Impetus Of Financial Inclusion And Financial Stability Of Commercial Banks In Kenya

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Abstract:

Background: Banking institutions that provide banking services must be financially stable in order for any nation's overall economy to be self-sufficient, since they play such a significant mediating role in the development of firms, particularly SMEs, and economic advancement. Commercial banks have since thought about banking innovations by developing new product categories and alternative service offerings with the sole purpose of reaching unbanked potential customers. It is noteworthy that despite these initiatives, some commercial banking entities have continued to face stability-related challenges in Kenya, leading to the receivership of some and the closure of others. It becomes crucial for banking institutions and their regulators to fully take into account the connections between expanding financial inclusion and its potential to promote stability.

Materials and Methods: The study used a descriptive correlational research approach, and all 41 commercial banks that were active throughout the study period served as the study's targeted population. The annual statements of the companies and the supervisory reports that CBK released for the relevant years under consideration were the sources of the data reviewed in this study. The STATA research tool was used to regress the data, and the results were presented as descriptive statistics, correlation analyses, and regression models.

Results: The investigation revealed a substantial correlation between deposit accounts, loan accounts, branch network, internet, and mobile banking, and financial stability. Further research revealed that the association between financial inclusion and bank financial stability was positively moderated by bank size.

Key Word: Financial Stability; Financial Inclusion; Deposit and Loan Accounts; Internet and Mobile Banking.

I. Introduction

Financial inclusion is a key development yardstick in the global arena as one of the factors that accelerates widespread economic growth by expanding access to finance and thereby increasing liquidity circulating within the economy, drives the level of economic blueprints, and lowers the poverty index of countries. According to the ECB (2007), financial stability depicts an environment in which commercial banking institutions are able to absorb shocks and instances of financial imbalances. The idea of inclusion was derived from the financial intermediation hypothesis, according to which commercial banks are seen as a means of reallocating resources from savers to investors (Ongore and Kusa 2013). Banking companies must be financially sound, project soundness and stability, in addition to being profitable, to carry out their functions of financial intermediation without interruptions (Onuonga, 2014). According to Sufian (2011), because banking institutions play such a significant and crucial role in capital accumulation, development, and economic advancement, it is important to examine their financial health, productivity, self-sufficiency, and stability when classifying a nation's overall economy.

Githemo (2014) explained how both internal and external environmental variables have an impact on the stability of banks and financial inclusion. Internal factors have a big impact on a bank's stability and are classified as bank specific or unique features. In an ideal world, management's own decisions, policies, and controls would govern these variables. These factors include the overall size of the bank, market share, adequate capital, operational efficiency, diversification of income sources, and ownership.

According to Korir et al. (2015), competition, technological improvement, globalization, and deregulation are the main forces driving advances in mobile and online banking. Bank self-sufficiency has been encouraged through regular and consistent use of digital banking innovations to increase economic stability. Alongside the adoption of digital methods, different financial sector participants significantly increased the quality of their services to better fulfill the diverse needs of their customers, upscale financial inclusion, and ultimately improve stability and performance. Because of the considerable capital requirements and high failure rate associated with adopting financial innovations, banks make tremendous efforts to create, deploy, and execute the best and most recent digital banking innovations currently accessible on the market (Camara and Tuesta, 2014).

Over 7 million adults who are from rural areas are reportedly underbanked or unbanked, according to the Kenya Bureau of Statistics Report (2017). This is due to the high maintenance expenses for bank accounts and branches, making it ineffective to build branches and ATMs in rural areas. Branchless banking has nevertheless succeeded and helped banks reduce their operational costs. Increased client flexibility has resulted from technical advancements, and among the means for this improvement is ATM, internet, and mobile banking (Mwando, 2013).

Statement of the Problem

The average ROA for the entire industry fell from 3.7 percent in 2010 to 2.96 points in 2014, as reported in the CBK supervisory reports of 2021, highlighting the ongoing decline in the expansion of the banking sector. The ROE decreased from 26.5 percent in 2009 to 20.8 points in 2018, throughout the same time period. The CBK report showed a negative EPS of 13.8% in the first quarter of the fiscal year 2017, which underlines the deterioration. This was in light of an average increase of 15.5 percentage points over the same period in the fiscal year that ended in 2016. According to Bansal (2014), banking companies should continuously create approaches that solidify financial inclusion and subsequently guarantee financial stability. The independence of banking organizations functioning in Kenya has not demonstrated any sturdiness. A number of banks have faced difficulties with liquidity, and others have experienced problems with corporate governance. As a result, two banking companies were placed under receivership in the fiscal year 2015, and another bank was placed under receivership in the middle of 2016. This particular instance was the first encounter in more than ten years (CBK 2016). The CBK supervisory report from 2016 also hinted that these obstacles materialized against the backdrop of an increase in the overall assets of the entire banking industry.

It is noteworthy that there is insufficient theoretical and empirical coherence on the financial stability of banking institutions and the drive for financial inclusion, as some past studies found a positive direction, others a negative direction, and yet others a major or insignificant effect. Demirgüç-Kunt and Huizinga (2013), Mwai (2020), Obamuyi (2013), Saira, Jamil et al. (2011), Berger, Klapper et al. (2009), Kamau and Were (2013) were among the studies on the impact of different bank variables on financial stability that were conducted. However, the studies' conclusions appeared inadequate and produced contradictory results and inferences. Turk-Ariss (2010), Onuonga (2014), and Kamau and Were (2013) contextualized in Kenya but used other variables like bank size, non-performing loans, while this specific assessment focused on financial inclusion impetus like loans accounts, deposits accounts, and alternate channels accessibility. The majority of these studies' data were gathered from foreign countries. A number of these studies did, however, offer more information on the operational changes made by commercial banking organizations. Additional research into the driving forces behind financial inclusion and the stability of banking institutions produces more data that can be used to select better policies that increase the stability of the banking system over the short and long term while also filling in any gaps that are apparent when reviewing the empirical literature.

This in-depth analysis was conducted to ascertain the impact of financial inclusion on the financial stability of banking institutions with Kenyan domiciles in accordance with the identified gaps. The study departs from previous research since Z-score was used to operationalize bank financial stability. Z-score combines profitability, leverage, and return volatility into a single measurement. A higher Z-score points value with a lower exposure profile for any banking organization, and thus improved bank stability. Given that the banking industry is the largest financial participant in many countries, this study focused on commercial banking institutions as its target demographic. The overall findings of this study are enlightening for the development of the country's economy.

II. Literature Review

The broad theory used as the foundation for this investigation was agency theory, as proposed by Jensen and Meckling (1976). The hypothesis advanced that any formal entity must have ownership and management separated. This theory's suggested approach to adoption management will result in higher operational costs as a result of lost opportunities, including monitoring and agency charges. Thus, it could intensify disputes amongst those involved and ultimately reduce the benefits of investment. Subsequently, this will discourage investment and agency conflicts as a result arises. According to Henderson and Pearson (2010), commercial banks are motivated by the desire to increase shareholder wealth and, as a result, profitability. This is accomplished by lowering operating costs and improving accessibility to banking and financial services through the adoption of technological innovations that raise the quality of the services offered.

As a result, the theory is pertinent to our study since commercial banks must improve the accessibility of their financial services. Customers of banks will have quicker and more effective access to financial products through the internet and online banking channels. The most significant threat is the major risk they would experience, particularly if they were required to conclude deals against their will. Additionally, opening an account

online is quicker and requires less paperwork, which improves the quality of services provided to clients, who in turn encourage other people to use their services by spreading positive word of mouth.

Empirical Literature Review

Nthambi (2015) conducted research on bank profitability and financial inclusion. Hierarchical regression was used in this work to assess its hypothesized goals. The results of this study demonstrated that inclusion does have a significant impact on any banking institution's bottom line. Furthermore, there was little evidence to support the idea that financial inclusivity and the subsequent financial position of the banking sector are directly related to bank stability. Although a significant impact was confirmed on the NIM of the banks the study was targeting, there was incoherence regarding the direct impact of financial inclusion on the bank's financial performance as operationalized by ROE and ROA.

Oyugi (2014) conducted a study on the impact of automated bank offers on the financial performance of 45 SACCOs in Nairobi and Kiambu counties that were granted operating licenses by SASRA. According to the study's findings, the majority of Saccos floated their products online and processed transactions using ATMs. This evaluation confirmed a highly positive connection between virtual banking and Saccos' bottom lines in the context of Kiambu and Nairobi counties, which made the current investigation necessary.

By using an ADBI survey, Morgan and Pontines' (2014) study examined whether there is any correlation between bank stability and financial inclusion. The independent variable was chosen to be bank stability. The Z-score metric and NPLs, which are calculated as the percentage of bad loans to total loans throughout the whole banking system, were used to operationalize bank stability. According to the results, increasing the number of loans given to small and medium-sized businesses reduces their risk of default and their vulnerability to NPLs, stabilizing the banks in the process.

Amatus and Alireza (2015) investigated the impact of financial inclusion on banking institution stability in the setting of Sub-Saharan Africa. The assessment's use of a small dataset brought attention to how negatively outstanding loans and deposits undermine financial stability. Financial inclusion is aided by a higher GDP per capital. The degree of inflation had a negative effect on stability. The study approach was cross country in sub-Saharan Africa continent. Loans and unpaid deposits served as the operationalization of inclusion. The study came to the conclusion that banking systems do account for the predominance of all assets and activities in the financial sector. Any financial system's ability to spur economic growth suffers when the sector's minimal survival threshold falls below that of the banking institutions that make up the majority of the system.

The authors Okiro and Ndung'u (2013) examined the impact of mobile and internet banking on the performance of Kenyan financial institutions. The primary subject of this investigation was banks in their totality. The study, which was intended to concentrate on a representative sample of financial institutions operating within Nairobi's surrounds, concluded that of the entities chosen, banking institutions had the highest proportion of internet banking adoption. While the majority of microfinance-based businesses have not yet pursued internet banking adoption, SACCOS have been implementing it gradually. The study concluded that barriers to mobile banking include system delays by mobile money transfer providers, sluggish transaction processing, high transaction costs, caps on the amount that can be withdrawn in a single day, and fraudulent transactions.

There are authors who have studied this subject, such as Simboley (2017), who examined the performance of commercial banking institutions and how Agency Banking affected it in the setting of Kenya. In 2013, Kipngetich evaluated the effectiveness of banking through agencies in promoting financial inclusion in the county of Kisumu. Kithaka (2014) examined the effectiveness of mobile banking on the performance of Kenyan banks. The previous study only looked at one variable, whereas the current study aimed to analyze all the variables that affect financial inclusion.

The study will use Z-score as a composite exposure assessment of banks' stability, citing Vives, (2016). This score will be used to examine each bank's exposure individually by taking into account how close each bank is to becoming bankrupt and individually linking each bank's return volatility to its shareholder percentages. The Z-score for each bank will be calculated as ROA multiplied by the equity-to-assets ratio and divided by the ROA ratio's standard deviation. Greater Z-scores indicate reduced bank exposure, which often translates to greater bank stability. Therefore, a high Z-score implies that the number of standard deviations below the mean that ROA can decrease and yet be absorbed by banking institutions' shareholding level is greater.

III. Methodology

In order to evaluate the substance of relationships pertaining to variables, the study used a descriptive correlation research methodology that involved obtaining and evaluating units throughout time. A descriptive survey is an exercise in which data is gathered to aid in testing hypotheses or to provide answers to questions about the current state of the subject under study. Cooper and Schindler (2011) claim that a descriptive study entails a close examination of the circumstances surrounding an affair, explaining, implying, and reporting the current or past environment. The descriptive survey was in conformity with the study because its goal is to

determine whether there is a relationship between financial inclusion and financial stability. The study was cross-sectional where data is assembled on the full population of the study at a specific point in time to assess the correlation amidst the elements that are of interest to the study (Greener, 2008).

The degree of financial inclusion measurements and the stability metrics will be compared and analyzed using descriptive statistics, including means, standard deviations, minimum and maximum values. Regression models utilizing panel data were used to statistically evaluate the importance of the different variables. Following testing and verification that the CRLM assumptions were satisfied or addressed in the data under analysis, inferences were drawn. The assumptions include the requirement that the coefficients be linear, that the errors not be abnormally distributed, the homoscedasticity assumption, and the independence of the errors. Pearson's product moment correlation analyses were deployed to assess the nature and magnitude on the linkage between the variables under study and to test the hypothesized linkages. multiple linear regression analysis was adopted. The model was explained as outlined below:

$$Y = \beta_0 + \beta_1 X_{2i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \beta_4 X_{4i,t} + \beta_5 X_{5i,t} + \varepsilon_{it}$$

Where;
Y= Financial stability of banks
B0 - intercept coefficient
ε_{it} – error term (extraneous variables)
X1 – Branches and ATM Network accessibility for Bank i at time t
X2– Deposit accounts usage for Bank i at time t
X3– Loan account usage for Bank i at time t
X4– Internet and mobile banking for Bank i at time t
X5– Bank Size for Bank i at time t
β_1, β_2, and β_3 and β_4=regression coefficients

Sampling Technique

All 41 of Kenya's banks that had been established by 2022 made up the study's population. Kenya's economy is built on banks rather than markets, therefore choosing a bank was influenced by this fact. As a result, the banking sector serves as an intermediary for the majority of the funds in the country's economy. Banks in Kenya that met or exceeded the following fundamental criteria were among those to be studied from among the entire population: The bank with the whole data set and annual reports for the years 2013 through 2019. During the time of the study, there had been no mergers or acquisitions involving the banks.

Diagnostic Tests

To assess whether the collected data were appropriate for analysis using the selected multiple linear regression models, diagnostic tests were run on the data. To determine the specific type of panel data, diagnostic tests for normality, collinearity/multicollinearity, heteroscedasticity, and panel unit root were performed. The Hausman test was used to compare the FEM and REM models.

IV. Results

According to the indicated study objectives, the project's findings and discussions will be presented in this part. This study's primary objective was to determine the relationship between financial inclusion and financial stability. Six years' worth of annual banking supervision reports were used to compile secondary data for 36 financial institutions. As indicators for gauging financial inclusion, natural logarithms of agents and representatives, ATMs and branches, loans and deposits, and online banking were selected. Financial stability was calculated using *Z score* which was operationalized as *Equity* to Asset ratio+ *ROA*/σROA. For purposes of conducting analysis of the gathered data, descriptive as well as inferential statistics were deployed.

Descriptive Statistics

Measures of dispersion and central tendency were used as the study's overall descriptive metrics. The study's findings, which are summarized in Table 1, suggested that the mean Z-score for financial stability was 17.85, with a mean deviation of 4.33. Minimum financial stability observations for banking institutions were 10.14, and maximum financial stability observations were 36.04. Asymmetry in distribution was inferred indicating non normality since p value representing Jarque Berra value was lower than 0.05, which gave enough confirmation to warrant disapproval of the null hypothesis at critical value of 5 percent. On average, agency banking indicated 12.31 points with the minimum being 6.32 and maximum being 60. A minimal deviation was highlighted on agency banking cutting across entire banking firms as was accounted for by 14.77 points. This may be due to increased agent penetration, which encourages its incorporation as a method for financial inclusion in Kenya's banking industry. On average, ATMs and branch outlets had 13.68 points, with a standard deviation of 1.05 confirming a comprehensive spread of branches and ATMs. With a minimum of 1.24 and a maximum of

36.08, mobile banking was determined to have a mean of 16.89. Additionally, mobile banking pointed to a non-normal distribution inferred by by Jarque Berra p-value which was under critical value of 0.05. Loans and deposits averaged 17.34 bearing a maximum of 34.45 and the minimum being 1.95. When all dimensions of financial inclusion are taken into account, the agency banking dimension had the highest standard deviation, 14.77, which showed a lack of regularity in agency banking activities among Kenyan banking businesses.

Table 1: Descriptive Statistics

	Number of Agency_Banking	Number of Atm_and_Branches	Log of Bank_Size in Kes	Number of Loan_and_Deposits_Accoun	Number of Mobile_and_Online_Banking	Z_Score
Mean	12.31	13.68	15.84	17.34	16.89	17.85
Median	9.50	12.74	16.79	20.67	18.70	17.49
Maximum	60.00	26.14	30.68	34.45	40.58	36.08
Minimum	6.32	1.61	1.05	1.95	1.24	10.14
Std. Dev.	14.77	4.97	6.05	6.70	8.22	4.33
Skewness	1.25	0.48	-0.13	-0.37	0.49	1.96
Kurtosis	5.64	4.08	3.35	2.86	3.71	8.70
Jarque-Bera	49.63	7.75	0.72	2.17	5.44	179.49
Probability	0.00	0.02	0.70	0.34	0.07	0.00
Sum	1108.00	1231.17	1425.16	1560.89	1520.28	1606.26
Sum Sq. Dev.	19404.83	2200.48	3257.26	3997.99	6007.48	1671.35
Observations	12.31	13.68	15.84	17.34	16.89	17.85

Panel Unit Root Test

Absence of unit root was highlighted as the null hypothesis which assumed that at all panel levels the data was not stationary. The result shown in Table 4.6 demonstrated that there was strong evidence against accepting the H0 at the critical level of 5% significance because all p values were less than 0.05. Thus, it was determined that commercial banking institutions' financial stability, agency banking, ATM and branch locations, loans and deposits, mobile banking, and bank size were all seen to be stationary at all panels' degrees. Subsequently, regression modelling that was not lagged was fitted with guarantee of absence of the probability of fitting spurious model. The results concurred with outcomes of an inquest by Githira, Muturi & Nasieku, (2019) and simultaneously alluded by Muchiri, (2016) who depicted stationarity at levels while scrutinizing efficacy of institutional financial attributes and structure of owners' capital.

Table 2: Panel Unit Root Test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-22.74	0.00	6.00	1506
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-22.98	0.00	6.00	1506
ADF - Fisher Chi-square	401323	0.00	6.00	1506
PP - Fisher Chi-square	598.80	0.00	6.00	1506

Multicollinearity Test

The results of the analysis, which are shown in table 4.3, showed that there was no collinearity because the maximum VIF was 3.63 and the lowest was 1.24. This meant that among the listed banks, there may be an aggregate major relation between ATMs and branches, agency banking, loans and deposit accounts, online and mobile banking. Since VIF and tolerance were within permissible limits, it was determined that financial inclusion in Kenyan banks can be examined in conjunction with their impact on financial stability (Baltagi, 2005).

Table 3: Multicollinearity

	Collinearity Statistics	
	VIF	Tolerance
ATM and branches	1.24	0.80
Agency banking	2.42	0.41
Loans and Deposits Accounts	2.22	0.45
Internet and mobile banking	3.63	0.27

Correlation Analysis

To determine the strength of the relationship between financial inclusions and financial stability, the study's correlation coefficient was used. The results, as shown in Table 4, suggested a strong, statistically significant connection between agency banking and financial stability (r coefficient = 0.83). With regard to the financial well-being of banks, there was a strong positive and significant correlation between ATMs and branches (r coefficient = 0.72). The association between mobile and internet banking and financial stability was then strongly favorably directed (r coefficient = 0.83). Fourthly, a strong and positive relationship that was substantial between loans and deposits accounts with financial stability was inferred (r coefficient= 0.86). Fifthly, there was strong positive and substantial link between bank size and financial stability of banks (r coefficient = 0.67). The results are in line with those of Simboley (2017), Kipngetich (2013), and Kithaka (2014), who discovered strong relationships between financial inclusivity and results and, in turn, bank financial stability. Nthambi (2015) work was on financial inclusion and results by banks deployed hierarchical regression to test hypothesized objective of the study. Outcome of insinuated that inclusion had a substantial impact on the banking institution's bottom line confirming the results of this analysis.

Table 4: Correlation Analysis

	Agency Channels	Branches & ATMs	Bank Size	Deposit & Loans Accounts	Online & Mobile Banking	Z_Score
Agency Channels	1.00					
Branches & ATMs	0.33	1.00				
Bank Size	0.42	0.22	1.00			
Deposit & Loans Accounts	0.44	0.25	0.49	1.00		
Online & Mobile Banking	0.46	0.44	0.31	0.23	1.00	
Z_Score	0.83	0.72	0.67	0.86	0.83	1.00

Panel Hausman Test

The outcome shows p=0.0000, which was below the threshold of significance of 5%. The study subsequently rejected the Ho in favor of H1, which claimed that the observed coefficients difference was systematic. As a result, FEM was used instead of REM for unmoderated variables because the test indicated the existence of a heterogeneity problem. Therefore, there were sufficient grounds to reject H0, and it was determined that the REM model was the most likely one to examine the relationship between variables related to banking financial inclusion and banks' financial stability. These indications dissented with Githira and Nasieku (2015) who adopted model of FEM on institutions listed in EAC exchanges and they confirmed results by Ndili and Muturi (2015) who deployed model of FEM on their scrutiny on role of financing decision on results of listed enterprises in NSE.

Table 5: Panel Hausman Test

Variable	Test	Statistic	P value
Financial Stability	Inverse Chi-squared	74.2421	0.0000
	Inverse Normal	-6.5959	0.0000
	Inverse logit	-8.4575	0.0000
	Modified Inverse chi-squared	12.7051	0.0000
Agency Channels	Inverse Chi-squared	63.0369	0.0000
	Inverse Normal	-5.8388	0.0000
	Inverse logit	-7.1434	0.0000
	Modified Inverse chi-squared	10.4179	0.0000
Branches & ATMs	Inverse Chi-squared	71.5415	0.0000
	Inverse Normal	-6.6518	0.0000
	Inverse logit	-8.1557	0.0000
	Modified Inverse chi-squared	12.1538	0.0000
Deposit & Loans Accounts	Inverse Chi-squared	72.9385	0.0000
	Inverse Normal	-6.8326	0.0000
	Inverse logit	-8.3266	0.0000
	Modified Inverse chi-squared	12.439	0.0000
Online & Mobile Banking	Inverse Chi-squared	60.5694	0.0000
	Inverse Normal	-5.5478	0.0000
	Inverse logit	-6.7372	0.0000
	Modified Inverse chi-squared	9.9142	0.0000
Bank size	Inverse Chi-squared	84.7194	0.0000
	Inverse Normal	-7.0952	0.0000
	Inverse logit	-9.6374	0.0000
	Modified Inverse chi-squared	14.8438	0.0000

Financial Inclusion and Financial Stability Results

The major goal was to determine the connection between financial inclusion and the stability of Kenyan banks' finances. It was carried out using panel data regression, more especially FEM as suggested by the Haussmann test.

Study findings in Table 6 depicted positively directed association between Agency channels and financial stability of banks domiciled in Kenya (p= .0050, p value < 0.05, β= 0.0332). There existed a positive significant linkage between Branches & ATM banking and financial stability (p= 0.0250, p value < 0.05, β= 0. 3544). There was positive significant relationship between Deposit & Loans Accounts with financial stability (p= 0.0100, p value < 0.05, β= 0.2091). There was positive significant relationship between online and internet banking with financial (p= 0.04, p value < 0.05, β= 0.0632). There was positive significant moderating effect of bank size on the relationship between financial inclusion and financial stability (p= 0.0437, p value < 0.05, β 0.2923)

Financial Stability = -15.1682+ 0.2332* Agency channels + 0.3544* Branches & ATM banking + 0.2091* Deposit & Loans Accounts + 0.0632* Online & Mobile Banking + 0.2923*Bank size …………..…………………….1

Table 6: Effect of Financial Inclusion and Financial Stability

Variable	Coefficient	Robust Std. Error	t-Statistic	Prob.
C	-15.1682	2.4923	-6.0861	0.0000
Agency channels	0.2332	0.05516	4.2270	0.0050
Branches & ATM banking	0.3544	0.14865	2.3841	0.0250
Deposit & Loans Accounts	0.2091	0.08897	2.3501	0.0100
Online & Mobile Banking	0.0632	0.02706	2.3348	0.0040
Banking size	0.2923	0.07921	3.6902	0.0437
R-squared	0.8971	Mean dependent var		14.1566
Adjusted R-squared	0.8891	S.D. dependent var		12.9293
S.E. of regression	4.3056	Sum squared residuals		2150.4710
F-statistic	112.3503	Durbin-Watson stat		2.1808
Prob(F-statistic)	0.0000			

The results of this study, which showed a favorable and significant effect, concurred with earlier findings by Hannig & Jansen (2010) and were emphasized by Kipesha & Zhang (2013) that stable banks can promote financial inclusion by interacting with new customers and are profitable. The results supported the claim that financial inclusion increases bank activity, which in turn increases profitability by drawing in new clients and lowering transaction costs as a result of economies of scale (Hanning & Jensen, 2010; Allen et al, 2012; Delfiner & Perón, 2007).

The results were in line with those of Bowa (2015), whose findings suggested that asset size and asset quality have a considerable impact on bank liquidity ratios and, consequently, bank stability. The total earning capacity of Kenyan banks has a considerable impact on both their ability to provide services and their ability to undertake banking operations. The financial intermediation theory, which highlighted that banks with a tendency toward competition experience growth at high levels of inclusion, was supported by the controlling efficacy of bank size as well. Distribution of financial services across businesses has a good effect on the expansion of the organizations. The key aim of financial inclusion is bringing closer the "unbanked" populace into the formalized financial system to get the chance for accessing financial offerings among them savings, transfers to credit, payments, and insurance. The conclusion was also in line with an assessment undertaken by Ndili and Muturi (2015) that alluded on the fact that earning capability of listed companies was anchored on their capability of acquisition and investment of their finances to increase their profitability and henceforth stability.

The study supported outcome of Mwai (2020) who suggested that adoption of the measures of financial inclusion enhanced the chances of widening virtual opened accounts which bear minimal cost to significant unbanked people who aren't in a position to acquire physical bank account due to lack of physical presence of banks outlets. Phones, therefore, enhance the innovativeness in bringing solutions of electronic banking and offering clients better services from these platforms with minimal efforts. Banking infrastructure subsequently offers real time banking, with improved accessibility without moving long distances to physical locations, thereby becoming more effective in increasing banks' deposit, financial base and consequently, their earning capability.

According to Oyugi (2014), a number of Saccos had integrated their products on their digital platforms, with ATMs serving as the main service line. This study demonstrated a highly substantial favorable relationship between digital banking and the outcomes of Saccos based in Kenya, indicating the necessity of the current investigation. Tchouassi (2012) sought to clarify the extent to which phones can be used to provide banking

services to the unbanked, underprivileged, and vulnerable people. The study focused on those with low incomes who live in vulnerable Sub-Saharan African (SSA) countries who, in the majority of cases, are unable to access accounts due to increased expenses for carrying out everyday transactions. hand devices presented a bigger chance for rendering financial innovations to unbanked individuals. Subsequently, technological and economic innovativeness, rules and procedures changes by regulators was necessary to make these products a reality to the unbanked group in the population.

On bank size, Kalunda (2015) highlighted that large firms bears more power in negotiations that result to on average lower costs of financing that subsequently betters overall stability of the entire market. Large firms can hedge and diversify exposures greatly as compared to smaller organizations. This affects a company's ability to utilize various forms of flexibility, which in turn affects survival over the long term. According to Bowa (2015), asset size and asset quality have a big impact on a bank's liquidity ratios. However, it was established that the ratio of banks' liquidity was most significantly impacted by bank size. These two evaluations supported the conclusion derived from this investigation.

V. Conclusion

Banking institutions must be financially robust, reachable, and available to the market share they service in order to carry out their intermediation duty in relation to liquidity provision. Every country must have access to bank loans and other banking services if it wants to develop. This justifies the need to eliminate all forms of discrimination from banking offers and to make them delightful, approachable, and available to everyone. This can be done through promoting financial inclusivity. The study showed that over the study period, banking firms had increased financial inclusivity, which had an impact on the stability of banking institutions. The major driving force of financial inclusion among them included banking channels being available, accessible and having a high utilization. The expansion of branch networks, ATMs, and banking agents were all factors in the growth in penetration. According to the study's findings, commercial banks have expanded their networks through ATMs, branches, and agents as well as strategically improved bank accessibility and service delivery. As a result, there was less default risk, liquidity vulnerability, and insolvency risk, which translated to stability for commercial banking institutions.

Based on research, it can be concluded that there is a pressing need for commercial banking companies to seize opportunities presented by mobile phones in order to expand their product and service offerings. Additionally, there is a need to improve mobile banking products and boost utilization of alternative channels in place of current lending, withdrawal, and deposit methods. The variety of mobile, internet, and phone banking offers the possibility to reduce instances of financial exclusion, particularly among Kenya's unbanked population in rural and remote locations.

This study highlighted the increase in bank service channels' accessibility over the course of the study, which had an impact on the stability of commercial banks, through the number of loan and deposit accounts. A greater number of accounts for savings, loans, and mobile accounts through digital financing led to this improved access. Based on these deductions, it may be concluded that banks with unlimited access are more likely to display stability. Since the number of account ownership does not equate to inclusion, the bank should not focus all of their efforts solely on access but also consider how the channels of delivery are used. Lastly, expanded bank size entrenched financial deepening of mobile banking, ATM banking, loan and deposit accounts, online banking and agency banking effect on financial stability. Hence, there is an importance for banks to put more resources in tangible and intangible assets that would act as a catalyst in adoption of banking financial innovativeness to enhance financial stability.

VI. Recommendations

According to the findings, banks in Kenya should adopt a variety of financial inclusion practices because doing so will improve their financial performance. The conclusions of this study's suggestions have important implications for academics, policymakers, shareholders of commercial banks, and regulators. It is important for regulators to update the current regulatory framework and develop explicit rules for the present and future success of mobile technologies, including levels of transaction frequency, commercial service consumption, and information technology concerns. Absence of clarity and presence of uncertainty is unhealthy for any venture and more so for the confidence boosting of the financial systems. By introducing clarity in rules governing financial system, the environment will be more predictable which in turn promotes additional investments and competitiveness.

In order to increase accessibility and ongoing use of financial products, it was recommended that institutions of governance streamline policies that are aimed toward the implementation of measures relevant to financial inclusion. A need also arises to divest in banking internal controls and management of security gaps to cushion customers against risk exposure that may arise from usage of alternative service provision channels such as mobile, internet and agency banking.

Based on the findings, the report proposes Kenyan bank management to implement systemic changes with the primary goal of boosting financial inclusion through ongoing development of service channels such internet and mobile banking, ATMs and branches, and agents. The channels will be improved, which will promote the financial inclusion demonstrated through loans and deposit accounts.

Internet banking is an innovation that is digital driven and is a significant cost cutting instrument. This aspect of inclusion has been inferred to contribute banks penetration and presence to a country's population. Notably, it is likely to anchor stability and synergy because of increased frequency in mobilization of deposit through various channels.

Bank's upper management ought to consider pursuing financial inclusivity with the objective of raising the numbers of their consumers base. They would then improve their loan, deposit, and mobile-related accounts, expanding their accessibility, and improving their stability. To make it easier for low-income households to access banking services and products, the apex bank should relax laws governing opening and maintaining accounts with banks based in Kenya. This in consequence, reduces the unbanked population and bring closer affordable and accessible banking offerings. The study concludes by advising that, in order for the Kenyan banking system to achieve the Z-score index for banking firms' financial stability, there is a need to expand bank size.

References

[1]. Abu Bakar, H., Mahmood, R., & Ismail, N. N. H. (2014). Combined Effect Of Knowledge Management And Entrepreneurial Orientation On Performance Of Small And Medium Enterprises.

[2]. Adenuga, R.A., & Ayodele, K.O. (2013). Adolescents' Entrepreneurial Behaviour: The Predictive Effect Of The Big Five Personality Factors. European Journal Of Business And Social Sciences, 1(12), 48-58.2

[3]. Alfarsi, Y. (2021). The Impact Of Entrepreneur's Characteristics On The Performance Of Small Medium Enterprises: The Case Of The Kingdom Of Saudi Arabia (KSA). The Euraseans: Journal On Global Socio-Economic Dynamics, (3 (28)), 115-128.

[4]. Balogun, U.O., Bustamam, U.S.A., & Johari, F.B. (2016). Determinant Factors Affecting Women Social Enterprise Performances In Sokoto State, Nigeria, A Pilot Study. Asian Journal Of Social Sciences & Humanities, 5(2), 47-48.

[5]. Brown, T. E., Davidson, P., & Wiklund, J. (2001). An Operationalization Of Stevenson's

[6]. Chomba, S. J., & Nyang'au, S. P. (2019). Influence Of Entrepreneurial Competencies On The Growth Of Small And Micro Enterprises In The Agricultural Industry In Kirinyaga County, Kenya. International Academic Journal Of Innovation, Leadership And Entrepreneurship, 2(3), 1-13.

[7]. Fatoki, O. (2014). The Entrepreneurial Orientation Of Micro Enterprises In The Retail Sector In South Africa. J Sociology Soc Anth, 5(2): 125-129

[8]. Kim, C., & Lee, J. (2018). The Effect Of Network Structure On Performance In South Korea Smes: The Moderating Effects Of Absorptive Capacity. Sustainability, 10(9), 3174.

[9]. Marivate, S. P. (2014). The Impact Of Entrepreneurial Skills On The Viability And Long-Term Survival Of Small Businesses: A Case Of The City Of Tshwane, South Africa. European Journal Of Business, Economics And Accountancy, 2(2), 53-72.

[10]. Nthambi, E. K. (2015). Financial Inclusion, Bank Stability, Bank Ownership And Financial Performance Of Commercial Banks In Kenya (Doctoral Dissertation, University Of Nairobi

[11]. Ndirangu, A.N. (2016). Determinants Of Innovation Performance In Youth Enterprises In Kenya. Unpublished Phd Dissertation Of Jomo Kenyatta University Of Technology And Agriculture, Machakos, Kenya.

[12]. Ngugi, J. K., Gakure, R.W., & Kahiri, J. (2013). The Influence Of Intellectual Capital On Growth Of Enterprises In Kenya. International Journal Of Arts And Entrepreneurship, 1 (3), 1-2.

[13]. Koech, B.K., & Namusonge, G.S. (2015). Factors Influencing Performance Of Women Enterprises In Machakos County, Kenya. The Strategic Journal Of Business Change And Management, 2 (2), 1799-1817.

[14]. Machuki, V., Aosa, E., & Letting, N. (2012). Firm-Level Institutions And Performance Of Publicly Quoted Companies In Kenya. International Journal Of Humanities & Social Science, 2 (21), 298-312

[15]. Maina, J. N., Marwa, S. M., Waiguchu, M., & Riro, G. K. (2016). Network Relationships And Firm Performance An Empirical Study Of Kenyan Manufacturing Firms.

[16]. Mugenda, O. M., & Mugenda, A. G. (2013). Research Methods: Quantitative And Qualitative Approaches| Textbook Centre.

[17]. Worku, Z. (2013). Analysis Of Factors That Affect The Long-Term Survival Of Small Businesses In Pretoria, South Africa. Journal Of Data Analysis And Information Processing, 1(04), 67.