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A MODERATING EFFECT OF FINANCIAL INCLUSION ON THE RELATIONSHIP BETWEEN DIGITAL FINANCIAL SERVICES AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KISUMU COUNTY, KENYA

Okode M O
Maseno University, Department of Business Administration
P. O. Box Private Bag, Maseno, Kenya
okodemopiyo@gmail.com

Obura J M
Bomet University College (A Constituent College of Moi University),
Department of Finance and Accounting, P. O. Box 701 - 20400 Bomet, Kenya
johnmarkobura21@gmail.com

Abstract

Kenya is characterised by a vibrant financial sector and high financial exclusion in most regions, Kisumu County included at 25.85%, compared to national average of 17.59%. This low Financial Inclusion (FI) could accelerate banks expansive use of Digital Financial Services (DFS) intended to enhance Bank Financial Performance (BFP). Contrary to this, Kenya finance sector performance, including Kisumu County, is on the decline hence, inconsistent with the postulates of Finance Innovation and Economic Value Added Theories, which holds "digital technology are intended to enhance firm's liquidity" and "assess business performance based on the principle of value management" respectively. Past studies have not adequately addresses the nexus between DFS, FI and BFP. Scholars have focused on analysis of DFS or FI in establishing 'determinants' or 'individual effects' on BFP, and inconsistent results have been documented. This inconsistency could indicate an existence of a special relationship between the FI and DFS. The study, therefore, conceptualized a moderation of FI on the

relationship between DFS and BFP. The purpose of the study hence was to ascertain this moderating effect of FI. The study adopted correlational research design, a population of 172 managers at the 43 bank branches in Kisumu County, census survey and primary data. Regression results showed that DFS explains approximately 76.2% variation in financial performance of commercial banks; addition of FI insignificantly increases variation in financial performance explained increases by 0.3% (R Square Change (ΔR2) = 0.003) and introduction of interaction term (Moderator) significantly increases explain variation increases by 5.4% (ΔR2 = 0.054) to 81.9%. The study concluded FI significantly moderates the relationship between DFS and Financial performance of commercial banks.

Keywords: Digital financial services, Financial inclusion, Bank financial performance

INTRODUCTION

Background of the study

Technology and innovation have created enormous strategic opportunities in redefining the competitive locale and shifting market, industry and economy dynamics at large. Across the globe, the financial services industry and transactional economy at large, is currently anchored on Digital Finance Innovation (DFI). Modern business models and technological concepts that deliver user-friendly financial services, at persistently reducing costs, and without regards to location and time have become the norm in banking service sector, and more importantly a drive towards addressing the financial inclusion.

The Kenya financial service sector has shown tremendous transformation towards sector innovation and financial inclusion: diversified products and service delivery platforms, industry integration and digitization of the transcriptional process (Heyer & King, 2015). Approximately 76% of banking transactions are conducted through DFS platforms, despite the low FI within the rural areas where more than 50% still experience challenges in accessing financial services (Bill and Melinda Gates Foundation; CBK ; FSD Kenya, 2014).

Factoring in the banking sector innovation and low financial inclusion, especially in rural regions in Kenya, an expansive use of DFS, aimed enhancing FI, could equally enhance bank financial performance. However to the contrary, the banking sector have registered a declining financial performance from 2016: 9.6% in pre-tax profit, 3.1% total income 0.6% and 3.8% for RoE and RoA respectively (CBK, 2019). This scenario contradicts the financial innovation theory which posits that financial innovativeness improves firms' competitive edge and generates more earnings to the investors (Błach, 2011).

Scholars attempts to explore relationship between DFS or FI on performance have also yielded inconsistent results, with those reporting significant effect of DFS or FI on financial performance (Ozili, 2017; Dzombo, Kilika & Maingi, 2018; Mohamed 2019; Waiganjo, 2018), while those on the contrary (Too, Ayuma & Ambrose, 2016; Mabwai, 2016; Ngaruiya, Bosire and Kamau, 2014). The inconsistency in finding could indicate an existence of a special effect between the FI and DFS on financial performance of commercial banks. The study therefore conceptualized and analysed the moderating effect of FI on the relationship between DFS and financial performance, taking Kisumu County as a case.

Research Problem and Objectives

An efficient and effective financial system is critical to facilitate economic transactions and serve as a vehicle for financial inclusion, product innovation and market growth. Conceptually, low financial inclusion could accelerate commercial banks expansive use of DFS, intended to enhance bank performance. Although the adoption and use of DFS appears to be on the rise, with banks business models being aligned to DFS platforms, financial performance of most commercial banks in Kenya have been on the decline (pre-tax profit, total income, RoE and RoA) since 2016. Past scholarly evidence have not adequately addressed this phenomena, as they have either focused on the analysis of digital finance or financial inclusion, and in establishing determinants and individual effects of the same on financial performance. More importantly, inconsistent findings have been documented, an indication of an existence of a special relationship between DFS, FI and financial performance of commercial banks. This study, therefore, assessed this special moderation effect. The objectives that guided the study was to analyse the moderating effect of financial inclusion on the relationship between DFS and financial performance of commercial banks in Kisumu County.

LITERATURE REVIEW

Theoretical Review

The study was anchored on the Theory of Financial Innovations, proposed by Silber in 1983. The theory expounds the idea that expansion of money related foundations is the key reason of financial inclusion (Sekhar, 2013). Accordingly, the theory views financial related innovations as new resolutions or customary means through which latest component of development are being offered to enhance firms' liquidity and expand new applicants (Ionescu, 2012).

Proponents of the theory have argued its application promotes growth of financial entities through improved allocation, efficiency and a reduction of financial and administration

costs (Radcliffe & Voorhies, 2012). In addition, it enhances financial markets liquidity, ensure allocation of resources to insufficient areas and improve accessibility to emerging prospects (Tuesta et al, 2015), hence deepening financial inclusion. The theory was used to define and itemize financial services innovations and developments in technological solutions options available for banking service sector and digital financial service's products and delivery platforms.

Empirical Literature Review: Digital Financial Services, Financial Inclusion and Financial Performance

Very little empirical research has been done on DFS, FI and financial performance of commercial banks in general. Ozili (2018) conducted a study on impact of digital finance on financial inclusion and stability, primarily focusing on DFS, and reported positive effects of financial inclusion in emerging and advanced economies. Similarly, Dzombo, Kilika and Maingi (2018) investigated the role of financial inclusion on the relationship between branchless banking strategy and financial performance, as a mediator. Their result showed agency and electronic banking, when used in isolation, had a significant negative effect on the financial performance, however positive and significant when used together as a multichannel strategy, addition too, the strength of the relationship between branchless banking strategy and financial performance depends on the level of financial inclusion.

Shihadeh et al (2018) investigated the relationship between financial inclusion (FI) and banks' performance using annual data of 13 commercial banks from 2009 to 2014, and reported ATMs services, credits, and deposits have a strong positive correlation coefficient with SMEs banks gross income. In addition, regression results showed Financial Inclusion parameters has a significant effect on bank profit (Adj R^2=0.8880) and performance (Adj R^2=0.1668).

Agufa (2016) analysed effect of Digital Finance on Financial Inclusion in Kenya banking industry, and reported insignificant negative relationship between agency banking, mobile banking transactions and internet banking with financial inclusion; and low (4.4% or R^2=0.044) of variation effect on bank performance explained by DFS. The study concluded that digital finance does not have significant on financial inclusion and performance in banking sector in Kenya.

RESEARCH METHODOLOGY

A correlational research designs was adopted to explore the interaction between digital financial services and financial inclusion on financial performance. Kisumu County, Kenya with target population drawn from 43 commercial bank branches (KBA, 2017) in the County. The

target unit of analysis were bank branch head, operation manager, product development manager and finance manger, which resulted to 172 study respondents. A census study was adopted, instrument reliability gave an alpha value above 0.7 for DFS (α=0.867), FI (α=0.762) and Bank performance (α=0.904) item questions. Primary cross-sectional data was collected and analysed using inferential method. Test of regression assumption was conducted and revealed: a Variance Inflation factor r<10 for all variables thus no multicollinearity among other tests. The study employed Baron and Kenny (1986) test for moderation analysis to assess the moderating effect of FI on the relationship between DFS and financial performance. The analysis involved three-step approach to statistical determination of whether the coefficient for the interaction term differs from zero. First step estimated the main effects of each DFS predictor (Model 1), the second step involved estimated the combined effect of DFS and FI predictors (Model 2) and the third step involved adding the interaction term of DFS*FI on the individual predictor (Model 3 - moderated model i.e. product of predictors and moderator) to establish the moderating effect. The change in coefficient of determinant (ΔR^2), significance of F statistic change ($p<0.05$) and the beta coefficient (B) together with their resultant p values were used to establish the significance of moderating effect.

RESULTS AND DISCUSSIONS

Empirical Results

Analysis results (Model summary) for the predicted interaction effect of FI on the relationship between individual constructs of DFS with financial performance of commercial banks is summarized on Table 1

Table 1: Models summary result of moderating effects of FI on relationship between constructs of DFS with financial performance of commercial banks

					Change Statistics					
Model	R	R^2	Adj. R^2	Std. Error of the Est.	ΔR^2	F Change	df1	df2	Sig. F Change	Durbin - Watson
1	.873[a]	.762	.752	.30155	.762	78.286	4	98	.000	
2	.875[b]	.765	.753	.30088	.003	1.433	1	97	.234	
3	.905[c]	.819	.807	.26574	.054	28.354	1	96	.000	2.758

a. Predictors: (Constant), Digital financial services (MFS, OFS, CFS, DFIS)

b. Predictors: (Constant), Digital financial services (X), financial inclusion (W)

c. Predictors: (Constant), Digital financial services (X), financial inclusion (W), Interaction (M=X*W)

d. Dependent Variable: Financial Performance

Result in table 1 shows the result of coefficient of determination. Results for Model 1 shows R^2 = 0.762, SEE=0.30155, F=78.286, P-value<0.0001; result for Model 2 shows R^2 = 0.765, SEE=0.30088, F=1.433, P-value=0.234; and result in Model 3 shows R^2 = 0.819, SEE=0.26574, F=28.354, P-value<0.0005. The study findings implied that DFS explains approximately 76.2% variation in financial performance of commercial banks as in Model 1.

From the table, it is clear that the addition of FI to the existing Model 1, variation in financial performance explained increases by 0.3% (R Square Change (ΔR^2) = 0.003) and insignificant given the p-value 0.234 is greater than p-value 0.05 at 95% significance level. Further result shows addition of interaction term (M) to Model 2, the explain variation increases by 5.4% (ΔR^2 = 0.054) to 81.9%. The increase is significant as p-value 0.0001 is less than p-value=0.05 at 95% level of significance.

Discussion of Finding

The significant increase in the variation explained by the introduction of the interaction term clearly suggest that FI significantly explain the relationship between DFS and financial performance of commercial banks. The study, therefore, failed to accept (Reject) the null hypothesis as 'Financial inclusion significantly moderates the relationship between digital financial services and financial performance of commercial banks in Kisumu County.

The finding are in agreement with Dzombo , Kilika & Maingi (2018) whose study on branchless banking strategy and financial performance reported agency and electronic banking independently has a significant negative effect on the financial performance, however if used together as a multichannel strategy has significant and positive effect on financial performance thus the mediation effect. However on the contrary, the finding contradicts Michelle (2016) finding of insignificant negative relationship between digital financial services (agency banking, mobile banking transactions and internet banking) and financial inclusion on performance in banking sector in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

The study concludes that financial inclusion has significant moderating effect on the relationship between digital financial services and financial performance of commercial banks in Kisumu County. The moderation is explained by significant increase in variation explained in financial performance brought about by the inclusion of the moderator term.

The study recommends banks to capitalize on tailor customizing their products to reach wide untapped customers, given the significant variation on financial performance contributed by DFS. Specifically, more energies should be devoted to digital products targeting need for

saving, payment and credit access transaction service to enhance FI. In addition, banks should realign their business models and processes towards meeting financial transaction needs for poor unbanked customers with digital products or services, given the significant moderating effect of FI. This will reduce the exclusion gap and drive banks financial performance too. The study makes recommendation for further research to explore the topic on non-deposit taking institutions with a special emphasis in addressing the specific DFS unique to the financial sub-sector and moderating effect of FI on performance of the sub-sector.

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