

# Influence of Digital Financial Information Services on Financial Performance of Commercial Banks in Kisumu County, Kenya

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**Abstract:** - The purpose of this study was to determine the influence of Digital Financial Information Services (DFIS) on financial performance of commercial banks in Kisumu County, Kenya. It analysed four constructs of financial information service namely transaction alerts, online trading, digital market research and financial information dissemination. Findings revealed  $R^2 = 0.704$ ,  $F_{cal}(181.783, p=0.000)$ ; regression coefficients: financial information dissemination ( $\beta_1=0.170, p=0.000<0.05$ ), transaction alert ( $\beta_2 = -1.376, p=0.000<0.05$ ); online trading ( $\beta_3 = 0.728, p=0.001<0.05$ ) and digital market research ( $\beta_4 = 0.947, p=0.000<0.05$ ). The study concluded DFIS significantly influence financial performance of commercial banks in Kisumu County, Kenya.

**Key Words:** Financial information dissemination, transaction alerts, online trading, Digital market research, bank financial performance.

## I. INTRODUCTION AND BACKGROUND OF THE STUDY

The banking financial information services is experiencing high-speed digital transformation today, affecting financial performance of commercial banks across the globe. The rapid changes in the technological and innovation use of digital financial services, coupled with the patrons preference for use of digital channels, has transformed the speed with which information, including financial related ones, are generated, shared and stored.

As a prime area of financial innovation in the current decade, digital finance has revolutionised financial services provision due to its consumer-need-response characteristics such as sharing, convenience, low cost and easy access (Buckley, & Malady, 2015). Digital finance, is defined as financial services delivered over digital infrastructure including mobile and internet with low use of cash and traditional bank branches. Mobile phones, computers, or cards used over point-of-sale (POS) devices connect individuals and businesses to a digitized national payments infrastructure, enabling seamless transactions across all parties (Digital Finance Institute, 2016; Blach, 2011; Bank, 2001). At every point, these transaction generates information or data which are vital for managerial finance decision making.

Several authors have argued that Digital financial services (DFS) can expand the delivery of basic financial services to the poor through innovative technologies like mobile-phone-enabled solutions, electronic money models and digital payment platforms (Hemmadi, 2015; Lee, 2015; Muiruri & Ngari, 2014). These digital platforms equally are used to provide financial information services and could have effect on financial performance too. Thus, DFIS are rage of financial information required by users of financial information in order to make managerial financial decision. They include information related to trading through digital platforms, example, online trading, digital market research, digital transmission of transaction alerts, and dissemination of customers information through internet/mobile platforms.

A vibrant and well-functioning financial services sector is critical in allowing people to save for and insure against business uncertainties (European Investment Bank, 2014). Equally, this allow individuals, businesses, governments, and financial-services providers to conduct transactions efficiently. Efficiency in transaction, however, requires timely generation and dissemination of financial information to relevant parties without creating information asymmetry, thus the need for digital information generation and transmission channel.

Business operating in emerging economies characterised with low inclusion rate do not have the same access to financial information services comparative to advanced economies. World Bank Report (2018) estimates 45% percent of the developing world's adult population, lack an account with a commercial bank or other financial institution, or mobile-money service. Similarly, over 200 million macro, small and medium enterprises (MSMEs) in emerging economies lack adequate access to the credit facilities for growth. In Kisumu County, financial inclusion rate stands at 50.85% compared to national average of 69.59%, global average of 62.5% and recommended minimum rate of 75% according to Global Partners for Financial Inclusion (GPII). This low financial inclusion could accelerate commercial banks expansive use of Digital Financial Services, and thus generation and dissemination of financial information needed for expanding digital financial services adoption, enhancing financial inclusion and commercial bank financial performance.

## II. PURPOSE OF THE STUDY AND THE RESEARCH HYPOTHESIS

The purpose of this study was to determine the influence of Digital Financial Information Services on financial performance of commercial banks in Kisumu County, Kenya. The study developed a null non-directional hypothesis which stated below:

*H<sub>1</sub>: Digital financial information service does not significantly influence financial performance of commercial banks in Kisumu County, Kenya.*

## III. THEORITICAL FRAMEWORK AND LITERATURE REVIEW

The theory of financial innovations was proposed by Silber in 1983 and premised on the idea that benefit expansion of money related foundations is the key reason of financial inclusion (Sekhar, 2013). The theory demonstrates that the primary thoughts behind the innovations are the defects of the money related business sector, mostly the deviated data, office expenses and exchange costs (Błach, 2011). According to the theory, financial related innovations can be very new resolutions or simply customary means whereby latest component of development has been offered, enhancing firms' liquidity as well as expanding quantity new applicants, due to their qualifications on the situation (Ionescu, 2012).

According to the theory, financial innovation is a critical motivating force of the financial system, which leads to better economic competence and enhanced economic advantage derived from the new and frequent changes (Sekhar, 2013). Financial innovations define financial developments by coming up with new ways of production, technological solutions, creating better return rates hence boosting the country's economy in general. The theory posits that the innovativeness improves the firms' competitive edge of a corporate and generates more earnings to the investors (Błach, 2011). Innovation is a tool used to solve, manage and transfer the entire extra burden. The application of innovations promotes growth of financial entities through improved allocation, efficiency and a reduction of financial and administration costs (Radcliffe & Voorhies, 2012). Financial innovations enhance financial markets liquidity; ensure the allocation of resources to insufficient areas as well as improving the accessibility to emerging prospects (Tuesta, Sorensen, Haring, & Cámara, 2015), hence deepening financial inclusion.

The theory of financial innovations posits that some restrictions including external handicaps helps corporations in their pursuit of their objective which is maximization of revenues (Sekhar, 2013) hence commercial banks come up with innovative ways to reach more people to improve their profits. The emerging innovative financial inclusion models through mobile and other digital financial services especially in many African countries are assisting in closing the gap of

financial instruments which exists in these countries (Omwansa & Waema, 2014).

Digital Financial Information services is an emerging area of finance and have not attracted considerable literature or studies for review. However, the few study that have been conducted in the area is by Anson, Berthaud, Klapper, & Singer (2013), which analysed the use of financial information as generated from digital platforms on users decision making ability. The empirical results suggest that most of bank users are relatively more likely to use digital financial institutions to disseminate information to individuals who are most vulnerable to financial exclusion which includes the poor, less educated, and those out of the labour force. This area form solid ground for conducting the study as it an area largely ignore.

## IV. RESEARCH METHODOLOGY AND MODEL SPECIFICATION

The study adopted a correlational research design. According to (Cooper & Schindler, 2008), correlation design describes in quantitative terms the degree to which variables are related. The study target population was drawn from commercial banks that operates in Kisumu County. Unit of analysis comprised 160 respondents (branch managers, operation manager, product managers and finance manager) from all 43 branches of 30 commercial banks operating in Kisumu County (KBA, 2017). The study employed census sampling, as proposed by Cooper & Schindler(2008), due to the small size of target population. Stratified simple random sampling technique was used to select respondents. Primary data was obtained via use of structured questionnaires, secondary data collection financial performance reports of sampled banks. Both descriptive and inferential statistical tools were used to analyse the data collected. The study conducted Karl Pearson's correlation analysis to establish the nature and strength of relationship between the components or constructs DFIS and financial performance of commercial banks in Kisumu County, Kenya.

Multiple Regression model was developed to estimate the contribution change of independent variable (DFIS) on financial performance and parametric t-test statistics was used to evaluate the significance of beta coefficient and acceptance/rejection criteria was based on p value at 5% level of significance. The results of Kaiser-Meyer-Olkin measures (KMO) on the research instrument constructs were greater than 0.5 and not above 1, hence acceptable. In addition, Bartlett's Test of Sphericity had p-values of 0.000 for all the variables, thus indicated the factors were valid and suitable. Therefore, the two test (KMO and Bartlett's Test) revealed that no collinear relationship exist among the explanatory variables and data series was normally distributed, with a linear relationship between the independent variables and the dependent variable. The employed multiple regression model is shown in equation i.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon \quad \dots\text{Equation i}$$

Where Y = Financial performance of commercial banks

$\beta_0$  = Y-intercept (Constant value)

$X_1$  = Transaction alerts

$X_2$  = Online trading

$X_3$  = Digital market research

$X_4$  = Financial information dissemination

$\beta_1, \beta_2, \beta_3,$  and  $\beta_4,$  =the estimate of constructs.

$\varepsilon$  = Regression error term

### V. ANALYSIS AND FINDINGS

The model summary result for regression result depicts is shown in Table 1.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839 <sup>a</sup>	.704	.687	.22329

a. Predictors: (Constant), financial information dissemination, transaction alert, online trading, digital market research

The result of the regression indicated that the four predictor of DFIS (transaction alert, digital market research, online trading and information dissemination) explained 70.4% of the variance in financial performance of commercial banks in Kisumu County, Kenya ( $R^2 = 0.704$ ). This implies that the model 70.4% of variation in financial performance of commercial banks can be attributed to DFIS (transaction alert, digital market research, online trading and information dissemination). The remaining 29.6% are explained by other factors not considered in the mode. Result for Analysis of Variance (ANOVA) is shown in Table 2.

Table 2: ANOVA<sup>a</sup>

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.252	4	9.063	181.783	.000 <sup>b</sup>
	Residual	4.886	98	.050		
	Total	41.138	102			

a. Dependent Variable: Bank financial performance

b. Predictors: (Constant), financial information dissemination, transaction alert, online trading, digital market research.

Table 2 revealed a higher F cal = 181.783 > F critical = 3.933 and significance ( $p = 0.000 < 0.05$ ) at 95% level of significance. This implies that the model was fit for the study; and financial

information, are good predictor of financial performance of commercial banks in Kisumu County. Lastly, regression of coefficients results is shown in Table 3.

Table 3: Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	2.647	.351		7.548	.000	
1	Financial Information dissemination	.170	.098	.351	7.409	.000
	Transaction alert	-1.376	.150	-.098	-9.184	.000
	Online trading	.728	.051	.150	3.308	.001
	Digital market research	.947	.082	.051	11.602	.000

a. Dependent Variable: Bank financial performance

Results from Table 3 revealed a constant value ( $\beta_0 = 2.647$ ) which implies variation change on financial performance of commercial banks in Kisumu County which does not depend on the predictors of DFIS. Additionally, financial information dissemination significantly predicts ( $\beta_1 = 0.170, p = 0.000 < 0.05$ ) performance of commercial banks in Kisumu County, Kenya; transaction alert negatively significantly predicts ( $\beta_2 = -1.376, p = 0.000 < 0.05$ ); online trading significantly predicts ( $\beta_3 = 0.728, p = 0.001 < 0.05$ ) and digital market research significantly predicts ( $\beta_4 = 0.947, p = 0.000 < 0.05$ ). Regression results coefficients findings

implied that digital market research has the most significance influence on bank financial performance, followed by financial dissemination, and online trading in that order. In the contrary, transaction alerts has significance negative influence which can be interpreted as negative influence.

The test for null hypothesis was conducted using parametric t-test statistics. Findings shows that all the construct of DFIS calculated t statistic (financial information dissemination = 7.409, transaction alert = -9.084, online trading = 3.308 and digital market research = 11.602) were greater than t critical ( $t_{crit} = \pm 1.96$ ) and with corresponding

critical  $p < 0.05$ . Therefore, the study failed to accept the null hypothesis which stated that DFIS has no significant influence on financial performance of commercial banks in Kisumu County, Kenya. The study constructed model as follows:

$$Y = 2.647 + 0.947X_1 + 0.728X_2 + 0.170X_3 - 1.376X_4 \dots \text{equation 2}$$

Where Y = Financial performance of commercial banks

$X_1$  = Digital market research

$X_2$  = Online trading

$X_3$  = Financial information dissemination

$X_4$  = Transaction alerts

## VI. DISCUSSION, CONCLUSION AND RECOMMENDATION

The purpose of the study was to determine the influence of DFIS on financial performance of commercial banks in Kisumu County, Kenya. Four constructs of DFIS namely financial information dissemination, transaction alert, online trading and market research were assessed. Findings for regression indicated that the four predictors of DFIS explained 70.4% of the variance in financial performance of commercial banks in Kisumu County, Kenya ( $R^2 = 0.704$ ). Further results indicated that digital market research had the highest contribution ( $\beta = 0.947$ ), followed by online trading ( $\beta = 0.728$ ) and information dissemination ( $\beta = 0.170$ ). On the contrary, transaction alert has a negative and significant contribution ( $\beta = -1.376$ ). This finding implied DFIS have significant contribution to financial performance of commercial banks in Kisumu County. The findings corroborate results of Anson, Berthaud, Klapper, & Singer (2013) study which reported financial institutions significantly use digital information channels to bridge financial information asymmetry among the in emerging economies. The study recommends commercial banks to fully embrace DFIS as a means to mitigate financial information asymmetry risk and allow individuals, businesses, governments, and financial-services providers to conduct transactions efficiently. In return, this would lead to expansive use of digital financial services and thus boost bank financial performance.

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