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ABSTRACT

Globally, existing literature indicate conflicting relationships between banks innovativeness and banks' performance, while other researchers merely report on bank innovations without relating the effectiveness of the purported innovations on bank performance. Therefore, lack of adequate empirical evidence on the relationship between emerging banks' innovativeness and bank performance gave rise of this study. The objective of the study was to examine the effect crowd funding Systems on the Banks Financial Performance of listed commercial banks in Kenya. This research study adopted explanatory survey research design. The study targeted managers from listed commercial banks in Nairobi; Kenya. The study sample size was determined using Taro Yamane's proportional sampling technique formula, which was drawn randomly from managers of commercial banks in Nairobi; Kenya. Primary data was collected by means of self-administered questionnaires. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS version 24) software. Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) were used. Data was organized into graphs and tables for easy reference. Further, inferential statistics such as regression and correlation analyses was computed to determine both the nature and the strength of the relationship between the dependent and independent variables. Both descriptive and inferential statistics showed that Crowd Funding System significantly influenced financial performance of listed commercial banks in Kenya. The study concluded that; commercial banks effectively utilize Crowd Funding systems since there is attraction of huge customer's base, saving on transaction costs, thus boosting on bank's financial performance. The study recommended that banks should adopt secure and cost effective Crowd Funding systems that can attract and retain a huge customer base. Further the study recommended for further study of similar variables using different methods.

Key words: *Crowd Funding System, Financial Performance*

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INTRODUCTION

Turbulent financial performance of many financial lending institutions has attracted a myriad or researches on the most effective ways of mitigating financial loss, thus, the need for innovations. According to Laforet (2013), few financial lending institutions have empirically examined innovation outcomes at the firm level or the link between a firm's innovation and financial performance. In this regard, financial innovation has been an integral component of economic activity for several millennia (Goetzmann, 2009). Gorton and Metrick (2010) summarized the reasons for the growth of modern financial innovation as; reduction in bankruptcy costs, tax advantages, reduction in moral hazard, reduced regulatory costs, transparency and customization. A highly turbulent environment leads to successful innovation creating a unique competitive position and competitive advantage and lead to a superior performance which can only be maintained by endless innovation, improvement of the product, the process and relating it with financial performance.

Harper *et al.,* (2016) asserts to minimize costs, attract a larger market share and boost bank profitability in Brazil, private and state owned banks delivered financial services through retail agents including small supermarkets and pharmacies, post offices, and lottery kiosks. These agents were referred to as banking correspondents. In January 2006, India's central bank issued a circular permitting banks to use post offices and specializes micro finance institutions, including nonprofit organizations cooperatives, and for profit companies as retail agents. The circular calls these agents business correspondents. In South Africa, branchless banking through retail agents is permitted only for licensed financial institutions.

Manning (2018) study noted that technological adaptation in banking sector of Middle-East have moved at a much slower pace as compared to other global markets. With time there had been shift in attitude towards technological tools and now banking professionals aim to work hand in hand with the technological developments. Chinese commercial banks' traditional businesses operations mode 'the wholesale credit operations' have been changing and the ratio of commercial banks' retail businesses have been increasing. For example the Bank of China as an example, during 2006-2007, the growth rate of retail business was 250%, which was 2.5 times of the growth rate of wholesale business at the same period. One of the important reasons for this change is innovation which includes innovation in business philosophy, management, procedure, product, promotion and scientific and technology (Yin & Zhengzheng, 2010).

In Kenya, effective use of Information Technology has led to better utilization of personnel and organizations assets, increased revenues and increased access to financial services by the general population (Mwania & Muganda, 2011). In the study by Jamall (2017) on banking innovations in the Middle East , the scholar found the banking sector still faces lags behind in certain fields such as financial risk management and as well banking sectors also faced significant challenges in determining feasible banking innovations that can impact positively on financial performance.

Noonan (2018) study on Crowd Funding System in the banking industry asserted that crowd funding systems can aid in improving financial performance. Shirish, Jayantilal and Haimari, (2016) also opined that strong consumer adaptation is the primary reason behind greater acceptance of technological advances in banking sector of Middle Eastern countries. Considering significant penetration of e-commerce, digital banking is only adopted by 20% to 25% of the consumers, due to lack of essential digital resources and security protocols.

The banking sector in Kenya operates is governed by the companies' Act, the Banking Act, the CBK Act and the various prudential guidelines issued by the CBK. The financial performances of commercial banks in Kenya have been in a generally turbulent financial trend and these have mainly been attributed to financial management issues and stiff

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competition from Micro finance institutions (CBK Annual Report, 2018).

More so, the banking industry has been earmarked as a key pillar to the achievement of vision 2030 (a long-term strategy to achieve sustainable growth by year 2030) through increased savings, encouragement of Foreign Direct Investment (FDI), safeguarding the economy from external shocks as well as propelling Kenya to become a leading financial centre in Eastern and Southern Africa. Within the Medium Term Plan (2008-2012) under vision 2030, some of the target areas include development of a safe and innovative payments system that will ensure smooth transfer and settlement of funds between customers and banks as well as between banks (CBK,2018).

Further, the Kenyan banking industry has faced some challenges including: stiff competition from existing microfinance banks and SACCOs as they offer substitute products, offer loaning services at different rates. That is, Microfinance and Savings and Credit Societies (Sacco) institutions are emerging key players in delivery of financial services to both employed and unemployed population. However, it is expected that the banking sector will continue to grow especially in retail banking segment, as major consumer segments remain largely unbanked.

More so, according to the CBK Annual Report (2018) the banking sector has continued to experience significant competition related challenges simultaneously, thus commercial banks need to establish a sustainable innovative strategy into their core business activity in the markets and communities where they operate.

Statement of the problem

Banks innovativeness is meant to boost profitability but evidence from existing literature indicate conflicting relationships between banks Crowd Funding System and banks' financial performance, while other researches merely report on bank innovations without relating the effectiveness of the purported innovations on bank profitability (Cheng *et al*., 2017).

Crowd funding system being a market-based financing technique where funds are raised from large numbers of individuals or legal entities in small amounts; hence, bypassing traditional financial intermediaries, and using mobile phones and online web-based platforms to connect funders with borrowers, has highly supported the economies in easing of transaction (IOSCO, 2014)

Researchers have been expressing on financial information, especially; an example and for instance, in Kenya, Central Bank of Kenya (2017) indicated that, the number of automated teller machines grew from 166 in 2001 to 2091 in 2010, debit cards increased from 160,000 in 2001 to over 6 million cards in subsequent years while mobile banking transactions increased from 48,000 per annum in 2007 to over 450,000 transactions per annum in 2017. Performance of commercial banks in Kenya also grew impressively between years 2001 to 2010 where profit before tax grew from Kshs 2.7 billion in 2001 to Kshs 74 billion in 2010. During the same period, total income grew from Kshs 61billion to Kshs 178 billion while total assets grew from Kshs 425 billion to over Kshs 1.7 trillion (CBK, 2017); but the banks do not comprehensively report whether banking innovations have had a contributing effect on their growth in total assets.

Further, existing researches on financial innovation have focused on internet and mobile banking innovations without considering other emerging innovations that give banks a competitive edge over their rivals and maintaining a sustainable increase in profitability. While some scholars support Crowd Funding Systems being useful, other researchers have been on little encouragement of the system's effectiveness especially the Government sector systems with the Central Bank (Aduda & Kingoo's (2012).

Therefore, lack of adequate empirical evidence on the relationship between emerging banks' innovativeness on consideration of Crowd Funding

System and Bank Financial Performance gave rise to a researchable gap for the study to be undertaken.

Objective of the Study

The study determined the influence of crowd funding system on financial performance of listed commercial banks in Kenya. The study was guided by the following research hypothesis;

- **H_0:** Crowd funding system does not significantly influence financial performance of listed commercial banks in Kenya.

LITERATURE REVIEW

Theoretical review;

Innovation Diffusion theory

This theory proponed by Rogers (1983) asserts that factors which influence the diffusion of an innovation include; relative advantage (the extent to which a technology offers improvements over currently available tools), compatibility (its consistency with social practices and norms among its users), complexity (its ease of use or learning), trialability (the opportunity to try an innovation before committing to use it), and observability (the extent to which the technology's outputs and its gains are clear to see). These elements are not mutually exclusive thus unable to predict either the extent or the rate of innovation diffusion.

Dillon and Morris (1996) further expanded the array of innovation characteristics. Three of the seven innovation characteristics are directly borrowed from Rogers: relative advantage, compatibility, and trialability. The other characteristic, ease of use, is a close relative to Rogers' (1983) complexity. It is worth noting that both relative advantage and ease of use are subjective characteristics since they can be viewed differently depending on an individual's perceptions.

Further, while Rogers (1983) included image as an internal component of relative advantage, Moore and Benbasat (1991) found it to be an independent predictor of adoption. Image is the self-perception that adopting an innovation could result in enhanced social status.

In this regard, the innovation diffusion theory describe the innovation-decision process within organizations, and is relevant to this study in that it helps in understanding how the characteristics of banking innovation interact to affect its adoption within the banking sector and its consequent on financial performance of commercial banks.

Schumpeter theory of innovation

Proponed by Schumpeter (1928), the theorist argued that entrepreneurs, who could be independent inventors or research and development engineers in large corporations, created the opportunity for new profits with their innovations. In turn, groups of imitators attracted by super-profits would start a wave of investment that would erode the profit margin for the innovation. However, before the economy could equilibrate a new innovation or set of innovations, conceptualized by Schumpeter as Kondratiev cycles, would emerge to begin the business cycle over again.

That is, according to Freeman, (1994), Schumpeter saw innovations as perpetual gales of creative destruction that were essential forces driving growth rates in a capitalist system. Schumpeter's thinking evolved over his lifetime to the extent that some scholars have differentiated his early thinking where innovation was largely dependent on exceptional individuals/entrepreneurs willing to take on exceptional hazards as an act of will. His later thinking recognized the role of large corporations in organizing and supporting innovation. This resulted in his emphasis on the role of oligopolies in innovation and which later was falsely viewed as the main contribution of his work.

In relation to the banking industry, Schumpeter drew a clear distinction between the entrepreneurs whose innovations create the conditions for profitable new enterprises and the bankers who create credit to finance the construction of the new ventures (Schumpeter, 1939). He emphasized that the special role of credit-creation by bankers was 'the monetary complement of innovations' (Schumpeter, 1939). As independent agents who

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have no proprietary interest in the new enterprises they finance, bankers are the capitalists who bear all the risks (none is borne by the entrepreneurs). That requires having the special ability to judge the potential for success in financing entrepreneurial activities. Schumpeter emphasized that it is just as important to deny credit to those lacking that potential as it is to supply credit to those having it (Schumpeter, 1939).

Therefore Schumpeter theory of innovation is relevant to this study in the sense that banking innovations emerge as advanced entrepreneurial skills meant to make commercial banks maintain a competitive financial edge against rivals and also for the very reason of remaining relevant in the current turbulent competitive business environment in Kenya.

Technology Acceptance Model

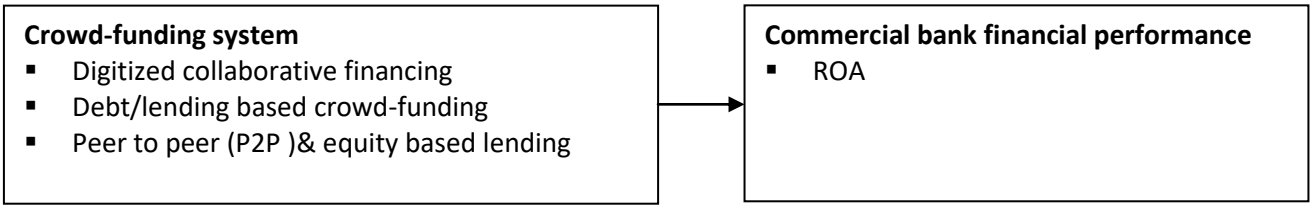
Davis (1989) advanced the Technology Acceptance Model which relates the individuals' behavioral intentions and his/her ICT use. From the model, it is suggested that, the actual behavior of a person is determined by his behavioral intention to use, which is in turn influenced by user's attitude toward and perceived usefulness of the technology.

However attitude and perceived usefulness are both determined by ease of use. Adopting the TAM model requires the understanding of end-users requirements regarding usefulness and user friendliness. From this model, usefulness and user friendliness affect users' attitudes towards any service.

While trying to apply the TAM, Wang, Wang, Lin and Tang (2003) were interested in identifying the factors that determine acceptance of internet banking by the users. According to the Technology Acceptance Model (TAM), perceived ease of use and perceived usefulness constructs are believed to be fundamental in determining the acceptance and use of various Information Technologies. These beliefs may not fully explain the user's behavior toward newly emerging IT, such as internet banking.

Using the TAM as a theoretical framework, Wang, Lin and Tang, (2003) introduces "perceived credibility" as a new factor that reflects the user's security and privacy concerns in the acceptance of internet banking. Wang et al. (2003) examines the effect of computer self-efficacy on the intention to use internet banking. The results strongly support the extended TAM in predicting the intention of users to adopt internet banking. It also demonstrates the significant effect of computer self-efficacy on behavioral intention through perceived ease of use, perceived usefulness, and perceived credibility (Wang, Lin & Tang, 2003).

Therefore the Technology Acceptance Model is relevant in this study in the sense that the rolling out of many innovations by commercial banks can be affected by the customers' attitudes of perceived relevance and ease of use of the emerging bank innovations; thus, commercial banks normally use pull and push strategies to enable customers accept new product/service innovations.



Independent Variable **Dependent Variable**

Figure 1: Conceptual framework

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Review of study variables

This study assessed the influence of existing crowd-funding innovations like facilitation of access to market hubs /capital markets, peer to peer & equity based lending, connecting funders to business startups on profitability of listed commercial banks in Kenya.

In this regard, IOSCO (2014) asserted that crowd-funding as a market-based financing technique can be used to raise funds from large numbers of individuals or legal entities in small amounts, bypassing traditional financial intermediaries, and using mobile phones and online web-based platforms to connect with borrowers (IOSCO 2014). Thus, crowd-funding platforms are websites that enable interaction between fundraisers and the crowd (borrowers), where financial pledges can be made and collected through the platform facilitated by the bank.

Empirical review

Crowd funding is a relatively new banking innovation concept and European Commission (2016) studies in its application in EU capital markets reported that some banks were using crowd funding as open call to the public to raise funds for a specific project. Crowd funding platforms are websites that enable interaction between fundraisers and the crowd. Financial pledges can be made and collected through the platform.

World Bank (2013) while studying on the Crowd Fundings' potential for the developing world reported that some banks utilized Crowd funding as an Internet-enabled way for businesses or other organizations to raise money—typically from about US$1,000 to US$1 million—in the form of either donations or investments from multiple individuals facilitated by the banks.

GPFI (2016) report on global standard-setting bodies and financial inclusion in the evolving landscape, asserted that in the financial inclusion context, crowd funding was now being used as a market-based financing technique where funds are raised from large numbers of individuals or legal entities in small amounts, bypassing traditional financial intermediaries, and using mobile phones and online web-based platforms facilitated by a bank to connect with borrowers, whether to fund a business, a specific project, or other needs.

European Commission (2016) also reported that crowd funding is part of the broader universe of financial innovations enabled by technological advancement, also known as FinTech. FinTech has been changing the way the financial sector operates and crowd funding is specifically part of FinTech's subcategory called alternative finance (Alt Fi). Alternative finance refers to technology-enabled market-based funding outside the traditional financial system and includes online marketplaces for consumer and business lending, invoice trading, and third-party payment platforms facilitated by a bank that supports the innovative platform. But recommended empirical enquiries in the relationship between crowd funding innovation and bank financial performance.

Agrawal, Catalini, and Goldfarb (2013) study on types of crowd funding found that reward-based crowd funding enables beneficiaries to access capital at a lower cost compared to traditional sources for three reasons; one, better outreach and targeting— donors are not constrained by their geographical location, and campaigns can have global reach, thus targeting interested crowds with no or limited geographical barriers; two, monetization of assets—beneficiaries can leverage assets that are difficult, to trade in traditional markets and three; technological innovations—including streamlined online procedure to set up a campaign, social media marketing, increased transparency and competition.

Grella (2015) further found that debt crowd funding allows funders (lenders) to directly lend to fundraisers or invest in debt obligations issued through a platform. Debt crowd funding is also

known as lending-based crowd funding, marketplace lending, or person-to-person (P2P) lending—terms that are not as broad as debt crowd funding. Debt crowd funding is best thought of as a new approach to lending rather than a completely new financial product. By leveraging the Internet's interconnectivity, this form of crowd funding builds a direct relationship between the funder and the fundraiser.

METHODOLOGY

The explanatory survey design was therefore used to determine an association between the conceptualized independent and dependent variables as shown in the study's conceptual model. This study targeted managers from 12 listed commercial banks headquarters in Nairobi city County, Kenya. Sampling consisted of senior managers of all listed commercial banks whose headquarters were in Nairobi city County, Kenya. The study sample size was determined using Taro Yamane's proportional sampling technique formula.

The study employed stratified random sampling technique which guided how sampled managers of commercial banks headquarters in Nairobi city county, Kenya, were to be selected. The stratified sampling technique ensured that it had minimized sample selection bias and ensured that certain elements of the population were not over represented or under represented.

Primary data was collected by means of self-administered questionnaires. The questionnaires had structured questions. These questionnaires were structured and designed in multiple choice formats. Section one introduced the researcher, topic of research and its purpose to the respondent. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS) version 24 software.

Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) was used. Data was also organized into graphs and tables for easy reference. Further, inferential statistics such as regression and correlation analyses was used to determine both the nature and the strength of the relationship between the dependent and independent variables. Correlation analysis is usually used together with regression analysis to measure how well the regression line explains the variation of the dependent variable. The linear and multiple regression plus correlation analyses were based on the association between two (or more) variables. Study conceptualized Regression Model used was;

$y = \beta_0+\beta_1X_1 + e$

y = financial performance of commercial banks in Nairobi city County

β_0 = Constant

X_1= Crowd Funding Systems

$\{\beta_1\}$ = Beta coefficients

e = the error term

FINDINGS AND DISCUSSIONS

Response rate was 83.6% which is good for generalizability of the research findings to a wider population.

Descriptive Statistics

Descriptive statistics: Crowd funding and banks' financial performance

These were summarized responses on whether crowd funding influence financial performance of listed commercial banks in Kenya. The descriptive results were presented in table 1.

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Table 1: Descriptive statistics; Crowd funding system

Statement	5	4	3	2	1	Mean	Std.Dev
1.The bank operates a crowd funding platform based on sound and enabling legal/regulatory framework	13(16.9)	37(48.1)	10(13.0)	11(14.3)	6(7.7)	3.55	0.917
2.The bank facilitates a crowd funding platform to connect various investors/funders with bank customers	12(15.6)	36(46.8)	11(14.3)	10(13.0)	8(10.3)	3.52	0.921
3.The bank has digitized collaborative financing where willing investors fund business startups for bank customers	13(16.9)	35(45.5)	10(13.0)	12(15.5)	7(9.1)	3.45	0.923
4.The bank's crowd funding platform facilitates customers in accessing varied capital markets and marketing hubs	11(14.3)	39(50.6)	9(11.7)	10(13.0)	8(10.4)	3.48	0.927
5.The bank facilitates crowd funding to enable bank customers raise business starting capital and access diverse marketing hubs	12(15.6)	32(41.6)	12(15.5)	10(13.0)	11(14.3)	3.38	0.929
6.The generally, the bank's facilitation of crowd funding platform has made it raise some capital, increased and retained a higher capital base which has translated to increase in its return on assets	11(14.3)	39(50.6)	11(14.3)	7(9.1)	9(11.7)	3.49	0.918
Valid list wise=77							
Grand mean =3.48							

From table 1, most respondents agreed (48.1%) and strongly agreed (16.9%) that the bank operated a crowd funding platform based on sound and enabling legal/regulatory framework; while 46.8% agreed that the bank facilitates a crowd funding platform to connect various investors/funders with bank customers, which attracts a large customer base assumed to translate to improved financial performance.

More so, 45.5% and 16.9% of respondents agreed and strongly agreed respectively that the bank has digitized collaborative financing where willing investors fund business startups for bank customers; and 50.6% agreed that the bank's crowdfunding platform facilitates customers in accessing varied capital markets and marketing hubs; thus transactions from successful customers on crowd funding platform translates to financial benefits to the bank.

Furthermore, most respondents agreed (41.6%) and strongly agreed (15.6%) that the bank facilitates crowd funding to enable bank customers raise

business starting capital and access diverse marketing hubs. Thus, successfully facilitated customers make financial transactions of their business through the facilitating bank, which then increases financial benefits for bank.

Lastly, most respondents agreed (50.6%) that generally, the bank's facilitation of crowdfunding platform has made it raise some capital, increased and retained a higher capital base which has translated to increase in its return on assets. This is also indicated by the grand mean of 3.48 rounded off to 4 which agree on the likert scale of measurement. This is also supported by IOSCO (2014) assertion that crowd-funding as a market-based financing technique can be used to raise funds from large numbers of individuals or legal entities in small amounts, bypassing traditional financial intermediaries, and using mobile phones and online web-based platforms to connect with borrowers who benefit the facilitating bank through financial transactions and attracting a higher customer base.

Inferential Statistics

Linear influence of Crowd Funding and Financial Performance

This tested the direct influence of Crowd Funding on Financial Performance of listed commercial banks in Kenya. The results were shown table 2.

Table 2: Direct influence of crowd funding on financial performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.676[a]	.457	.449	.90463	.457	63.037	1	75	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	51.587	1	51.587	63.037	.000[a]
	Residual	61.377	75	.818		
	Total	112.964	76			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.162	.304		3.826	.000
	Crowd funding	.756	.095	.676	7.940	.000

a. Dependent Variable: Financial performance

From table 2, the model summary showed that R^2 = 0.457; implying that 45.7% variations in the financial performance of listed commercial banks in Kenya was explained by crowd funding while other factors not in the study model accounted for 54.3% of variation in financial performance of listed commercial banks in Kenya. Further, coefficient analysis showed that crowd funding has positive significant influence on financial performance of listed commercial banks in Kenya (β = 0.756 (0.095); *at p<.01*). This implied that a single improvement in effective crowd funding innovations will lead to 0.756 unit increase in the financial performance of listed commercial banks in Kenya. Therefore, the linear regression equation was;

$y = \boldsymbol{1.162 + 0.756X_3}$

Where;

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y = financial performance of listed commercial banks in Kenya.
X_3 = crowd funding

Testing of study hypothesis

Study hypothesis (H_0) stated that Crowd Funding System does not significantly influence financial performance of listed commercial banks in Kenya. Multiple regression results indicate that crowd funding system significantly influence financial performance of listed commercial banks (β = 0.314 (0.102) at *p<0.05*). Hypothesis was therefore rejected. The results indicated that that a single improvement in effective crowd funding systems will lead to 0.314 unit increase in the financial performance of listed commercial banks in Kenya. The results are supported by World Bank (2013) who while studying on the crowd funding's potential for the developing world reported that some banks utilized Crowd funding as an Internet-enabled way for businesses or other organizations to raise money—typically from about US$1,000 to US$1 million—in the form of either donations or investments from multiple individuals facilitated by the banks; thus, banks financially benefited from the crowd funding system.

CONCLUSIONS AND RECOMMENDATIONS

The hypothesis, H_0: Crowd funding system does not significantly influence financial performance of listed commercial banks in Kenya tested the influence of crowd funding system on financial performance of listed commercial banks in Kenya. The study found that Crowd Funding mechanisms like digitized collaborative financing, debt/lending based crowd-funding, peer to peer (P2P) and equity based lending significantly influenced financial performance of listed commercial banks in Kenya. The study findings supported other researchers who found that Crowd Funding is part of the broader universe of financial innovations enabled by technological advancement and if well customized by the banking can attract a huge customer base whereby huge transactions by customers using the crowd funding platform can enhance financial performance of commercial banks that efficiently utilize it.

The study concluded that commercial banks that facilitate their customers access Crowd Funding platforms can attract a huge customer base and benefit from financial transactions of customers who secure their business transactions using the bank.

The study recommended that commercial banks should embrace Crowd Funding platforms to attract and retain a huge customer base.

Areas for further research

First, a similar study can be done on all commercial banks in Kenya using time series analysis so as to compare study findings. Similar study can be done on Micro Finance Banking institutions so as to assess the effectiveness of the adopted Crowd Funding Systems.

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