Analysis Of The Role Of Technological Alignment On Organization Performance: A Perspective Of Commercial Banks In Nyeri County, Kenya

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Abstract: The study sought to examine the role of technological alignment on performance of commercial banks within Nyeri County, Kenya. Technological alignment was measured in terms of product technological innovation, blockchain technology and Fintech technology adoption. Similarly, organizational performance was measured in terms of customer satisfaction, employee satisfaction, market share and capacity utilization. The study employed descriptive research design and its targeted employees in 14 commercial banks in Nyeri County. Semi-structured questionnaire was used to collect primary data. Descriptive analysis and inferential analysis were done and the findings presented in tables and figures. Qualitative data was analyzed using content analysis and presented in prose form. The study established that technological alignment through modern-day banking technologies, investing and equipping the bank with new technologies that is accessed by all staff and availability of financial and human resources under resource alignment resulted in improved bank performance. The study recommended that the bank management and other firms to adopt the use of technological alignment for enhanced operational efficiency, delivery of high quality service as well as innovative products.

Keywords: Technological Alignment, Organizational Performance and Innovation

I. INTRODUCTION

Organization performance refers to how well an enterprise operates towards realization of its vision, mission and strategic objectives (Windermere, 2013). Measurement of organization performance is a comparison between the results and the intended goals and the evaluation of organization and its performance is of great concern to market players and researchers (Daley, 2012; Kinyua, 2015; Kimaru & Kinyua, 2018; Kobia & Kinyua, 2018; Mbugua & Kinyua, 2020). Performance in organizations can be measured using non-financial indicators like customer satisfaction (Mbai, Muhoho & Kinyua, 2018) or through using financial indicators like return on assets and profitability (Muthoni & Kinyua, 2020). Performance of commercial banks has also been measured using efficiency, effectiveness, customer retention, new process, customer satisfaction, employee's satisfaction, capacity utilization, market share and profit (Mirugi &

Kinyua, 2018; Gabow & Kinyua, 2020). In this study, capacity utilization, customer satisfaction, employees' satisfaction and market share were used as non-financial measures of performance in the context of Commercial Banks in Nyeri County, Kenya.

To assess technology alignment, there must be open communication system between business and IT executives and also successful history of information systems. Designed strategies that are well communicated across the entire organization lead to efficient performance (Kobia & Kinyua, 2018). The communication can be made effective by using modern technological systems as the technologies help in sharing data that is used to make decisions and adjustments in strategies leading to improved performance (Mutuvi, Muraguri & Kinyua, 2019). On the other hand, it helps in laying performance standards, structure and ensuring that there is consistency by the management (Kinyua, Njoroge, Wanyoike & Kiiru, 2015). According to Aagaard (2016), traditional

manual operating systems by the commercial banks are being replaced by digital modes. Some of the processes that have been digitized include loan application and disbursements and know-your-customer (KYC) documentation. This transition has resulted in efficient service delivery by the banks to its customers.

The commercial banks in Nyeri have continued to register low performance index due to non-performing loans that is linked to weak monitoring controls and supervision, weak lenders' recourse, legal infrastructure and poor strategies for debt recovery (Kirui, Ndiao & Wasike, 2018). These banks have also failed to attain maximum levels of efficiency but with the adoption of digital banking platform the trend has started to shift due to user-friendly platforms and increased security levels. As evidenced by Gweyi (2014) low levels of economic growth are to blame for poor performance of commercial banks as reflected in the inflation rate, interest rate spread, interest rates, high volatility and deposit rates and GDP growth- the per-capita GDP being low.

Some related studies include; Aagaard (2016) who affirmed that business and information systems strategy alignment helps companies to perform better. Empirical research by Ittner, Larcker and Randall (2013) showed that the performance implications of this alignment has not been realised as a solid unit. In another study by Otiso (2018) investigating on the organizational structure and quality service for the commercial banks based in Nandi County, where the results revealed that organizational structure influenced the quality services offered by the commercial banks in Nandi County. The difference is that while it examined service quality, the current study focus on performance. The gap is such that very few researches looked at the influence of technological alignment on performance. Based on this gap, the study investigated on how technological alignment influenced the performance of commercial banks in Nyeri County.

II. LITERATURE REVIEW

A. THE RESOURCE-BASED VIEW

The origin of RBV of the firm is associated with Edith Penrose and seeks to provide a firm oriented perspective to the concept of strategy (Penrose, 1959). The model serves as managerial framework that determines an organization's strategic resources that can be exploited to enable the firm attain sustainable competitive advantage. The major proponent of the model is Barney (2011) who postulated that the RBV model has undergone evolution from a blossoming approach to become one of the more powerful and prominent theories that describe, explain and predict the various relationships existing in the firms. The model propounds that the resources of the firm are so fundamental in determining both the performance and competitive edge of the firm. The RBV model works on the assumption that firms that operate within a particular industry may be heterogenous in nature with regard to the bundle of resources under their control. The second underlying assumption of the model is that resource heterogeneity is likely to persist for long since the resources

used in executing the resources of the organization are not perfectly mobile across organizations.

RBV works on maximizing returns using the available resources. These resources are tangible which take the form of fixed or current organizational assets or they can be intangible including intellectual property rights and capabilities, skills and experiences inherent in the organizational employees. To gain competitiveness, the organizations must exploit these resources (Dibrell, Craig & Neubaum, 2014). The model proponents argue that these resources and not the environment is what gain an organization its competitive edge. As such the model exposes the use of information and communication technology in gaining firm competitive edge (Meng & Berger, 2019). The RBV model anchored the study by informing on technological alignment and its linkage to organization performance. It further shows and justifies how resources in a firm are balanced to score the ultimate objective of wealth maximization, which, in this study was enhancing organizational performance.

B. EMPIRICAL LITERATURE REVIEW

Laban and Deya (2019) conducted a study on the effect of technological innovation and alignment on organization performance among ICT companies. The study was confined to 14 ICT firms in Nairobi City County and its employees who as the respondents' revealed that market innovation led to improved organization performance. Market innovation had the biggest effect followed by product, process and lastly organizational innovation. The study made use of multiple regression model where the independent variables were jointly regressed on the dependent variable.

Chege Wang and Suntu (2020) assessed the association that technology alignment had on organization performance and found out that the performance of the sampled 240 enterprises was strongly influenced by technology. The study reveals that enterprises should invest in technology and innovative strategies that improve the organization performance. The study used structural equation modeling for the research strategy but the required confirmatory factor analysis was not carried out.

Nguyen, Nguyen and Phung (2019) studied the effect that technology alignment had on organization performance and corporate social strategy within the Vietnamese manufacturing firms. The study collected data from 2011-2013 and revealed that product innovation improved the performance of organizations in terms of market share. The study employed an external intervening variable while the current study does not.

Kariuki (2015) in a study on technology alignment and performance in the mobile telecommunication companies in Kenya. Results showed that strategic innovation positively affected performance of the firms. Some of the strategies included product, process, marketing and resources planning like human capital and these strategies led to improved performance of the firms. These telecommunication firms were advised to invest in technology so as to invent and innovate more products and processing and increase their productivity. The study did not provide a clear methodological approach in terms of study population and sampling design;

which are well addressed in the current study. Similarly, Faruk and Lynn (2016) investigated the impact of innovation strategy on organization performance. The study analysis revealed that innovation strategy significantly increased the organizational performance.

C. CONCEPTUAL FRAMEWORK
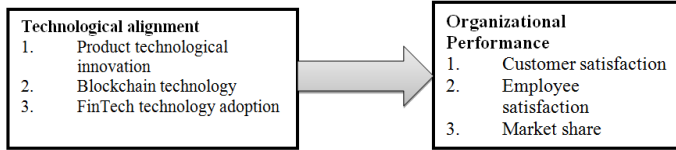
Source: Researcher (2021)
Figure 1: Conceptual Framework

On the basis of the conceptual framework, the research hypotheses for this study were;

H_0: Technological alignment has no effect on performance of Commercial Banks in Nyeri County, Kenya

H_1: Technological alignment has an effect on performance of Commercial Banks in Nyeri County, Kenya

III. RESEARCH METHODOLOGY

The chosen design was descriptive and which provided the researcher with sufficient data on population features and gave answers on who, what, where and when of the research problem. It also provided the right information by describing conditions as they exist and was considered appropriate for this study to reveal answers on technological alignment and performance. Descriptive research design has been effectively used in past scholarly researches including (Gatuyu & Kinyua, 2020; Ontita & Kinyua, 2020; Mbugua & Kinyua, 2020).

The study targeted fourteen commercial banks in Nyeri County in Kenya, whose unit of analysis were the selected employees working in these banks. The respondents included three senior level management employees, three middle level management employees and three junior level management employees, totalling to nine employees from each bank and 126 total respondents. The census sampling method was adopted because the population of interest was small hence all the 126 respondents were used in the study. This is captured in Table 1:

SN	Bank	Senior Management	Middle Management	Junior Management	Total Per Bank
1	Jamii bora Bank	3	3	3	9
2	Standard Chartered	3	3	3	9
3	Sidian Bank	3	3	3	9
4	Kenya Commercial Bank	3	3	3	9
5	Equity Bank	3	3	3	9
6	Diamond Trust Bank	3	3	3	9
7	Cooperative Bank	3	3	3	9
8	Barclays Bank	3	3	3	9
9	Investment and Mortgages (I&M) Bank	3	3	3	9
10	Eco Bank	3	3	3	9
11	Family Bank	3	3	3	9
12	National Bank	3	3	3	9
13	Housing Finance Bank	3	3	3	9
14	Consolidated Bank	3	3	3	9
	TOTAL				126

Source: Nyeri County Business Registry (2020)
Table 1: Target Population and Sample Size Distribution

Primary data was collected through semi-structured questionnaires such that the researcher had both qualitative and quantitative data. The structured questions employed the use of Likert Scale Rating and it was divided into sections, the first was a self-introduction letter, then demographic information and specific information as per study variables.

The instrument was piloted to assess its validity and reliability (Bryman, 2016); Content validity ensured the instrument is adjusted accordingly in readiness for actual use. The researcher also sought the guidance of fellow students and the supervisor to deliver a good instrument. For reliability testing, test re-test method was employed where the same group of respondents were given the same instrument twice and the results obtained in both tests were compared using the Pearson's co-efficient. The internal consistency was also done using Cronbach's Alpha index so as to measure similarity of the research instrument. Alpha index of 0.7 and above is the threshold to indicate reliability of the instrument (Kiprotich, Kahuthia & Kinyua, 2019; Ontita & Kinyua, 2020).

The reliability test result is shown in table 2.

Research variable	Number of items	Cronbach Alpha	Comment
Technology alignment	7	.830	Cronbach Alpha is <0.7 (reliable, should be adopted).
Organizational Performance	8	.855	Cronbach Alpha is <0.7 (reliable, should be adopted).
Overall (total)	**15**	**.842**	**Cronbach Alpha is <0.7 (reliable, should be adopted).**

Source: Pilot Test Data (2021)
Table 2: Reliability Test Results

Findings of table 2 show that technological alignment had Cronbach alpha value of α= 0.830 and organizational performance was α= 0.855 with the aggregate score of α= 0.842

The collected data was sorted, checked for completeness and accuracy, edited and coded into groups then entered into SPSS for further analysis. Descriptive statistics was performed and results shown in the form of percentages, mean and standard deviation and inferential statistics analyzed the relationship of the key research variables. The following equation was adopted:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots \text{(i)}$$

Where;
Y=Organization Performance
X_1= Technological Alignment
$\beta_0, \beta_1,$ = beta coefficients
ε = Error term

IV. RESEARCH FINDINGS AND DISCUSSION

The researcher administered 126 questionnaires to the staff working in the 14 commercial banks operating in Nyeri County and 93 were returned; showing a response rate of 73.8%. Mugenda and Mugenda (2003) noted that any response rates that are above 70% are adequate for use in research and drawing conclusions and recommendations as a fit

representation of the entire population. As such, the response rate of 73.8% is sufficient enough for use in this study and for generalization of the findings.

A. DESCRIPTIVE ANALYSIS

Technology Alignment	Mean	Std. Dev.
The bank uses innovative strategy to develop new pathways for performance	4.7527	.45816
Innovative ideas are encouraged and rewarded by the bank	4.7097	.47960
The bank invests in developing new technological ideas as a show of its commitment	4.6452	.58319
The bank ensure staffs can access all facilities to work better	4.6989	.56693
The firm has set a budget for R&D with the money available for use	4.6667	.66485
The departments in the banks are equipped with necessary technology	4.6452	.54464
The installed modern-day banking technology acquired by our bank has brought desirable change that has boosted the operational performance of the bank.	4.6989	.54742
Overall Score	**4.6881**	**.5492**

Source: Survey Data (2021)
Table 3: Technology Alignment and Performance

The descriptive analysis showed that technological alignment in general had a mean 4.6881 and standard deviation of .5492 in its influence on organizational performance of the commercial banks. The mean scores ranged from 4.75 at the highest to 4.64 at the lowest. These findings show that banking technologies have made service delivery fast and efficient which has potential to bolster the bank's performance.

Descriptive analysis results for organizational performance

Performance	Mean	Std. Deviation
Strategic alignment improves customer satisfaction	4.8387	.36979
Strategic alignment improves employee satisfaction	4.7634	.45200
Strategic alignment improves the bank's market share	4.7634	.47544
The bank realized high profits	4.7312	.51372
The bank grown and expanded in the past one year with strategy implementation	4.3656	.94280
The bank uses innovative ways to improve their performance.	4.7204	.55883
The bank managers tap into new uprising opportunities which is converted to business ideas	4.6734	.48200
In the past one year the operational performance has improved	4.7518	.49777
Overall Score	**4.7136**	**.5328**

Source: Survey Data (2021)
Table 4: Organization Performance

Table 4 shows that the overall mean score was 4.7136 and the standard deviation was .5328 for performance of the commercial banks within Nyeri County, Kenya. The highest mean score is at 4.8 and lowest at 4.3 which is an indication that the performance measures adopted in this study are present in the observed commercial banks.

B. CORRELATION ANALYSIS

Simple linear regression analysis was applied to scrutinize technological alignment and performance of commercial banks in Nyeri County. In this case, technological alignment was regressed on performance. Table 5 present regression analysis results

		Performance	Technology Alignment
Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	93	
Technology Alignment	Pearson Correlation	.900**	1
	Sig. (2-tailed)	.000	
	N	93	93

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Table 5: Correlation Analysis

The results of correlation analysis in table 5 show that technology alignment has a positive linear relationship with performance as denoted by r-900 with p-values of 0.000

C. REGRESSION ANALYSIS

Table 6: Model Summary

R	R Square	Adjusted R Square
.756a	0.508	0.642

The result of coefficient of correlation analysis as shown in table 6 with r of 0.756 is an indication of strong and positive correlation between the variables. The adjusted coefficient of determination is 0.642 showing that 64.2% of variation of organizational performance can be traced to technological alignment and the residual effect of 35.8 can be explained by other elements that are excluded in the present study.

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1803.671	1	1803.671	23.859	.000b
Residual	6879.319	91	75.597		
Total	8682.989	92			

a. Predictors: (Constant), Technological Alignment
b. Dependent Variable: Performance
Table 7: ANOVA

Findings in Table 7 show that with these ANOVA results, the regression model is a good fit for the observed data set since the F calculated is statistically significant at $F_{(1, 91)}$ = 23.859 and the p-values are 0.00 and it is less than the

declared standard level of 0.05 meaning the independent variable holds a significant influence on the dependent variable.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	13.192	3.392		.257	.000
Technological Alignment	0.807	.725	.225	.899	.036

a. Dependent Variable: Organizational Performance
Table 8

THE RESULTANT EQUATION

$Y = 13.192 + 0.807$ Technological Alignment …….. (ii)

The regression analysis proves that when technological alignment is held constant, the performance of commercial banks were at 13.192 and a unit increase in technological alignment resulted in commercial banks performance being at 0.807. The p-value for technological alignment was $0.036 < 0.05$ an indication that the variable has a significant influence on performance of the observed commercial banks.

The findings are in agreement with conclusions made by Laban and Deya (2019) that there is a link between technological alignment and performance of the ICT firms within Nairobi County. Similarly, Chege, *et al.,* (2020) found out that technology and innovation strategies have a strong influence on performance of enterprises. These findings are also supported by the empirical observation made by Kariuki (2015) to the effect that technology alignment yields higher performance of the telecommunication firms in Kenya.

D. ANALYSIS OF QUALITATIVE DATA

The respondents were asked to share their thoughts on use of technologies and how it enables attainment of the bank's targeted performance. Many of respondents shared that use of technologies helped to cut down the turn-around time on responses to customer requests, it helped bank staff to quickly and accurately deliver quality services to the client, it also helped the bank to deliver innovative products to the market and the innovative strategies improved operations of the bank leading to higher quality service delivery. The bank leadership embraced online marketing that has a far-reach to the consumers who are connected on different digital platforms.

V. CONCLUSIONS AND RECOMMENDATIONS

This study investigated the effect of technological alignment on performance of commercial banks in Nyeri County, Kenya. The study used descriptive research design and collected data from the 14 commercial banks in Nyeri County. The study established that technological alignment had a positive correlation with organizational performance. Linear regression analysis determined that technological alignment influenced organizational performance.

The study concluded that the banks have realized improved performance with aspects like high customer satisfaction and efficiency in bank operations based on technological alignment which has been supported by the use of modern-day banking technologies and equipping the bank branches with appropriate technologies that can be accessed and used by bank employees. The study recommended that the bank management and other firms to adopt the use of technological alignment for enhanced operational efficiency, delivery of high quality service as well as innovative products.

The study findings were limited to technological alignment and organizational performance of commercial banks in Nyeri County, Kenya. Future researchers should focus on other factors that have potential contribution to organization performance. Replicative studies should also be carried out in different industries to validate these findings and conclusions.

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