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Abstract

The purpose of this study was to investigate the effect of savings level determinant on sustainability in I&M Rwanda. The specific objectives were to establish the effect of interest rate, income level and access to credit on the sustainability of I&M Bank. This study implemented a descriptive research design and utilized coefficient of correlation to assess the effect of each specific objective on the sustainability of the Bank. The population comprised of 12,057 including 12,050 customers and 7 staff of finance department of I&M Bank Rwanda. A sample size of 99 was calculated using Yamane (1967) simplified formula. To accomplish this aim, both primary and secondary data are used. The researcher used simple random and purposive sampling techniques. A questionnaire and interview have used to collect data. Quantitative data was obtained using questionnaire while a financial statement of I&M Bank covering 2016-2020 was used as secondary data. Descriptive and inferential statistical analysis showing mean, standard deviation, correlation and regression was used statistical Package for Social Sciences (SPSS) version 26.0 to analyze statistical information while content analysis used to analyze qualitative information. The findings and recommendations for this study addressed to the I & M Bank Rwanda, for decision-making and policies. The study found that interest rates, income level and access to credit have significant positive effect on sustainability of commercial banks in Rwanda at 78%, 90.5% and 92.9% respectively. The relationship among saving level determinants and sustainability of business bank was also determined to be linear with increase in get admission to credit score by means of clients. The researcher concluded that saving degree and get admission to credit volatility had more effect on sustainability of banks. The study endorsed that guideline to be installed vicinity to boom financial institution lending and ensure monitoring the same.

Keywords: *Savings Level Determinant, Sustainability, Commercial Banks, I&M Bank, Rwanda*

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1.1 Introduction

Commercial banks play a dominant role in financial resources for investment and economic growth if they maintain high standards of performance in terms of savings, which is transferable to the real sector. Despite the fact that the government of Rwanda has put a lot of effort in improving the savings level of the country and that of the local population through several programs, the national savings are still very low (Minecofin report, 2018). Minister Ndagijimana in New Times (2019) noted that statistics shows that total savings are still below 15% of GDP compared to the target of 20% of GDP by 2020. The Fin scope survey report (2020) points out that 35% of adults still save at home due to inconvenience and or inaccessibility to formal financial institutions. Informal savers must be pulled into financial institutions and ensure that they do not only save to pay for living expenses but move on to invest and create wealth (New Times, 2019). It is worthy to note that 72% of Rwandan adults are financially included, with 42% of the Rwandan population in the formal financial system (23% served by commercial banks and 33% served by non-bank formal institutions), and 58% use informal financial mechanisms.

I&M bank, Rwanda delivering strong business performance across all key financial metrics. Growth in interest income and trading income led to 13.0% increase in headline earnings, with profit after tax recording a remarkable 14.6% increase from the previous year. The Bank strengthened its balance sheet with a 13.0% growth in its asset base, 15.4% increase in its loan book, a strong capital adequacy ratio of 17.3% and an 18.1% return on equity, reflecting the bank's robust performance. I&M Bank Limited, Mauritius: performance achieved a 47% growth in top line revenues, 25% growth in its asset base and an 18% increase in customer deposits. The IMF report (2019) shows that over the last four decades, the deposit rate and economic growth are key drivers of private saving in Mauritius. Given the economic and demographic characteristics, private saving rate is about 3% of GDP lower than the potential in Mauritius. I&M Bank Limited, Kenya. The Bank's performance for the year 2018 recorded a 23% increase in total assets from the previous year on the back of a 30% growth in customer deposits. Loans and advances to customers increased by 9.0%, while profit before tax achieved to 16% increase. I&M Bank Tanzania Limited, the Bank's balance sheet exceeded the half trillion mark, growing by 15.2% to close at Tshs 510 billion. This is an important milestone for the bank, driven in part by a 10.5% increase in the loan book and a 29.3% growth in profit before tax (I&M Holding PLC Annual Report, 2018).

Bank popular du Rwanda, the saving level stand on 10.22%, Bank of Kigali, saving level is 12.4% during 2019 while I&M bank saving level is 7.07% in 2019 (Financial 2019). Many researchers have investigated the effect of savings on the performance of commercial banks in different countries using different variables to measure savings for example, in Nigeria, Enyioko (2012) examined the performances of banks based on the interest rate policies and discovered that interest rate policies have not improved the overall performances of banks significantly. Aburime (2008) found that real interest rate, inflation, monetary policy and foreign exchange regime are positively associated with banks' return on assets of the banks in Nigeria. Bosson and Jog-kun (2002), however found out that profitability of Ghanaian banks is skewed towards large banks and that there is correlation between bank size and profitability. In Kenya, there has been an extensive research on the area of interest rates and profitability. Kipnetich (2011) examined the effect of interest on the performance of commercial banks in Kenya. The study found there is a positive relationship between interest rates and financial performance of commercial banks in Kenya. Mbai (2006) found out that proper interest rate management reduced bank exposure to risk and provides an opportunity

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to stabilize and improve their net income. All these studies did not address savings level determinants and sustainability of commercial bank with specific attention on income level of depositors, access to credit and interest rate of commercial banks in Rwanda. Therefore, this study sought to examine if income level of depositors, access to credit and interest rate are savings level determinants that could have any significant effect on the financial sustainability of commercial banks with specific attention paid on I&M Bank, Rwanda.

1.2 Objectives of the study

1.2.1 General objective

The main objective of this study was to assess the effect of Savings level determinant on the Sustainability of Commercial Banks in Rwanda.

1.2.2 Specific Objectives

The specific objectives are the following.

- (i) To determine the effect of interest rate on the sustainability of I &M Bank.
- (ii) To assess the effect of income level on the sustainability of I&M Bank.
- (iii) To establish the effect of access to credit on the sustainability of I&M Bank.

1.2.3 Research Hypothesis

H₀₁: There is no significant effect of interest rate on the sustainability of I&M Bank.

H₀₂: There is no significant effect of income level on the sustainability of I&M Bank.

H₀₃: There is no significant relationship between access to credit and sustainability of I&M Bank.

2.1. Empirical Literature Review

2.1.1 Effect of Interest Rate on Sustainability of Commercial Banks

Bhattarai (2017) explored the determinants of lending interest rate of Nepalese commercial banks. The Methodology for the study were Ordinary Least Square model, fixed effects model and random effects model. This study has used lending rate was dependent variable, while the explanatory variables are operating cost to total assets ratio, deposit interest rate, profitability (ROA) and default risk. The findings show that operating costs to total assets ratio, profitability (ROA) and default risk have significant positive impact on the commercial bank lending rate. However, deposit rate has negligible impact on lending interest rate. The minimum and maximum lending rates of Nepalese commercial banks during the sample period are 7.83% and 15.37% respectively. The average lending rate is 11.21% meaning that Nepalese commercial banks charge, in average, 11.21% annual interest on their loans and advances. The results from the pooled Ordinary Least Square model indicate that the value of R² and adjusted R² are 0.6454 and 0.5996 respectively. Thus, this study concludes that the major determinants of commercial banks' lending rate are operating costs to total assets ratio, profitability (ROA) and default risk in Nepalese perspectives. The study recommended that Banks should try as much as possible to strike a balance which will help them to cover cost associated with lending and at the same time, maintain good banking relationship with their borrowers.

Irungu (2013) investigated the impact of interest rate spread on the output of Kenyan commercial banks. The study discovered a clear positive relationship between commercial bank financial results and interest rate spread. According to the report, interest rate spread

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had a significant impact on asset nonperformance in banks because it increased the cost of loans charged to borrowers, and interest rate control had a significant impact on asset nonperformance. The study suggested that the government regulate interest rates to protect borrowers from commercial bank exploitation. Noreen (2018) investigated the interest rate changes and its impact on the profitability of Pakistan commercial banks. In this paper data collected from the bank's annual reports from 2007 to 2018. The Pearson method is used to examine the result amongst interest Rate and banks profitability. The findings in this investigation obtain the optimistic and direct relationship among interest rate and banks profitability. When the banks charged high interest rate from their customers then they obtain higher profitability and vice versa. Okech (2013) investigated the impact of lending rates on the long-term viability of Kenyan commercial banks. In terms of lending interest rate, the analysis looked at management performance and operating cost efficiency. The study discovered a poor positive relationship between commercial bank lending rates and their long-term viability.

Ngure (2014) investigated the impact of interest rate fluctuations on commercial bank in Kenya. The study used descriptive research design using secondary data obtained from Central Bank of Kenya for the period of five years from 2009 to 2013 Data obtained was analyzed using SPSS version 21 and results obtained tested for significance using ANOVA. Research findings shown that in year 2013, 42.86% of commercial banks had ROA of between 0% and 3%, 30.95% of other commercial banks had ROA of between 3% and 5%.19.05% had ROA of 6.10%, while others 7.14% had a negative ROA. The study found that interest rates have significant positive effect on financial performance of commercial banks in Kenya at 95% confidence level. The study also concluded that bank size and interest rate volatility had effect on profitability of commercial banks. The study found that the model containing interest rates and size of commercial bank could explain 64% of the changes in commercial banks profitability. The study recommended that policies be adopted to shield bank lending rates and ensure monitoring the same. The study suggested that policies be utilized to protect bank lending rates and ensure that they are monitored. To protect consumers from commercial banks' abuse, the study also recommended that Kenya's central bank exercise strict supervision and discipline any commercial banks that increase interest rates arbitrarily to improve their profitability and sustainability.

2.1.2 Effect of Income Level on Sustainability of Commercial Banks

Henry (2019) examined the effects of income expansion on commercial banks soundness in Nigeria. Ordinary least square method was used as data analysis method. From the findings, income expansion as an independent variable explained 77 % variations on capital adequacy ratio. The beta coefficient found that the independent variable has positive effects on bank capital adequacy. The study concludes that credit expansion significantly relates to commercial banks soundness in Nigeria. We, therefore, recommended for a well-articulated credit policies that will strengthen commercial banks soundness in Nigeria. Aleksandra (2020) assessed the effect of income level banks, the findings was that there is a positive effect of increasing income on improving the assessment of financial stability using CAMEL method. In addition, the study showed that not all activities have positive impact on the stability of banks.at this point in time, the basis income diversification is interest and commission income that is becoming the main way for banks to increase profitability and being sustainable.

Perira (2018) investigated the relationship between income diversification and performance of commercial banks in Sri Lanka. The objective of the study was to identify whether there is an impact of income diversification on commercial banks performance which are operating in Sri Lanka. Data set of the study covers Sri Lanka private commercial banks during the sample period of 2010–2015. Multiple regression analysis used as method to identify whether there is a relationship between diversification and performance variables including some control variables like asset size, equity, interest rate and asset growth. A regression analysis is conducted to identify the relationship between bank income diversification and banks performance. The findings of the research indicated that there is a positive relationship between income diversification and bank performance, although the degree of diversification did not come to peak within Sri Lankan context. Additionally, variables of asset size and asset growth are not significant variables to the both ROA and ROE models. But equity variable shows a significant negative relationship with bank performance in ROE. According to the findings of the research, it evidences Sri Lankan private sector commercial banks benefited from income diversification and able to gain moderate return during the sample period. As a percentage non-interest income is 29% from total operating income during sample period this figure is most assisted by one foreign bank and one local commercial bank, therefore cannot conclude that there is a considerable effect from local commercial banks.

Alec (2016) studied the effect of income on sustainability of commercial banks. The finding was that there is strong relationship between income and sustainability of commercial banks. Income of business or individual people expand commercial banks 'source of revenue and cost. The income source of commercial banks includes interest income and noninterest income. Obviously, when the expanding traditional income business faces limitation from relative stable population and increasingly income horizontal competition developing. Both noninterest income and interest income can increase the total Income the total level of income of commercial banks in several ways; satisfying diversified needs for financial services, investment consultation and so forth by continuous innovation of new financial products and services to gain more fees and commission and strengthen the market competitiveness. Improving the investment level of commercial banks in financial markets to gain the investment income from bonds and stocks. Enriching income from gain or losses of exchange and profits or losses from changes of fair value and other business.

2.1.3 Effect of Credit Access on Sustainability of Commercial Banks

Tadesse (2014) investigated the impact of credit access on the performance of commercial banks in Ethiopia. The objective of the study is to empirically examine the quantitative effect of credit access on the performance of commercial banks in Ethiopia, considering variables related to lending activities, over the period of 5 years (2008-2012). The empirical investigation used the accounting measure of Return on Assets (ROA), as the dependent variable. The econometrics method used in the study basically involves assessing the impact of selected internal variables. Multiple linear regression model was used to measure the relative weighting of the independent variables above dependent variable. Basic descriptive statistics was applied for trend analysis. The study finds that the selected variables - provision to total loans, loan to total asset, credit administration and Size have significant effect on the performance of Banks. The mean value of ROA is 2.9% which is more than the international standard of ROA of 1 to 2%, Basel Committee on Banking Supervision (2001). The standard

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deviation the earnings before interest and 29 taxes (EBIT) against total asset ratio from its mean for Commercial Banks in Ethiopia is 0.28%. The minimum and maximum values of ROA are 2.7% and 3.4% respectively. The study recommended Ethiopian banks to develop their credit access management capacity, there should also be control over overhead costs related to lending and increasing the credit book size without compromising the sound credit planning.

Vincent and David (2012) investigated the effect of credit on bank performance with a sample of three banks in Rwanda. All three banks have adequate credit policies, which were reflected in their bank's mission, credit responsibility, collection policy and credit evaluation policies ranging from car loans, personal loans, overdraft, and mortgage at interest rate ranging from 17.25% to 20% per year. Loan applications period ranging from 1 to 10 days depending on types of loan. as results credit policies indeed affect the performance of commercial banks. All selected banks have effective and efficient credit policies, which help banks in sustainability.

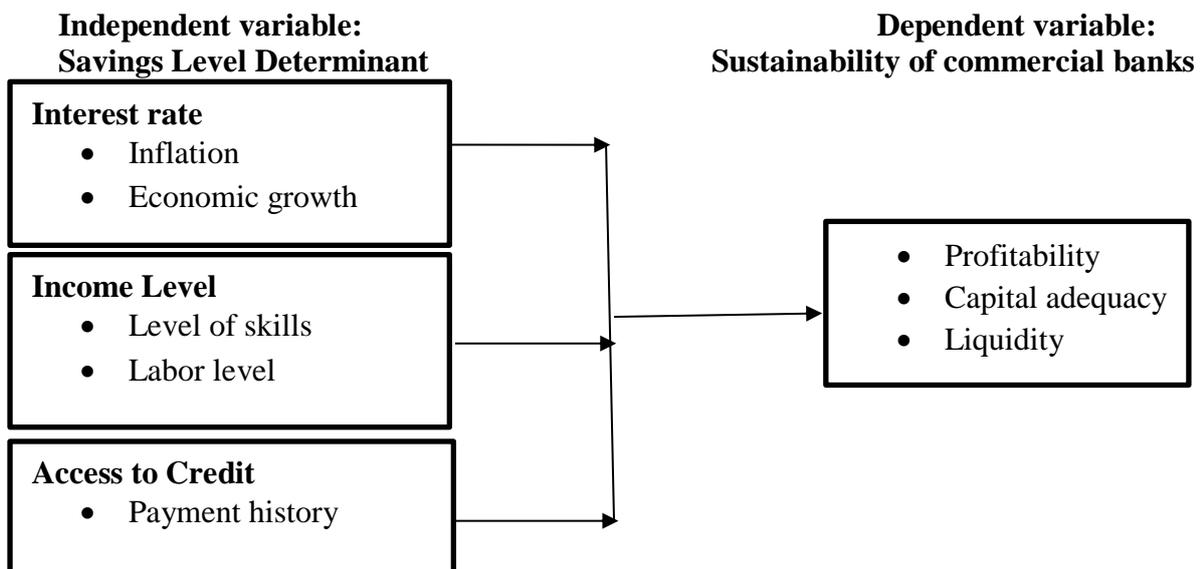
2.2 Research Gap

Many researchers have investigated the effect of savings level determinant on the performance of commercial banks in different countries using different variables to measure savings for example, in Nigeria, Enyioko (2012) examined the performances of banks based on the interest rate policies and discovered that interest rate policies have not improved the overall performances of banks significantly. Aburime (2008) found that real interest rate, inflation, monetary policy and foreign exchange regime are positively associated with banks' return on assets of the banks in Nigeria. Bosson and Jog-kun (2002), however found out that profitability of Ghanaian banks is skewed towards large banks and that there is correlation between bank size and profitability. In Kenya, there has been extensive research on the area of interest rates and profitability.

Kipngetich (2011) examined the effect of interest on the performance of commercial banks in Kenya. The study found there is a positive relationship between interest rates and financial performance of commercial banks in Kenya. Mbai (2006) found out that proper interest rate management reduced bank exposure to risk and provides an opportunity to stabilize and improve their net income. All these studies did not address savings level determinants and sustainability of commercial bank with specific attention on income level of depositors, access to credit and interest rate of commercial banks in Rwanda. Therefore, this study seeks to examine if income level of depositors, access to credit and interest rate are savings level determinants that could have any significant effect on the financial sustainability of commercial banks with specific attention paid on I&M Bank, Rwanda. Oguabor and Malaolu (2013) studied the informality and sustainability of banks in Nigeria using panel data analysis. Abaenewe, Ogbulu and Ndugdu (2015) examined the profitability performance and sustainability. Unfortunately, none of them has particularly studied the effect of interest rate, income level and access to credit on sustainability of commercial banks in Rwanda. After having observed the gap in this area of research, the researcher decided to conduct in the research on the effect on saving level to determine its effect on the sustainability of commercial banks most specifically for I&M Bank Rwanda by investigating to constructs; interest rate, income level and access to credit.

2.3 Conceptual Framework

The conceptual structure shows the relationship between independent variable (savings level determinant) and dependent variable (sustainability of commercial bank in Rwanda). This focuses on the thematic constructs of income level, interest rate and credit accessibility and their relationship with the indicators of sustainability in terms of profitability, capital adequacy and liquidity.



Source: Research, 2021

Figure 1: Conceptual Framework

3. Materials and Methods

The descriptive and correlation methods was used because they allow for observation and analysis of the effect of independent variables on the dependent variables. Therefore, this study employed quantitative and qualitative research approaches to analyze the effects of savings level on sustainability of I &M Bank Rwanda. The study divided into two, theoretical and empirical approaches. In the case of the former, the study used an explorative research method to better understand issues pertaining to saving level of economic agent upon which assumption could be generated to serve as guides for study. The population target of this study includes customers and staff of I&M Bank Headquarters Rwanda totaling 12057 where a sample of 99 respondents were drawn using Yamane formula (1967) and the simple random sampling technique was used to allow for equally likely selection of respondents for the study thereby avoiding any personal bias in the selection process.

In this research, data were collected using different research instruments including questionnaire and interview guide. The data collected were first be edited, coded and put in tables by use of SPSS version 26.0. Therefore, inspection, cleaning, transforming, and modeling data with the aim of highlighting valuable details, suggesting conclusions, and assisting decision-making is known as data analysis. The mechanism in question necessitated the implementation of several techniques. From an empirical perspective, the researcher conducted methodological, historical, statistical, and comparative analysis for this report. The

historical method was used to evaluate the facts on the subject over the time span examined, while the statistical method was used to analyze the data collected through questionnaires.

Descriptive and inferential statistical analysis showing mean, standard deviation, correlation and regression has used statistical Package for Social sciences version 26.0 to analyse statistical information while content analysis was used to analyse qualitative information. Tabulation is the process of summarizing raw data and displaying it in compact form for further analysis. Therefore, preparing tables is a very important step. The findings can be presented in table mode. To conduct inferential statistics, that study was use Pearson’s correlation for relationship determination as well as regression analysis showing the effect through correlation coefficient with regression equation where $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$ to analyse the relationship between the interest rate, income level, credit availability and sustainability of commercial banks. Where, Y is dependent variable (sustainability of banks), X_1 , X_2 and X_3 are independent variables (interest rate, income level and access to credit) and e is Random error.

4. Research Findings

4.1 Effect of Interest Rate on Sustainability of Commercial Banks

This objective was assessed respondent’s opinions on effect of interest rate on sustainability of I&M bank. Researcher firstly wanted to know whether the concerned respondents have an idea of interest rate in I&M bank. After getting viewpoints from them, Researcher was also interest in knowing the extent to which interest rate in sustainability of I&M bank in Table 1.

Table 1: Interest rate and Sustainability

Statements	N	SA	A	Mean	SD
I&M Bank interest rate gives me the willingness to save in I&M Bank	99	96.0%	4.0%	4.9596	.19791
Higher interest rates makes savings more attractive in I&M Bank	99	92.9%	7.1%	4.9293	.25764
I&M bank interest rate gives me the willingness to increase savings in I&M Bank	99	91.9%	8.1%	4.9192	.27393
Low interest rate leads to a lot of borrowing from I&M Bank	99	90.9%	9.1%	4.9091	.28894
Higher interest rates mean that I will gain a higher rate of return on my savings in I&M Bank	99	85.9%	14.1%	4.8586	.35022
Higher interest rates make saving more attractive than consumption	99	89.9%	10.1%	4.8990	.30288
Overall mean				4.51247	

Source: Primary data (2021)

Table 1 showed the perception of the respondents on Interest rate and 96.0% and 4.0% of the respondents respectively strongly agreed and agreed that I&M Bank interest rate gives them the willingness to save in I&M Bank. 92.9% and 7.1% of the respondents respectively strongly agreed and agreed that higher interest rates make savings more attractive in I&M Bank. 91.9% and 8.1% of the respondents respectively strongly agreed and agreed that I&M bank interest rate gives them the willingness to increase savings in I&M Bank. 90.9% and 9.1% of

the respondents respectively strongly agreed and agreed that Low interest rate leads to a lot of borrowing from I&M Bank. 85.9% and 14.1% of the respondents respectively strongly agreed and agreed that higher interest rates mean that they will gain a higher rate of return on their savings in I&M Bank. 89.9% and 10.1% of the respondents respectively strongly agreed and agreed that higher interest rates make saving more attractive than consumption. In addition the overall mean of 4.51247 which is in the range of $3.25 \leq \mu \leq 5.00$ which is very high mean which indicates strong evidence of the existence of the fact that I&M Bank interest rate gives me the willingness to save in I&M Bank. Higher interest rates makes savings more attractive in I&M Bank, I&M bank interest rate gives me the willingness to increase savings in I&M Bank, Low interest rate leads to a lot of borrowing from I&M Bank, Higher interest rates mean that I gain a higher rate of return on my savings in I&M Bank, Higher interest rates make saving more attractive than consumption.

4.2 The correlation between interest rate and sustainability of commercial bank

Table 2: Correlations between interest rate and sustainability of commercial banks

		Interest rate	sustainability of commercial banks
Interest rate	Pearson Correlation	1	.823**
	Sig. (2-tailed)		.000
	N	99	99
sustainability of commercial banks	Pearson Correlation	.823**	1
	Sig. (2-tailed)	.000	
	N	99	99

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

Source: Primary data (2021)

Table 2, shows the Correlations between interest rate and sustainability of commercial banks and there is very high correlation ($r=0.823$) between interest rate and sustainability of commercial banks. The relationship was significant based on Pearson correlation ($r=0.823$.) The p-value of 0.000 (i.e. 0.0%) is less than 1%. This leads to confirm that there is a significance high correlation between interest rate and sustainability of commercial banks. This is considered true that interest rate contributes to the sustainability of commercial banks.

Table 3: What is your monthly level of income?

	Monthly Levels of income in RwF	Frequency	Percent
Valid	Below 100,000	17	17.2
	100,001-500,000	20	20.2
	500,001-1,000,000	23	23.2
	1,000,001-1,500,000	17	17.2
	1,500,001-2,000,000	16	16.2
	Above 2,000,000	6	6.1
	Total	99	100.0

Source: Primary data (2021)

Table 3 showed the monthly level of incomes of the respondents, and the majority have monthly income, which is ranged from 500,000frw to1, 000,000frw which are totaling to 23.2% of the respondents. In addition, those who earn above 2,000,000frw are totaling to 6.1% of the respondents. The table also showing the range of customer's income of I&M bank.

4.3 The effect of income level on sustainability of I&M banks

This objective was assessed respondent's opinions on effect of income level on sustainability of I&M bank. Researcher firstly wanted to know whether the respondents have an idea of income level in I&M bank. After getting viewpoints from them, Researcher was also interest in knowing the extent to which income level in sustainability of I&M bank in Table 4

Table 5: Perceptions of the respondents on Income level

Statements	N	SA	A	Mean	SD
My income level gives me ability to save in I&M bank	99	90.9%	9.1%	4.9091	.28894
Rising income levels will lead to a rise in total saving levels	99	94.9%	5.1%	4.949	.2201
Rising incomes leads to more spending on luxury goods instead of savings	99	92.9%	7.1%	4.9293	.25764
My disposable income level gives me the ability to save more in I&M Bank	99	91.9%	8.1%	4.9192	.27393
Low income will have very low saving levels	99	78.8%	21.2%	4.7879	.41089
With low income, I need to buy necessities and do not have the luxury of being able to save	99	93.9%	6.1%	4.9394	.23982
Overall mean				4.70565	

Source: Primary data (2021)

Table 5 showed the perception of the respondents on Income level and 90.9%and 9.1% of the respondents respectively strongly agreed and agreed that income level gives them ability to save in I&M bank. 94.9%and 5.1% of the respondents respectively strongly agreed and agreed that rising income levels will lead to a rise in total saving levels. 92.9% and 7.1% of the respondents respectively strongly agreed and agreed that rising incomes leads to more spending on luxury goods instead of savings. 91.9% and 8.1% of the respondents respectively strongly agreed and agreed that my disposable income level gives me the ability to save more in I&M Bank. 78.8% and 21.2% of the respondents respectively strongly agreed and agreed that Low income will have very low saving levels. 93.9%and 6.1% of the respondents respectively strongly agreed and agreed that with low income, I need to buy necessities and do not have the luxury of being able to save and in addition this provided overall mean of 4.70565 which is in the range of $3.25 \leq \mu \leq 5.00$ which is very high mean which indicate strong evidence of the existence of the fact that My income level gives me ability to save in I&M bank, Rising income levels will lead to a rise in total saving levels, Rising incomes leads to more spending on luxury goods instead of savings, My disposable income level gives me the ability to save more in I&M Bank, Low income will have very low saving levels and With low income, I need to buy necessities and do not have the luxury of being able to save.

Table 6: Correlations between income level and sustainability of commercial banks

		Income level	Sustainability of commercial banks
Income level	Pearson Correlation	1	.750**
	Sig. (2-tailed)		.000
	N	99	99
Sustainability of commercial banks	Pearson Correlation	.750**	1
	Sig. (2-tailed)	.000	
	N	99	99

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

Source: Primary data (2021)

Table 6 shows the Correlations between income level and sustainability of commercial banks and there is high correlation ($r=0.750$) between income level and sustainability of commercial banks., the relationship was significant based on Pearson correlation ($r=0.750$.) The p-value of 0.000 (i.e. 0.0%) is less than 1%. This leads to confirm that there is a significance high correlation between income and sustainability of commercial banks. This is considered true that income level contributes to the sustainability of commercial banks.

Table 7: Perceptions of the respondents on Access to Credit

Statements	N	SA	A	Mean	SD
I always have access to credit in I&M Bank	99	84.8%	15.2%	4.9596	0.19791
Access to credit in I&M Bank gives me the willingness to save in I&M Bank	99	92.9%	7.1%	4.9293	.25764
Increased access to credit induces borrowers to shift from livestock to deposit in I & M Bank	99	94.9%	5.1%	4.9495	.22010
Access to credit increase the ability to generate more income	99	90.9%	9.1%	4.9091	.28894
Overall mean				4.9293	

Source: Primary data (2021)

Table 7 showed if the customers are always having access to credit in I&M Bank and the findings showed that 84.8% of the respondents have the access while 15.2% do not have access to credit in I&M bank. The respondents concluded that they have the access to credit form I&M Bank as the majority showed. Table 4.8 showed the perception of the respondents on Access to Credit, 92.9%and 7.1% of the respondents respectively strongly agreed and agreed that Access to credit in I&M Bank gives me the willingness to save in I&M Bank, 94.9%and 5.1% of the respondents respectively strongly agreed and agreed that Increased access to credit induces borrowers to shift from livestock to deposit in I & M Bank and 90.9%and 9.1% of the respondents respectively strongly agreed and agreed that Access to credit increase the ability to generate more income and in addition these provided an overall mean of 4.9293 which is in the range of $3.25 \leq \mu \leq 5.00$ which is very high mean which indicate strong evidence of the existence of the fact that Access to credit in I&M Bank gives me the willingness to save in I&M Bank, Increased access to credit induces borrowers to shift from livestock to deposit in I & M Bank and Access to credit increase the ability to generate more income.

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4.4 The effect of access to credit on sustainability of I&M banks

This objective was assessed respondent’s opinions on effect of access to credit on sustainability of I&M bank. Researcher firstly wanted to know whether the respondents have an idea of access to credit in I&M bank. After getting viewpoints from them, Researcher was also interest in knowing the extent to which access to credit on sustainability of I&M bank in Table 8

Table 8: Correlations between Access to credit and sustainability of commercial banks

		Access to credit	Sustainability of commercial banks
Access to credit	Pearson Correlation	1	.850**
	Sig. (2-tailed)		.000
	N	99	99
Sustainability of commercial banks	Pearson Correlation	.850**	1
	Sig. (2-tailed)	.000	
	N	99	99

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

Source: Primary data (2021)

Table 8, shows the Correlations between access to credit and sustainability of commercial banks and there is very high correlation ($r=0.850$) between access to credit and sustainability of commercial banks, the relationship was significant based on Pearson correlation ($r=0.850$). The p-value of 0.000 (i.e. 0.0%) is less than 1%. This leads to confirm that there is a significance high correlation between access to credit and sustainability of commercial banks. This is considered true that interest rate contributes to the sustainability of commercial banks.

Table 9: the effect of Savings level determinants on sustainability of I&M Bank

Statement	N	SA	A	Mean	SD
High Interest rates increases the level of savings which leads to the profitability of I&M Bank	99	96.0%	4.0%	4.9596	.19791
High Interest rates increases the level of savings which leads to the capital adequacy of I&M Bank	99	91.9%	8.1%	4.9192	.27393
High Interest rates increases the level of savings which leads to the liquidity of I&M Bank	99	93.9%	6.1%	4.9394	.23982
Income level increases the level of savings which leads to the profitability of I&M Bank	99	94.9%	5.1%	4.9495	.22010
Income level increases the level of savings which leads to the capital adequacy of I&M Bank	99	96.0%	4.0%	4.9596	.19791
Income level increases the level of savings which leads to the liquidity of I&M Bank	99	92.9%	7.1%	4.9293	.25764
Access to credit increases the level of savings which leads to the profitability of I&M Bank	99	96.0%	4.0%	4.9596	.19791
Access to credit increases the level of savings which leads to the capital adequacy of I&M Bank	99	93.9%	6.1%	4.9394	.23982
Access to credit increases the level of savings which leads to the liquidity of I&M Bank	99	97.0%	3.0%	4.9697	.17229
Overall mean				4.94726	

Source: Primary data (2021)

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Table 9 showed the perceptions of the respondents on Savings level determinants and sustainability of I&M Bank it has been found that more than 90% of the respondents strongly agreed on the statement and in addition this provided an overall mean of 4.94726 which is in the range of $3.25 \leq \mu \leq 5.00$ which is very high mean which indicate strong evidence of the existence of the fact that High Interest rates increases the level of savings which leads to the profitability of I&M Bank, High Interest rates increases the level of savings which leads to the capital adequacy of I&M Bank, High Interest rates increases the level of savings which leads to the liquidity of I&M Bank, Income level increases the level of savings which leads to the profitability of I&M Bank, Income level increases the level of savings which leads to the capital adequacy of I&M Bank, Income level increases the level of savings which leads to the liquidity of I&M Bank, Access to credit increases the level of savings which leads to the profitability of I&M Bank, Access to credit increases the level of savings which leads to the capital adequacy of I&M Bank and Access to credit increases the level of savings which leads to the liquidity of I&M Bank.

The following section deals with the relationship between saving level determinants and sustainability of commercial banks.

Table 10: Correlation between saving level determinants and sustainability of commercial banks.

		Sustainability of commercial bank	Interest rate	Income level	Access to credit
Sustainability of commercial bank	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	99			
Interest rate	Pearson Correlation	.823**	1		
	Sig. (2-tailed)	.001			
	N	99	99		
Income level	Pearson Correlation	.750**	.823**	1	
	Sig. (2-tailed)	.000	.001		
	N	99	99	99	
Access to credit	Pearson Correlation	.850**	.823**	1.000**	1
	Sig. (2-tailed)	.000	.001	.000	
	N	99	99	99	99

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

Source: Primary data (2021)

Pearson correlation coefficient matrix between all variables, along with p-values (sig.one-tailed) denoted whether they are statistically significant. This matrix provided further evidence that variables are correlated. As indicated in the table 9, there is high correlation between interest rate and sustainability of commercial bank which is equal ($r=0.823$). The relationship was significant based on Spearman correlation ($r=0.823$.) The p-value of 0.000 (i.e 0.0%). Which is less than 1%? The table also shows the relationship between income level and sustainability of commercial bank that is equal (0.750 %) and also the relationship between access to credit and sustainability of commercial bank equal (0.850 %) This leads to confirm that there is a significance high correlation between saving level determinants and

sustainability of commercial banks. This is considered true that saving level contributes to the sustainability.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.787 ^a	.687	.787	1.68683

- a. Predictors: (Constant), interest rate, income level, access to credit
- b. Dependent variable: sustainability of commercial banks

Source: Primary data (2021)

Table 11 is the Model summary for the regression. For a relatively detailed account of what all these statistics mean and theory behind them of 0.787 represents the coefficient of multiple correlation between the response variable (interest rate, income level and access to credit). multiple R can range in value from 0 to 1.0. From the findings in the above table 10, the value of adjusted R squared (coefficient of determination) was 0.787 and indication that there was a variation of 78.7% on the sustainability of commercial banks due to changes in saving level, this shows that 78.7% changes in the saving level could be accounted for by changes sustainability of commercial banks. The study also established that there is a strong positive relationship between the saving level determinants and sustainability of commercial banks.as shown by a correlation coefficient of 0.787.

Table 12: Analysis of Variance (ANOVA)

The ANOVA table below for regression reveals how the variance in the regression was partitioned, SS Total of 5.378 is partitioned into SS Regression (0.787) and SS Residual (4.591).that is ,0.787+4.591=5.378.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.787	1	.787	10.847	.003 ^a
	Residual	4.591	98	.062		
	Total	5.378	99			

- a. Predictors: (Constant), Interest rate, income level, access to credit
- b. Dependent Variable: sustainability of commercial banks

Source: Primary Data (2021)

Table 12 showed the analysis of the variance between saving level determinants and sustainability of commercial banks. The regression of .787 showed that the variable of data across the mean showing that any change in saving level affect positively a change in sustainability of commercial banks by 78.7%. The regression formula is given below:

$$Y_i = f(X_i, \beta_i) + e$$

Y_i=dependent variable

F=function

X_i-X_{iii}=independent variables

β =unknown parameters

Table 13: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.038	3.216		10.896	.000
Interest rate	.327	.439	.238	2.248	.027
Income level	.750	.521	.003	.032	.975
Access to credit	.850	.044	.195	1.846	.068

a. Dependent Variable: sustainability of commercial banks

Source: Primary Data (2021)

The coefficient of variance showed that the dependent variable is sustainability of commercial bank, and as illustrated by .238 means that the change in independent variable affect by 78.7% to the dependent variable.

4.5 The analysis of financial statements of I&M BANK headquarters (2016-2020)

Like and other institution, I&M BANK headquarters, prepares its financial statements such as Balance sheet and income statement to show the profitability and financial position. In this part the researcher made an analysis and interpretation of the published financial statements in the annual reports. The analysis shows the financial position and profitability during the period 2016 and 2020. The tables are drowning to show some of methods used to analyze the profitability and financial of the I&M BANK headquarters The interpretation of financial statements was made into percentage and explanation in relation to the data given in the financial statements of I & M bank, for the year 2016 and 2020 enclosed to this research.

Table 14: Profitability of I&M BANK headquarters

Years	2016 in (000) Rwf	2017in (000) Rwf	2018 in (000) Rwf	2019 in (000) Rwf	2020 in (000) Rwf
(A).Net income/ loss	7,932,449	6,513,401	7,462,572	6,204,284	5,215,780
(B)Interest income	13,881,445	17,564,572	20,225,290	21,965,995	22,412,747
(C)Total assets	206,451,275	260,174,192	294,163,633	317,899,026	417,203,688
(D)Total equity	30,423,125	35,064,526	39,587,408	42,786,882	54,476,853
Profit margin=A/B*100	57.145%	37.08%	36.89%	28.24%	23.27%
Return on assets=A/C*100	3.84%	2.503%	2.536%	1.95%	1.25%
Return on equity=A/D*100	26.07%	18.57%	18.85%	14.50%	9.57%

Source: Annual report I&M BANK headquarters (2016-2020)

The secondary data results in Table 14 indicated that the total income of I&M Bank for the period of 5 years 2016-2020 fluctuated up and down with the last year (2020) being the lowest. I&M bank have 7 billion of Income after tax in 2016. The income after tax in the year

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2017 was 6 billion. The income after tax rose to 7 billion in year 2018. The income after tax decreased to 6 billion in year 2019. The income after tax was 5 billion in 2020. This secondary data result supports the primary result that income level of respondents affects the sustainability of the I&M Bank for example, Low-income levels will have very low saving levels and with low income level, the respondents need to buy necessities and do not have the luxury of being able to save. Table 4.13 shows that the profit margin in 2016 was 57.145%, in year 2017, was 37.08% and 2018 was 36.89%, in 2019 was 28.24% and in 2020 was 23.27% the researcher concluded that the profit margin of I&M bank reduced from 2017 to 2020 as illustrated to the above. The return on assets is in 2016 was 3.84%, in 2017 was 2.503% in 2018 was 2.536% in 2019 was 1.95% and in 2020 was 1.25%. This implied that from the investment of I&M bank 3.84rwf; 2.503rwf; 2.536rwf; 1.95rwf and 1.25rwf were earned on the assets consecutively from 2016 to 2020 for every 100rwf invested. The return on equity were as follow: in 2016 was 26.07% in 2017 was 18.57% in 2018 was 18.85% in 2019 was 14.50% and in 2020 was 9.57%. This implied that 26.07rwf; 18.57rwf; 18.85rwf; 14.50rwf and 9.57rwf earned for each 100rwf invested consecutively from 2016 to 2020.

4.5.1 Saving Level of I&M Bank from 2016 to 2020

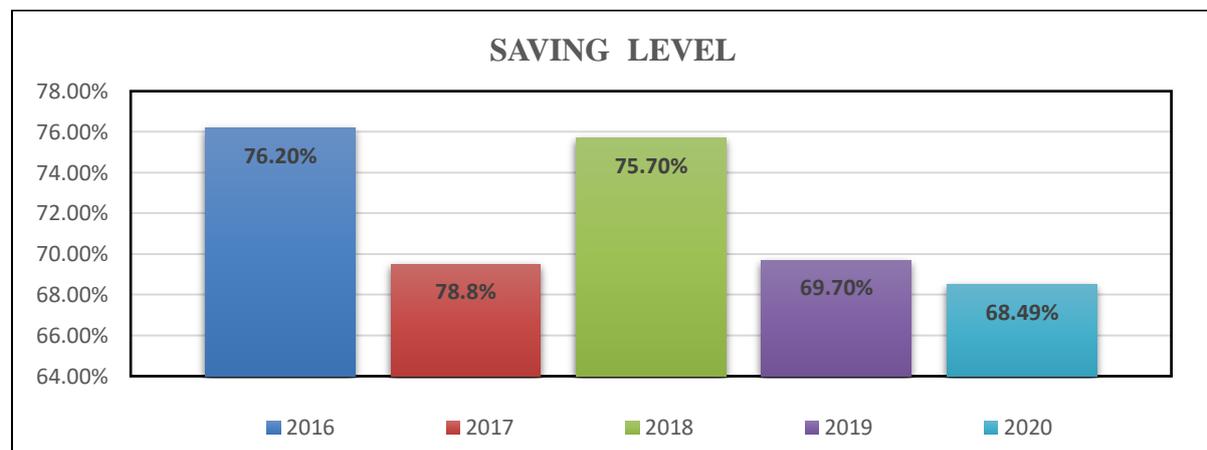


Figure 1: saving level

Source: Secondary data (2021)

The results in figure 1 supports Table 14 that I&M bank has witnessed a gradual descend in the saving level. The saving level in the year 2016 was 76.2% which representing 134,152,364Rwf of total customers saving over total liability equal 176,028,150Rwf. The saving level increased to 78.8% stand for 177,422,107Rwf of customer 'savings and 255,109,666 Rwf of total Liability in year 2017. The saving level decreased to 75.7% represent total customer' saving of 192,840,285Rwf and total liability of 254,596,135Rwf in year 2018. The saving level deceased to 69.7% due to total customer 'saving of 191,840.341Rwf over total liability of 275,112,144Rwf in year 2019. There was a drop down in saving level to 68.49% which is represent total customer 'saving that is equal of 248,435,597Rwf over total liability of 362,726,835Rwf of the year 2020 to Figure 1 which is above is showing the statistics of saving level in I&M bank during five years and it helped the researcher to analyse the position of saving in I&M bank.

Table 15: Liquidity of I&M BANK headquarters

Years	2016		2017		2018		2019		2020	
	Amount	in	Amount	in	Amount	in	Amount	in	Amount	in
	000 Rwf		“000”Rwf		“000”Rwf		“000”Rwf		“000”Rwf	
(A)Current assets	50,48,664		30,215,48		23,840,151		30,691,946		30,266,747	
(B)Current liability	134,152,364		177,422,106		23,840,151		191,804,341		248,435,597	
Current ratio=A/B	37.63%		17.03%		62.64%		16.00%		12.18%	

Source: annual report I&M BANK headquarters (2016-2020)

As revealed in this Table 15 shows the liquidity of I & M bank in terms of current assets, by current ratio in 2016 was 37.63%, in 2017 was 17.05% and in 2018 was 62.64% in 2019 was 16% and in 2020 was 12.18. The researcher concluded that current ratio of I&M bank frustrated consecutively from 2016 to 2020.

4.5.2 Capital adequacy or Solvency ratio

According to Denis (2000), there are two influential ratios that are used to measures solvency of businesses: debt to assets ratio and equity to assets ratio. The high equity to assets ratio indicates a less risks financial situation. Cameron (2004) urges that some businesses prefer to use debt to equity ratio to measure solvency and high ratio indicates more risk.

Table 16: Solvency of I&M BANK headquarters

Years	2016		2017		2018		2019		2020	
	Amount	in								
	000 Rwf		000 Rwf		000 Rwf		000 Rwf		000 Rwf	
(A)Assets	206,451,275		260,174,192		294,163,633		317,899,026		417,203,688	
(B)Debt	175,715,735		225,109,666		254,596,125		275,112,144		362,726,835	
(C)Equity	30,423,125		35,064,526		39,587,408		42,786,882		54,476,853	
Debt-to-assets=B/A*100	85.11%		86.52%		86.55%		86.54%		86.94%	
Equity-to-assets=C/A*100	14.74%		13.48%		13.46%		13.46%		13.06%	

Source: annual report I&M BANK headquarters (2016-2020)

The Table 16 indicates solvency of I&M BANK headquarters in terms of Debt-to-asset ratio and Equity-to- assets ratio where the findings indicated that in 2016 debt to assets ratio was 85.11% in 2017 was 86.52%, in 2018 was 86.55%, in 2019 was 86.54% and in 2020 was 86.94%, this implied that I&M bank can cover debts by 86%. The equity to assets in 2016 was 14.74% in 2017 was 13.48% in 2018 and 2019 was 13.46% and in 2020 was 13.06% this implied that I&M Bank can cover shareholder’s money by at least 13% of the total assets. Storey, 2010 said that a decrease in solvency ratio indicates that the company is facing an increased risk of not being able to meet its financial obligations; the ratio could be improved by taking steps to increase the operating profit.

5.1 Conclusion

In conclusion, the savings in bank influences sustainability of commercial banks in Rwanda through savings since the findings from the study revealed that there is a significant relationship between the saving level and sustainability of I&M bank through interest rate, income level and access to credit. This implies that sustainability of I&M bank Rwanda is influenced by the interest rate level, income level of customers and access to credit by customers.

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