THE FACTORS CONTRIBUTING TO NON-PERFORMING LOANS IN COMMERCIAL BANKS IN RWANDA. A CASE OF BANK OF KIGALI, HEADQUARTER (2018-2020)

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ABSTRACT

The main objective of this research was to evaluate the factors contributing to non-performing loans in commercial bank in Rwanda, a case of bank of Kigali. Specific objectives were: To evaluate the effect of capital on non-performing loans in BK, to investigate the effect of income diversification on non-performing loans in BK, to examine the effect of profitability on non-performing loans in BK and to evaluate the effect of character and conditions on non-performing loans in BK. Descriptive design was adopted in the present research by using quantitative data. The primary and secondary data were collected by using questionnaire and documentary as data collection instruments. The study used universal sampling as 74 respondents were used as total population and sample size of research. Based on the findings of the study, the results from the table 4.13, 4.16, 4.19, 4.22 showed that the correlation coefficient (R) = 0.956, 0.940, 0.901, 0.948 indicated that there was strong relationship between capital, income diversification, profitability, character and condition respectively and with the Non-performing Loans (Default loans). Based on the findings, the study concluded that banks factors such as capital, income diversification, profitability, character and condition, and handling nonperforming loans had a significant effect on Non-performing Loans (Default loans), and also the study recommended that commercial banks could assess carefully the process of delivering loans. Commercial banks could also set permanent follow-up of implementation of activities in which browser presenting during requesting loans.

Key words: *Non-performing loans, Income diversification, Bank capital, and Bank efficiency.*

INTRODUCTION

A non-performing loan (NPL) is a loan in which the borrower is in default and has not paid the monthly principal and interest repayments for a specified period. Non-performing loans occur when borrowers run out of money to make repayments or get into situations that make it difficult for them to continue making repayments towards the loan (Kittikulsingh, 1999). Usually, banks classify loans as non-performing loans when the repayments of principal and interest are due for more than 90 days or depending on the terms of the loan agreement. As soon as a loan is classified as an NPL, it means that the likelihood of receiving repayments is significantly lower. However, a borrower may start making repayments to a loan that has already been classified as a non-performing loan. In such cases, the non-performing loan becomes a re-performing loan (Akter & Roy, 2017).When a bank is unable to recover non-performing loans, it can repossess assets pledged as collateral or sell off the loans to collection agencies. When a bank has too many non-performing loans in its balance sheet, it poses cash flow problems for the bank since it is no longer earning income from its credit business (Louzis*et al*., 2012).

Small Non-performing loans (NPLs) reflect the credit quality of the loan portfolio of banks, and in aggregate terms, reflect the credit quality of the loan portfolio of the banking sector in a country. An understanding of the factors that influence the level of non-performing loans is crucial for the risk management function of banks and for national bank supervisors responsible for banking stability. The determinant of nonperforming loans within and across countries is a major theme in the non-performing loans (Skarica, 2014).Financial development is important for bank profitability and efficiency by Naceur & Omran (2011). Moreover, in practice and in policy, non-performing loans arising from bank lending is an indicator of bank performance (Ozili, 2015).

A policy solution that takes into account the structure of the financial system and the level of financial development for banking sector performance can be effective. Yet, policy debates on non-performing loans have paid little attention to the role of financial development for nonperforming loans, an indicator of banking performance. Given that the level of non-performing loan is an indicator of bank performance, i.e., the lower the better according to Beck *et al*. (2015),there assumed that certain financial (sector) development characteristics can make it more probable for the banking sector to experience higher or fewer aggregate non-performing loans. There revealed that non-performing loans are positively associated with financial development measured as experience higher non-performing loans (Ekanayake & Azeez, 2015). Nkusu (2011) investigate the determinants of non-performing loans and find out that economic growth and higher unemployment led to higher non-performing loans.

Skarica (2014) investigate the determinants of nonperforming loans among 7 countries in the Central and Eastern European (CEE) region during 2007 and 2012 and find that higher non-performing loans are

significantly associated with economic slowdown, unemployment and inflation. Beck *et al* (2015) examine the macroeconomic determinants of nonperforming loans (NPLs) across 91 countries and find that non-performing loans are significantly affected by real GDP growth, share prices, exchange rate and lending interest rate. Anastasiou *et al.* (2016) focus on the Euro-area banking system during the 1990 to 2015 period and find that income tax and output gap significantly influence NPLs.

Concerning the determinants of NPLs among bank, Klein (2013) discovers that capital adequacy measured as equity-to-asset ratio is negatively correlated with NPLs. This implies that banks with relatively low capital have incentives to engage in risky lending behavior which increases the incidence of non-performing loans. On the other hand, investigation of the cross-country determinants of nonperforming loans (NPLs) while controlling for the impact of banking supervision and institutional factors on credit risk exposure. They show that banking sectors with higher capital adequacy ratios and prudent loan loss provisioning report fewer non-performing loans (Boudriga *et al.*, 2009).

Ozili (2018) show that European systemic banks, on average, have fewer NPLs than non-systemic banks because systemic banks have superior credit risk management systems to mitigate non-performing loans compared to non-systemic banks. They also find a negative relationship between loan loss provisions and nonperforming loans for both systemic and non-systemic banks in Europe. Additionally, Klein (2013) shows that profitable banks have fewer NPLs because lower NPLs leads to higher interest income which subsequently improves overall profitability. Ozili (2018) investigates the determinants of banking stability, using NPLs as a stability indicator. Using data for 48 African countries, the study finds that bank efficiency, bank concentration, foreign bank presence, unemployment rate and the size of the banking sector are significant predictors of aggregate NPLs; however, higher government effectiveness, high competition and strong legal systems reduced the persistence of non-performing loans in the post-financial crisis period (Klein, 2013).

NPL is an indicator of banks' asset quality, and asset quality is an important indicator of the performance of the banking sector of a country amongst other performance indicators. In aggregate terms, the asset quality of a country's banking sector is determined by its aggregate non-performing loan measured as the ratio of impaired loans to gross loans (Beck *et al.*, 2015); however, the definition of non-performing loans will differ across countries. The level of non-performing loans is of serious concern to bank regulators/supervisors due to its role in the failure of several systemic and non-systemic financial institutions around the world particularly during the 2007 to 2008 financial crisis (Boudriga *et al.*, 2009).

According to the International Monetary Fund (IMF), the types of non-performing are the following: Loan installments of principal and interest are at least 90 days due, and the lender no longer believes the borrowers will honor their debt obligations. In this case, the loan is written off as a bad debt in the

lender's books of accounts. Ninety (90) days' worth of interest payments are capitalized, refinanced, or delayed due to changes in the loan agreement. Payments of principal and interest are less than 90 days overdue, and there are reasons to doubt that the borrower will not pay the outstanding loan in full (Messai & Jouini, 2013).

Generally, non-performing loans are considered bad debts because the chances of recovering the defaulted loan repayments are minimal. However, having more non-performing loans in the company's balance hurts the bank's cash flows, as well as its stock price. Therefore, banks that have non-performing loans in their books may take action to enforce the recovery of the loans they are owed. One of the actions that lenders can take is to take possession of assets pledged as collateral for the loan. For example, if the borrower provided a motor vehicle as collateral for the loan, the lender will take possession of the motor vehicle and sell it off to recover any amounts owed by the borrower (Thakor & Udell, 1991).Banks may also foreclose on homes where borrowers fail to honor their mortgage obligations, and the repayments become due for more than 90 days. The lender may also opt to sell the non-performing loans to collection agencies and outside investors to get rid of the risky assets from their balance sheet. Banks sell the non-performing loans at significant discounts, and the collection agencies attempt to collect as much of the money owed as possible. Alternatively, the lender can engage a collection agency to enforce the recovery of a defaulted loan in exchange for a percentage of the amount recovered (Chakraborty & Hu, 2006).

NPLs have impact on Banks when a lender records a large percentage of its outstanding loans as non-performing loans, it can hurt the financial performance of the lender. Banks mainly make money from the interest they charge on loans, and when they are unable to collect the owed interest payments from NPLs, it means that they will have less money available to create new loans and pay operating costs. The money represents an income that is potentially lost, and it affects the profitability of the lender. Not only does it affect the lender, but it also leaves potential borrowers with fewer options to get loans from the lender. Holding a high number of NPLs relative to the total assets of a company poses a huge risk to the company. Potential investors are interested in investing in companies with healthy books of accounts (Ghosh, 2017).

When the percentage of non-performing loans increases, the lender's stock price will also go down. The NPLs a bank holds in its books, the less attractive it is for potential investors because its future profitability will suffer if the lender will not earn an income from its credit business. Also, the lender will be required to set aside a portion of its profits as bad debts provisions in case it is required to write off the debts. In the United States, banks with a high percentage of non-performing loans are carefully

monitored by the Federal Deposit Insurance Corporation (FDIC) to protect depositors whose funds are at risk (Al-Khazali & Mirzaei, 2017).

Banks are required by law to report their ratio of non-performing loans to total loans as a measure of the bank's level of credit risk and quality of outstanding loans. A high ratio means that the bank is at a greater risk of loss if it does not recover the owed loan amounts, whereas a small ratio means that the outstanding loans present a low risk to the bank (Macit, 2012).

OBJECTIVES OF THE STUDY

The general objective of this study was to evaluate the effect of factors contributing to non-performing loans in commercial bank in Rwanda.

Specifically, this study achieved the following objectives;

- To evaluate the effect of capital on non-performing loans in bank of Kigali, headquarter.
- To investigate the effect of income diversification on non-performing loans in bank of Kigali, headquarter.
- To examine the effect of profitability on non-performing loans in bank of Kigali, headquarter.
- To evaluate the effect of character and conditions on non-performing loans in bank of Kigali, headquarter.
- To establish the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in bank of Kigali, headquarter.

STATEMENT OF THE PROBLEM

Bank insolvency has been a significant problem in many parts of the world in the last 30 years. There have been waves of bank failures in developed and developing countries, and also in countries with transitional economies. Between 1997 and 2002, banks had to be closed in more than 50 countries (Campbell, 2007).Financial crises are one of the most immediate and important issues for the banking sector globally, especially in developing countries. Over the past few years, remarkable financial crises have been witnessed in numerous countries. After the global crises, NPLs are mainly under the eyes of government and banking management since they are considered with the failure and crises of the banking system. This phenomenon is most crucial to countries that highly rely on banks as monetary intermediaries that assign funds throughout the country's economy (Ghosh, 2015).

Prior to the 2008 financial crisis, aggregate non-performing loans for most countries were relatively low but increased significantly during and after the 2008 financial crisis1, compelling national banking supervisors to intervene to deal with the rising non-performing loan problem in their banking sectors.

Despite the formulation of several national policy frameworks intended to mitigate rising non-performing loans such as the imposition of stringent capital requirements for banks, yet rising non-performing loans remain a major issue, which raises concern about the adequacy of existing policy solutions to mitigate rising non-performing loans (Ozili, 2019).

The National Bank of Rwanda has raised concerns over the level of non-performing loans, which stood at 8.2%. The central bank attributed the increasing non-performing loan levels to slowdown in economic activity as well as inadequate monitoring of some large facilities.

LITERATURE REVIEW

Theoretical review

Banking theory

The theory of banking was generated by many authors. General theory of Keynes (1937) clearly states that for investments to take place, savings first need to be gathered. This view has also been reflected in the Keynesian growth models by Domar (1947), which are based on the financial intermediation theory of banking, although not explicitly modeling banks. In-deed, this theory provides the justification for failing to incorporate banks and the way they operate in economic models. Harrod & Domar's conclusions have had a significant influence on economic policy in the post-war era, as their work has been interpreted to the effect that developing countries could be helped by international banks that could provide missing domestic savings through their lending from abroad in order to fund economic growth. This logic has resulted in a significant increase in foreign borrowing and indebtedness by developing countries since the 2nd world war (Boyce, 2003).

Banks borrow from depositors with short maturities and lend to borrowers at longer maturities. The activity of the banks as negotiators of credit is characterized by the lending of other people's, that is, of borrowed, money. Banks borrow money in order to lend it. Banking is negotiation between granters of credit and grantees of credit. Only those who lend the money of others are bankers; those who merely lend their own capital are capitalists, but not bankers (Dewatripont *et al.*, 2010). There was believed that banks are pure financial intermediaries, presenting a model of banking in which a bank purchases assets with funds it had acquired in the form of deposits or the issuance of equity or bonds (Kashyap *et al.*, 2002).

Cecchetti (2008) does not consider banks able to create credit or money. He said that an institution like a bank stands between the lender and the borrower, borrowing from the lender and then providing the funds to the borrower. Banks, as other financial intermediaries, play a pivotal role in the economy,

channeling funds from units in surplus to units in deficit. Casu *et al.*(2006) reconcile the different needs of borrowers and lenders by transforming small-size, low-risk and highly liquid deposits into loans which are of larger size, higher risk and illiquid (transformation function).

Commercial banks are quasi-technical money creators to the new view that monitors banks as risk-neutral portfolio managers or, as the neo-Banking theory suggests, as mere intermediaries between, central banks on the one hand, and borrowers (investors) on the other hand. Rapid technological change and deregulation have caused banks to refocus their activities dramatically. Competition depressing margins in lending, the share of non-interest income of commercial banks has more than tripled from less than 10% of the total income in 1980 to over 25% in 1994 and bank executives are on record as stating that they expect the share of this non-traditional business to rise to 50% by the turn of the millennium (Ahtiala, 2005).

Theory of commercial bank

Rapid technological change and deregulation have caused banks to refocus their activities dramatically. With competition depressing margins in lending, the share of non-interest income of commercial banks has more than tripled formless than 10% of the total income in 1980 to over 25% in 1994 (Rajan, 1996) and bank executives are on record as stating that they expect the share of this non-traditional business to rise to 50% by the turn of the millennium (Round, 1996). A new theory of commercial banking is emerging (Kashyap *et al.*, 2002).

The bank is primarily not in the separate businesses of accepting deposits from, and extending loans to its customers, but these products constitute the joint business of liquidity provision for the customers: providing liquidity on demand by meeting the customer's liquidity shortfalls by extending loans, and by standing ready to pay interest on its excess liquidity. In connection with this and the payment-processing function, the bank obtains plenty of information on the customer, which is a non-rival good: the bank can use it over and over again not only for its information-intensive lending decisions but also for other information-intensive products like bank guarantees, standby letters of credit, and sale of credit information (Chan *et al.*, 1986).

Both the bank and the customer can utilize scope economies with are relationship involving both liquidity provision and services. Possession of information makes the incumbent bank a low-cost producer for established customers demanding several kinds of services. It also renders the bank unable to cost the services separately. In addition, the customer saves search and negotiation costs with one stop banking (Rajan, 1996).

In an early approach integrating banking services with lending along basically traditional lines, Cukierman (1978) postulates that other banking services are priced above their marginal cost because of the non-competitive nature of the banking industry, and the bank equates marginal cost with marginal revenue, including excess profits from services, in its lending. In the presence of these dependencies, he obtains a variant of the conventional marginal conditions and indifference. High-quality customers are information captured by their old bank, which makes it possible for the old bank to earn rents on the customer, whereas competition forces the bank to lend to new unknown customers at an expected loss (Sharpe, 1990).

However, as pointed out by Rajan (1992) the bank has an incentive to 'behave' with its old customers to get in on subsequent projects. Evidence provided by James (1992) on investment banks is consistent with this view: the underwriter spread was significantly lower in the initial public offerings in which the issuing firm made a subsequent equity offer, and the poorer the investment banker's prior pricing performance, the more likely was the customer to switch (Diamond & Rajan, 2001).

Review of non-performing loans

The size of non-performing loans (NPLs) plays a key role in the stability of the banking sector of a country. The factors that explain the NPLs contain very important information for banks. Financial crises are one of the most immediate and important issues for the banking sector globally, especially in developing countries. Over the past few years, remarkable financial crises have been witnessed in numerous countries. The latest financial crises were faced in the US subprime mortgages due to the financial credit crunch that occurred in 2007 and 2008, resulting in financial crises and financial market instability (Khan*et al*., 2020).

Earlier in 1997, the developing countries in monetary crises are highly marked by the ascent of non-performing loans (NPLs) in banking advances. After the global crises, NPLs are mainly under the eyes of government and banking management since they are considered with the failure and crises of the banking system (Ghosh, 2015). This phenomenon is most crucial to countries that highly rely on banks as monetary intermediaries that assign funds throughout the country's economy. In banking-centered economic system, banks play a key part in the sustainability of the banking system and are known as the primary source of funding, as the capital markets of these countries are still emerging (Moradi *et al*., 2016).

Advances that remain unpaid are called NPLs. International Monterey Fund (IMF) stated that loans would be considered NPLs if they do not produce interest and principal amount for a minimum of 90 days Alton & Hazen (2001) stated that loans become NPLs if the principal amount and its interest are not

yet paid on the maturity date and are not anticipated in future dates. The main reasons for high NPLs are weak credit procedure, low capable credit specialists, high markup spreads, low credit principles and lack of monitoring policy of the borrowers. NPLs are major indictor to measure credit risk that affects the banking system of the country. Handley (2010) stresses that NPLs can be used as an indicator of banking crises as it affects the economic growth of the nation by decreasing credit development (Ivanovic, 2016).

A low level of NPLs shows a strong monetary system of the country while high NPLs indicate a weak financial position. The increasing level of NPLs will first affect the commercial banks in the long run then it will affect the financial position of the economy in the country (Souza & Feijó, 2011). The increasing drift of NPLs will affect the banking efficiency resulting in banking crises (Vouldis & Louzis, 2018). The NPLs will block the interest revenue, reduce investment openings as well as develop liquidity crises in the financial system, which results in bankruptcy problem and weak economic system. Thus, it is necessary to identify the factors that affect NPLs to decrease the level of NPLs for financial stability and economic goals (Stijepović, 2014).

Michael (2006) stated that NPLs affect the overall routine of the banking sector, thus threatening the bankruptcy of the banking sector. A high level of NPLs directly affects the overall financial performance of the banks (Berger & DeYoung, 1997). Fofack (2005) stated that the leading cause of economic crises in African countries is due to the high level of NPLs in banks. In case of Pakistan, the State Bank of Pakistan (SBP) controls the overall banking structure of the country and is responsible for the smooth regulations of banking sector. The report of SBP shows that NPLs ratio is increasing rapidly over time. In 2005, the NPLs ratio was 6.7%, which reached to 14.3% in 2010 and is still moving upward. The effects of NPLs will result in dividend payments, high interest rates and low levels of investments resulting in the lower economic development of the country.

The percent non-performing loans in Rwanda reflect the health of the banking system. A higher percent of such loans shows that banks have difficulty collecting interest and principal on their credits. That may lead to less profits for the banks in Rwanda and, possibly, bank closures (Musengamana, 2019). Bank nonperforming loans to total gross loans are the value of nonperforming loans divided by the total value of the loan portfolio (including nonperforming loans before the deduction of specific loan-loss provisions). The loan amount recorded as nonperforming should be the gross value of the loan as recorded on the balance sheet, not just the amount that is overdue (Herelimana, 2017).

The main risk a bank faces in the lending channel is the ex post credit risk that takes the form of non-performing loans (NPLs). In fact, NPLs' increase in banks' loan portfolio deteriorates banks' assets and capital, and represents greater risk that affects banks' liquidity and profitability. NPLs may act as an

impediment to the development of the banking sector (Zhang *et al*.,2016), and they are one of the significant elements in causing a banking and financial crisis(Greenidge & Grosvenor,2010). The literature agrees that the volumes of NPLs are often associated with bank failure and banking crisis (Jin *et al*., 2011).

Ahmad (2002)empirically links NPLs to the financial crisis by the analysis the banking system and concludes that NPLs had already started to accumulateat 4.1% before the onset of the 1997 Asian financial crisis (AFC) and became more serious as NPLs increased to 11.8% in 1998. Ghosh (2015) links NPLs to bank failure and indicates that NPLs can be used, among other factors asharbinger to a banking crisis. NPLs are therefore a measure of the stability of the banking system and the financial stability of a country. However, NPLs have been always remained especially since the 2008 global financial crisis (GFC) inthe core interest of regulatory authorities concerned on financial stability as well as banks' management.

Determinants of non-performing loans

Researchers have identified various elements that affect the NPLs, including income diversification, profitability, and capitalization and operating efficiency. However, the relationship between NPLs and these factors is not clear. Some researchers concluded that these factors have positive relationships, while others reject their results (Khan *et al*., 2020).

Capital and non-performing loans

There provided new evidence that the capital (in the past and in the future) is a concave function of NPLs implying that increasing the capital will initially increase the NPLs until NPLs reach a maximum threshold (under the moral hazard effect), after which more capital buildups will succeed in decreasing NPLs (under the disciplinary or regulatory effect). There also find that higher levels in GDP growth and lending interest rate and are associated with more NPLs, while higher inflation is associated with less NPLs. Monetary expansion, i.e. higher money supply growth raises NPLs in banks, while competition between banks and higher liquidity of the stock market are NPLs reducing (Hajja, 2020).

The main risk a bank faces in the lending channel is the ex post credit risk that takes the form of non-performing loans (NPLs). In fact, NPLs' increase in banks' loan portfolio deteriorates banks' assets and capital, and represents greater risk that affects banks' liquidity and profitability. NPLs may act as an impediment to the development of the banking sector (Zhang *et al*.,2016), and they are one of the significant elements in causing a banking and financial crisis (Greenidge & Grosvenor,2010).

The effect of bank capital on NPLs is in the opposite direction. On one side, the incentive and encouraging managers of low capitalized banks tend to get involved in high-risk investments and give loans that are issued without proper credit rating and monitoring (Keeton, 1999). As a result of these activities, the rise in loan default occurs showing the negative relationship between bank capital and NPLs. On the other side, banks with a high level of capital tend to give loans easily as they know that due to these loans banks are not going to be bankrupt and fail; therefore, banks are highly engaged with these kinds of risky credit activities suggesting a positive association between capital and NPLs (Rajan, 1994).

Capital adequacy ratio (CAR) shows the ability of an organization to face abnormal losses and to survive that situation. Hu & Chiu (2004) concluded from their study that bank size has a negative impact on NPLs when banks give risky advances. Makri *et al.* (2014) also stated that there is a negative association between CAR and NPLs. Constant & Ngomsi (2012) stated that NPLs and CAR are having a positive association with each other. Amuakwa & Boakye (2015) studied the various banking factors that effected the NPLs in Ghana and revealed that microeconomic factors have a negative impact on NPLs while bank capital has a positive impact on NPLs. Kumar & Kishore (2019) stated that concerning banking factors, the NPLs and CAR are having a negative association in the banking sector. Koju *et al.* (2018) conducted a study on the banking sector of Nepal and concluded that CAR has a negative relationship with NPLs.

Lenders also consider any capital the borrower puts toward a potential investment. A large contribution by the borrower decreases the chance of default. Borrowers who can place a down payment on a home, for example, typically find it easier to receive a mortgage. Even special mortgages designed to make homeownership accessible to more people, such as loans guaranteed by the Federal Housing Administration (FHA) and the U.S. Department of Veterans Affairs (VA), require borrowers to put down between 2% and 3.5% on their homes. Down payments indicate the borrower's level of seriousness, which can make lenders more comfortable in extending credit. Down payment size can also affect the rates and terms of a borrower's loan. Generally speaking, larger down payments result in better rates and terms. With mortgage loans, for example, a down payment of 20% or more should help a borrower avoid the requirement to purchase additional private mortgage insurance (PMI).

Income diversification and non-performing loans

Income diversification means that the banks get income from sources other than interest earnings, and it is measured as noninterest income. There are two types of earnings received by the banks: one is from lending activities and the other is from noninterest activities, that is trading and derivative transaction. Banks with more income other than interest income are more careful and try to lower their risk by

investing very less in high-risk investments. Therefore, these banks have better loan performance showing the inverse relationship between NPLs and income diversification (Ghosh, 2015). On the other hand, Hu (2002)stated that there is no relationship between NPL and income diversification.

Louzis *et al*. (2012) investigated various banking and microeconomic factors as determinants of NPLs such as leverage ratio, ROA, CAR and non-interest income in different Greek banks and concluded that ROA has a negative impact while non-interest income has a positive impact upon NPLs. Rachman *et al*. (2018) studied the various banking factors affecting the NPLs in Indonesia including income diversification, bank capital and other banking factors. Their study revealed that these factors do not influence NPLs; however, a negative association was found between NPLs and income diversification.

Profitability and non-performing loans

In the traditional banking model, loans play a dominant role in banks' operations. Loan portfolio quality is the main generator of banks' results. In the periods of best results, as well as in timesof worst performance of banks' operations, the reasons for success or failure have been attributable to the changes in the loan portfolio quality. The basic indicator of credit portfolio quality is the share of non-performing loans to the total credit portfolio. The consequences of an increased amount of non-performing loans may not only reduce the financial results, but also reduce the capital and increase the risk profile of the bank (Jolevski, 2017).

Problems in the loan portfolio have a crucial role for the problems in all other areas of banks' operations, such as low profitability, liquidity problems or use of capital to cover credit losses. They may have effects such as: reducing market confidence in the bank, increasing its reputational risk and contributing to depositors withdrawing their deposits or increasing funding costs. Also, a high amount of non-performing loans is one of the main reasons for systemic insolvency of the banking sector, which presents a threat and obstacle not only to the development of the banking system, but to the economic system as a whole (Jolevski, 2017).

Kozaric & Zunic (2015) analyze the relation between risks to which banks are exposed, the rate of non-performing loans and the rate of capital adequacy in the banking system of Bosnia and Herzegovina. In addition, as indicators of banks' risk exposure, indicators of profitability ROA and ROE, risk weighted assets, the share of loans in total assets, the loan/deposit ratio, ratio for the share of liquid assets in total assets and liquid assets terms of long-term obligations are used. They conclude that there is a strong correlation between the rate of capital adequacy and non-performing loans, ROA and ROE. Non-performing loans have a strong negative correlation with indicators of liquid assets share in total assets and liquid assets in long-term liabilities. Authors recommend that banks in Bosnia and Herzegovina

should pay more attention to non-performing loans, which are one of the biggest dangers to their liquidity and stability.

Character and conditions on non-performing loans

Although it's called character, the first C more specifically refers to credit history: a borrower's reputation or track record for repaying debts. This information appears on the borrower's credit reports. Generated by the three major credit bureaus Experian, Trans Union and Equifax credit reports contain detailed information about how much an applicant has borrowed in the past and whether they have repaid loans on time. These reports also contain information on collection accounts and bankruptcies, and they retain most information for seven to 10 years (Rachman *et al.*, 2018).

Information from these reports helps lenders evaluate the borrower's credit risk. For example, FICO (formerly known as the Fair Isaac Corporation), a leading credit evaluation firm, uses the information found on a consumer's credit report to create a credit score, a tool lenders use for a quick snapshot of creditworthiness before looking at credit reports. FICO scores range from 300–850 and are designed to help lenders predict the likelihood that an applicant will repay a loan on time (Jolevski, 2017).

Many lenders have a minimum credit score requirement before an applicant can be eligible for a new loan approval. Minimum credit score requirements will vary from lender to lender and from one loan product to the next. The general rule is the higher a borrower's credit scores, the higher the likelihood of receiving an approval. Lenders also regularly rely upon credit scores as a means for setting the rates and terms of loans. The result is often more attractive loan offers for borrowers who have good-to-excellent credit (Greenidge & Grosvenor, 2010).

The conditions of the loan, such as its interest rate and amount of principal, influence the lender's desire to finance the borrower. Conditions can refer to how a borrower intends to use the money. Consider a borrower who applies for a car loan or a home improvement loan. A lender may be more likely to approve those loans because of their specific purpose, rather than a signature loan, which could be used for anything. Additionally, lenders may consider conditions that are outside of the borrower's control, such as the state of the economy, industry trends, or pending legislative changes (Moradi *et al.*, 2016).

Handling of Non-Performing Loans by Banks
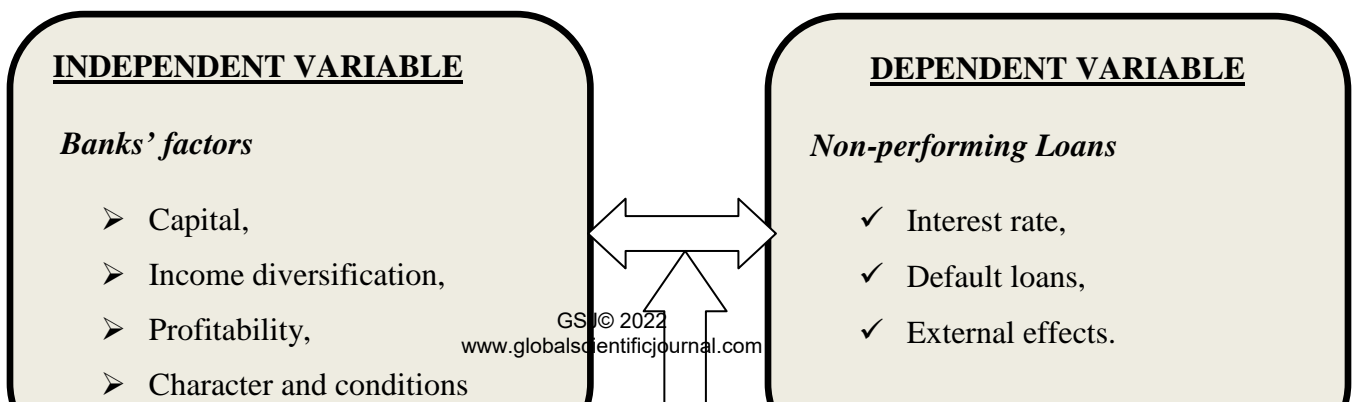
Generally, non-performing loans are considered bad debts because the chances of recovering the defaulted loan repayments are minimal. However, having more non-performing loans in the company's balance hurts the bank's cash flows, as well as its stock price. Therefore, banks that have non-performing loans in their books may take action to enforce the recovery of the loans they are owed. One

of the actions that lenders can take is to take possession of assets pledged as collateral for the loan. For example, if the borrower provided a motor vehicle as collateral for the loan, the lender will take possession of the motor vehicle and sell it off to recover any amounts owed by the borrower (Yanagawa, 2007).

Banks may also foreclose on homes where borrowers fail to honor their mortgage obligations, and the repayments become due for more than 90 days. The lender may also opt to sell the non-performing loans to collection agencies and outside investors to get rid of the risky assets from their balance sheet. Banks sell the non-performing loans at significant discounts, and the collection agencies attempt to collect as much of the money owed as possible. Alternatively, the lender can engage a collection agency to enforce the recovery of a defaulted loan in exchange for a percentage of the amount recovered (Bholat*et al.*, 2018).

Conceptual framework

Conceptual framework presents the relationship between dependent, independent and intervening variables. The following figure 1 presents bank's factors in term of independent variables. Non-performing loans presented in term of dependent variables.

INDEPENDENT VARIABLE	**DEPENDENT VARIABLE**
Banks' factors	*Non-performing Loans*
➢ Capital,	✓ Interest rate,
➢ Income diversification,	✓ Default loans,
➢ Profitability,	✓ External effects.
➢ Character and conditions	

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<u>Intervening factors</u>

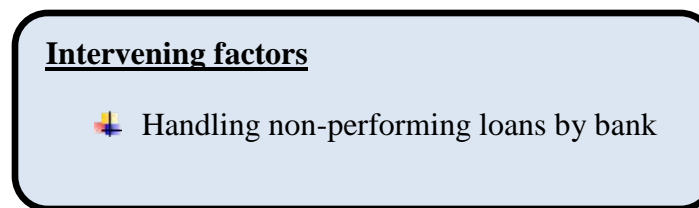✛ Handling non-performing loans by bank

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Figure 1: Conceptual framework

RESEARCH METHODOLOGY

This study adopted a descriptive survey research design.

The total and target population of this research were composed by 74 employees of bank of Kigali Headquarter.

For the purpose of this study universal and simple random sampling technique was used for data collection.

Under this research, total population equal to sample size because the number of population was too small.

Both primary and secondary data was obtained for the study. Where the Primary data were collected using questionnaire techniques while secondary data were obtained using documentary technique. SPSS was used for data analysis.

FINDINGS

Descriptive statistics of results

The study set out to explore the factors contributing to non-performing loans in bank of Kigali, headquarter. This section presented data and its discussion. The data collected was on a five point Likert scale of 1-5 where strongly agree=5; agree= 4; undecided=3; disagree=2; and strongly disagree=1. To achieve the study objectives, the respondents were asked to indicate their level of agreement on the statement in the tables, where responses was summarized using descriptive statistics like mean ($\overline{x}$) and standard deviations (δ).

Capital

The first objective of the study was to evaluate the effect of capital on non-performing loans in BK headquarter.

Table 1: Capital on non-performing loans in BK headquarter.

	N	Mean	Std. Deviation
More capital buildups will succeed in decreasing NPLs	74	4.7162	.45391
Lending interest rate is associated with more NPLs	74	2.2432	1.00425
Higher inflation is associated with NPLs	74	4.2297	1.18838
Higher money supply growth raises NPLs	74	4.4730	.95405
Competition between banks increase NPLs	74	2.2568	1.18276

The results from the 1 showed that the many of the respondents were strongly agreed that more capital buildups will succeed in decreasing NPLs as indicated by mean=4.7162 and SD=0 .45391, other agreed that the higher money supply growth raises NPLs as indicated by mean=4.4730 and SD=0.95405, higher inflation is associated with NPLs as indicated by mean=4.2297 and SD=1.18838, while others disagreed that competition between banks increase NPLs as indicated by mean=2.2568 and SD=1.18276, and lending interest rate is associated with more NPLs as indicated by mean=2.2432 and SD=1.00425. The present results are discussed with other studies where Keeton (1999) revealed that the incentive and encouraging managers of low capitalized banks tend to get involved in high-risk investments and give loans that are issued without proper credit rating and monitoring. As a result of these activities, the rise in loan default occurs showing the negative relationship between bank capital and NPLs while Rajan (1994) said that banks with a high level of capital tend to give loans easily as they know that due to these loans banks are not going to be bankrupt and fail; therefore, banks are highly engaged with these kinds of risky credit activities suggesting a positive association between capital and none-performing loans.

Income diversification

The second objective of the study was to investigate the effect of income diversification on non-performing loans in BK headquarter.

Table 2 Income diversification on non-performing loans in BK headquarter.

	N	Mean	Std. Deviation
Lending activities affect NPLs	74	4.0405	1.32871
Noninterest activities (trading, derivative transaction) raise NPLs	74	1.3243	.62171
Bank interest receivable raise NPLs	74	1.1757	.38314
Processing fee affect NPLs	74	1.6622	.47620

Annual account maintenance charges affect NPLs	74	1.7568	1.08300

The results from the table 2 showed that the many of the respondents were agreed that lending activities affect NPLs as indicated by mean=4.0405 and SD=1.32871, other were disagreed that Processing fee affect NPLs as indicated by mean=1.6622 and SD=0.47620, annual account maintenance charges affect NPLs as indicated by mean=1.7568 and SD=1.08300, while others were strongly disagreed that noninterest activities (trading, derivative transaction) raise NPLs as indicated by mean=1.3243 and SD=0.62171, and bank interest receivable raise NPLs as indicated by mean=1.1757 and SD=0.38314. Ghosh (2015) stated that banks with more income other than interest income are more careful and try to lower their risk by investing very less in high-risk investments. Therefore, these banks have better loan performance showing the inverse relationship between NPLs and income diversification.

Profitability

The third objective of the study was to examine the effect of profitability on non-performing loans in BK headquarter.

Table 3 Profitability on non-performing loans BK headquarter.

	N	Mean	Std. Deviation
ROA affect NPLs	74	1.7973	.99285
ROE affects NPLs	74	1.9054	1.11243
Share of loans in total assets raise NPLs	74	1.6081	.80780
The loan/deposit ratio increase	74	4.0541	1.13345
Liquid assets in terms of long-term obligations raise NPLs	74	1.5270	.50268

The results from the table 3 showed that the majority of the respondents were agreed that the loan/deposit ratio increase as indicated by mean=4.0541 and SD=1.13345, while other respondents disagreed that the ROA affect NPLs as indicated by mean=1.7973 and SD=.99285, ROE affects NPLs as indicated by mean=1.9054 and SD=1.11243, share of loans in total assets raise NPLs as indicated by mean=1.6081 and SD=0.80780, and liquid assets in terms of long-term obligations raise NPLs as indicated by mean=1.5270 and SD=0.50268. Godlewski (2008) investigated the association between NPLs and return on assets (ROA), and he stated that the lower the rate of ROA, the higher would be

NPLs and vice versa. Boudriga *et al*. (2010) confirmed from their study that there is a negative association between ROA and NPLs. They concluded that when the ROA decreases, then the bank starts to make investments in high-risk projects, and as a result the level of NPLs increases. Makri *et al*. (2014) showed that there is a negative affiliation between ROA and NPLs, while Ahmad (2015) stated that there is a positive association between ROA and NPLs.

Character and conditions

The fourth objective of the study was to evaluate the effect of character and conditions on non-performing loans in BK headquarter.

Table 4 Character and conditions on non-performing loans in BK headquarter.

	N	Mean	Std. Deviation
Customers are not able to repay back on time	74	1.1486	.35817
Profit have been gone down due to NPLs	74	3.5811	1.50803
Cost of insurance on NPLs had been increased	74	4.3514	.94263
The financial stability of bank has been affected	74	4.3919	.85716
The credibility to customers has been reduce due to NPLs	74	4.1216	.96447

The results from the table 4 showed that the many of the respondents were agreed that cost of insurance on NPLs had been increased as indicated by mean=4.3514 and SD=0.94263, The financial stability of bank has been affected as indicated by mean=4.3919 and SD=0.85716, The credibility to customers has been reduce due to NPLs as indicated by mean=4.1216 and SD=0.96447, other were neutral that the Profit have been gone down due to NPLs as indicated by mean=3.5811and SD=1.50803, while others disagreed that Customers are not able to repay back on time as indicated by mean=1.1486 and SD=0.35817. The study stated that many lenders have a minimum credit score requirement before an applicant can be eligible for a new loan approval. Minimum credit score requirements will vary from lender to lender and from one loan product to the next. The general rule is the higher a borrower's credit scores, the higher the likelihood of receiving an approval. Lenders also regularly rely upon credit scores as a means for setting the rates and terms of loans (Greenidge & Grosvenor, 2010). The NPLs will block the interest revenue, reduce investment openings as well as develop liquidity crises in the financial system, which results in bankruptcy problem and weak economic system. Thus, it is necessary to identify the factors that affect NPLs to decrease the level of NPLs for financial stability and economic goals (Stijepović, 2014).

Handling non-performing loans

The fifth objective of the study was to establish the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters.

Table 5 Handling non-performing loans on non-performing loans in BK headquarter.

	N	Mean	Std. Deviation
Recovery of NPL's	74	4.4324	.49880
Internal control influence the correction level of NPL's	74	4.2973	.46019
Appraisal of loan policies influence NPL's	74	4.6757	.47132
Operation plans	74	4.8649	.34420
Regular assessment influence the performance of NPL's recovered	74	4.5541	.50046

The results from the table 5 showed that the majority of the respondents were strongly agreed that appraisal of loan policies influence NPL's as indicated by mean=4.6757 and SD=0.47132, Operation plans as indicated by mean=4.8649 and SD=.34420, regular assessment influence the performance of NPL's recovered as indicated by mean=4.5541 and SD=0.50046, while others agreed that recovery of NPL's as indicated by mean=4.4324 and SD=0.49880, and internal control influence the correction level of NPL's as indicated by mean=4.2973 and SD=0.46019.

Non-performing loans

The respondents were asked to indicate their level of agreement on the statement related to non-performing loans in bank of Kigali as dependent variable.

Table 6 Non-performing loans in bank of Kigali

	N	Mean	Std. Deviation
Interest rate influence NPL's	74	4.1622	.37112
Default loans increase NPL's	74	4.6757	.47132
External effects affect NPL's	74	4.5676	.49880
Collateral increase NPL's	74	4.3378	.47620
Sanctions charged influence NPL's	74	3.9595	1.16383

The results from the table 6 showed that the majority of the respondents were strongly agreed that default loans increase NPL's as indicated by mean=4.6757 and SD=0.47132, external effects affect NPL's as indicated by mean=4.8649 and SD=.34420, other agreed that Interest rate influence NPL's as indicated by mean=4.1622 and SD=0.37112, collateral increase NPL's as indicated by mean=4.3378 and SD=0.47620, while others neutral that sanctions charged influence NPL's as indicated by mean=3.9595 and SD=1.16383. This was supported by Alton & Hazen (2001) who stated that loans become NPLs if the principal amount and its interest are not yet paid on the maturity date and are not anticipated in future dates. The main reasons for high NPLs are weak credit procedure, low capable credit specialists, high markup spreads, low credit principles and lack of monitoring policy of the borrowers. NPLs are major indictor to measure credit risk that affects the banking system of the country.

Inferential statistics of results

This section used inferential statistics to analyze the relationship using correlation and the effect using regression analysis.

Correlation analysis on factors contributing to non performing loans in bank of Kigali

This section analyzed the relationship on factors contributing to non performing loans in bank of Kigali, headquarter was demonstrated using different dimensions of bank's factors (capital, income diversification, profitability, character and condition, and handling nonperforming) while to default loans was for Non-performing Loans in bank of Kigali.

Table 7 Correlations with factors contributing to non performing loans in bank of Kigali, headquarter.

		X1	X2	X3	X4	X5
X1	Pearson Correlation	1	.939**	.875**	.905**	.921**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	74	74	74	74	74
X2	Pearson Correlation	.939**	1	.962**	.889**	.928**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	74	74	74	74	74
X3	Pearson Correlation	.875**	.962**	1	.891**	.918**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	74	74	74	74	74
X4	Pearson Correlation	.905**	.889**	.891**	1	.946**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	74	74	74	74	74
X5	Pearson Correlation	.921**	.928**	.918**	.946**	1

Sig. (2-tailed)	.000	.000	.000	.000	
N	74	74	74	74	74

**. Correlation is significant at the 0.01 level (2-tailed).

The results from the table 7 showed a significant relationship on banks' factors and non-performing loans in BK Headquarter. This relationship was obtained through the dimensions of Banks' factors (capital, income diversification, profitability, character and conditions and handling nonperforming) and that of the Non-performing Loans (default loans) selected for this particular study. Where X1=capital, X2=income diversification, X3=profitability, X4=character and condition, and X5=handling nonperforming. Details show that capital is linked to default loans (r = 1.000, p ≤0.01), income diversification is also linked to default loans (r = 0.939, p ≤ 0.01), profitability is linked to default loans (r = 0.875, p ≤ 0.01), character and conditions is also linked to default loans (r = 0.905, p ≤ 0.01), and handling nonperforming is also linked to default loans (r =0.921, p ≤ 0.01). It implied that there was a strong positive relationship between Banks' factors and non-performing loans in BK Headquarter.

Effect of capital on non-performing loans in BK Headquarter.

The first objective of the study was to evaluate the effect of capital on non-performing loans in BK headquarter and was tested and achieved as it shown on the following tables

Table 8 Model summary of capital on non-performing loans in BK Headquarter.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.956[a]	.913	.912	.72512

a. Predictors: (Constant), Capital

The results of the findings from the table 8 showed that the correlation coefficient (R) = 0.956 indicated that there was strong relationship between capital and with the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of determination, adjusted R^2= 0.913. Therefore the findings showed that capital contributed to 91.30% of the variation in the Non-performing Loans (Default loans). This was supported where, one side, the incentive and encouraging managers of low capitalized banks tend to get involved in high-risk investments and give loans that are issued without proper credit rating and monitoring (Keeton, 1999). As a result of these activities, the rise in loan default occurs showing the negative relationship between bank capital and NPLs. On the other side, banks with a high level of capital tend to give loans easily as they know that due to these loans banks are not going to be bankrupt and fail; therefore, banks are highly engaged with these kinds of risky credit activities suggesting a positive association between capital and NPLs (Rajan, 1994).

Table 9 ANOVA of capital on non-performing loans in BK Headquarter.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	399.602	1	399.602	759.994	.000[b]
	Residual	37.857	72	.526		
	Total	437.459	73			

a. Dependent Variable: Non-performing Loans

b. Predictors: (Constant), Capital

The findings in table 9 revealed that capital had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 759.994. This implies that there is a linear relationship between capital and Non-performing Loans (Default loans).Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study. This was supported by Amuakwa & Boakye (2015) studied the various banking factors that effected the NPLs in Ghana and revealed that microeconomic factors have a negative impact on NPLs while bank capital has a positive impact on NPLs.

Table 10 Coefficients of capital on non-performing loans in BK Headquarter.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.520	.379		30.408	.000
	Capital	.568	.021	.956	27.568	.000

a. Dependent Variable: Non-performing Loans

The results from the table 10, the findings of regression coefficients showed that there was a positive and significant effect between capital and Non-performing Loans (Default loans) (β= 0.956, p value <0.05). This means that a u nit change in capital increases Non-performing Loans (Default loans) by units 0.568. The results of regression model was established as follows; Non-performing Loans (Default loans) = 11.520+ 0.568 capital. This was supported by Jolevski (2017) argued that problems in the loan portfolio have a crucial role for the problems in all other areas of banks' operations, such as low profitability, liquidity problems or use of capital to cover credit losses. They may have effects such as: reducing market confidence in the bank, increasing its reputational risk and contributing to depositors withdrawing their deposits or increasing funding costs. Also, a high amount of non-performing loans is one of the main reasons for systemic insolvency of the banking sector, which presents a threat and obstacle not only to the development of the banking system, but to the economic system as a whole.

Effect of income diversification on non-performing loans in BK headquarter.

The second objective of the study was to investigate the effect of income diversification on non-performing loans in BK headquarter and was tested and achieved as it shown on the following tables

Table 11 Model Summary of income diversification on non-performing loans in BK headquarter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940[a]	.884	.883	.83807

a. Predictors: (Constant), Income diversification

The results of the findings from the table 11 showed that the correlation coefficient (R) = 0.940 indicated that there was strong relationship between income diversification and with the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of determination, adjusted R^2= 0.884. Therefore the findings showed that income diversification contributed to 88.40% of the variation in the Non-performing Loans (Default loans). This was supported by Ghosh (2015) stated that income diversification means that the banks get income from sources other than interest earnings, and it is measured as noninterest income. There are two types of earnings received by the banks: one is from lending activities and the other is from noninterest activities, that is trading and derivative transaction. Banks with more income other than interest income are more careful and try to lower their risk by investing very less in high-risk investments. Therefore, these banks have better loan performance showing the inverse relationship between NPLs and income diversification.

Table 12 ANOVA of income diversification on non-performing loans in BK headquarter

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	386.890	1	386.890	550.843	.000[b]
	Residual	50.570	72	.702		
	Total	437.459	73			

a. Dependent Variable: Non-performing loans
b. Predictors: (Constant), Income diversification

The findings in Table 12 revealed that income diversification had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 550.843. This implies that there was a linear relationship between income diversification and Non-performing Loans (Default loans). Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study.

Table 13 Coefficients of income diversification on non-performing loans in BK headquarter

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.515	.321		45.168	.000
	IncomeDiversification	.722	.031	.940	23.470	.000

a. Dependent Variable: Non-performing loans

The findings of regression coefficients showed that there was a positive and significant effect between income diversification and Non-performing Loans (Default loans) (β= 0.940, p value <0.05). This means that a u nit change in income diversification increases Non-performing Loans (Default loans) by units 0.568. The results of regression model was established as follows; Non-performing Loans (Default loans) = 14.515+ 0.722 income diversification.

Effect of profitability on non-performing loans in BK headquarter.

The third objective of the study was to examine the effect of profitability on non-performing loans in BK headquarter and was tested and achieved as it shown on the following tables

Table 13 Model summary of profitability on non-performing loans in BK headquarter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.901[a]	.812	.809	1.06897

a. Predictors: (Constant), Profitability

The results of the findings from the table 13 showed that the correlation coefficient (R) = 0.901 indicated that there was strong relationship between profitability and the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of determination, adjusted R^2= 0.812. Therefore the findings showed that profitability contributed to 81.20% of the variation in the Non-performing Loans (Default loans). This was supported by Jolevski (2017), where in the traditional banking model; loans play a dominant role in banks' operations. Loan portfolio quality is the main generator of banks' results. In the periods of best results, as well as in times of worst performance of banks' operations, the reasons for success or failure have been attributable to the changes in the loan portfolio quality. The basic indicator of credit portfolio quality is the share of non-performing loans to the total credit portfolio. The consequences of an increased amount of non-performing loans may not only reduce the financial results, but also reduce the capital and increase the risk profile of the bank.

Table 14 ANOVA of profitability on non-performing loans in BK headquarter

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	355.185	1	355.185	310.830	.000[b]
1	Residual	82.274	72	1.143		
	Total	437.459	73			

a. Dependent Variable: Non-performing loans

b. Predictors: (Constant), Profitability

The findings in Table 14 revealed that profitability had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 310.830. This implies that there was a linear relationship between profitability and Non-performing Loans (Default loans). Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study. This was supported by Kozaric & Zunic (2015) analyzed the relation between risks to which banks are exposed, the rate of non-performing loans and the rate of capital adequacy in the banking system.

Table 15 Coefficients of profitability on non-performing loans in BK headquarter

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.775	.358		44.008	.000
	Profitability	.544	.031	.901	17.630	.000

a. Dependent Variable: Non-performing loans

The findings of regression coefficients from table 15 showed that there was a positive and significant effect between profitability and Non-performing Loans (Default loans) (β= 0.901, p value <0.05). This means that a u nit change in profitability increases Non-performing Loans (Default loans) by units 0.568. The results of regression model was established as follows; Non-performing Loans (Default loans) = 15.775+ 0.544 profitability. This was supported by Kozaric & Zunic (2015) analyzed the relation between risks to which banks are exposed, indicators of profitability ROA and ROE, risk weighted assets, the share of loans in total assets, the loan/deposit ratio, ratio for the share of liquid assets in total assets and liquid assets terms of long-term obligations are used. They conclude that there is a strong correlation between the rate of capital adequacy and non-performing loans, ROA and ROE.

Effect of character and conditions on non-performing loans in BK headquarter.

The fourth objective of the study was to evaluate the effect of character and conditions on non-performing loans in BK headquarter and was tested and achieved as it shown on the following tables.

Table 16 Model summary of character and conditions on non-performing loans in BK headquarter.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.948[a]	.899	.898	.78325

a. Predictors: (Constant), Character and condition

The results of the findings from the table 16 showed that the correlation coefficient (R) = 0.948 indicated that there was strong relationship between character and condition and the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of determination, adjusted R^2= 0.899. Therefore the findings showed that character and condition contributed to 89.90% of the variation in the Non-performing Loans (Default loans). Greenidge & Grosvenor (2010) stated many lenders have a minimum credit score requirement before an applicant can be eligible for a new loan approval. Minimum credit score requirements will vary from lender to lender and from one loan product to the next. The general rule is the higher a borrower's credit scores, the higher the likelihood of receiving an approval. Lenders also regularly rely upon credit scores as a means for setting the rates and terms of loans. The result is often more attractive loan offers for borrowers who have good-to-excellent credit. The conditions of the loan, such as its interest rate and amount of principal, influence the lender's desire to finance the borrower. Conditions can refer to how a borrower intends to use the money.

Table 17 ANOVA of character and conditions on non-performing loans in BK headquarter

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	393.288	1	393.288	641.072	.000[b]
	Residual	44.171	72	.613		
	Total	437.459	73			

a. Dependent Variable: Non-performing loans
b. Predictors: (Constant), Character and condition

The findings in 17 revealed that character and condition had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 641.072. This implies that there was a linear relationship between character and condition and Non-performing Loans (Default loans). Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study. This was supported by Rachman *et al*. (2018) stated that character and conditions refers to credit history: a borrower's reputation or track record for repaying debts. This information appears on

the borrower's credit reports, and credit reports contain detailed information about how much an applicant has borrowed in the past and whether they have repaid loans on time.

Table 18 Coefficients of character and conditions on non-performing loans in BK headquarter

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.646	.407		28.580	.000
	Character and Condition	.572	.023	.948	25.319	.000

a. Dependent Variable: non-performing loans

The findings of regression coefficients from the table 18 showed that there was a positive and significant effect between character and condition and non-performing Loans (Default loans) ($\beta= 0.948$, p value <0.05). This means that a u nit change in character and condition increases Non-performing Loans (Default loans) by units 0.568. The results of regression model was established as follows; Non-performing Loans (Default loans) = 11.646+ 0.572 character and condition. This was supported by Jolevski (2017), stated that character and conditions refers to credit history: a borrower's reputation or track record for repaying debts reports. Information from these reports helps lenders evaluate the borrower's credit risk.

The moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters.

The fifth objective of the study was to establish the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters and was tested and achieved as it shown on the following tables.

Table 19 Model Summary of the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961[a]	.923	.922	.68492

a. Predictors: (Constant), Handling non-performing loans

The results of the findings from the table 19 showed that the correlation coefficient (R) = 0.961 indicated that there was strong relationship between handling nonperforming loans and the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of

determination, adjusted R^2= 0.923. Therefore the findings showed that handling nonperforming loans contributed to 92.30% of the variation in the Non-performing Loans (Default loans). Based on Yanagawa (2007), generally, he stated that non-performing loans are considered bad debts because the chances of recovering the defaulted loan repayments are minimal. However, having more non-performing loans in the company's balance hurts the bank's cash flows, as well as its stock price. Therefore, banks that have non-performing loans in their books may take action to enforce the recovery of the loans they are owed. One of the actions that lenders can take is to take possession of assets pledged as collateral for the loan.

Table 20 ANOVA of the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	403.683	1	403.683	860.526	.000[b]
	Residual	33.776	72	.469		
	Total	437.459	73			

a. Dependent Variable: nonperforming loans
b. Predictors: (Constant), Handling nonperforming loans

The findings in Table 20 revealed that handling nonperforming loans had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 860.526. This implies that there was a linear relationship between handling nonperforming loans and Non-performing Loans (Default loans). Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study. This was supported by Bholat *et al*. (2018) where Banks may also foreclose on homes where borrowers fail to honor their mortgage obligations, and the repayments become due for more than 90 days. The lender may also opt to sell the non-performing loans to collection agencies and outside investors to get rid of the risky assets from their balance sheet. Banks sell the non-performing loans at significant discounts, and the collection agencies attempt to collect as much of the money owed as possible. Alternatively, the lender can engage a collection agency to enforce the recovery of a defaulted loan in exchange for a percentage of the amount recovered.

Table 21 Coefficients of the moderating effect of handling non-performing loans on the factors contributing to non-performing loans in BK headquarters

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.259	.990		-7.329	.000

Handling non-performing loans	1.269	.043	.961	29.335	.000

a. Dependent Variable: Non-performing loans

The findings of regression coefficients from the table 21 showed that there was a positive and significant effect between Handling non-performing loans and non-performing Loans (Default loans) (β= 0.948, p value <0.05). This means that a u nit change in handling non-performing loans increases Non-performing Loans (Default loans) by units 0.568. The results of regression model was established as follows; Non-performing Loans (Default loans) = -7.259+ 1.269 Handling non-performing loans.

The effect of the bank's factors on non-performing loans in BK headquarters.

The effect of banks' factors on non-performing loans in BK Headquarter and was obtained through the dimensions of Banks' factors (capital, income diversification, profitability, character and conditions and handling nonperforming) and that of the Non-performing Loans (default loans) selected for this particular study as it shown on the following tables.

Table 22 Model summary of the bank's factors on non-performing loans in BK headquarters.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.982[a]	.965	.963	.47258

a. Predictors: (Constant), Capital, income diversification, profitability, character and condition, and handling non-performing loans.

The results of the findings from the table 22 showed that the correlation coefficient (R) = 0.982 indicated that there was strong relationship between dimensions of banks factors and intervening variable indicated by capital, profitability, income diversification, and character and condition, and handling nonperforming loans and the Non-performing Loans (Default loans). The results of findings also indicated that the coefficient of determination, adjusted R^2= 0.965. Therefore the findings showed that banks factors (capital, profitability, income diversification, and character and condition, and handling nonperforming loans) contributed to 96.50% of the variation in the Non-performing Loans (Default loans).

23 ANOVA of the bank's factors on non-performing loans in BK headquarters.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	422.273	5	84.455	378.150	.000[b]
	Residual	15.187	68	.223		
	Total	437.459	73			

a. Dependent Variable: nonperforming loans

b. Predictors: (Constant), Capital, income diversification, profitability, character and condition, and handling nonperforming loans.

The findings in Table 23 reveals that capital, income diversification, profitability, character and condition, and handling nonperforming loans had a significant effect on Non-performing Loans (Default loans) since p-value < 0.05, F = 860.526. This implies that there was a linear relationship between capital, income diversification, profitability, character and condition, and handling nonperforming loans and Non-performing Loans (Default loans). Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant and therefore fit for the study. This was supported by Skarica (2014), small Non-performing loans (NPLs) reflect the credit quality of the loan portfolio of banks, and in aggregate terms, reflect the credit quality of the loan portfolio of the banking sector in a country. An understanding of the factors that influence the level of non-performing loans is crucial for the risk management function of banks and for national bank supervisors responsible for banking stability.

Table 24 Coefficients of the bank's factors on non-performing loans in BK headquarters.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.962	1.841		2.695	.009
	Capital	.151	.051	.254	2.946	.003
	Income diversification	.257	.098	.335	2.613	.011
	Profitability	.124	.061	.205	2.044	.004
	Character and condition	.182	.046	.301	3.935	.000
	Handling non-performing loans	.422	.116	.319	3.650	.001

a. Dependent Variable: Non-performing loans

From the analysis, capital, income diversification, profitability, character and condition, and handling nonperforming loans had p-values of less than 0.05 which meant that they was significant predictors of Non-performing Loans (Default loans)as indicated from the table 24. The regression model becomes: Y=4.962+0.151X1+0.257X2+0.124X3+0.182X4+0.422X5. From this regression model, holding other factors (capital, income diversification, profitability, character and condition, and handling nonperforming) constant to zero, Non-performing Loans (Default loans) in Bank of Kigali Headquarter would be achieved at a unit of 4.962. It was also established that a unit increase in capital would cause an increase in Non-performing Loans (Default loans) in Bank of Kigali Headquarter by a factor of 00.151,

a unit increase in income diversification would cause an increase in Non-performing Loans (Default loans) in Bank of Kigali Headquarter by a factor of 0.257, a unit increase in profitability would lead to an increase in Non-performing Loans (Default loans) in Bank of Kigali Headquarter by a factor of 0.124, a unit increase in character and condition would lead to an increase in Non-performing Loans (Default loans) in Bank of Kigali Headquarter by a factor of 0.182 and a unit increase in the handling nonperforming loans would lead to an increase in Non-performing Loans (Default loans) in Bank of Kigali Headquarter by a factor of 0.422.

This was supported by Akter & Roy (2017) that banks classify loans as non-performing loans when the repayments of principal and interest are due for more than 90 days or depending on the terms of the loan agreement. As soon as a loan is classified as an NPL, it means that the likelihood of receiving repayments is significantly lower. However, a borrower may start making repayments to a loan that has already been classified as a non-performing loan. In such cases, the non-performing loan becomes a re-performing loan (Akter & Roy, 2017). When a bank is unable to recover non-performing loans, it can repossess assets pledged as collateral or sell off the loans to collection agencies. When a bank has too many non-performing loans in its balance sheet, it poses cash flow problems for the bank since it is no longer earning income from its credit business (Louzis *et al*., 2012).

CONCLUSION AND RECOMMENDATIONS

The aim of the present research was to evaluate the factors contributing to non-performing loans in commercial bank in Rwanda, a case of bank of Kigali. The determinants proving the effects of capital on non-performing loans were more capital buildups with succeed, lending interest rate, higher inflation. Lending activities and noninterest activities were slightly the determinants of income diversification as raising non-performing loans. The loan/deposit ratio was the determinants of profitability in increasing non-performing loans. The determinants of characters as reason of non-performing loans were customers are not able to repay back on time, profit have been gone down due to non-performing loans, cost of insurance on non-performing loans had been increased, the financial stability of bank has been affected and the credibility to customers has been reduce due to non-performing loans. Based on the findings, the study concluded that banks factors such as capital, income diversification, profitability, character and condition, and handling nonperforming loans had a significant effect on Non-performing Loans (Default loans). Therefore, Based to the finding from this research, there are factors affecting non-performing loans. Thus, bank could assess carefully the process of delivering loans.

According to the findings from this research, some recommendations are prepared and addressed to the

The government of Rwanda through central bank could enforce all ways of mitigating NPLs in banks by helping them in training regarding collateral assessment.

Based to the finding from this research, there are factors affecting non-performing loans that bank could assess carefully their process of delivering loans. Therefore, Commercial banks was recommended to carefully the process of delivering loans. Commercial banks could also set permanent follow-up of implementation of activities in which browser presenting during requesting loans.

Suggestion the further researchers

The further researchers could conduct many researches on the same topics by taking different specific objectives such as assessing the effects of NPL among browsers in different commercial banks.

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