

A Study on Performance of Financial Institutions in Uganda

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Abstract

The very purpose of this study is to investigate the performance of financial institutions in Uganda: the financial access, financial depth, financial efficiency, and financial stability. The reason why this study was conducted is that there was no previous study of its kind regarding the performance of Ugandan finance sector by investigating the financial institutions in terms of access, depth, efficiency, and stability. The first objective of this study is to track and evaluate access of financial services in Ugandan financial institutions. The second objective is to measure the depth of financial institutions in the Ugandan finance sector. The third objective is to examine whether Ugandan financial institutions are efficient. The fourth objective is to measure the stability of Ugandan financial institutions. In this study, access, depth, efficiency, and stability was measured to find out whether these variable proxies could have some positive effects on the performance of Ugandan financial institutions. To counter check results, linear model was constructed. In this study, secondary data was employed. The data was analyzed by using Excel software and statistical package for social sciences (SPSS) in descriptive statistics. The result of this study became 226.73 mean averages with standard deviation average 334.625. Overall mean averages for a total of 32 variables became 7.1 and overall Std. Dev. 10.5. According to the calculations and computations of this study, the researcher found fluctuation on three accounts; access, efficiency and stability, and linear growth in financial depth.

Keywords: Financial access; Financial depth; Financial efficiency; Financial stability; Financial services; Mobile money; Uganda

Introduction

In a world comparison, Africa has the lowest level of financial inclusion in accordance of the total population of the member states in the continent. In regard of formal account to financial institutions, only 25% of the adult population in Africa can reach banks, while 39% in Latin America and the Caribbean and 89% in high income countries has already had a possibility of formal bank account to reach their financial institutions [1]. For financial services improvement, access problem to credit and savings largely reduces the ability to saving and investment of the households [2]. The IFC, (International Finance Corporation) in Washington DC believes that many African States have chosen mobile money as the mechanism of financial inclusion which is not only boosting economic growth and development but also favoring for the poor [3]. According to Rouse [4], there are three interpolated factors from government, social, and financial sector which are limiting the mobile money services (MMS) and its penetration to the market: (i) regulatory and jurisdiction is affecting the openness of the market, (ii) the influence of social trust and underlying cultural traits may need some time that more and more people understand until mobile money services can make enough breakthrough to break down the barriers permanently, and (iii) people who live in Sub-Saharan African (SSA) countries do not have enough physical infrastructure to overcome the problem of access to money and services offered by financial institutions.

The microfinance regulation era in SSA countries started 2001 to 2009, a period of 9 years, and 31 Sub-Saharan African countries passed new laws or somehow revised previous microfinance legislations, while another 24 countries in SSA region adopted their national microfinance strategies. Both donors and governments expected sustainability from MFIs through regulation environment, while MFIs expected accessing cheap local currency and deposits from the business environment transformed by regulation. Evidence from research of 192 institutions in 32 Sub-Saharan countries turned down the expectations of donors and governments on one side and the microfinance institutions on the other side. Only those countries with official supervision and

integrated their supervisory power with deposit intermediation showed a significant and positive results of self-sufficiency operations [5].

In SSA countries, local banks have a leverage of superior knowledge of local borrowers but foreign banks offset this leverage with technological and cost advantages such as collateralizing and securing loans and low refinancing costs. Maybe, this is the reason why those foreign entrants have been efficient and profitable compared to their domestic competitors in developing countries. The financial sector of the East African Countries (EAC) is dominated by foreign banks which own the largest shares of total banking sector assets, loans and deposits. The credit of the private sector benefited from the financial reforms which took place in the last two decades. The innovation of financial services and introduction of new financial products has increased the access to finance but low financial intermediation is still limiting the financial access. In regard of regulatory and supervisory of banks, there is still much to be done. Outside of the Sub-Saharan context, the (EAC) banking sector is underdeveloped. The financial instruments of insurance companies and pension funds are in a low profile with limited clients [6].

A research study that investigated some 440 commercial banks of SSA countries within a period of 10 years, from 2006 to 2015 published results showing monopolistic banking market. The study of the research concluded that the banking industry of SSA region is competitive and contestable. The SSA region has experienced a number of reforms namely: Liberalization and privatization, deregulation and recapitalization, refinancing and indigenization policies, and removal

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of credit controls. These reforms introduced some good results but two problems appeared: (i) the competitive banking environment is outweighed the results of the reforms meaning cost of banking, the average rate of interest spreads (lending and deposit rates), service charge and interest cost is very high in Sub-Saharan African countries. (ii) The level of efficiency of financial intermediation is lagging behind the highly concentrated banking system of the SSA region. This research has a drawback. It is the only research available that used Lerner Index to measure the level of competition in the banking industry of SSA countries [7]. Three authors affiliated to the Bank of France conducted a much similar research to the study of Akande. The study investigated 221 banks from 33 countries of Sub-Saharan region for a period of 15 years from 2000 to 2015. The researchers found non-linear relationship between credit risk and bank competition. Their paper addressed that competition leads efficiency followed by lower credit risk. The researchers controlled macroeconomic determinants and regulatory environments and bank specific indicators employing both structural and operational issues. They put under doubt the sustainability of efficiency gains from competitive environment due to financial instability effects. In a highly competitive environment banks will tend to take businesses with higher returns which typically involve with higher risks. According to bank competition and stability, there are two views: (i) the competition-fragility paradigm and (ii) the competition-stability paradigm. The first view (franchise value) worries the reduction of oligopoly rents related to interest margins that can harbor unexpected shocks which may lead to externalities of macroeconomics and liquidity shocks. The later view (competition-stability) advocates in a competitive market with lower loan rates which will increase the net present value of investment projects and more favorably decrease the default probability of borrowers [8].

Objective of the study

The objective of this study is to evaluate and measure, examine, and track the access of financial services, financial depth, financial efficiency, and stability of financial institutions in Ugandan finance sector (Figure 1).

Research questions

- 1) How effective is the access of financial services in Ugandan financial institutions?
- 2) How big are financial institutions in Ugandan finance sector?
- 3) Are Ugandan financial institutions efficient?
- 4) What is the degree of stability of Ugandan financial institutions?

Literature Review

Ugandan financial institutions have improved their physical infrastructure such as bank branching and ATMs, however, it is still below standards of big financial system. According to the foreign ownership shares and the high level of concentration, the Ugandan banking system is smaller than the African standard and it is lower than the overall average performance of the Sub-Saharan financial institutions in liquid liabilities, bank deposits, and private credit to GDP [9].

By 2014, in Uganda, mobile money transactions were equal to 35.2% relative to the overall performance to GDP. In Uganda, mobile money promoted financial inclusion by 15% within a period of four years from 2009 to 2013. Two attributes were mainly responsible this upward trend: (1) mobile money service attracted large number of both unbanked and under banked population, (2) due to competition, telecom companies reduced the price of their services. The Bank of Uganda mandated a Supervision Financial Institution (SFI) to work with mobile money providers to reconcile the balances of subscribers’ accounts and to administer the mobile money deposits to appear as liabilities on commercial banks’ accounts. This system of mobile money increased the transformation of deposits into credit by commercial banks [10].

During 2010, Uganda had 23 licensed commercial banks, 1,400 microfinance institutions, 800 savings and cooperative societies (SACCOs), two development banks, four investment banks, 29 insurance companies, and 135 forex bureaus, in this respect, Uganda has enough institutions for integrating its population with financial inclusion, but Uganda is still fighting basic problems of financial inclusion, why? What is wrong? Let’s look at the inclusive rate according to the three different components of the Ugandan Financial system: (1) formal sector 18%, (2) semi-formal sector 3%, and (3) informal sector 17%. The overall rate of the Ugandan financial inclusion is 38% meaning 62% of the population is financially excluded. The estimations of these statistics have been published during 2010. Surprisingly, none of these sectors have been involved in retail banking at the time of transitional period of 20 years, from 1990 to 2010. According to the implications of the literature review in this paper, the researcher is contemplating that Uganda didn’t go far after 18 years from 2010 to 2018 meaning the financial exclusion of Uganda is still around 62%.

In Uganda, the history of MFIs dates back to early of 1990s, a period of 27 years in existence. FINCA was among the early MFIs in Uganda. The MFIs in Uganda operate in a triangle of three deadly problems: (1) the MFIs business in Uganda is unregulated in a rate of 79% by the Bank of Uganda. This means the security of the interest of

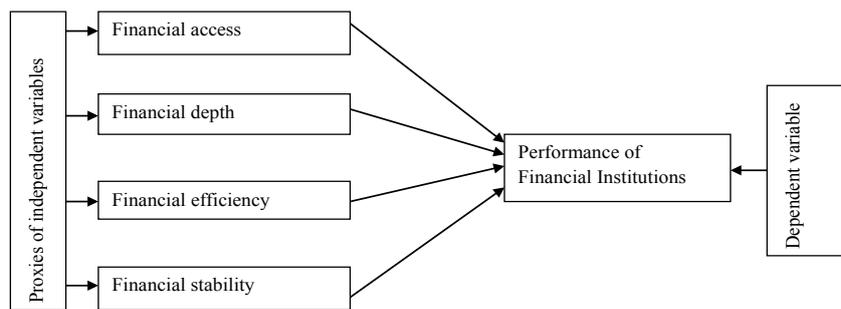


Figure 1: Performance of financial institutions.

the clients are in danger, (2) the government of Uganda favored for the side of SACCOs over MFIs for voting reasons, and (3) MFIs are trying to maintain close relations to both government and donors. In this regard, MFIs are avoiding getting trouble from the government politics and on the other hand, they fear interferences from funding sources. Unfortunately the government politics especially when it comes to vote and the policy procedures of donors does not match. These three deadly problems affected the management and the professionalism of the MFIs in Uganda. Apparently, this has severely affected the sustainability of MFIs in Uganda. But wait, there is one more problem; to avoid direct influence from the government, the MFIs are trying to transform themselves to micro deposit taking institutions (MDIs), but this activity of transformation puts the MFIs under the direct supervision of the Central Bank of Uganda. Unfortunately the Bank of Uganda has already been separated the operations of MDIs from those of MFIs meaning MDIs cannot operate like MFIs in Uganda. It appears MFIs in Uganda, already doing unregulated business are now facing bad political business from the side of the government and receiving interferences from the other side of donors. Overall capital structure of MFIs in Uganda, 14% is grant compared to the overall accumulated assets of MFIs in all other African states which is 20.5%. This means there is a lot of foreign aid flow to Uganda. This increases the dependence of MFIs to grants. Whenever the MFIs receive such grants, they attract huge number of borrowers with low interest in return. This threatens competition and vastly reduces revenue [11]. A research study on MFIs conducted in 2017 proved that risk management and credit allocation positively affected loan portfolio performance. It is doubtless, in the context of Uganda, such research is one of the few studies launched until now. The Ugandan association of microfinance Institutions (AMFIU) believes that MFIs in Uganda are practicing poor risk management and credit risk allocation strategies are no good. This is may be the reason why MFIs in Uganda are suffering massively. The MFIs in this country deal with over 500,000 customer borrowers with a capacity of 612.5 million USD total loans. From 2013-2014, within one year period, the MFIs in Uganda had a loan loss of Uganda Shilling 128.5 billion with non-performing loans 67.8 billion of Uganda Shilling in the same period, 2014. In Uganda, the loan repayment rate of MFIs is low, the standard of non-performing loans (NPLs) is very high, and the rate of arrears of portfolio at risk is also very high [12]. According to McIntosh et al. [13], the level of competition of MFIs in Uganda is so high, it is higher than the ordinary level that a business can operate smoothly or at least can survive. This highly competitive environment gives hard time to MFIs to keep their customers in the loop. Borrowers are getting multiple loans from different agents or at least they are engaging double-dipping because of the extra-ordinary competition. This weakens loan repayment performance, it also makes difficult for the agents to keep the information of clients on track regularly. Such highly competitive environment, businesses cannot maintain regularly the information about individual clients with specific characteristics. There are several problems which worth a look such as the level of the education of the clients; the class of educated people engage information sharing skills, their savings are higher than the rate of their loans and they maintain higher levels of loan repayment and they always consider the consequences of their actions. Business penetration role; it appears that the MFIs in Uganda are operating a market which is already saturated. And maybe there are unmet credit demand which forces clients to increase their chances of taking multiple loans from different agents and double-dipping which later leads to low performance of loan repayment. The implication of this research has one major drawback; this research is based on the data from FINCA, there is no data from

other lenders. This is limiting the chance that researchers can tell the switching behavior of clients from one financial institution to another.

According to Darko [14], the mission drift of Ugandan MFIs has been deviated from poorer areas to the richer districts. Commercial MFIs banks are increasing their chances to present themselves in poorer districts than any other type of MFIs in Uganda. The existing laws in the Ugandan banking industry do not contain the microfinance activities. This leaves the access, the drive, and the incentives of those microfinance institutions that operate in Uganda in the middle of nowhere. The researchers employed count data model to examine whether MFIs in Uganda are locating themselves in poorer districts as their developmental objective and as prioritization of goal and choosing poorer districts as their target over richer districts. When the researchers counted poverty heads as a ratio of poverty measure, they didn't find any statistical significant evidence relative to mission drift in the poorer districts in Uganda. More seriously, when they measured the severity of the poverty by using poverty gap index, they found that MFIs had very little access to the poorer districts. The statistics are showing strong significance of this negligence in 2009, 2011, and 2013. In regard of location decisions by MFIs and evidences from number of countries, MFIs are hunting places with higher per capita GDPs, districts with higher level of developments; they are locating themselves closer to each other for reasons of skilled labor and availability of markets. MFIs are choosing the richer areas with better access to banks and infrastructure and highly densely populated areas, where the demand for financial services is high and their business can influence market size. Uganda is no different.

The papers written in 1999-2008 described the environment of performance of commercial banks in Uganda as a cause of self-infliction such as lack of transparency which resulted by huge mismanagement, accountability and poor ethical conducts. During the time, researchers took examples as ICB, Trans Africa Bank LTD and GBL and other banks. In time, when the internal operations of commercial banks in Uganda were intervened by the Bank of Uganda, the result was a shocking one. Profit failure in one bank (City Bank) was reported to 1.7 billion in just one year period. Liabilities in some banks reached 5 billion during 2002. Balance sheets of banks and loans and deposits showed the worst losses in the history of the banking industry of Uganda. During 2001-2002, a period of one year, the national bank of commerce experienced a loss of 729 million of Ugandan Shilling. The reason why this is happened is lack of transparency and sound corporate governance [15]. In 2009 financial crises, the Ugandan financial institutions were not involved in the sharp declines of the complex securities, yet Uganda feared the impact of economic slowdown on loan portfolios meaning if non-performing loans increase there could be a massive damage to the balance sheet of commercial banks. Uganda also feared what would happen to the government securities if investors decide to retreat to somewhere else for their own safety. To cure this financial fear as prevention, the Bank of Uganda suspended some of its Treasury bill auctions in the first quarter of 2009 and to encourage lending, the Bank of Uganda reduced its lending rate by 3.4%. The worst nightmare of the Ugandan economy was and still is that 80% of the banking industry in Uganda is owned by foreign governments [16]. One of the major developments characterized in the Ugandan banking industry is the Credit Reference Bureaus (CRBs). In Uganda, Credit Bureaus helped credit accessibility to a large number of people and on the other hand they helped business owners to reduce risk and fraud. Credit Bureaus assimilated information sharing skills between financial institutions in respect of customer credit behavior which is necessary for credit underwriting. This knowledge sharing allowed borrowers to take their

credit history from one financial institution to another [17]. In short, the liberalization process in Uganda dated back to 1990s was supposed to increase the performance of the financial system in multiple levels of financial depth, access, efficiency, and stability. One of the key roles of the liberalization program was to reduce the spread between lending rate (LR) and deposit rate (DR) [18]. A research on drivers of interest rate spreads conducted in Uganda in 2012 showed that the average between lending and deposit rates is large and volatile. Before the reforms from 1990 to 1992, the interest rate spreads were 7% to 12%. After reforms from 1993, the interest rate spread began to rise to 17%. In 15 years, from 1993 to 2007, the lowest and highest spread rates recorded by the Bank of Uganda were 13.8% to 21.3% respectively with the lowest 6.8% and highest 25.1% of bank rates. Those large and volatile spread rates made impossible the provisions of long-term lending in Uganda. This is the reason why the Bank of Uganda lifted the moratorium on commercial banks to open the doors of more competitive environment. This effort brought 9 new commercial banks in the game, 16 banks from 2005 to 25 banks in 2012. Unfortunately, the spread rate between LR and DR remained unchanged, still large and volatile [19].

Methodology

Design

This study adopted a descriptive research design to achieve the objectives of the study. The study uses quantitative approach which will determine the relationship between the dependent variable and independent variables [20]. In this study, survey research design is employed to present oriented methodology to investigate secondary data [21]. In this research, Uganda and its finance sector is selected and the study analyses the performance of the Ugandan financial institutions.

Instrument

This study made use of secondary data effective to the financial sector of Uganda. The study investigates the performance of Ugandan financial institutions. This research study is contained 3 variables of access, 12 variables of depth, 10 variables of efficiency, and 7 variables of stability. The variables in this research are united under 4 common proxies called: (i) financial access, (ii) financial depth, (iii) financial efficiency, and (iv) financial stability. These 4 proxies are representing the independent variables of this study. Performance of financial institutions in Uganda is the dependent variable. Duration of the secondary data is 10 years, from 2006 to 2015.

Result

The Ugandan financial access has been fluctuating over the years. In 2006 and 2007, the level of mean average of financial access was 38.94 to 38.10 respectively. From 2008 to 2010, a period of three years, average mean increased to a level of 52.62, 59.00, and 65.22 respectively. Then it slowed down and continued a fluctuation for the next four years, from 2011 to 2014. In 2015, the average mean of financial access was 71.28. The total mean average of financial access is 195.97=(587.93/3) with a standard deviation average 322.6=(967.865/3) (Table 1).

The financial depth of financial institutions in Ugandan financial sector is somehow different from access and efficiency. There is neither fluctuation nor downward drift. In 2006, it started 12.8 mean averages, by 2008, it slowed down to a mean average of 11.39 but in 2009, the trend drifted upward and kept going in that way until 2015. However, there is no much increase in financial depth. The highest increase ever

recorded for a period of 10 years was 1.3 in 2010. The overall mean average of the Ugandan financial depth is 11.1=(133.23/12). The overall standard deviation is 14.8=(178.114/12) (Table 2).

The efficiency of financial institutions in Ugandan financial sector is not stable. It is fluctuating. From 2006 to 2008, a period of three years, the efficiency of financial institutions showed upward trend from 18.60 to 19.86 in average mean, but it couldn't keep up that way. From 2009 to 2011, another period of three years of average mean, 19.30 in (2009), 18.10 in (2010), and 19.04 in (2011), and the trend of efficiency kept in that way, upward and downward movement until 2015. The overall average mean efficiency performance is 18.3=(183.05/10). The overall average of standard deviation is 19.2=(191.597/10) (Table 3).

The nature of the financial stability of financial institutions in Ugandan finance sector is the same as the efficiency. For over a period of 10 years, the average mean and standard deviation are fluctuating. The overall mean average is 42.33=(296.33/7). The overall standard deviation average is 37.77=(264.14/7) (Table 4).

Years	N	Mean	Std. dev.
2006	3	38.94	64.834
2007	3	38.10	62.964
2008	3	52.62	87.154
2009	3	59.00	97.308
2010	3	65.22	107.764
2011	3	61.08	100.447
2012	3	69.01	113.625
2013	3	64.61	105.301
2014	3	68.07	111.532
2015	3	71.28	116.936
	Total	587.93	967.865

Table 1: Financial access.

Years	N	Mean	Std. dev.
2006	12	12.18	16.727
2007	12	12.47	16.938
2008	12	11.39	17.040
2009	12	12.00	17.708
2010	12	13.30	17.834
2011	12	13.59	16.906
2012	12	13.54	16.393
2013	12	13.75	16.147
2014	12	14.46	19.007
2015	12	15.55	23.414
	Total	133.23	178.114

Table 2: Financial depth.

Years	N	Mean	Std. Dev.
2006	10	18.60	18.875
2007	10	19.83	18.096
2008	10	19.86	18.931
2009	10	19.30	17.667
2010	10	18.10	18.438
2011	10	19.04	17.254
2012	10	18.54	15.973
2013	10	16.96	16.718
2014	10	16.34	22.145
2015	10	16.48	27.860
	Total	183.05	191.957

Table 3: Financial efficiency.

The reason why the researcher placed Table 5 here is to show that the result in the tables has errors of residuals and the results of mean and standard deviation will not match with the result in Figure 2. So to avoid confusion the researcher clarified the proof of errors. See discussion of results.

$$PERFI = \sum_{V=32}^4 (\beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \epsilon)$$

$$PERFI = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where PERFI: Performance of financial institutions; X_1, X_2, X_3 and X_4 are the components of proxies of independent variables; β : Sensitivity of the coefficient which is a standardized measure of the component variables of the performance of financial institutions; ϵ : Error term

The model is transformed into $PERFI = \beta_0 + \beta_1FA_3 + \beta_2FD_{12} + \beta_3FE_{10} + \beta_4FS_7 + \epsilon$, where FA, FD, FE, and FS are representing the variable proxies of financial

Years	N	Mean	Std. Dev.
2006	7	27.18	22.481
2007	7	28.20	23.339
2008	7	32.04	29.704
2009	7	29.48	25.802
2010	7	28.82	28.021
2011	7	28.94	26.670
2012	7	29.64	27.297
2013	7	32.63	28.920
2014	7	30.20	26.146
2015	7	29.20	25.760
Total		296.33	264.14

Table 4: Financial stability.

N	Statistics	
	Valid	32
Missing	0	
Mean	2.2673E2	
Std. error of mean	5.91540E1	
Std. deviation	3.34625E2	

Table 5: Mean and standard deviation error.

access, financial depth, financial efficiency, and financial stability. The numbers 3, 12, 10, and 7 are the number of variables that contained each one of the four proxies Table 6.

$$PERFI = \beta_0 + \beta_1FA_3 + \beta_2FD_{12} + \beta_3FE_{10} + \beta_4FS_7 + \epsilon$$

$$PERFI = 0 + (1 \cdot 195.97) + (0.995 \cdot 11.1) + (0.967 \cdot 18.3) + (0.975 \cdot 42.33) - (40.97) = 225.01235 \approx 226.73.$$

According to the linear model employed in this study, ATMs per 100,000 adults represents the independent variable of financial access (Table 7). Deposit money banks' assets to GDP, bank net interest margin (%), and bank Z-score were chosen as the independent variables of financial depth, financial efficiency, and financial stability respectively (Table 7). The result of the model matched the result of the statistics in Figure 2.

ATMs and bank branches per 100,000 adults are zero percent on the graph. The access of Ugandan financial institutions is very low (Figure 3).

The growth of the financial depth of Ugandan financial institutions is not U shaped. It is linear (Figure 4). This signifies that there is no tangible growth in Ugandan financial institutions in regard of financial

No.	Proxies of variables	Mean averages	Std. dev. averages
1	Financial access	195.97	322.6
2	Financial depth	11.1	14.8
3	Financial efficiency	18.3	19.2
4	Financial stability	42.33	37.77
	Total	267.7	394.37

Table 6: Performance of Ugandan financial institutions.

	Non-standardized coefficients		Standardized coefficients	t value	Sig.
	B	Std. error	β		
Access	13.928	0.016	1.000	870.296	0.001
Depth	9.380	0.310	0.995	30.217	0.000
Efficiency	8.351	0.782	0.967	10.678	0.000
Stability	8.046	0.816	0.975	9.856	0.000

Table 7: Linear model.

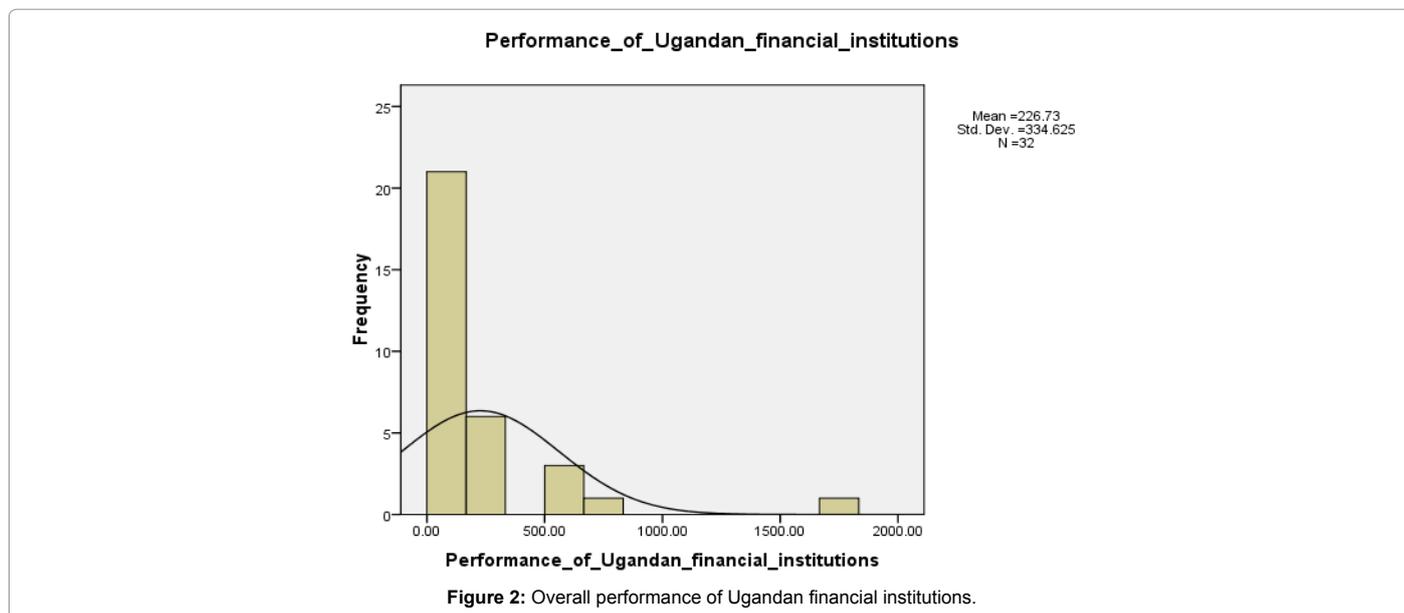


Figure 2: Overall performance of Ugandan financial institutions.

	R	R square	Adjusted R square	Std. error of the estimate
Access	1.000	1.000	1.000	1.467
Depth	0.995	0.989	0.988	17.543
Efficiency	0.995	0.989	0.988	17.543
Stability	0.995	0.989	0.988	17.543

Table 8: Modal summary.

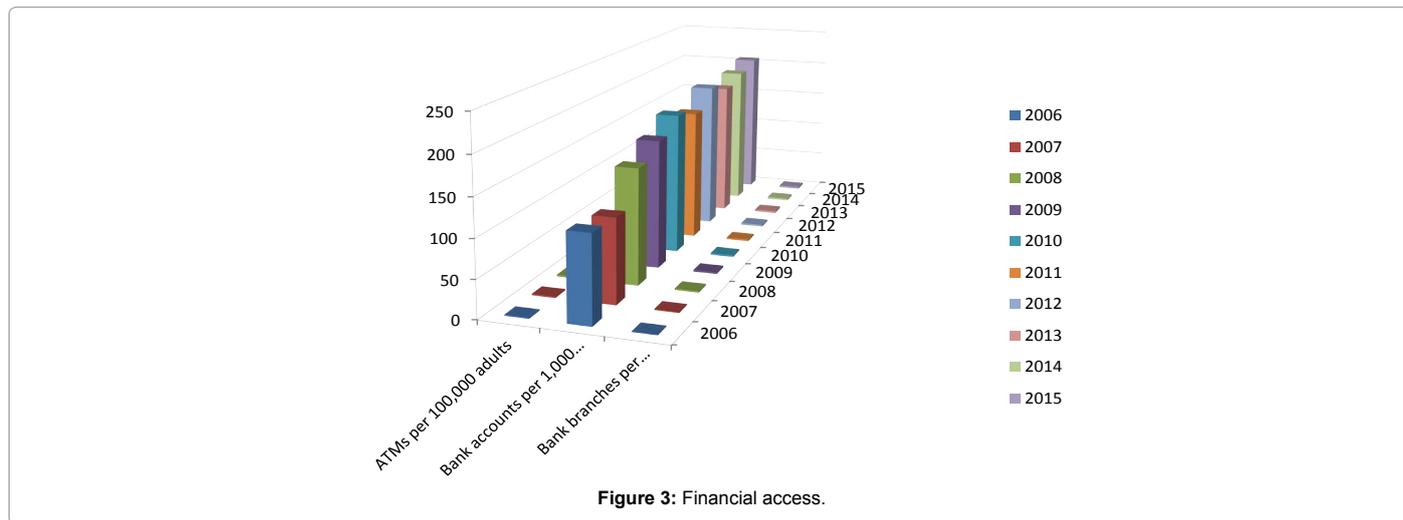


Figure 3: Financial access.

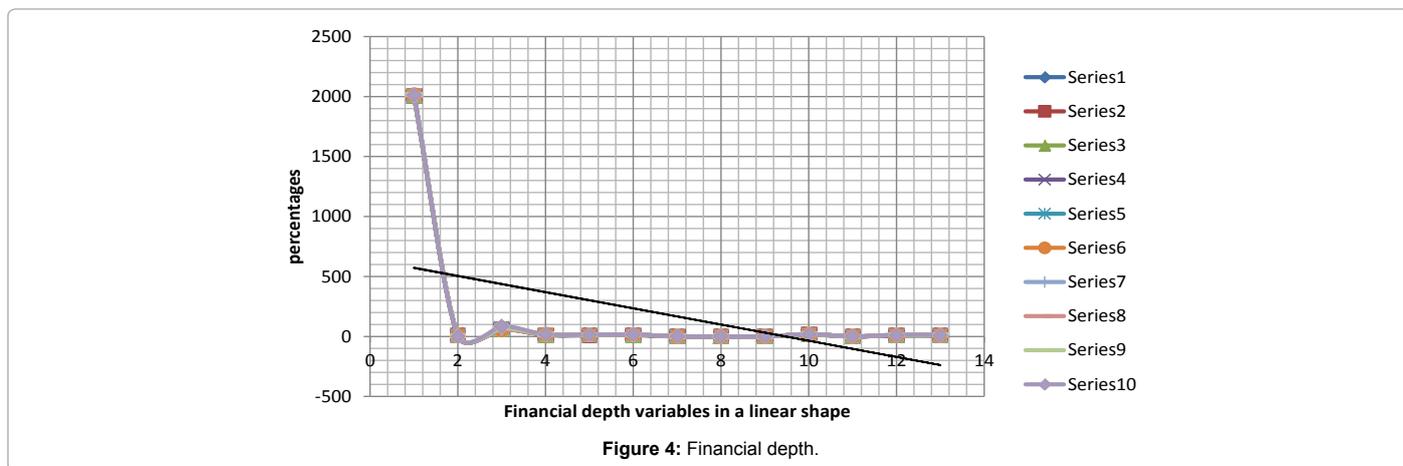


Figure 4: Financial depth.

depth. According to Table 2 of mean and standard deviation, the researcher pointed out that the highest growth rate in financial depth was 1.3 for over a period of 10 years. This linear graph proves the same. The highest percentage ever recorded in 10 years was 20%.

Let's start the bank cost to income ratio (%) variable (Figure 5). Surprisingly, within a period of six years, from 2006 to 2011, this variable has been larking from 54% to 62% fluctuating up and down. In 2012, it took a downward drift at a level of 49%. Next year, in 2013, it went up to 56% and it kept in that way within a period of three years, 77% in 2014, and at a level of 95% in 2015. The next unusual variable is the bank return on equity (% before tax). Within a period of five years, this variable has been declining downward sharply, from 43% in 2006 to 23% in 2010. This represents a decline of 20% within five years. In 2011, it went up to a level of 36%, unfortunately, it couldn't keep going up to the ladder. In 2012, it begun to fall to 33%, and in 2013, it came to 21% and 15% in 2015. Let's take a look at bank noninterest income to total income (%). From 2006 to 2008, within a period of three years,

this variable took a sharp increase from 10% to 38%; this represents a growth of 28% within a very short period. The next three years, from 2009 to 2011, the variable showed a little decrease gradually. And in the next four years, the variable has been dramatically slowing down until it stood at a level of 16% at the end 2015. Within two years, 2006 and 2007, Bank return on equity (% after tax) stood at 33% but like the other variables, it started slow down. In 2010, it came to 18%. After one year, in 2011, it reached 37% but again, it shifted its track to downward until it reached 11% in December 2015. The bank lending deposit spread, bank net interest margin (%), bank overhead cost to total assets (%), bank return on assets (% after tax), and bank return on assets (% before tax), and credit to government and state owned enterprises to GDP percentage. Those six variables took their resting positions from 3% to 10%. In conclusion, the efficiency of Ugandan financial institutions is at risk.

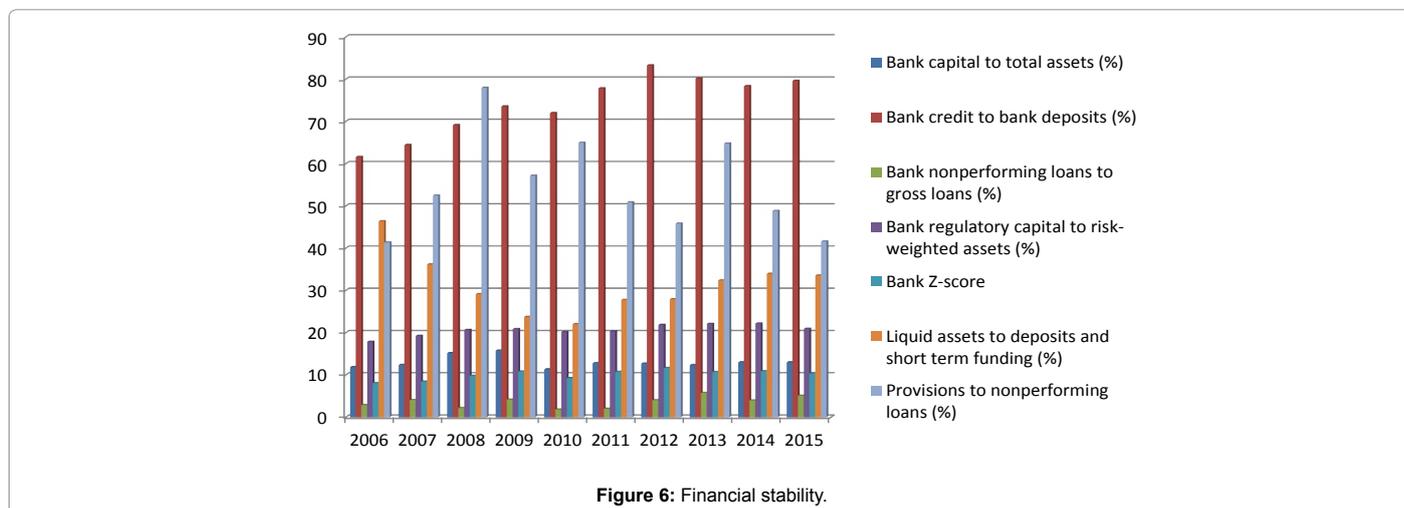
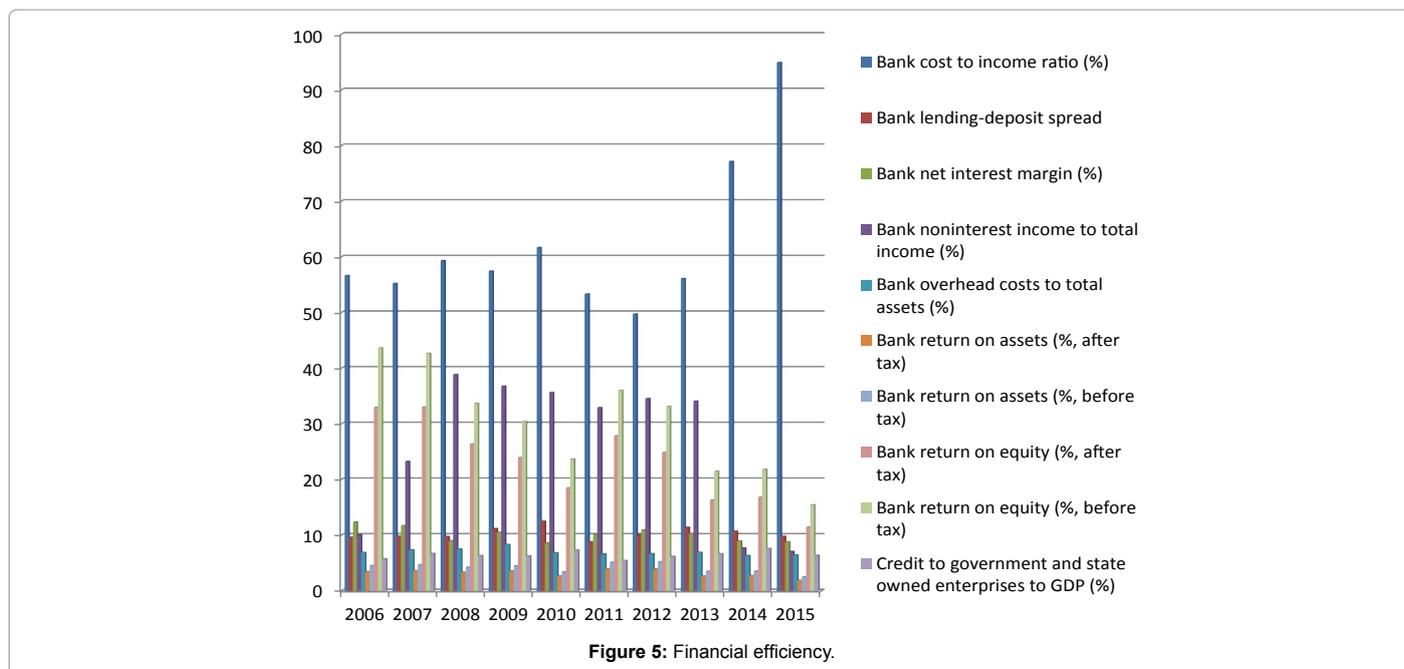
A period of 4 years, from 2006 to 2009, bank credit to bank deposit (%) has been growing from a rate of 61% to 73%. In 2010, it had fallen

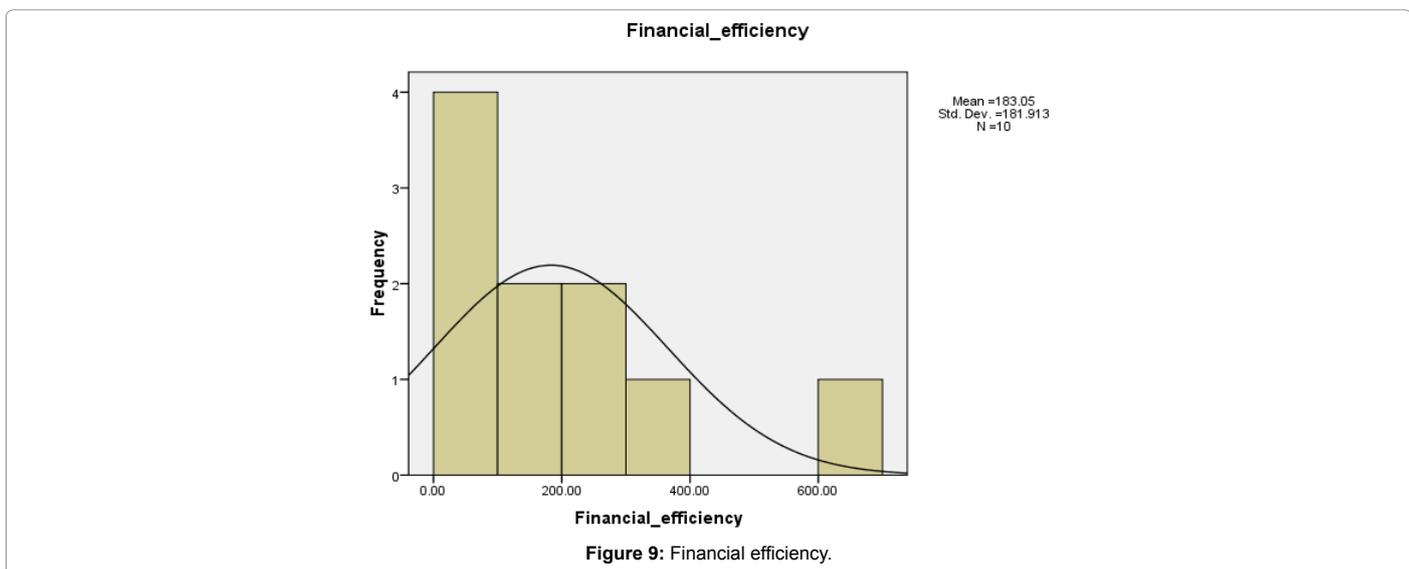
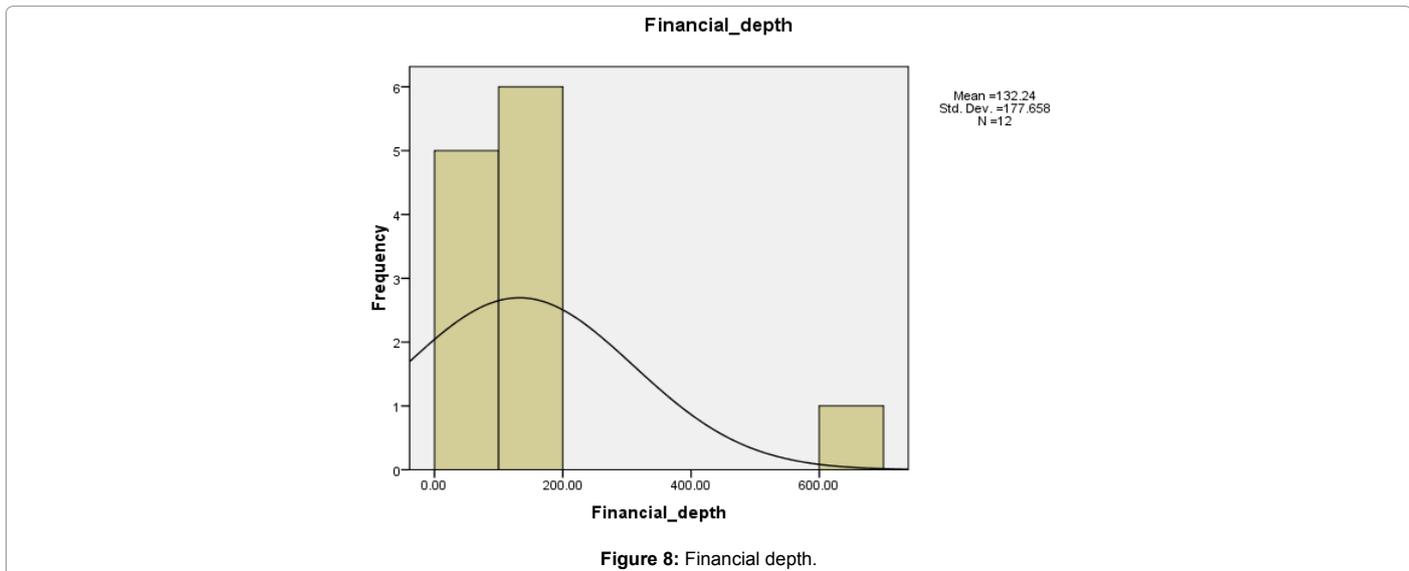
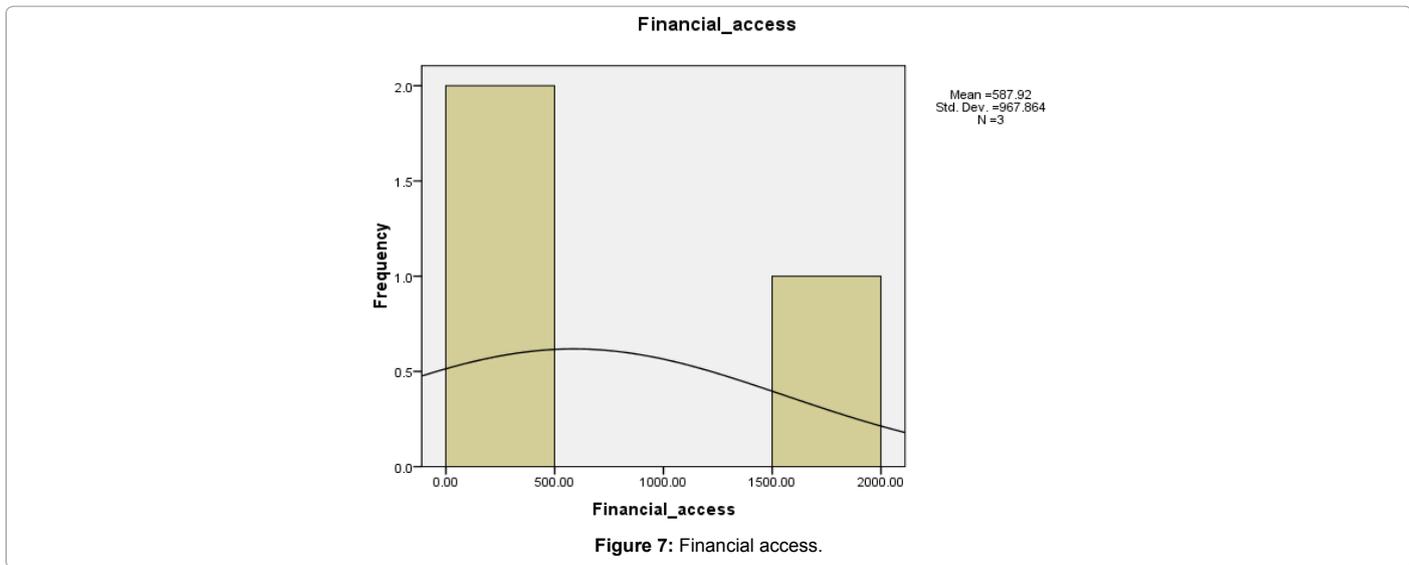
down to 71% (Figure 6). For the next two years, it reached 83% and then drifted downward for another two years, 2013 and 2014. In 2015 it ended 79%. Provisions to nonperforming loans have been rising from 40% to 78%, within a period of three years, from 2006 to 2008. In 2009, the level of nonperforming loans was reduced to 56% but in 2010, it reached 64%. It slowed down for the next two years to a level of 46%. In 2013, it rose to 63%. In 2014 and 2015, the level of NPLs was 48% and 41% respectively. For a period of 5 years, from 2006 to 2010, liquid assets to deposit assets and short term funding (%) has been dramatically falling down from 46% to 21%. This represents 25% loss of liquidity of financial institutions in Ugandan finance sector. For the next 5 years, from 2011 to 2015, the liquidity of the Ugandan financial institutions has been fluctuating, from 27% in 2011 to 23% in 2015. The variable of bank regulatory capital to risk-weighted assets (%) has been around 20% for a period of 10 years from 2006 to 2015. Bank capital to total assets (%) has grown from 11% to 16% from 2006 to 2009 but the rest of the track, for a period of 6 years from 2010 to 2015, the variable has been doing 12%. Bank Z-score rested around 10% for a period of

10 years. Bank nonperforming loans to gross loans (%) were doing less than 5% from 2006 to 2015. In conclusion, the stability of Ugandan financial institutions is fluctuating.

Discussion of Results

Figures 2,7,8,9 and 10 show the measurement of dispersion variability. Dispersion is the degree of scatter or variation of the variables about a central value. None of the figures showed normal distribution. In Figure 7, the central tendency line looks like flat and the distribution of the data is abnormal. The data is far from the central value, unequally distributed along the two tails of the central line. That is why the financial access data showed the highest mean average, 587.92. Figures 8 and 9; financial depth and financial efficiency, the data skewed to the right (positively skewed distribution) and also abnormal. Figure 10 in financial stability has also shown some degree of skewing to the right side or positive distribution but it is not like depth and efficiency and it has the second highest mean 296.34 with abnormal distribution. The difference between mean and





standard deviation calculations from Table 6 and mean and standard deviation computations of statistical Figure 2 is $40.97=(267.7-226.73)$ and $59.745=(394.37-334.625)$ respectively. Per se 40.97 and 59.745 is the standard mean and standard deviation error. For mean and standard deviation error, refer Table 5. Let the researcher explain this statistical discrepancy. In the first place, 40.97 and 59.745 is not big deal. These are residuals of mean, median, and mode plus their errors. In the second place, for mean; $((8.4, \text{mean with error})=(267.7/32))$ or $((7.1, \text{mean without error})=(226.73/32))$. For standard deviation; $((12.3, \text{standard deviation with error})=(394.37/32))$ or $((10.5, \text{standard deviation without error})=(334.625/32))$. 32 is the number of overall variables of the study. Refer the abstract for mean and standard deviation. Like the researcher said, there is no big deal but this is not the perfection however this logic calculation at least shows you that 40.97 and 59.745 are residuals. The correct explanation is that Figure 2 has the perfect statistical computation. Again the researcher explains it; the following is what happened in statistical computations: for mean $((587.92/3)+(132.24/12)+(183.05/10)+(296.34/7)-(40.97))=226.73$. The numbers 3, 12, 10, and 7 are components of variables of the 4 proxies (access, depth, efficiency, and stability). Refer the research design. For standard deviation $((967.864/3)+(177.658/12)+(181.913/10)+(258.571/7)-(59.745))=334.625$. This is how Figure 2 came up with results of mean 226.73 and standard deviation 334.625 statistics. You can also solve the problem of error directly from Table 6: $267.7-40.97=226.73$; and $394.37-59.745=334.625$. This study is valid for the statistical mean and standard deviations in Figure 2. Remember Tables 1-4 and Figures 7-10

of mean and standard deviations have the same results.

The data of overall performance of Ugandan financial institutions is positively skewed to the right. According to the central value, the data is abnormally distributed. The highest frequency of the overall data distribution is 22. The distribution range on X bar is 20. The effect of Figure 2 shows how large is the dispersion or degree of scatter of the data. According to the result of this study, the objectives of effectiveness of access of financial institutions and the efficiency of Ugandan financial institutions and the stability were not met. The absolute and systemic size (depth of financial institutions) was met. It is linear, not U shaped but at least it is stable.

In this study correlation is significant at the level of 1% meaning the dependent variable of this study is integrated or related with the independent variables at a level of 1%. There is no strong relationship between independent and dependent variables of this study but there is significance (Table 9).

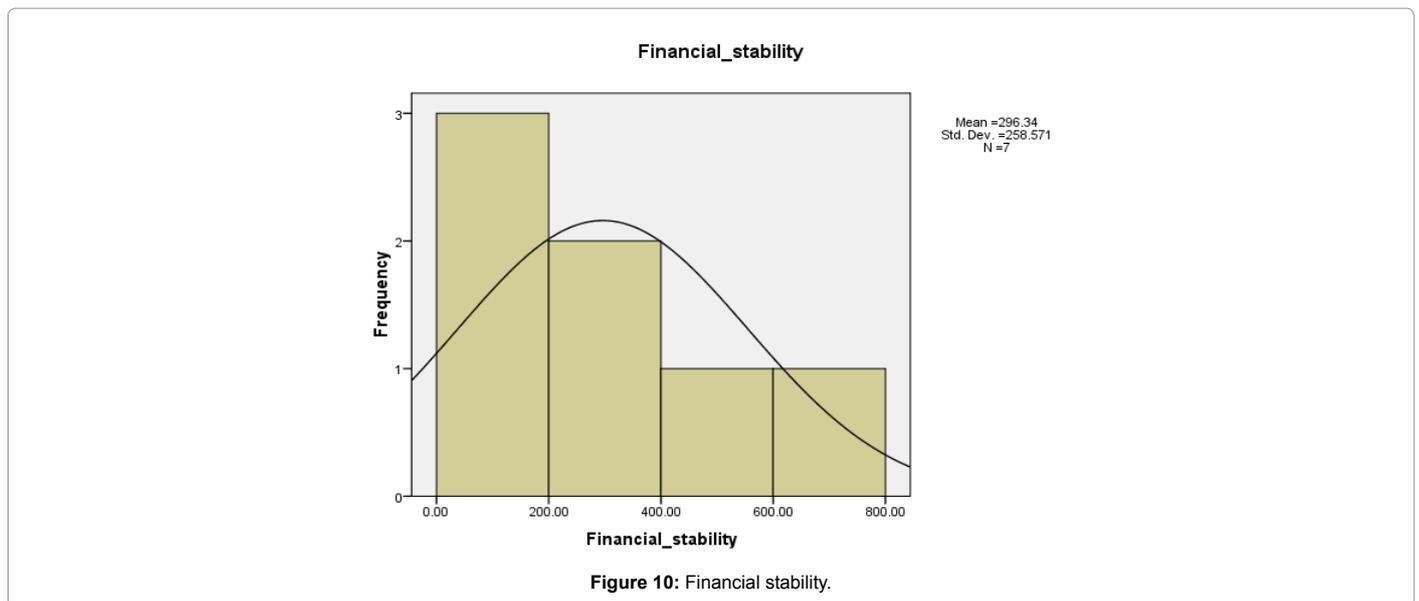
Conclusion

In Uganda, MFIs need instruments to measuring the effect of loan portfolio risk management to facilitate understanding the way internal practices happen which can possibly affect the lending process. There must be an optimal application that can be applied with internal operations of financial institutions to make sure risk management is carried out properly and uncertainty is being taken care. The management must be able to better explain the external environment

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Pearson correlation	1									
Sig. (2-tailed)										
N	32									
Pearson correlation	0.989**	1								
Sig. (2-tailed)	0.000									
N	32	32								
Pearson correlation	0.945**	0.972**	1							
Sig. (2-tailed)	0.000	0.000								
N	32	32	32							
Pearson correlation	0.944**	0.961**	0.988**	1						
Sig. (2-tailed)	0.000	0.000	0.000							
N	32	32	32	32						
Pearson correlation	0.927**	0.945**	0.984**	0.996**	1					
Sig. (2-tailed)	0.000	0.000	0.000	0.000						
N	32	32	32	32	32					
Pearson correlation	0.950**	0.960**	0.979**	0.996**	0.992**	1				
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000					
N	32	32	32	32	32	32				
Pearson correlation	0.929**	0.936**	0.963**	0.990**	0.989**	0.996**	1			
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000				
N	32	32	32	32	32	32	32			
Pearson correlation	0.930**	0.944**	0.981**	0.993**	0.996**	0.992**	0.991**	1		
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
N	32	32	32	32	32	32	32	32		
Pearson correlation	0.946**	0.940**	0.955**	0.979**	0.983**	0.981**	0.979**	0.983**	1	
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
N	32	32	32	32	32	32	32	32	32	
Pearson correlation	0.935**	0.926**	0.937**	0.966**	0.970**	0.964**	0.962**	0.966**	0.995**	1
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
N	32	32	32	32	32	32	32	32	32	32

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

Table 9: Correlations.



and its impact. The management should predict the sustainability performance by assessing the reliability of indicators in which the institutions are using. Institutions should have the ability to plan and realize the performance indicators by looking at whatsoever which is affecting the environment of these institutions. The management of financial institutions must not fail along lines of loan namely: disbursement of loans, loan loss rate, loan servicing rates, loan recovery rates, loan repayment rate, and arrears rates. Deposits and risk profiles must also be given considerable attention. The link between sustainability and the outreach of Ugandan microfinance institutions to the poorer districts needs to be examined and measured. The Ugandan MFIs need to substantially reduce their operating expenses and to look for proper strategy to loan disbursement. The Ugandan financial institutions and government must look for ways to minimize the expenditure (cost) of transactions.

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