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Influence of Financial Process Innovation on Profitability of Commercial Banks in Mombasa County, Kenya

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Abstract

The study investigated the influence of Financial Innovation on Profitability of Commercial banks in Mombasa County. The Transaction Cost Theory was applied in support of this study. The study adopted descriptive survey design, with a target population of 252 respondents consisting of branch managers and various heads of departments. The sampling size was calculated using Nassiuma's formula to determine the sample size of 77. Both primary and secondary data were collected in this study. Statistical analysis was carried out with the aid of IBMS SPSS Statistics for Windows, version 27. The hypothesis testing led to the rejection of H_{01} hence confirming that financial process innovation had a significant positive influence on the profitability of Commercial banks in Mombasa County. The study therefore recommends that there is need for banks to continuously update bank processes while filing patents for the same as this influences profitability positively.

Keywords: *Financial Process Innovation, Profitability, Commercial banks, Mombasa County*

1.0 Introduction

According to Cirera *et al.* (2020), financial process innovation is a new or improved business process that majorly differs from former processes. This implies changes in the method in which bank products are delivered like for instance through internet banking and digital account opening. Song and Zhou (2021) observe that a bank which keeps working on an efficient way to produce and deliver products can expect to develop the same products but cheaply leading to profitability.

However, Mohamed (2019) notes that if the process innovation is continuously adopted by competitor banks, profits are likely to fall gradually. Furthermore, Blach (2020) highlights the risks involved in allowing customers manage accounts. The author points out the risk of fraud and money laundry since the customer's actual identity is not disclosed. Such mixed perceptions emphasis the need for this particular study so as to determine the real influence of financial process innovation on profitability of commercial banks.

1.1 Statement of the Problem

Commercial banks have been forced to apply financial innovations in order to remain competitive and to curb other numerous uncontrollable challenges in the business environment, including the effects of Ukraine-Russia war, climate change, and global inflation. Regardless of these environmental pressures, banks aim at maximizing profits through the new developments. However, as noted by Mai, Vu, Bui and Tran (2019), innovation is a risky and costly venture whose success is not known from the outset.

Furthermore, some studies done in the past on the influence of financial innovation on profitability have given mixed results. Some have revealed a positive correlation between financial innovation and profitability, while others revealed a negative correlation. For instance, Ejike (2019) and Mohamed (2019) discovered that innovations have a positive effect on the income generating potential of the banks by improving efficiency and profitability of the banks. On the other hand, studies by Mueni (2018); Chanaron, Luo and Yu (2018) revealed that product and process innovations negatively impact on the profitability. The reduced profits was as a result of heavy investment in the innovations and less income due to low bank charges. Such mixed findings suggest a state of uncertainty as banks vigorously engage in innovations, hence the importance of carrying out this study under the current circumstances.

Therefore, despite the fact that financial innovation may seem to have economic benefits to banks, the influence of such innovations on profitability is still not that clear. Banks need current information on the same to avoid a reverse causality in the innovation-profitability relationship.

1.2 Objective

To establish the influence of financial process innovation on the profitability of commercial banks in Mombasa County.

1.3 Research Hypotheses

H_0: Financial process innovation has no significant influence on profitability of commercial banks in Mombasa County.

2.0 Literature Review

2.1 Theoretical Framework

The study was anchored on Transaction Cost Theory as proposed by Hick and Henians in 1983. According to this theory, the main aim of financial innovation was to ensure efficiency in executing transactions by minimizing the cost of exchange. Financial innovation which came as a result of advancement in technology aimed at reducing transactions costs. Commercial banks tend to be shifting towards self-serviced banking facilities to attain such efficiency. If greater efficiency is achieved by commercial banks, the benefits derived from process innovations will exceed the costs incurred leading to profitability. This particular view is consistent with that of Muia (2017) who

concluded that technological delivery channels affected Returns on Assets positively. However, the theory contradicts with the findings on Mueni (2018) whose results showed that mobile banking impacted negatively on profits.

This theory helps explain the reason as to why banks engage in financial process innovations. Presently, the application of ICT among commercial banks contributes to substantial reduction in the cost of executing transactions since they are internet driven. The application of automated processes are meant to reduce the overall operational costs incurred by the banks and therefore resulting into improved bank profitability. However, this theory overlooks the fact that the installation and maintenance costs of the process innovations could exceed the benefits leading to loss.

2.2 Conceptual Framework

The study reviewed the inter-relationship between the dependent variable and independent variables as shown in Figure 1:

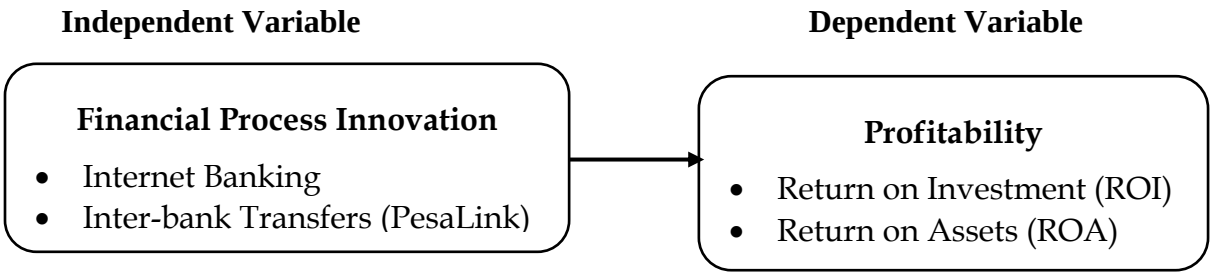

Figure 1: Conceptual Framework

2.3 Empirical Literature Review

According to Odipo (2018), new and improved products and structural systems are embraced by enterprises because they help cut on costs of production, leads to customer satisfaction and yield bigger profits. This implies that profits will only be attained when the returns earned by a firm exceed the investment made. Mai et al. (2019) agrees with this by asserting that firms that innovate experience faster growth and are more profitable than those that do not innovate. This suggests that financial process innovation is an important characteristic associated with success of commercial banks.

Other studies conducted in the area of financial innovation and profitability recorded mixed results on the effect of financial innovations on banks' performance. Ireri (2020) who investigated the effects of financial innovations on Kenyan commercial banks performance found out that the variables tested like mobile banking and agency banking had a significant influence on profits.

Riungu (2020) carried out a study on the influence of strategic innovation practices on organisational performance. The study observed that banks in Kenya engage in financial innovations so as to gain a larger market share than the competitors. Riungu's findings showed that financial innovation application is directly proportional to financial performance. The study concluded that banks use electronic channels to enhance accuracy, speed and reliability.

Ejike (2019) sought to find out the effect of bank innovations on financial performance of commercial banks in Nigeria. The study found out that most of the innovations have a positive effect on the income generating potential of the banks by improving efficiency, liquidity and

profitability. Ejike's results are consistent with those of Awolusi and Aduaka (2020) who concluded that commercial banks are to engage in financial innovation if they are to increase profits through quality and effectiveness.

Mueni (2018) on the other hand found mixed results on the effect of financial innovations on the profitability of public commercial banks. Mueni's results showed a positive correlation between

profitability and Real Time Gross Settlement (RTGS), but that mobile banking was negatively correlated to bank profitability.

Akani and Obiosa (2020) also got mixed results in their study on the effect of financial innovation on the profitability of deposit money banks in Nigeria. An inferential survey research design was applied. Findings revealed that electronic fund transfer leads to a decrease in return on equity while E-banking and computer technology increases returns on equity. On the other hand, Olalere *et al.* (2021) did a comparative study on the effect of financial innovation on firm value of Malaysian and Nigerian banks. The results showed that financial innovation impacts negatively on firm value in Nigeria. However, the authors discovered that for the Malaysian banks, financial innovation impacted positively on firm value.

A good number of past studies done by authors like; Elomu (2017), Odipo (2018), Muia (2017), Ayaale (2017) and Mohammad (2017) were done earlier when banks operated in a more stable environment. The current economic environment marked by post COVID-19 effects, Russia–Ukraine war, global inflation, climate change, famine and rise in cost of living provides a new context in the application of financial innovation. Commercial banks have been forced to come up with new products and creative ways of responding to these uncontrollable circumstances. There is therefore need for this study to be done so as to fill the literature gap and provide stakeholders with up to date information on the influence of innovation on profitability under such unforeseen and uncontrollable events. Additionally, most of the earlier studies reviewed had some financial innovation variables whose use has significantly reduced as depicted in the CBK (2021) report, for instance Automated Teller Machines. The current has portrayed the most current bank innovations like PesaLink and smart contracts.

3.0 Research Methodology

The study adopted descriptive survey design, with a target population of 252 respondents and sampling size calculated using Nassiuma's formula to determine the sample size of 77. Primary data was collected by administering structured questionnaires on senior management. Additionally, the study applied both descriptive statistics and inferential statistics while employing Pearson's correlation coefficient and multiple regression analysis. Statistical analysis was carried out with the aid of IBMS SPSS Statistics for Windows, version 27. The analysed data was then presented using tables and graphs. On the other hand, hypothesis testing was done using multiple regression with an acceptable margin error of 0.05 at 95% confidence level. The regression model guiding this study was formulated in the following manner.

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$…...……...…….……Equation 1

Where: Y = Profitability, X_1 = Financial Process Innovation, β = Beta coefficient and ε = the error term

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4.0 Findings and Discussion

4.1 Diagnostic Tests

Diagnostic tests were conducted on the data as a prerequisite for the successful running of the simple linear regression model.

4.1.1 Test for Normality

The data set was tested to determine whether data are normally distributed with no skew observed. The normality test was carried out using the Shapiro-Wilk test. The examination of the data as revealed in Table 1, ensured confidence in the normality of the dataset. As observed, the p - value of the Shapiro-Wilk Test is greater than 0.05, hence the normality of the data confirmed. This adherence to normality increased confidence in both the regression model and the study conclusions.

Table 1: Normality Test Results

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Profitability	.125	70	.008	.971	70	.103
Process innovation	.096	70	.183	.982	70	.435

a. Lilliefors Significance Correction

4.1.2 Test for Linearity

The study tested the existence of a linear relationship between the dependent and independent variable in order to verify the suitability of the regression model. Based on the ANOVA Output Table, value sig. Deviation from linearity 0.066> 0.05, it is evident that there is a linear relationship between the variables of financial process innovation and profitability. Therefore, results presented in Table 2 confirmed the presence of linearity, thus proving the appropriateness of the linear regression model.

Table 2: Linearity Test Results

ANOVA Table

			Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Profitability Process innovation	Between Groups	(Combined)	10.196	11	0.927	4.741	.000
		Linearity	6.509	1	6.509	33.291	.000
		Deviation from Linearity	3.687	10	.369	1.886	.066
	Within Groups		11.340	58	.196		
	Total		21.536	69			

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4.2 Descriptive Analysis Results

The descriptive statistics for the financial process innovation were generated using SPSS and the results tabulated in Table 3.

Table 3: Descriptive Results

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Process Innovation	70	1.50	5.00	3.3107	.73897

Table 3 showed that the overall mean for the financial process innovation variable was 3.3107, hence portraying an overall agreement by the respondents that financial process innovation had an influence on profitability. The standard deviation statistics value of 0.73897 being less than the mean value proved that the data was well spread around the mean.

4.3 Pearson's Correlation Analysis Results

The Pearson's correlation analysis statistics were generated and tabulated in Table 4.

Table 4: Bivariate Linear Correlation Analysis Results

		Y	X
Y	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	70	
X	Pearson Correlation	.623**	1
	Sig. (2-tailed)	.000	
	N	70	70

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

The study established that there is a significant association between financial process innovation (X_1) factor on profitability of commercial banks in Mombasa County. This was indicated by coefficient correlation (r=.623) and P-value *(P< .000*).

4.4 Regression Analysis Results

This section comprised of Table 3 for the model summary, Table 4 for the ANOVA results and Table 5 for the regression coefficients of the direct relationship model. Table 6 was used to represent the regression coefficients for the moderated relationship model.

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Table 5: The Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623[a]	.388	.379	.46305

a. Predictors: (Constant), Financial Process Innovation

b. Dependent Variable: Profitability

The findings presented in Table 5 show the extent of variations on the profitability which as depicted by the independent variables. The R square value is 0.388. This means that the independent variables explain 38.8% of the variations in dependent variable. This proved that the model used was ideal in affirming the relationship between the two variables.

Table 6: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.249	1	9.249	43.137	.000[b]
	Residual	14.580	68	.214		
	Total	23.829	69			

a. Dependent Variable: Profitability

b. Predictors: (Constant), Financial Process Innovation

ANOVA was used to test the influence of innovation on profitability of commercial banks in Mombasa County. The Table 6 shows a regression output of the financial process innovation factor as valid ($F(1, 68) = 43.137$, $P<0.000$). This means that financial process innovation factors can be used as predictors explaining the variation in profitability of commercial banks in Mombasa County. The $P<0.000$ is less that the critical value of 0.05 hence the model reliable as the variation in the results is insignificant that cannot result to a much difference in case of a change in the units of analysis.

Table: 7: Regression Coefficient Results of the Model

	Unstandardized Coefficients		Standardized Coefficients		
Model 1		**B**	**Std Error**	**Beta**	**T**	**Sig.**
	Constant	1.482	.366		4.044	.000
	Fin. Process Innovation	.684	.104	.623	6.568	.000

a. Dependent Variable: Profitability

The interpretations of the findings in table 4.7 indicated the following regression model:

$Y= \beta_0 + \beta X + \varepsilon$

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Therefore;

Y=1.482+0.684X

4.5 Hypothesis Testing

The hypothesis of the study was tested at a significance level of alpha = 0.05. The results are presented in Table 8.

Table 8: Test of Hypotheses

Hypothesis Statement	B	T	p-value	Decision
H_0: There is no significant influence of financial process innovation on profitability of commercial banks	0.684	6.568	0.000	Reject

Based on the regression coefficient results (β_1 = 0.684, t = 6.568, p < 0.05), the study findings rejected the null hypothesis that financial process innovation has no significant influence on profitability of commercial banks in Mombasa County. This is confirmed by the positive coefficient 0.684, and a p-value that is less than 0.05 proving that the relationship is not only positive, but also statistically significant. According to these results, financial process innovation contributed to 68.4% increase in profitability of commercial banks in Mombasa County. These results are identical with those of Muia (2017) whose study established that all the variables, that is, electronic funds transfers, mobile banking and internet banking affect Return on Assets positively. However, the results are in contrast with those of Akani and Obiosa (2020) which revealed that electronic funds transfer leads to a decrease in return on equity.

The objective of the study was to establish the influence of financial process innovation on profitability of commercial banks in Mombasa County. The hypothesis testing in table 4.8 led to the rejection of H_0. The results portrayed that financial process had a positive and significant influence on profitability of commercial banks in Mombasa County. The outcome of financial process innovation on profitability showed that banks' automated processes reduce operational costs and enhance customer satisfaction leading to profitability.

5.0 Conclusion

Based on the findings, the researcher concluded that financial process innovation had a positive and significant influence on profitability of commercial banks in Mombasa County.

6.0 Recommendations

The researcher therefore recommends that commercial banks should regularly update their existing processes or come up with totally new processes so as to heighten efficiency and increase profitability**,** while filing patents for the same in order to enjoy profits for longer period. The researcher also recommends the need for another study to be conducted considering the moderating effect of regulatory framework in innovation-profitability relationship.

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