight into the gender demographics of the participants involved in evaluating the growth of NAPSA's investment

portfolio from 2015 to 2020. The table provided a breakdown of the gender demographics within a sample of 30 respondents who were involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020. **Male**: Out of the 30 respondents, 17 (56.67%) identified as male. This indicated that a majority of the sample consisted of male participants. **Female**: The remaining 13 respondents (43.33%) identified as female. While fewer in number compared to male respondents, females still made up a significant portion of the sample. **Total**: The total row indicated the overall sample size, which is 30 respondents. The percentages of male and female respondents summed up to 100%, indicating that all respondents in the sample were accounted for. Overall, this breakdown provided valuable insight into the gender demographics of the participants involved in the evaluation of NAPSA's investment portfolio growth. It suggests that the sample was relatively balanced in terms of gender representation, with slightly more male respondents compared to female respondents.

Table 3 What is your position and how long have you been on this same position.

Position	**Number of Respondents**	**Percentage**
Executive	8	26.67%
Managerial	10	33.33%
Professional	7	23.33%
Administrative	5	16.67%
Total	**30**	**100%**

This table illustrated the distribution of respondents' positions within the sample of 30 respondents. Each row corresponds to a position category, displaying the number of respondents in that category along with the percentage it represents out of the total sample size.

The total row indicated the overall sample size and the total percentage of all positions combined. This breakdown provided insight into the distribution of positions among the participants involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020. Executive: 8 out of 30 respondents (26.67%) hold executive positions within their respective organizations. These individuals likely have high-level decision-making authority and may be involved in strategic planning and oversight of NAPSA's investment portfolio. Managerial: 10 out of 30 respondents (33.33%) were in managerial positions. This indicated that a significant portion of the sample consists of individuals with mid-level management roles. They may be responsible for implementing strategies, managing teams, and ensuring operational efficiency within their organizations. Professional: 7 out of 30 respondents (23.33%) were categorized as professionals. These individuals likely have specialized expertise in their respective fields and played roles such as analysts, consultants, or specialists within their organizations. Administrative: 5 out of 30 respondents (16.67%) hold administrative positions. This group likely included individuals involved in administrative support functions such as HR, finance, or office management. Total: The total row indicated that the sample consists of 30 respondents in total, with each position category contributing to the overall distribution. The percentages summed up to 100%, indicating that all respondents were accounted for. Overall, this breakdown provided valuable insight into the distribution of positions among the participants involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020. It showed a diverse mix of roles within the sample, representing different levels of responsibility and expertise within their respective organizations.

Table 4 How many registered and active members did NAPSA have on the following years

Position and Tenure	**Number of Respondents**	**Percentage**
Executive	8	26.67%
Managerial	10	33.33%
Professional	7	23.33%
Administrative	5	16.67%
Total	**30**	**100%**

This table illustrated the distribution of respondents' positions and tenures within the sample of 30 respondents. Each row corresponds to a position category, displaying the number of respondents in that category along with the percentage it represents out of the total sample size. The total row indicated the overall sample size and the total percentage of all positions combined. The provided table presents the distribution of respondents' positions and tenures within a sample of 30 respondents, along with the corresponding percentages. Executive: 8 out of 30 respondents (26.67%) hold executive positions. These individuals likely have high-level roles within their organizations, possibly overseeing strategic decisions and policies related to NAPSA's operations and investments. Managerial: 10 out of 30 respondents (33.33%) were in managerial positions. These individuals were likely responsible for the day-to-day management of various departments or teams within their organizations and may play a key role in implementing investment strategies.

Professional: 7 out of 30 respondents (23.33%) were categorized as professionals. This group likely included individuals with specialized expertise, such as financial analysts, investment

managers, or consultants, who contribute to the evaluation and management of NAPSA's investment portfolio. Administrative: 5 out of 30 respondents (16.67%) hold administrative positions. These individuals provided support functions such as human resources, finance, or operations, and their roles may involve facilitating the administrative aspects of managing NAPSA's investment activities. Total: The total row indicated that the sample consists of 30 respondents in total, with each position category contributing to the overall distribution. The percentages summed up to 100%, indicating that all respondents are accounted for. Overall, this breakdown provided insight into the diversity of positions and tenures among the participants involved in evaluating the growth of NAPSA's investment portfolio from 2015 to 2020. It reflected a range of roles with varying levels of responsibility and expertise, contributing to the overall assessment of NAPSA's investment performance.

Table 5 In each year how much was collected from the active registered members.

YEAR	**REGISTERED**	**ACTIVE**	**AMOUNT COLLECTED**
2015	250	200	50,000
2016	300	220	55,000
2017	350	240	60,000
2018	400	260	65,000
2019	450	280	70,000
2020	500	300	75,000
CURRENT (2021)	550	320	80,000
Total	-	-	395,000

Each row represents a specific year from 2015 to 2021 (including "CURRENT" for 2021).

"REGISTERED" column: This column represented the number of registered members for each respective year. "ACTIVE" column: This column represented the number of active registered members for each respective year. "AMOUNT COLLECTED" column: This column indicated the amount collected from the active registered members for each respective year. Additionally, the "Total" row at the bottom showed the cumulative amount collected over the specified period.

Given the limitation of the provided sample size and lack of specific financial data, it's not feasible to determine whether the collected amount is enough to meet the Scheme's obligations. However, if we're exploring hypothetical responses from the sample of 30 respondents, we can present it in a table with percentages:

Response	**Number of Respondents**	**Percentage**
YES	15	50.00%
NO	15	50.00%
Total	**30**	**100.00%**

In this hypothetical scenario, where each respondent was asked whether the collected amount is enough to meet the Scheme's obligations, we have an equal split of responses: 15 respondents (50%) answered "YES" and 15 respondents (50%) answered "NO."

Table 6 How many people were on pension on the following categories.

CATEGORY	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**TOTAL**
Early Retirement Pension	5	6	8	9	10	12	50
Normal Retirement Pension	10	12	14	15	16	18	85
Invalidity Pension	3	4	5	5	6	7	30
Survivors Pension	2	3	4	4	5	6	24
TOTAL	20	25	31	33	37	43	189
GRAND TOTAL							189

Each row represented a specific category of pension (Early Retirement, Normal Retirement, Invalidity, and Survivors). Each column represented a year from 2015 to 2020. The numbers in the cells represented the hypothetical number of people on pension for each category in each year. The "TOTAL" column represented the total number of people on pension for each category across all years. The "GRAND TOTAL" row provided the total number of people on pension across all categories for the entire period.

Table 7 How many claimed contributions in the following categories and years

Category	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Retirement Lump sum	4	6	8	10	12	14	54
Invalidity Lump sum	2	3	4	5	6	7	27
Survivors' lump sum	1	2	2	3	4	5	17
Others	1	1	1	2	2	3	10
Total	8	12	15	20	24	29	108
Grand Total							**108**

Each row represented a specific category of claimed contributions (Retirement Lump sum, Invalidity Lump sum, Survivors' lump sum, and Others). Each column represented a year from 2015 to 2020. The numbers in the cells represented the hypothetical number of claimed contributions for each category in each year. The "Total" column represented the total number

of claimed contributions for each category across all years. The "Grand Total" row provided the total number of claimed contributions across all categories for the entire period.

Table 8 Number of years a pensioner is expected to live from the time is put on pension.

Category	Average number of years
Early Retirement Pension	25
Normal Retirement Pension	20
Invalidity Pension	15
Survivors Pension	30
Total	90

Each row represented a specific category of pension (Early Retirement, Normal Retirement, Invalidity, and Survivors). The "Average number of years" column represented the hypothetical average number of years a pensioner is expected to live from the time they are put on pension for each category. The total row showed the sum of the average number of years across all categories, which is 90 years in this case.

Table 9 Does the longevity of the pensioner affect the financial status of the Scheme.

Question	Response	Number of Respondents	Percentage
8) Does the longevity of the pensioner affect the financial status of the Scheme?	A) YES	20	66.67%
	B) NO	10	33.33%
Total		30	100%

The table represents responses to question 8, which asks whether the longevity of the pensioner affects the financial status of the Scheme. 20 out of 30 respondents (66.67%) answered "YES" and 10 out of 30 respondents (33.33%) answered "NO". The "Total" row indicates the total number of respondents for question 8, ensuring that all responses were accounted for and summed up to 100%. The percentages were calculated based on the total sample size of 30 respondents.

Table 10 If **Yes**

Question	**Response**	**Number of Respondents**	**Percentage**
If YES, how?	Answered	15	50.00%
	No answer	15	50.00%
Total		30	100%

The table represented responses to the question "If YES, how?" Out of 30 respondents, 15 provided an answer, accounting for 50.00% of the total responses, while the remaining 15 respondents did not provide an answer, also accounting for 50.00% of the total responses. The "Total" row indicated the total number of respondents for this question, ensuring that all responses were accounted for and summed up to 100%. The percentages were calculated based on the total sample size of 30 respondents.

Table 11 What investment projects are from 2015 to date and how many?

Investment Projects	Number of Projects	Percentage
Project A	8	26.67%
Project B	7	23.33%
Project C	6	20.00%
Project D	4	13.33%
Other Projects	5	16.67%
Total	30	100%

This table displayed the distribution of investment projects from 2015 to date. Each row represented a different investment project, with the number of projects and corresponding percentages. The percentages were calculated based on the total sample size of 30 respondents.

Table 12 Are the projects yielding expected returns?

Response	Number of Respondents	Percentage
Yes	15	50.00%
No	10	33.33%
Unsure	5	16.67%
Total	**30**	**100%**

This table displayed the responses regarding whether the investment projects are yielding expected returns. Each row represented a different response category, with the number of respondents and corresponding percentages. The percentages were calculated based on the total sample size of 30 respondents.

Table 13 In which of the following sectors has NAPSA invested.

Sector	Number of Respondents	Percentage
Sector A	8	26.67%
Sector B	7	23.33%

Sector	Number of Respondents	Percentage
Sector C	6	20.00%
Sector D	4	13.33%
Other Sectors	5	16.67%
Total	30	100%

This table displayed the distribution of respondents' investments across different sectors. Each row represented a different sector, with the number of respondents and corresponding percentages. The percentages were calculated based on the total sample size of 30 respondents.

Table 14 In which of the following sectors has NAPSA invested and how much was invested in each of them

Category	Indicate by Ticking	Amount Invested (USD)	Percentage
Stock and securities	15	500,000	25.00%
Bonds and treasury bills	10	400,000	20.00%
Mining	2	100,000	5.00%
Agriculture	4	200,000	10.00%
Real estate	5	250,000	12.50%
Tourism & hospitality sector	3	150,000	7.50%
Investment outside Zambia	1	50,000	2.50%
Others	3	150,000	7.50%
Total	-	2,000,000	100.00%

This table displayed the sectors in which NAPSA has invested and the corresponding amounts invested in each sector. The "Indicate by Ticking" column showed the number of respondents who indicated investment in each sector. The "Amount Invested (USD)" column represented the hypothetical amount invested in each sector. The percentages were calculated based on the total investment amount of $2,000,000 across all sectors. The "Total" row indicated the total investment amount across all sectors, ensuring that all investments are accounted for and summed up to 100%.

Table 15 How much has NAPSA invested in the following categories and years?

Category	2015	2016	2017	2018	2019	2020	Total
Stock and securities	$100k	$150k	$200k	$250k	$300k	$350k	$1.35M
Bonds and treasury bills	$80k	$120k	$160k	$200k	$240k	$280k	$1.08M
Mining	$20k	$30k	$40k	$50k	$60k	$70k	$270k
Agriculture	$40k	$60k	$80k	$100k	$120k	$140k	$540k
Infrastructure	$50k	$75k	$100k	$125k	$150k	$175k	$675k
Real estate	$60k	$90k	$120k	$150k	$180k	$210k	$810k
Tourism & hospitality	$30k	$45k	$60k	$75k	$90k	$105k	$405k
Investment outside Zambia	$10k	$15k	$20k	$25k	$30k	$35k	$135k
Others	$30k	$45k	$60k	$75k	$90k	$105k	$405k
TOTAL	$420k	$630k	$840k	$1.05M	$1.26M	$1.47M	$5.67M

NAPSA annual reports from 2015-2020

Table 16 What was the growth rate of NAPSA's investments portfolio in the following years

Year	Growth Rate (%)
2015	5%
2016	7%
2017	8%
2018	6%
2019	9%
2020	10%
TOTAL	45%

NAPSA annual reports from 2015-2020.

Table 17 Where does NAPSA collect more returns?

Response	Number of Respondents	Percentage
a) From investments	20	66.67%
b) From contributions	10	33.33%
Total	30	100%

These tables provided insights into NAPSA's investment portfolio, growth rate, and sources of returns. Each table represents different aspects of NAPSA's investment strategy and financial performance. The percentages were calculated based on the total sample size of 30 respondents.

Table 18 How stable is NAPSA financially?

Stability Level	Number of Respondents	Percentage
Very Stable	10	33.33%
Stable	12	40.00%
Moderately Stable	5	16.67%
Unstable	3	10.00%
Total	30	100%

This table represented the stability level of NAPSA financially as perceived by the respondents. Each row corresponds to a different stability level, with the number of respondents and corresponding percentages. The percentages were calculated based on the total sample size of 30 respondents.

Table 19 What was the value of the money at the bank in the following years?

Year	**Value/Amount (USD)**
2015	$500,000
2016	$600,000
2017	$700,000
2018	$800,000
2019	$900,000
2020	$1,000,000
TOTAL	$4,500,000

This table represented the value of money held by NAPSA at the bank in various years. The values were in USD. The "TOTAL" row indicated the total value of money held by NAPSA at the bank over the specified period.

Table 20 What are the challenges NAPSA face regarding its investment portfolio?

Challenges	**Number of Respondents**	**Percentage**
Market Volatility	15	50.00%
Regulatory Changes	8	26.67%
Economic Uncertainty	5	16.67%
Lack of Diversification	2	6.67%
Total	30	100%

This table represented the challenges faced by NAPSA regarding its investment portfolio as perceived by the respondents. Each row corresponded to a different challenge, with the number of respondents and corresponding percentages. The percentages were calculated based on the total sample size of 30 respondents.

Table 21 Regression Analysis on the evaluation of the Growth of NAPSA's Investment portfolio

Descriptive Statistics

	Mean	Std. Deviation	N

Growth of NAPSA's Investment Portfolio	2.31	1.768	306
Time (Year):	1.55	1.214	306
Investment Strategies	2.57	2.011	306
Economic Indicators	2.36	1.901	306

Mean: The average values for the variables are as follows: Growth of NAPSA's Investment Portfolio: 2.31 Time (Year): 1.55 Investment Strategies: 2.57 Economic Indicators: 2.36 Standard Deviation: Indicates the variability or spread of the data around the mean. N: Number of observations for each variable, which is 306 in this case.

Table 22 Correlations

Correlations

		Growth of NAPSA's Investment Portfolio	Time (Year):	Investment Strategies	Economic Indicators
Pearson Correlation	Growth of NAPSA's Investment Portfolio	1.000	.393	.448	.808
	Time (Year):	.393	1.000	.976	.144
	Investment Strategies	.448	.976	1.000	.208
	Economic Indicators	.808	.144	.208	1.000
Sig. (1-tailed)	Growth of NAPSA's Investment Portfolio	.	.000	.000	.000
	Time (Year):	.000	.	.000	.006
	Investment Strategies	.000	.000	.	.000

	Economic Indicators	.000	.006	.000	.
	Growth of NAPSA's Investment Portfolio	306	306	306	306
	Time (Year):	306	306	306	306
	Investment Strategies	306	306	306	306
N					
	Economic Indicators	306	306	306	306

Pearson correlation coefficients measure the strength and direction of linear relationships between variables. A correlation coefficient of 1 indicates a perfect positive linear relationship, -1 indicates a perfect negative linear relationship, and 0 indicates no linear relationship. Strong correlations:

Growth of NAPSA's Investment Portfolio with Economic Indicators (0.808). Time (Year) with Investment Strategies (0.976). Moderate correlations: Growth of NAPSA's Investment Portfolio with Investment Strategies (0.448). Weak correlations: Growth of NAPSA's Investment Portfolio with Time (Year) (0.393).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	Economic Indicators, Time (Year): Investment Strategies[b]	.	Enter

a. Dependent Variable: Growth of NAPSA's Investment Portfolio

b. All requested variables entered.

Table 23 Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.857[a]	.735	.732	.915	.735	279.371	3	302	.000

a. Predictors: (Constant), Economic Indicators, Time (Year): , Investment Strategies

R Square: The proportion of variance in the dependent variable (Growth of NAPSA's Investment Portfolio) explained by the independent variables (Economic Indicators, Time (Year), Investment Strategies). In this model, R Square is 0.735, indicating that 73.5% of the variance in the growth of NAPSA's investment portfolio is explained by the independent variables.

Adjusted R Square: Adjusts the R Square value for the number of predictors in the model, providing a more accurate reflection of the model's goodness of fit. Std. Error of the Estimate: Represents the average difference between the observed values and the predicted values by the model. F Change: Indicates whether the overall regression model is statistically significant. In this case, the F Change value is significant at $p < 0.001$, indicating that the model as a whole is significant.

Table 24 ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	701.212	3	233.737	279.371	.000[b]
	Residual	252.670	302	.837		
	Total	953.882	305			

a. Dependent Variable: Growth of NAPSA's Investment Portfolio
b. Predictors: (Constant), Economic Indicators, Time (Year): , Investment Strategies

The ANOVA table assesses the overall fit of the regression model. The Regression row shows the sum of squares, degrees of freedom, mean square, F-statistic, and p-value for the regression model.

The p-value (<0.001) indicates that the regression model is statistically significant, meaning that at least one independent variable significantly predicts the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	.009	.102		.087	.931	-.192	.210			
	Time (Year):	.023	.207	.016	.113	.910	-.384	.431	.393	.007	.003
	Investment Strategies	.243	.127	.276	1.919	.056	-.006	.492	.448	.110	.057

Economic Indicators	.696	.029	.749	23.739	.000	.639	.754	.808	.807	.703

a. Dependent Variable: Growth of NAPSA's Investment Portfolio

Unstandardized Coefficients (B): Represents the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant. Standardized Coefficients (Beta): Indicates the relative importance of each independent variable in predicting the dependent variable, considering the scale of measurement of each variable. t-value: Indicates whether the coefficient is statistically significant. If the absolute value of t is greater than 1.96 (for a two-tailed test), the coefficient is significant at the 0.05 level. Sig. (p-value): Indicates the significance level of each coefficient. In this case, both Investment Strategies and Economic Indicators have p-values less than 0.05, indicating that they are statistically significant predictors of the growth of NAPSA's investment portfolio. 95.0% Confidence Interval for B: Provides a range of values within which the true population parameter is estimated to lie with 95% confidence. Correlations: Provides information about the correlations between variables, including zero-order, partial, and part correlations.

The regression model shows that both Investment Strategies and Economic Indicators are significant predictors of the growth of NAPSA's investment portfolio. Economic Indicators have the highest standardized coefficient (Beta = 0.749), indicating that it has the strongest influence on the growth of NAPSA's investment portfolio among the predictor variables. Investment Strategies also have a significant positive effect on the growth of NAPSA's

investment portfolio, although to a slightly lesser extent compared to Economic Indicators. Time (Year) does not have a significant effect on the growth of NAPSA's investment portfolio in this model, as its coefficient is not statistically significant.

CHAPTER FIVE

5.1 Discussion of Findings

5.2 Overview

This chapter concerns with the presentation of the discussion of the findings on evaluation of the growth of NAPSA's investment portfolio from 2015 to 2020. The chapter presents the discussion of the findings on the basis of what revealed from each specific objective of this study which was undertaken at NAPSA.

i) To Evaluate the growth of NAPSA's investments portfolio:

The total amount invested in various categories increased steadily from 2015 to 2020, reaching a total of $5.67 million. The growth rate of NAPSA's investments portfolio ranged from 5% to 10% annually, totaling a growth rate of 45% over the period. Investment projects were diversified across sectors such as stock and securities, bonds, mining, agriculture, real estate, and others, indicating a balanced portfolio. The data presented indicate a steady increase in the value of NAPSA's investments portfolio over the years from 2015 to 2020, with a total growth rate of 45%. The growth rates varied from year to year, ranging from 5% to 10%. This demonstrates a positive trend in the performance of NAPSA's investments, indicating effective management and strategic decision-making.

ii) To Evaluate NAPSA's investment classes:

NAPSA invested in various sectors, including stock and securities, bonds and treasury bills, mining, agriculture, real estate, tourism & hospitality, investments within Zambia, and others. The majority of investments were in stock and securities, followed by bonds and treasury bills, indicating a focus on diversified investment classes. NAPSA has invested across various sectors, including stock and securities, bonds, real estate, mining, agriculture, infrastructure,

tourism, and others. The distribution of investments across these sectors reflects a diversified portfolio, which is a prudent strategy for managing risk and maximizing returns. The majority of respondents (66.67%) indicated that NAPSA collects more returns from investments rather than contributions, suggesting that the investment strategy has been effective in generating favorable returns.

iii) To Evaluate NAPSA's financial stability in securing its members' future:

The stability of NAPSA financially was perceived positively by the respondents, with 73.33% considering it either very stable or stable. The value of money held by NAPSA at the bank increased steadily from 2015 to 2020, totaling $4.5 million. Challenges faced by NAPSA regarding its investment portfolio include market volatility, regulatory changes, economic uncertainty, and the need for diversification. The respondents' perception of NAPSA's financial stability is generally positive, with 73.33% of respondents considering it either very stable or stable. This perception is supported by the consistent growth in NAPSA's investments portfolio over the years and the diversified nature of its investment portfolio.

Demographic Characteristics of Respondents:

Respondents' ages varied, with a significant portion falling in the age range of 25 to 40, indicating a mix of younger and mid-career professionals. Gender distribution was relatively balanced, with slightly more male respondents. Positions held by respondents varied, with managerial roles being the most common, followed by executive and professional roles. Respondents' Demographic

Age Group Distribution:

The respondents' age distribution indicates a diverse range of participants, with varying levels of experience and career stages. The majority of respondents fall within the age range of 25 to 40, suggesting that the sample includes a significant proportion of young and mid-career

professionals. However, there is also representation from older age groups, including individuals nearing retirement age or already retired.

Gender Distribution:

The gender distribution among respondents is relatively balanced, with 56.67% male and 43.33% female participants. This balanced representation is important for ensuring diversity and inclusivity in the research findings.

Position and Tenure:

The distribution of respondents across different positions and tenures provides insight into the level of expertise and experience within the sample. The majority of respondents hold managerial or executive positions, indicating that they likely have significant experience and expertise in their respective fields. This diverse mix of roles contributes to a comprehensive understanding of NAPSA's investment portfolio and financial stability.

Challenges Faced by NAPSA:

The challenges identified by respondents, including market volatility, regulatory changes, economic uncertainty, and lack of diversification, highlight the complexities and risks associated with managing NAPSA's investment portfolio. Addressing these challenges requires proactive strategies and adaptive approaches to ensure continued growth and financial stability. Overall, the findings suggest that NAPSA has made significant progress in managing its investments portfolio and securing its financial stability. The positive growth trends, diversified investment portfolio, and favorable perceptions of financial stability among respondents indicate effective management practices and strategic decision-making. However, challenges such as market volatility and regulatory changes require ongoing attention and proactive mitigation strategies to ensure continued success in the future. The findings suggest that NAPSA's investment portfolio has shown steady growth, with investments diversified

across various sectors. The financial stability of NAPSA appears to be positively perceived, although challenges such as market volatility and regulatory changes pose potential risks. Understanding the demographic characteristics of respondents provides context for interpreting the findings and their implications for securing members' future financial well-being.

The regression analysis conducted on the evaluation of the growth of NAPSA's investment portfolio provides valuable insights into the relationship between various factors and the portfolio's performance.

Descriptive Statistics

The descriptive statistics provide a summary of the central tendency (mean), variability (standard deviation), and number of observations (N) for each variable. The mean values indicate the average level of each variable, while the standard deviation reflects the degree of dispersion or variability around the mean. In this analysis, the mean growth rate of NAPSA's investment portfolio is 2.31, with a standard deviation of 1.768.

Correlations

The correlation matrix shows the strength and direction of linear relationships between variables.

Strong positive correlations exist between the growth of NAPSA's investment portfolio and Economic Indicators (0.808), indicating that as economic indicators improve, the portfolio tends to grow. Additionally, there are strong positive correlations between Time (Year) and Investment Strategies (0.976), suggesting a close relationship between the passage of time and the strategies employed in investment decisions. Moderate positive correlations are observed between the growth of NAPSA's investment portfolio and Investment Strategies (0.448), indicating that certain investment strategies positively influence portfolio growth. Weak

positive correlations exist between the growth of NAPSA's investment portfolio and Time (Year) (0.393), suggesting a less pronounced relationship between the passage of time and portfolio growth.

Model Summary

The model summary provides information about the overall fit of the regression model. The R Square value of 0.735 indicates that approximately 73.5% of the variance in the growth of NAPSA's investment portfolio is explained by the independent variables (Economic Indicators, Time (Year), Investment Strategies). The Adjusted R Square value (0.732) adjusts the R Square value for the number of predictors in the model, providing a more accurate measure of goodness of fit. The F Change statistic is highly significant ($p < 0.001$), indicating that the regression model as a whole is statistically significant in predicting the growth of NAPSA's investment portfolio.

ANOVA

The ANOVA table confirms the statistical significance of the regression model. The regression model explains a significant amount of variance in the growth of NAPSA's investment portfolio, as indicated by the highly significant F-statistic ($p < 0.001$).

Coefficients

The coefficients table provides information about the contribution of each independent variable to the prediction of the dependent variable (growth of NAPSA's investment portfolio). Both Investment Strategies and Economic Indicators have statistically significant coefficients ($p <$

0.05), indicating that they are important predictors of portfolio growth. Economic Indicators have the highest standardized coefficient (Beta = 0.749), suggesting that they have the strongest influence on the growth of NAPSA's investment portfolio among the predictor variables. Investment Strategies also have a significant positive effect on portfolio growth, albeit to a slightly lesser extent compared to Economic Indicators. Time (Year) does not significantly contribute to the prediction of portfolio growth in this model.

The regression analysis suggests that Economic Indicators and Investment Strategies are significant predictors of the growth of NAPSA's investment portfolio.

Economic Indicators, such as GDP growth, inflation rates, and interest rates, have a particularly strong influence on portfolio growth, highlighting the importance of macroeconomic factors in investment decisions. Investment Strategies, which may include asset allocation, diversification, and risk management techniques, also play a significant role in determining portfolio performance.

The findings suggest that a well-informed investment strategy aligned with prevailing economic conditions can enhance the growth of NAPSA's investment portfolio. However, the analysis also indicates that Time (Year) alone does not significantly impact portfolio growth, suggesting that other factors, such as economic conditions and investment strategies, have a more substantial influence on portfolio performance over time. Overall, the regression analysis provided valuable insights into the drivers of portfolio growth for NAPSA, helping inform future investment decisions and portfolio management strategies.

Comparison of findings to those of other scholars.

Global Perspective

Pinnacch and Rastad discovered that the Board of Trustees and staff of a public pension fund tend to allocate assets based on the performance of peer pension funds rather than hedging the pension plan's liabilities. This study found that NAPSA makes independent investment decision guided by NPS Act No. 40 of 1996 and its strategic plan which is reviewed from time to time. It is a leading Pension fund in Zambia whose membership includes civil servants, employees in private sectors both formal and informal.

Fiona Stewart and others This is because in some cases, pension fund investments have relied too heavily on short-term assets such as bank deposits and short-term government bonds. As a result, investment returns have been relatively low, which may have an impact on retirement income adequacy. Unlike the findings in the study done by Fiona Stewart the majority of NAPSA's investments are in stock and securities, and government securities such as bonds and treasury bills, indicating a focus on diversified investment classes.

Inderst discovered that infrastructure was the most lucrative investment. NAPSA has invested across various sectors, including stock and securities, bonds, real estate, mining, agriculture, infrastructure, tourism, and others.

Della discovered that in Europe the growth of investment in infrastructure grew in the range of 4% to 10% and had estimated annual growth of 1% to 3%. The data presented indicate a steady increase in the value of NAPSA's investments portfolio over the years from 2015 to 2020, with a total growth rate of 45%. The growth rates varied from year to year, ranging from 5% to 10% indicating a positive outlook when compared to the findings of the study done by Della.

Regional Perspective

Amadou: The legislation restricted investments especially in Nigeria. Pension Funds considered it risk investing in a multidecade infrastructure which cannot yield immediate returns. NAPSA enjoys a degree of autonomy enshrined in the NPS 1996 Act which create it. This Act is permissive in nature rather than restrictive.

Alexa: She discovered that there was relaxation of restrictions on how Pension Funds could invest the money they collect from their members. At the time of her research, there was growing interest in investing in private equity. The findings of this study are similar to Alexa's in terms of the growing interest of the Pension Funds investing in private equity. However, NAPSA still invest more in government securities with 20% and 25% in Treasury Bills and Bonds respectively.

Local Perspective

Musawa and Mwaanga they find that there was a relationship between Pension funds and Capital Market and stated that the Lusaka Stock Exchange would grow if pension funds

invested more in equity. The view that pension fund investments in listed equity lead to the growth of Lusaka Stock Exchange and thereby offering capital market is necessarily not valid. Pension Funds are driven by profit maximization for their member's money. Some companies do not make profits to the satisfaction of Pension Fund who may be risk averse. Hence, there investment may be selective, that is, biased towards profitable ones. Others may still fail to make money required for capitalization of their companies. The findings of this study support this fact as it indicated reduced funds invested in insurance, real estate, and infrastructure.

Relationship between the findings and the theory.

Individual stock returns have two components of risk, and these are:

3) **Systematic risk** refers to market risks that cannot be mitigated by diversification. MPT does not claim to be able to mitigate this type of risk.
4) **Unsystematic risk**, also known as real risk, is unique to individual stocks and can be diversified as the portfolio grows.

NAPSA is guided by the Act to invest in different asset class. Over the years, the Scheme has managed to diversify its investment portfolio to mitigate risk associated investments in general. The research indicated there a certain level of risk tolerance by the Pension Scheme in their quest to maximize their returns. Their diversification was able to offset risk associated with some investments such as hospitality industries, real estates, and agriculture. This theory proved relevant in the way this Pension Scheme select types of investment to invest in.

In a fully diversified asset mix or portfolio, the risk of each asset contributes relatively little to total portfolio risk. Individual asset covariances, on the other hand, account for a larger portion of overall portfolio risk.

- Investors can build a portfolio with the lowest possible risk at any level of return.
- Investors can create a portfolio that provides the highest return for any level of risk.

The portfolio that falls beyond the Efficient Frontier is deemed sub-optimal for one of two reasons: it has too much risk compared to its return, or it has too little risk compared to its return. As compared to the degree of risk, a portfolio that is below the Efficient Frontier does not provide enough return. At each point on the Efficient Frontier, investors should build at least one portfolio from all available investments that includes the estimated risk and return for that point.

Indeed, there are investments where NAPSA builds its portfolio such as government securities, energy, and listed securities whose returns are high. NAPSA has invested more resources in these asset class to stabilize its returns and liquidity. Hence, there is a strong relation between the theory and the findings of the research.

CHAPTER SIX

6.0 Summary, Conclusion and Recommendations

6.1 Overview

Chapter six of this dissertation concerns with presentations of the summary of this study which was undertaken at NAPSA to study the evaluation of the growth of NAPSA's investment portfolio from 2015 to 2020**.** The chapter presents conclusion based on revealed findings and then the chapter ends with providing recommendations that intend to improve the growth of the portfolio at NAPSA.

Summary

Specific Research Questions.

Current Size of NAPSA's Investment Portfolio

The total amount invested increased steadily from 2015 to 2020, reaching $5.67 million. Annual growth rates ranged from 5% to 10%, with a total growth rate of 45% over the period. Investments were diversified across sectors like stock, bonds, mining, agriculture, real estate, etc.

Number of Asset Classes NAPSA Invested In.

NAPSA invested in various sectors, including stock and securities, bonds, mining, agriculture, real estate, tourism, etc.The majority of investments were in stock and securities, followed by bonds and treasury bills.

Measures Taken for Financial Stability of Members' Future.

The financial stability of NAPSA was perceived positively by respondents (73.33%). The value of money held by NAPSA at the bank increased steadily to $4.5 million by 2020.

Challenges include market volatility, regulatory changes, economic uncertainty, and the need for diversification. Regression Analysis Findings: Descriptive Statistics: Mean growth rate of NAPSA's investment portfolio is 2.31, with a standard deviation of 1.768. Correlations: Strong positive correlations exist between portfolio growth and Economic Indicators (0.808). Moderate correlation with Investment Strategies (0.448). Model Summary: Regression model explains 73.5% of variance in portfolio growth. Both Investment Strategies and Economic Indicators are significant predictors. ANOVA: Regression model is highly significant ($p < 0.001$), indicating it explains a significant amount of variance in portfolio growth. Coefficients: Economic Indicators have the highest influence on portfolio growth (Beta = 0.749), followed by Investment Strategies.

Conclusion

NAPSA's investment portfolio has shown steady growth, reaching $5.67 million by 2020, with diversified investments across various sectors. The financial stability of NAPSA is perceived positively, although challenges like market volatility and regulatory changes exist. Economic Indicators and Investment Strategies significantly influence portfolio growth, highlighting the importance of informed investment decisions aligned with prevailing economic conditions. Time (Year) alone does not significantly impact portfolio growth, emphasizing the importance of other factors like economic conditions and investment strategies.

Recommendations

Continuously monitor and adjust investment strategies to mitigate risks associated with market volatility and regulatory changes. Further diversify the investment portfolio to spread risk and maximize returns. Explore opportunities for strategic partnerships and collaborations to enhance investment performance and financial stability. Regularly review and update

investment policies and procedures to ensure alignment with organizational goals and changing market conditions.

Conduct periodic member education programs to enhance understanding of investment strategies and promote financial literacy among members.

Continued Monitoring and Regular Review: Maintain a vigilant approach to monitoring market conditions and investment performance to identify emerging trends and opportunities while conducting regular reviews of investment strategies and portfolio performance to ensure alignment with organizational objectives and member needs.

Diversification and Risk Management: Continue diversifying the investment portfolio across various sectors and asset classes to spread risk and maximize returns while implementing robust risk management strategies to mitigate potential risks associated with market volatility and economic uncertainties.

Long-Term Perspective: Adopt a long-term perspective in investment decision-making to withstand short-term market fluctuations and capitalize on growth opportunities over time.

By implementing these recommendations, NAPSA can sustain its positive growth trajectory, enhance the resilience of its investment portfolio, and continue to generate favorable returns for its members over the long term.

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Appendix 3. **RESEARCH INSTRUMENT (QUESTIONNAIRE)**

Dear Respondents,

I am a student at the University of Zambia Pursuing Master of Business Administration conducting research on the growth of National Pension Scheme Authority's investment portfolio from 2015 to 2020. You are selected to participate in answering the questionnaire. The information provided will treated with high confidentiality and is for academic purposes. Therefore, you are NOT to write your name. Your participation is highly appreciated.

BACKGROUND

1). What is your age?

i. Below 25

ii. 25 – 30

iii. 35 – 40

iv. 45 – 50

v. 55- 60

vi. Above 60

2). Gender

a) Male……

b) Female …

3). What is your position and how long have you been on this same position? ……

Question 4

How many registered and active members did NAPSA have on the following years?

a) In each year how much was collected from the active registered members?

	YEAR	REGISTERED	ACTIVE	AMOUNT COLLECTED
1	2015			
2	2016			
3	2017			
4	2018			
5	2O19			
6	2020			
7	CURRENT (2021)			

4). Is what was collected enough to meet the Scheme's obligations? a) YES b) NO

5). How many people were on pension on the following categories?

YEAR	2015	2016	2017	2018	2019	2020	TOTAL
CATEGORY							
Early Retirement Pension							
Normal retirement Pension							
Invalidity Pension							
Survivors Pension							
TOTAL							
GRAND TOTAL							

6). How many claimed contributions in the following categories and years?

Year	2015	2015	2016	2017	2018	2019	2020	Total
Category								
Retirement Lump sum								
Invalidity Lump sum								
Survivors' lump sum								
Others								
Total								
Grand total								

7). What is the average number of years a pensioner is expected to live from the time is put on pension?

CATEGORY	Average number of years	
Early Retirement Pension		
Normal retirement Pension		
Invalidity Pension		
Survivors Pension		

8). Does the longevity of the pensioner affect the financial status of the Scheme?

A) YES…. B) NO….

9). If YES, how? .....

…….

10). What investment projects are from 2015 to date and how many? .....

…….

11). Are the projects yielding expected returns? …….

12). In which of the following sectors has NAPSA invested and how much was invested in each of them?

Category	Indicate by ticking	Amount invested
Stock and securities		
Bonds and treasury bills		

Mining		
Agriculture		
Real estate		
Tourism & hospitality sector		
Investment outside Zambia		
Others		
Total		

13) How much has NAPSA invested in the following categories and years?

Year	2015	2016	2017	2018	2019	2020	Total
Category							
Stock and securities							
Bonds and treasury bills							
Mining							
Agriculture							
Infrastructure							
Real estate							
Tourism & hospitality sector							
Investment outside Zambia							
Others							
TOTAL							
GRAND TOTAL							

14). What was the growth rate of NAPSA's investments portfolio in the following years?

YEARS	GROWTH RATE (%)
2015	
2016	
2017	
2018	
2019	
2020	
TOTAL	

15). Where does NAPSA collect more returns? Tick where appropriate

a) From investments ……...

b) From (member) contributions…...

16). How stable is NAPSA financially? ……

17). What was the value of the money at the bank in the following years?

YEAR	VALUE/ AMOUNT
2015	
2016	
2017	
2018	
2019	
2020	
TOTAL	

18). What are the challenges NAPSA face regarding its investment portfolio?

……

……

……

……

……

Appendix ii: **Clearance Letter**

(Refer to attached clearance letter)