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PORTFOLIO INVESTMENT MANAGEMENT AND FINANCIAL PERFORMANCE OF FINANCIAL INSTITUTIONS IN RWANDA
A CASE OF BANK OF KIGALI PLC

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Abstract
The purpose of this study is to find out the effect of portfolio investments management and financial performance of financial institutions in Rwanda. The specific objectives: to determine the impact of portfolio return on the financial performance of Bank of Kigali; to examine the impact of risk management on the financial performance of Bank of Kigali; to find out the impact of portfolio diversification on the financial performance of Bank of Kigali and to establish the impact of asset allocation management on financial performance of Bank of Kigali. There are portfolio investment management at Bank of Kigali Plc which is categorized into bond, equity, mutual funds and cash equivalents. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table, the value of adjusted R squared was 0.897, an indication that there was variation of 89.7% on the financial performance (ROA) of investment companies due to changes in investment in bond, equity, mutual funds and cash equivalents at 95% confidence interval. This shows that 89.7% changes in financial performance of Bank of Kigali Plc could be accounted for investment in bond, equity, mutual funds and cash equivalents. R is the correlation coefficient which shows the relationship between the study variables. The calculated value was greater than the critical value (2.262 <3.316) an indication that investment in bond, equity, mutual funds and cash equivalents were significantly influencing financial performance (ROA) of Bank of Kigali Plc. The significance value was less than 0.05 and indication that the model was statistically significant. From the findings the study revealed that investment portfolio management affects financial performance of financial institutions in Rwanda. The study revealed that investment in bond and mobile banking positively influences the financial performance of Bank of Kigali Plc. Good organization structure will allow for better investment decision of Bank of Kigali Plc that manages their investment and thus increasing its financial performance in Rwanda. There is need to increase the size of Bank of Kigali Plc in the country. Increase in fund size in the country will have positive impact on the financial performance of Bank of Kigali Plc, as it was found that performance and size have a positive significant relationship.

Keywords: portfolio investments management and financial performance of financial institutions**.**

Introduction
Worldwide, an investment expected relationship between the commitment of resources over a period of time and the expectation of future resources that will compensate investors for the time invested inflation and the risk the uncertainty of future payments. Investment may also be defined as the change in capital stock during a period. Consequently, unlike capital, investment is a flow term and not a stock term. This means that capital is measured only at a point in time, while investment can only be measured over a period of time. Companies invest because of the desire to pass money from the present into the future. Institutions investors anticipate future cash needs, and expect that their earnings in the future will not meet those needs. Another motivation is the desire to increase

wealth, which requires risks because future investment returns are uncertain. Return on investment is a measure of the increase in welfare as a result of an investment. This growth rate is expressed as a percentage so that large and small investors can be compared (Trygve, 2017). Recent US economic literature has focused on the risks and volatility of investment performance in developing countries, particularly given the decline in capital investment rates in large developing countries in the 1990s (UNCTAD, 2019).

In this regard, empirical studies to date show a general consensus on their negative impact on the performance of private investment in both developed and developing countries. However, relatively few empirical studies have investigated the channels through which uncertainty and risk affect investment. In particular, the interaction between fixed investments, uncertainty and portfolio choice remains an unexplored area of research. The lack of empirical research on portfolio selection and its impact on the performance of investment brokerage firms is particularly surprising given the growing integration of international commodity and capital markets and the widening gap between real and financial sector transactions.

Investments in European countries such as Germany, the Netherlands, Switzerland and the United Kingdom are driven by three basic needs: income, capital preservation and capital appreciation. Income can be invested to secure future income. Usually, investors want to start earning in the near future. With capital preservation, investments are made to preserve capital or original value. These are generally conservative investments. Investors want to set aside funds while ensuring that they will be available at some point in the future without risking a loss of purchasing power. Since investors want to preserve the real value of the capital invested, the nominal value of the investment should grow at a rate that corresponds to the inflationary trend (Trygve, 2017). Capital appreciation is investing to allow money to grow or increase in value to meet future needs. The objective is to allow the value of the invested funds to grow faster than inflation to generate a positive return after the effects of taxes and inflation. Generally, investing for capital appreciation involves some risk in order to achieve the desired return. Optimal investment means that, in terms of profitability, firms should remain indifferent between investing today and moving these resources to tomorrow, as long as an appropriate discount rate is set to discount profits in the next period (Trygve, 2017).

Portfolio investment problems and optimal allocation of resources within several investment options are not new topics in economic literature. For example, Grube (2017) has pointed out the substitutability of real and financial assets in portfolio balance sheets. Therefore, investors decide how to divide their portfolio between real and financial investments based on their respective returns. Tornell (2018) argues that given the uncertain environment in developing countries, real sector firms may prefer to invest in more liquid, reversible financial sector assets, which also provide comparable or higher returns than investments in fixed assets. However, despite these findings, no empirical study has investigated the issue of real and financial asset substitution of real sector firms. Until recently, this issue has been studied by an increasing number of studies, which could be called the financial literature, focusing on the following main points: increasing the return on financial capital relative to fixed capital, ii) increasing the purchase of fixed capital. Short-term financial assets for real sector enterprises and the decline in the rate of fixed investment.

Kenya as a country, performance of the firm can be measured by its financial results, i.e., by its size of earnings riskiness and profitability are two major factors which jointly determine the value of the concern, (Pi and Timme, 2020). Financial decisions which increase risks will decrease the value of the firm and on the other hand, financial decisions which increase the profitability will increase value of the firm. Risk and profitability are two essential ingredients of a business concern. There has been a considerable debate about the ultimate objective of firm performance, whether it is profit maximization or wealth maximization (Pi & Timme, 2020). It is observed that while considering the firm performance, the profit and wealth maximization are linked and are effected by one-another.

The financial performance of a corporation is of vital interest to many different groups and individuals. Lenders are concerned with the corporation's ability to repay loans as well as whether it is abiding by loan contracts. Purchasing agents for other companies are concerned with its viability as a supplier of goods or services for its products. Potential investors are interested in determining the financial strength of a company as an element in assessing the company’s value. In addition to these external analysts, managers within the corporation are also concerned with analyzing its financial performance. These internal analysts compare the actual performance of the company and its divisions

and lines of business with plans, budgets, or objectives; they also compare the company's performance with that of current and potential competition (Scott, 2017).

The main aim of financial institutions in Rwanda is to seek profit like any other profit-oriented institution. Its capacity to earn profit depends upon its investment policy. Its investment policy, in turn, depends on the manner in which it manages its investment portfolio. Thus financial institutions investment policy emerges from a straightforward application of the theory of portfolio management to the particular circumstances of the financial institutions especially Bank of Kigali, (Omondi & Moronge, 2018). When a financial institutions operates, it acquires and disposes of income-earning assets. These assets plus the financial institutions's cash make up what is known as its portfolio. Bank of Kigali earning assets consist of securities issued by the central and state governments, local bodies and government institutions, and financial obligations, such as promissory notes, bills of exchange, etc. issues by firms. There earning assets constitute between one-fourth and one-third of Bank of Kigali total assets.

Thus Bank of Kigali earning assets are a vital source of its income. The manner in which Bank of Kigali manage their portfolios that is acquiring and disposing of their earning assets can have substantial effects on the financial markets, on the borrowing and spending practices of households and businesses, Bank of Kigali's profitability and on the economy as a whole (Ndung'U, 2017).

It is widely accepted that financial inclusion plays an important role in promoting faster, broad-based economic growth, and poverty reduction, and thus strongly supports national level objectives through different investment made by different institutions especially financial institutions. In recognizing the efforts to support financial inclusion, the Government of Rwanda (GoR) has introduced a number of initiatives to promote financial inclusion, including the implementation of the National Inclusion Financial Strategy (NFIS) and in ensuring that the NFIS is a living document that continues measuring and monitoring the identified areas of priority or pillars (Omondi & Moronge, 2019).

The development of the NFIS is a continuation of endeavor by the GoR to afford appropriate and quality financial services and product accessible to all categories of the population as well as to the small businesses and farmers. Inclusive and effective financial systems help mobilize savings for investment, reduce transaction costs and increases efficiency, thereby contributing to employment generation and growth. Financial inclusion also helps improve household welfare, by reducing their transaction costs, enabling them to efficiently manage risks and shocks, allocating capital for productive use and supporting the accumulation of wealth over time. Arising through a collaborative stakeholder review processes, the NFIS 2019–2024 aims to guide and assist the government and stakeholders to identify and implement actions that best improve financial inclusion. The development of the NFIS has been rolled out under the guidance of the government, being jointly led by the National Bank of Rwanda (BNR) and the Ministry of Finance and Economic Planning (MINECOFIN), with technical support from Access to Finance Rwanda (MINECOFIN report, 2018).

1. Statement of the Problem

Portfolio investment a substantial way of solutions for Rwandan economic (World Bank Report, 2019). The need for estimates of the economic cost of portfolio investment is almost self-evident. This estimation is potentially a valuable source of information for policymakers, researchers and private sector planners. Rwanda is faced the situation of financial performance of financial institutions due to different financial institutions. Morduch (2012) said that when the central bank rises the interest rate newly offered government securities, such treasury bills and bonds, are often viewed as the safest investments and was usually experience a corresponding increase in interest rates. In other words, the "risk-free" rate of return increases, making these investments more desirable.

As the risk-free interest rate increases, so does the total return required to invest in stocks. Therefore, if the required risk premium decreases but the potential return remains the same or decreases, investors may find the stock too risky and put their money elsewhere. Fernando (2017) argues that a rise or fall in interest rates affects the psychology of investors and the markets are nothing but psychological. Everyone agrees that when the central bank announces an interest rate hike, businesses and consumers cut back on spending, leading to lower incomes and lower stock prices as markets fall in anticipation. Conversely, when the central bank announces a cut in interest rates, it is assumed that consumers and businesses increase consumption and investment, which causes stock prices to rise.

Several studies have been done on portfolio investment, and how it affects performance, for example, an investigation whether and how firms in the retail trade sector may benefit by spreading their boundaries within and across regional boundaries (Chang, Timo, & Alan, 2018). The primary sources of information these analysts use to evaluate firm's performance are its financial statements. Performance assessment via financial statement analysis is based on past data and conditions from which it may be difficult to extrapolate future expectations. Any decision to be made as a result of such performance assessment can affect only the future as the past is gone, or sunk. They found that intra-regional diversification has a parallel relationship and interregional diversification has a connection with firm performance. They further established that unrelated product diversification has an adverse moderating effect on the relationship between inter-regional diversification and firm performance. The number of financial institutions in Rwanda has continued to increase day to day, which has aggravated the competition between government and the private sector for loanable funds. Despite the increased competition especially amongst many financial institutions, interest rates have always changing.

Morduch (2012) said that when the central bank rises the interest rate newly offered government securities, such treasury bills and bonds, are often viewed as the safest investments and was interest rates usually rise accordingly. In other words, the "risk-free" returns increase, making these investments more attractive. As the risk-free interest rate rises, the total return required to invest in equities increases. Therefore, if the required risk premium decreases but the potential return remains the same or decreases, an investor may consider the stock too risky and was put their money elsewhere. The poor performance among financial institutions in Rwanda has attracted both scholarly and practitioner's attention regarding portfolio investment, for example, Bodo (2015) points that portfolio investment is amongst the significant challenges facing by financial institutions in Rwanda where some banks have aimlessly invested heavily in unrelated areas that include securities, properties, mortgages, and loans. The future is uncertain and you have to decide how much risk you are willing to take because higher returns come with higher risk. Some of the financial instruments that caused the problems acted, and it was no surprise that some of the financial institutions were hit by the crisis on one balance sheet or another.

Review of Literature

Making portfolio investment is one of the significant policy issues in any investment company. Investing in a portfolio provides an attractive option to investment as it allows for maximization of returns and minimization of risks when compared to investing in segregated securities hence the need to make an intelligent portfolio investment. It is observed that in many financial institutions has lack of portfolio return, poor risk management and poor portfolio diversification; all elements hindering financial performance of financial institutions as profitability of financial institutions. Different financial institutions in Rwanda have always increasing the interest rate and also the BNR rate is always changing; this has discouraged the investors for getting loanable fund. There are different researchers on the related topic such as Amonoo (2014) conducted the research on this study and Kimutei (2013). That is why this research will intend to find out the portfolio investment management and financial performance of financial institutions in Rwanda with reference of Bank of Kigali.

Research objectives

The objective of the study was categorized as general and specific objectives as shown below:

General objective

The main objectives of this study are to analyze the portfolio investment management and financial performance of financial institutions in Rwanda.

Specific objectives

i. To determine the portfolio return on the financial performance of Bank of Kigali;
ii. To examine the risk management on the financial performance of Bank of Kigali;
iii. To find out the portfolio diversification on the financial performance of Bank of Kigali;
iv. To establish the asset allocation management on financial performance of Bank of Kigali.

Research hypotheses

i. **H_0 :** There is no significant impact of portfolio return on financial performance of Bank of Kigali;
ii. **H_{01} :** Risk management does not have impact on financial performance of Bank of Kigali;
iii. **H_{02} :** There is significant effect of portfolio diversification on financial performance of Bank of Kigali;
iv. **H_{03} :** Asset allocation management does not have effect on financial performance of Bank of Kigali.

Conceptual Review

Portfolio Return of financial institutions

A portfolio is a collection of different investments that make up an investor's overall money allocation. Examples of investment portfolios are stocks and/or investment properties owned by investors. From a corporate perspective, a portfolio can also include investments in several different capital projects Lofthouse (2018). The main considerations for both individuals and companies are the required return and the risks associated with the investment portfolio. By allocating all available funds to one investment, if one project or security loses value, the entire fund may be lost. But by spreading the risk over several investments, the risk of total losses is significantly reduced. A portfolio is better than a single investment because it reduces risk while providing satisfactory returns. The old saying "never put all your eggs in one basket" applies here as well. Therefore, it is important to consider the relationship between risk and expected return when managing a portfolio (Sharpe, 2017). Risk and return are two important factors that determine investments in stocks and bonds, which can add value to an investor's wealth. Risk can be called the possibility of loss. If the possibility of asset loss is high, the asset can be considered a risky asset (Idzorek & Kowara, 2018).

Return is a measure of the total profit or loss that the owner experiences from an asset (stocks/bonds) over a period of time. Due to the complexity of understanding and managing risk and return, especially in portfolio management, this article explains them briefly using illustrations and accompanying tables and charts. I believe this article will help readers to understand the relationship between return and risk, especially in managing portfolio stocks to reduce risk through diversification effects (Hensel et al., 2017).

Investing means that the different types of stocks/securities that make up a portfolio can often diversify (reduce) risk if they do not have similar characteristics that produce returns under similar conditions (Anson, 2019). In particular, the returns of two stocks in a portfolio are likely to be highly positively (or perfectly) correlated if their combined returns follow similar trends under the same scenario. Given this, the overall risk of such securities in the portfolio is very high and does not appear to have a diversification effect. Therefore, when investing in different stocks/securities to build a portfolio, the correlation coefficient (which represents the correlation between the returns of the securities) is very important (Bodie et al., 2018).

Risk Management in financial institutions

The understanding of risk is the fundamental step involved in the management of risk. There is a need to identify the various alternatives available in a problem situation. A thorough exploration of all the other options would ease the process of decision making (Hussain & Al-Ajmi, 2020). There must be a common understanding across the bank about the components of risk involved in banking. The responsibility of each of the employees in the bank should be made clear to all. There is also need to set out the accountability of risk management. ‘Who is responsible for what' is to be spelt out in the bank and it should be recorded. If this is missing, then it will be ‘blame game' during the crisis. Understanding the accountability and responsibility is a must for the risk management. There must be a growing awareness among the employees that risk management influences the business performance. The employees should be eager to understand the most sophisticated tools and techniques of risk management. Application of risk management techniques to various problem situations must also be made known to the employees. Continuous review an evaluation is an essential component of the risk management. Employees must also be aware of the fact that risk management reduces cost or unexpected losses. Risk management strategy has to be set by the bank, and there should be a team to monitor the same. All these issues constitute the efficient risk management (Cebenoyan & Strahan, 2017).

The risk identification has a role to play in the success of risk management. Unless the risk management team has the required competencies to identify the possible risks the bank cannot anticipate the danger in advance and prepare itself to face the challenges it may cause. The bank's roles and responsibilities must have a provision for risk identification when things could go wrong (Hassan, 2019). Knowledge about the strengths and weaknesses of other banks is also essential for the risk identification of a bank. So a systematic procedure for risk identification for the risk will have to be developed by a bank, and it differs from bank to bank.

There must be an assessment regarding the likelihood of risk (Hussain & Al-Ajmi, 2020). There are several quantitative techniques which are available to assess the risk. A team must be constituted to study those quantitative methods and pick the relevant. Qualitative methods of risk assessment should also be used such as those who classify risk to be low, medium and high qualitatively. Cost-benefit analysis plays a vital role in risk management. Active management is required for analyzing risk includes identifying, prioritizing of

risk and selection. A resource constraint on risk treatment implementation is the bank's response to analyzing risk which provides for identifying, prioritizing risk treatment (Babbel & Santomero, 2016).

The risk monitoring must be an integral part of routine management reporting. The level of control by the bank must be appropriate for the risk that it faces. There must be a sufficient reporting and communication processes within the bank to handle risk. The bank's response to risk must also include action plans in implementation decisions about identified risk. A team has to be constituted by the bank to monitor the risk on a timely basis continually. Quantitative methods need to be employed to control the deviation from the normal mode of operation (Tai, 2018).

Improving shareholder returns is a concentrated manifestation of the bank's results and one of the main goals of the bank's management. This goal often comes at the expense of increased risk.

Banks face various risks such as interest rate risk, market risk, credit risk, off-balance sheet risk, technical and operational risk, currency risk, country risk, liquidity risk, and bankruptcy risk (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2017). However, for the purposes of this study, credit risk will be examined. Bank risk management is motivated by risks that may lead to poor bank performance. Risk management problems in banking have a greater impact not only on banks but also on economic growth (Tandelilin et al., 2017). Tai (2018) concludes that some empirical evidence shows that return shocks generated by the banking sector in the past have significantly affected not only the fluctuations of currency and stock markets in general, but also their prices, suggesting that banks can be an important source of funding. Contagion during a crisis. Banks with better implemented risk management can have the following advantages: regulatory compliance; it improves their reputation and opportunities to attract a wider range of clients for building the fund's resource portfolio; this increases their efficiency and profitability.

Portfolio Diversification of financial institutions

Portfolio diversification as a way of managing portfolio whereby an investor diminishes instability and risks of her/his set of the portfolio through holding a range of unlike investments are lowly correlated with one another (Derek, 2017). Cernas (2017) Diversification is also defined as a portfolio management strategy of combining different assets to reduce the overall risk associated with the portfolio. On the other hand, asset diversification is a group strategy that combines multiple assets to reduce overall portfolio risk (Dimitriou, 2019). It is the practice of dividing a portfolio into key asset classes such as equities, cash, fixed income and alternative investments. Active diversification refers to the allocation of stocks in a portfolio across different asset types, geographies and markets.

Asset diversification is a fundamental principle of sound investing (Dimitriou, 2019). Asset diversification aims to realize revenues for allowed risk margin by a combination of different classes of an asset in a way that is well calculated. This allows the smoothening of the variability in returns achieved in each asset class. According to Perez (2020), bank assets include loans, financial assets, cash, other assets, and premises. Perez (2020) It concludes that asset diversification in banks can be measured by examining loans and financial assets. Other investments and liquid assets. Asset diversification has been adopted widely a strategy aimed at mitigating the turbulent markets and operational environments for investors.

The primary benefit associated with this move is lowering the portfolio volatility and losses and is very crucial especially when there is increased uncertainty (Dimitriou, 2019). The significant advantage of any portfolio diversification is that it diversifies various investments along diverse categories of financial tools, whereby each has its magnitude of risk-return. This diversification type is done with the principal objective being lowering the expected risk that may arise from having all resources put in one investment type only (Syriopoulos, 2017). Through a careful strategy of diversification, commercial banks may prosper, rather than falling victim to the consolidation trend in the industry.

Bank managers responsible for funds accept diversification to a level that is worthwhile and sensible for the served client and customers gave its risk preferences and come up with a list of intended holdings consequently (Shambe, 2016). Firms desire investments that provide high returns at little risk. Unfortunately, in the real world, mixed returns and risks are bound. Diversification is appreciated as one of the robust and most promising methodologies of lowering chances that anyone poorly performing a class of assets or individual asset would ruin your overall return. It is perceived that positive effect occurs as firms move from a single business strategy to a related diversification strategy, but adverse effects arise as companies move from a similar approach to an unrelated procedure in which the benefit of synergies is offset by the cost of diversification. The central question here seems to be the choice of measurement method of diversity or relatedness that influences research results (Hall,

2014; Robin 2015), and the statistical econometrics methodologies used to measure the relationship between diversification and performance (Holbain, 2017; Bergh, 2017), with findings highly vulnerable to statistical errors and, therefore, drawing theoretical conclusions not based on substantial statistical evidence.

Attempts to measure the extent and type of firm diversity have followed two main avenues: at one extreme there are simple but objective, replicable indicators (continuous measurement developed but with the shortcoming of not being able to tap fully into the dimension of relatedness, and at the other extreme there are more sophisticated indicators that can represent in more detail the degree of relatedness among business units; their relatedness constructs are based on cross-business synergies arising (Wiersema, 2015).

Asset allocation management of financial institutions

A key component of managing portfolios is making decisions about asset allocation. This decision determines how assets should be allocated among various investment vehicles, including cash, bonds, and stocks, among others, in what proportions for each class. The long-term approach of strategic asset allocation is Sharpe's (2017; Sharpe). According to Lofthouse (2018), strategic weights should be determined based on capitalization and investors should vary their holding of an asset with the least risk to obtain the trade-off they desire. Investors should also consider following media managers who do what others are doing. Therefore, a lot of portfolio managers are in a position where they are responsible for managing assets that are meant to cover particular liabilities. Asset distribution according to time profiles is known as tactical asset allocation. Market analyses inform decisions (Hensel et al., 2017).

The creation of an investment portfolio can be viewed as a top-down process that begins with the capital allocation, or the choice of how much money should be invested in the risky portfolio and the risk-free assets, and then moves on to the question of how to construct the risky portfolio. The creation of a risky portfolio is a concern of asset allocation, which entails choosing between asset classes like stocks, bonds, real estate, or commodities under the premise of neutral capital market conditions, which means that no asset class is underpriced or overpriced (proportional risk-return expectations) (Bodie et al. , 2014).

A portfolio's exposure to market risk (beta) is determined by the establishment of broad asset classes (asset allocation policy), whereas the exposure to alpha is determined by the selection of specific securities within the chosen asset classes (security selection) (Idzorek and Kowara, 2017). As it operationalizes an organization's investment goal and reflects its risk tolerance for risk aversion, strategic asset allocation falls under the purview of the organization's board of directors (Anson, 2018). Setting investment goals for each broad asset class over the course of a full market cycle under normal market conditions is the main characteristic of asset allocation policy, as it is also known (Sharpe, 2017; Anson, 2018). Along with the goals, it also specifies acceptable ranges for each target weight to account for variations between policy targets and actual holdings. Investors have very different levels of tolerance for emerging departures from the target. While multi-asset mutual funds appear to make an effort to keep the differences relatively small, it appears that only significant differences compelled other investors to rebalance their holdings (Sharpe, 2017).

However, since shifts in allocation have a significant impact on the overall risk of a portfolio and asset allocation is intended to reflect the level of risk tolerance or risk aversion, asset allocation policy requires adjustments, either on a periodic or occasional basis, when market movements changed the relative values (Sharpe, 2017). An increase in the portfolio's allocation to equities or less liquid asset classes will increase risk, whereas a move to fixed income will reduce risk while also increasing the likelihood of a positive return (Anson, 2018). Additionally, asset allocation policy is a long-term strategy that aims to follow rather than outperform the market (Anson, 2018). Since it maintains a proper risk-return balance given market opportunities rather than wasting resources in a fruitless attempt to explore superior knowledge or insight, it is appropriate for efficient markets where prices reflect all relevant information (Bodie et al. , 2019). Unlike asset allocation policy, active asset allocation (often referred to as tactical asset allocation) seeks to outperform the market by exploiting market inefficiencies (Anson, 2014).

Because underperformance is only temporary, it is a single-period or myopic strategy (Brennan et al., 2017) that attempts to improve performance by identifying specific mispriced securities,security selection, or forecasting broad market trends, market timing (Bodie et al. , 2017). Although asset allocation and security selection are theoretically the same, as both aim to identify the portfolio that offers the best risk-return trade-off, in practice they are usually split into two steps. Thus, asset allocation determines how much to invest in each of the different asset classes, such as stocks, bonds, or

shares, before security selection selects specific securities within each asset class (Bodie et al., 2019). The difference between asset allocation and security selection is driven by three factors: the high demand for sophisticated investment management, the increasing breadth and depth of financial markets, and economies of scale in investment analysis.

These factors make it almost impossible for an investment company to simultaneously optimize a broad, risky portfolio with international exposure at one stage, so in practice, the selection of securities for each asset class portfolio is optimized independently, while the asset allocation is updated by top management responsible (Bodie et al., 2019). As part of active asset allocation, market timing involves selecting the performance of broad asset classes or, more specifically, moving money between market index portfolios and safe assets to outperform safe assets (Bodie et al., 2019). To maximize wealth and meet obligations, portfolio managers must create a portfolio that meets their needs. Building optimal portfolios involves asset allocation, that is, selecting different major asset classes (Sharpe, 2017), such as bonds and stocks. An important part of asset allocation is to optimize the balance between risk and return in a portfolio (Bodie et al., 2019).

Portfolio managers not only invest the received deposits in the fulfillment of future obligations, but also earn a profit. Therefore, portfolio managers expect total deposits plus investment earnings to exceed total cash withdrawals (Lloyds Bank, 2017). Brinson et al. (2016) show that asset allocation decisions are by far the dominant factor in portfolio performance, explaining more than 91% of the variation in asset returns. Literman (2018) further suggests that asset allocation can be divided into two different types of decisions: asset allocation between different asset classes, such as stocks and bonds, and asset allocation within a single asset class (such as countries and industries). Countries that have introduced mandatory funded pensions are often inexperienced in investment; these pension reforms require strict regulation of asset allocation. Lack of experience in investing and risk management can lead to poor portfolio decisions. In fact, investing in developing countries is riskier than investing in more developed countries. Capital markets can be fragile, illiquid and transparent.

Financial performance

There are different views on what performance is. It can be regarded as simply the record of the achieved outcomes. On an individual basis, it is a record of the person's accomplishment. Kane (2016) argues that "performance is something that the person leaves behind and that exists a part from the purpose". Bernadine et al (2017) said that: "Performance should be defined as the outcome of work because they provide the strongest linkage to the strategic goals of organization, customer satisfaction and economic contribution". Therefore, performance is the end result of activity. Which measures to select to assess performance depends on organizational unit to be appraised and the objectives to be achieved. The following are the key indicators of performances.

To observe how working capital management can affect organizational performance, one needs to take a look at a company's cash flows. As Shin and Soenen (2018) state in their study, a longer cash conversion cycle might indicate that a company's sales are rising and that the company can compete by having lax credit policies or high inventories. In the same perspective, a higher cash conversion cycle can actually hurt a company's profitability and sales volume by increasing the time that cash is tied to non-interest bearing accounts such accounts receivable. By shortening the cash conversion cycle, the company's cash flows will have a higher net present value because cash is received quicker. In addition, according to Dong (2020) firms' profitability and liquidity are affected by working capital.

Dong (2020) also disclosed that there exists a negative relationship between profitability, conversion cycle and related elements which denote that decrease in the profitability occur due to increase in cash conversion cycle. It is also found that if the number of days of account receivable and inventories are diminished then the profitability will increase. In the same perspective, Bloomberg (2017) had proved that a negative relationship exists between dimensions of working capital component namely, current ratio current asset to total asset ratio current liabilities to total asset ratio and debt to asset ratio in effect to the firm's performance. Smith (2018) was one of the first to study the trade-off between liquidity and profitability in working capital management. This, however, can according to Shin and Soenen (2018) have a negative impact on company decisions, as a shorter cash conversion cycle can contribute to both a better liquidity and higher profitability. So instead of having to make a decision between liquidity and profitability, a company must usually optimize the link between sales and finance. As stated earlier, many companies use long credit periods or high inventories as to enhance sales (Shin & Soenen, 2018) but a lower cash conversion cycle leads to higher NPV of cash flows. This is thus, de facto, a trade-off between sales flexibility and financial policies.

Measuring the profitability

The main objective of business is to achieve a satisfactory return on investment. Financial analysis helps determine whether the capital invested in the company brings sufficient profit. It also helps in understanding interest and dividend paying capacity (Aryeetey, 2015). It measures the performance of a business or the overall performance and efficiency of a company. Some of the more popular profitability ratios include: Return on Assets (ROA) is a return on investment (ROI) that measures a company's profitability relative to its total assets. This ratio shows how well a company is doing by comparing the profits it makes (net income) to the capital invested in its assets.

The higher the yield, the more productive and efficient the financial resources are managed.

Below is a detailed description of the ROA formula and calculation. The formula for return on assets is as follows:

ROA = Net Profit/Average Assets

or

ROA = Net Profit / Closing Assets

Where:

Net income is equal to net income or net income for the current year (annual period), and average wealth is equal to assets at the end of the period and assets at the beginning of the period divided by 2.

Return on equity (ROE)

Return on equity (ROE) is a measure of a company's annual return (net profit) divided by total equity, expressed as a percentage (eg 12%). Alternatively, ROE can also be calculated by dividing a company's dividend growth rate by its earnings retention ratio (1 - dividend payout ratio). Return on equity is a two-part relationship because it combines the income statement and the balance sheet, where net income or profit is compared to equity. The figure represents the total return on equity and shows the company's ability to turn capital investment into profit.

Theoretical Review

Allocation of Resource Theory

Allocation of resource theory was developed by Peteraf and Barney (2017). It is concerned with the discovery of how nations, corporate, entrepreneurs or individuals distribute financial resources through budget management process to attain financial goals. For corporate economic resource to attain sustained competitive advantage, it should have the following qualities: priceless, rare, imperfectly imitable and non-substitutable. This calls for use of budget management systems to allocate those scarce economic resources in government institutions (Anantadjaya, 2018).

The economic concept of resource allocation is an important area of study in an organization using the invisible hand theory. Under invisible hand theory, the allocation of resources is done through competition, supply and demand by individuals and corporate (Peteraf, 2020). “Corporates distribute financial resources through budgeting in their attempts to meet predetermined financial targets”. Therefore, the allocation of resource theory, help organizations in allocating financial resources at their disposal through budget management system. Thus, this is a valid theory is validated by research and are a sound basis for practical action from the research study.

Modern Portfolio Theory

Balancing risk and returns is a cornerstone of modern portfolio theory. Markowitz’s (2017) seminal work derived measures for calculating expected returns and expected risk of a portfolio. He presented variance as a meaningful measure of risk, and created a method of calculating the overall portfolio risk taking into account the imperfect correlation of price movements between assets. Variance is a statistical measure of how widely disbursed a set of probability outcomes are around its mean value. When combining multiple assets that are less than perfectly correlated, the combined variance of the portfolio reduces. Markowitz’s work into calculating these measures at a portfolio level allows today’s investors to quantify the relationship between risk and return rather than relying on the investor’s best guess.

Markowitz makes a number of important assumptions (Reilly & Brown, 2020) Each asset has a set of probable outcomes which can be thought of as a probability distribution. Investors aim to maximize their single period utility of wealth. Investors are risk averse that is, they have diminishing marginal utility of wealth. Investors can estimate risk based on the variability of returns. Investors only base their investment decisions on the first and second moments of the distribution expected return and variance. For any given level of risk (or variance), the investor prefers a higher expected return. Similarly, for any given expected return, the investor prefers a lower level of risk.

Expenditure Theory

Expenditure theory was developed by (Rubin, 2017). This theory is of two kinds: the normative theory and the descriptive theory. Budget management needs a normative theory in deciding its critical policy on financial expenditure. Normative theory also explains why some corporate expenditure are given priority while others are not considered in

their budgeting process, which in turn helps these corporates to perform well financially (Posner and Blondal, 2017). Normative theory of budgeting accomplishment and acceptance means end of conflict over the government's role in society. Budget management has become predominant process of government decision making.

Descriptive theory is based on keen observations or participations in public sector financial activities on budgets in order to achieve financial objective. This theory emphasizes importance of corporates having relevant facts to explain individual budget expenditure variation and which in turn assist in knowing why expenditures change as opposed to set financial targets (Ulrich, 2019). Organization use normative theory to choose activities or projects to be undertaken depending on the desirability of the project as expressed on the budget which in turn helps corporate to attain set financial targets.

Economic Theory

Economic theory was developed by (Lewis, 2018) in his efforts to explain how the concept of marginal utility a traditional microeconomic theory could be used to determine the relative financial value of goods to substantiate allocation of resources that in the aggregate would improve financial performance of a corporate. This theory emphasizes on procedures applicable for budgeting while considering all resources as scarce and appropriate for attaining the financial performance. Due to the scarcity of financial resources in regard to demand, the basic financial test which could be applied is that every expenditure would be worth its return and every financial costs would be equal to all its sacrificed alternatives in order to attain financial targets (Wicker, 2017). Incremental analysis is necessary on every budget for effectiveness achieving specific financial objectives.

Materials and Methods

The research was statistical servey; it is key role in statistics and data analysis. Descriptive and correlation, describes, compares, and measures data; it is also identify characteristics, frequencies, trends, and categories for the portfolio investments management and financial performance of financial institutions in Rwanda. The study was statistical survey and was useful in obtaining information on the current status of the phenomena to describe what exists (Natasha, 2011). It is an efficient way of collecting information from a large number of respondents. Very large samples are possible. Statistical techniques can be used to determine validity, reliability and statistical significance. Surveys are flexible in the sense that a wide range of information can be collected. researcher.

Target Population

This study used secondary data such us government report, Bank of Kigali reports and financial statements analysis as main source of informations in the period of 2013 up to 2022.

Data Collection Methods

Data collection is the systematic gathering of data using a specified scientific process (Cooper, Schindler, 2014). Poor selection of data collection methods affects the collected data. Research was adopt the documentation review to collect secondary data.

Data Analysis

Data collected was analyzed using descriptive statistics because the data obtained in this study was quantitative. It uses correlations and regression analysis. According to Quang and Hong (2009), quantitative data are observations measured on a numerical scale. Results collect also was entered into the statistical analysis. This analysis indicated variations of the response in the sample, response to the various questions and variations among different groups. Presentation of the results and findings were in terms of tables and graphs.

Descriptive statistics

Descriptive statistics was used to describe the basic features of the data in the study in the tendencies and then replicated in tabular manner. It involved use of percentages, frequencies, mean and standard deviation.

Spearman (Pearson) correlation

Spearman (Pearson) correlation coefficient measures the extent to which, as one variable increases, the other variable tends to increase, without requiring that increase to be represented by a linear relationship. If, as the one variable increases, the other decreases, the rank correlation coefficients were negative. Statistical correlation is measured by what is called coefficient of correlation (r). Its numerical value ranges from +1.0 to -1.0. It indicates the strength of relationship. In general, $r > 0$ indicates positive relationship, $r < 0$ indicates negative relationship while $r = 0$ indicates no relationship (or that the variables are independent and not related). Here $r = +1.0$ describes a perfect positive correlation and $r = -1.0$ describes a perfect negative correlation.

Closer the coefficients are to +1.0 and -1.0, greater is the relationship strength between the variables. As a rule of thumb, the following guidelines on strength of relationship are often useful (though many experts would somewhat disagree on the

choice of boundaries). It was employed Statistical package for Social Sciences (SPSS) in processing and data examination of which informed the presentation of findings, examination and elucidation. The presentation was emphasized on the hypothesis. Statistical treatment depends upon the problem, especially the specificity of data gathered. Data analysis was done based on descriptive statistics particularly means and standard deviation. The coefficient of determination, R^2, was used to analyze how differences in one variable can be explained by a difference in a second variable. For example, when a person gets pregnant has a direct relation to when they give birth. More specifically, R-squared gives you the percentage variation in y explained by x-variables. The range is 0 to 1 (i.e. 0% to 100% of the variation in y can be explained by the x-variables.

The R^2 is similar to the coefficient correlation, R. how strong is a linear relationship for two variables. R Squared is the square of the correlation coefficient, *r* (hence the term r squared).

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4. Results

4.1 Descriptive statistics

This section presents the descriptive statistics for the data analyzed and the derived statistics include mean, standard deviations, skewness and kurtosis values. Table 1 below displays results obtained.

Table 1: Descriptive statistics on portfolio return at Bank of Kigali Plc

	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
Profit before tax (‘000)	3,886,412,690	7,096,694,473	5,491,553,581.5	3,210,281,783
Liquidity (‘000)	30,604,658,337	51,825,681,991	41,215,170,164	21,221,023,654
Financial Assets (ratio)	.053	.058	.0555	.005
Deposit Mix	1.5	1.7	1.6	.2

Source: Primary Data (2024)

According to the findings above, the mean value for profit before tax of Bank of Kigali Plc was 5.4 billion This was affected by some banks making profit over the period, thus pulling the mean down, as evidenced by the standard deviation of 3.2 billion. Similarly, the mean value for liquidity (absolute cash and cash equivalents) was 41.2 billion, with a similarly large standard deviation of 21.2 billion, showing that there was variability in the profitability of Bank of Kigali Plc over the period of assessment. Descriptive statistics for other variables are as shown in the table above.

Table 2: Descriptive statistics on portfolio diversification at Bank of Kigali Plc

	Mean Statistic	Std. Deviation Statistic
Bond	4.8	1.32
Equity	4.6	1.24
Mutual funds	4.7	1.20
Cash equivalents	4.3	1.10

Source: Primary Data (2024)

The study sought to determine the effect of portfolio investment management on financial performance of financial institutions in Rwanda. Table 2 shows that the rating of the statement "Bond enhances performance in my Bank. Any Bank Equity enhances performance in my bank" had a mean of 4.8 and standard deviation of 1.32. "Mutual funds enhance performance in my bank" had a mean of 4.6 and standard deviation of 1.24. "Any bank cash equivalents enhance performance in my bank" had a mean of 4.7 and standard deviation of 1.20. "Strategies for customer acquisition have been put in place in our bank to enhance performance" had a mean of 4.3 and standard deviation of 1.10.

5. Conclusions

From the findings the study revealed that investment portfolio management affects financial performance of financial institutions in Rwanda. The study revealed that investment in bond and mobile banking positively influences the financial performance of Bank of Kigali Plc. The study also found that investment in bond, equity, mutual funds and cash equivalents of Bank of Kigali Plc positively impacted in the financial performance. It was found that size of the company positively impacted in the financial performance of Bank of Kigali Plc.

6. Recommendations

There is need for the management of Bank of Kigali Plc to have solid organization structure. Organization structure will influence their investment portfolio choice which impact on their financial performance. Good organization structure will allow for better investment decision of Bank of Kigali Plc that manages their investment and thus increasing its financial performance in Rwanda. There is need to increase the size of Bank of Kigali Plc in the country. Increase in fund size in the country will have positive impact on the financial performance of Bank of Kigali Plc, as it was found that performance and size have a positive significant relationship.

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