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EFFECT OF PROJECT MANAGEMENT TOOLS ON OPERATIONAL EFFICIENCY IN SELECTED COMMERCIAL BANKS IN KENYA

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ABSTRACT

The study aimed to investigate the effect of project management tools on operational efficiency within the banking sector, specifically focusing on selected commercial banks in Kenya. The primary objective was to examine how project management tools influenced operational efficiency in these banks. A quantitative research design was employed, utilizing structured questionnaires to collect data from a target population of 46 commercial banks listed by the Central Bank of Kenya. To ensure a representative sample, purposive random sampling was used to select five commercial banks Absa Bank, Bank of India, National Bank, Equity Bank, and Family Bank while stratified random sampling was applied to select 140 employees from relevant departments. A pilot test was conducted at Kenya Commercial Bank (KCB) in Nairobi City County to refine the research instruments. Content validity was ensured through expert input, and reliability was assessed using Cronbach's alpha coefficient. Data analysis involved descriptive statistics, correlation, and regression analysis using SPSS to examine the relationships between project management tools and operational efficiency. The study concludes that project planning and tracking tools have a positive and significant effect on operational efficiency in selected commercial banks in Kenya. In addition, the study concludes that project automation tools have a positive and significant effect on operational efficiency in selected commercial banks in Kenya. Based on the findings, the study recommends that commercial banks should strengthen project planning and tracking tools by adopting advanced data acquisition and cost management systems to enhance decision-making. Additionally, increasing the adoption of project automation tools will optimize operational workflows, reduce errors, and improve resource utilization.

Key Words: Project Management Tools, Project Planning and Tracking Tools, Project Automation Tools, Operational Efficiency in Selected Commercial Banks

Background of the Study

Project Management Tools refer to software applications, methodologies, and systems designed to assist project managers and teams in planning, organizing, and executing projects. These tools encompass a range of functionalities, including task scheduling, resource allocation, collaboration, and communication, contributing to the successful completion of projects within specified constraints (Wrike, 2019). Project management tools play a crucial role in facilitating operational efficiency within organizations (Rowe, 2019). These tools encompass a range of software and applications designed to streamline project planning, execution, and monitoring. The utilization of such tools provides a structured framework for managing resources efficiently, aiding in the allocation of tasks, monitoring progress, and ensuring that projects are delivered on time and within budget (Jones, 2018).

The integration of project management tools has become a widespread practice in the present global business environment. This is due to the fact that businesses have come to recognize the vital role that these tools play in maximizing resource management (Miller, 2021). Statistics gathered from a variety of locations, such as Europe, Asia, and North America, shown that more than seventy percent of businesses have used project management technologies in order to improve both their operational efficiency and the results of their projects (Taylor, 2020). In addition to the information technology industry, the construction industry, the healthcare business, and the manufacturing industry all find applications for these tools.

Globally, statistics from across the world on the percentage of successful projects highlight the significance of the influence that project management technologies have on resource optimization. According to Brown (2019), businesses that use sophisticated project management tools report a significant increase of twenty-five percent in the percentage of successful projects they complete in comparison to those who depend on more conventional approaches. It is not only established areas like North America and Europe that are experiencing this tendency; rather, it is also prominent in the economies of South America and Asia, which are still in the process of developing. It is becoming more important for companies to integrate project management technologies in order to improve resource management and overall project success. This is because businesses are continually competing with one another for competitiveness in the global market.

Regionally, a study done by Nkosi (2020), opines that, the usage of project management technologies has been gradually expanding within the African business environment, but at a speed that is unique from general trends in the worldwide business scene. An increasing number of organizations throughout the continent are beginning to acknowledge the significance of these technologies in terms of enhancing project results and optimizing resource management. There is a perceptible growing trend in the adoption of project management tools in important African economies, such as Nigeria, South Africa, and Egypt (Moyo, 2019).

Locally, it is noteworthy that a larger trend toward improving resource management methods across the corporate environment is reflected in the growing use of project management software in Kenya, which has been gaining ground in recent years. The results of recent research conducted in the area indicate that firms in Kenya are increasingly using project management technologies as critical components of their strategic planning and execution processes (Kiptoo et al., 2021). In light of this, there is a rising acknowledgment of the essential role that these tools play in optimizing resource allocation and enhancing overall project results.

Statement of the Problem

The effective implementation of project management tools is crucial for enhancing operational efficiency in the banking sector. These tools offer numerous advantages, such as streamlined processes, improved resource allocation, and enhanced communication among team members, which collectively contribute to the overall productivity and efficiency of banking operations. Equity Bank, a leading financial institution in Nairobi, Kenya, relies on sophisticated project management tools to ensure that projects are delivered on time and within budget, ultimately leading to increased customer satisfaction and competitive advantage in the marketplace.

Previous studies have explored the impact of project management tools on various sectors, yet there is a scarcity of research specifically focused on the banking sector in Nairobi. A case in point is a study by Mwangi (2018) which examined the influence of project management tools on construction projects, highlighting significant improvements in project outcomes. However, this research did not extend its findings to the banking sector. Similarly, Karanja and Wanyoike (2020) investigated the role of project management software in the IT industry but failed to consider its application in financial institutions, thereby leaving a gap in understanding how these tools can enhance operational efficiency in banks.

Despite the known benefits, there are significant gaps in the adoption and effective utilization of project management tools within the banking sector, particularly in developing regions like Nairobi. A study conducted by KPMG (2019) revealed that 56% of banks in Kenya fail to leverage the full potential of project management tools, resulting in operational inefficiencies and project delays. Further, according to the Central Bank of Kenya (2020), only 40% of banking projects are completed within the stipulated time frame, indicating a critical gap in project management practices that needs addressing.

This study aims to fill the identified gaps by focusing specifically on the commercial banking sector in Kenya, with a view to establishing the efficacy of Project Management Tools in this industry. It assessed how the adoption and utilization of project management tools affect operational efficiency, identifying best practices and areas for improvement. By addressing the gaps left by previous researches, this study provided valuable insights into the specific needs and challenges faced by selected commercial banks in Nairobi County, thereby contributing to the body of knowledge and offering practical recommendations for enhancing operational efficiency through effective project management, hence the topic; Effect of Project Management Tools on Operational Efficiency in Selected commercial banks in Nairobi County, Kenya

General Objective

The main aim of this study was to determine effect of project management tools on operational efficiency in selected commercial banks in Kenya.

Specific Objectives

The study was guided by the following specific objectives:

i. To establish the effect of project planning and tracking tools on operational efficiency in selected commercial banks in Kenya.
ii. To assess the effect of project automation tools on operational efficiency in selected commercial banks in Kenya.

Theoretical framework

Credit Creation Theory

According to supporters of Credit creation theory banks do not need necessarily to collect deposits at first in order to issue the loan. MacLeod (1906) said that "the business of banking is not to lend money, but to create Credit: and by means of the Clearing House these Credits are now transferred from one bank to another, just as easily as a Credit is transferred from one account to another in the same bank by means of a cheque." Many supporters of this theory wrote their articles in the first 20 years of the 20th century. Recently Werner (2014) did the comparison of three banking theories: Financial intermediation theory, Fractional reserve theory and Credit creation theory. After an empirical experiment with data from Raiffeisenbank Wildenberg Werner (2014, 2016) concluded that Credit creation theory is the only explaining results in the experiment. On Werner's findings (first ideas regarding this topic were published already in 1992) refer Turner (2012) when researching socially optimal allocation of credit to different economic sectors or activities and Ponomarenko (2017) when researching the money creation mechanisms in emerging markets with special focus on external transactions and outlines the implications for monetary policy and financial stability issues.

Fractional Reserve Theory

The fractional reserve theory states that only the banking system as a whole can collectively create money, while each individual bank is a mere financial intermediary, gathering deposits and lending these out. Under a fractional-reserve banking system (FRBS), banks are not required to hold 100% of their clients' deposits in their reserves. Central banks define the reserve requirement, i.e., the reserve percentage that banks must hold of deposits to meet repayment demands. Under a fractional-reserve banking system (FRBS), banks are not required to hold 100% of their clients' deposits in their reserves. Central banks define the reserve requirement, i.e., the reserve percentage that banks must hold of deposits to meet repayment demands. Suppose that client A deposits ten monetary units in a bank account. If the reserve ratio is 10%, banks can lend up to 90% of their clients' deposits. If this is the case, the bank lends up to nine monetary units of client A's deposit to client B. How does the FRBS impact economic performance? Two opposing approaches to the FRBS dominate in the monetary economics literature. On the one hand, Keynesian and monetarist macroeconomics argue that the FRBS is economically sustainable (Friedman and Schwartz 1986; Bibow 2002; Lavoie and Seccareccia 2004). The cash ratio ensures a high probability of depositors receiving their cash on demand even when their deposit is not complete and safe, generating a credit expansion process (well-known as bank multiplier) and increasing consumption levels (Sawyer 2006).

Empirical Review

Project Planning and Tracking Tools (Knowledge Management) and operational efficiency

Knowledge Management is an essential element for the successful implementation of projects. Due to the temporary nature of the projects and the teams that participate in them, the transfer, integration, and management of knowledge among projects is vital to promote sharing best practices, and to avoid the repetition of previous mistakes, in order to increase the probability of success for the projects and the organization. For this reason, Project Management tools can play a significant role in supporting Knowledge Management. The goal of this paper is to analyze and evaluate the project management tools of the Gartner Leader quadrant (2019 Gartner Magic

Quadrant) regarding their potential for the Capture, Storage, Sharing and Application of knowledge, according to the artifacts in the PMBOK, (PMI, 2021), and determine which are the best options.

Nowadays, organizations and businesses have been facing several challenges. The transition from an industrial economy to a knowledge and information-based economy has made organizational knowledge emerge as the most critical resource for organizations (Ordonez, et al,, 2017). Since the amount of information produced in organizations is increasing, (Landaeta, 2008), states that organizations that leverage their knowledge, technological capabilities, and innovative experiences are more likely to succeed. In addition, the work carried out by organizations often involves projects, and these play a key role in creating new business opportunities in an increasingly competitive market environment (Loufrani-Fedida, et al., 2015). According to Sankarasubramanian, (2009), all projects have one thing in common: knowledge. Therefore, it is important to develop an environment for creating, sharing, and using knowledge to achieve the intended results for the project.

The greatest challenge for organizations and project managers lies in finding a way to structure all the data produced, store them and direct them so that they are shared among all stakeholders, thus ensuring the business evolution (Duffield, 2016) Through the use of project management tools, it is possible to mitigate some of these problems, and assist in the planning, organization and management of a varied set of resources. This research work aims to analyse and evaluate the potential of project management tools to manage the knowledge that could translate into efficiency in the entire organization.

Project Automation Tools and operational efficiency of selected commercial banks

Khaled (2013) on a study on the Impact of Information and Communication Technology on the performance of Libyan banks found out that, the utilization of a new technology became widespread in both developed and developing economies especially in the banking sector in the recent years. However, Libya was still using traditional methods in commercial banking systems.

The results of the study confirmed the level of using ICT was low in Libyan selected commercial banks; in telecommunications and electricity, causes unattractive performance within Libyan commercial banking operation and government intervention was the main reason behind the lack implementation of ICT. Niwamanya (2012) did a study on technology and operational efficiency of selected commercial banks in Kampala.

The study found out that the use of new technologies had provided numerous advantages to the operations of the banks, for example, it had improved on the management of queues and extended the service or working hours for the banks. The study also indicated that the non- credit income of Post Bank had increased significantly, profitability levels had improved too, and the execution of tasks by the staff of the banks was done with utmost accuracy and precision, hence improving on the operational efficiency of the banks. A high positive relationship was obtained between the use of new technologies and operational efficiency which implied that the adoption of the new technologies had streamlined service delivery by the banks. The study concluded that adoption of the new technologies had greatly boosted the operational efficiency of banks and enabled them to perform at a addition an analysis revealed that poor state infrastructure, especially within the fields of 22 telecommunications and electricity, causes unattractive performance within Libyan commercial banking operation and government intervention was the main reason behind the lack

implementation of ICT. Niwamanya (2012) did a study on the competitive level with other banks. Mahdi and Mehrdad (2010) used chi-square to determine the impact of e-banking in Iran and their findings from the viewpoints of customers is that, e-banking cause higher advantages to Iranians. In other words, Iran banks provide services that the customers are deriving satisfaction with particular reference to the use of e-banking. All these studies go to show that, technology is critical in enhancing the operational efficiency of selected commercial banks in Kenya.

Conceptual Framework

The proposed study employed conceptual framework described below under this section. According to (Mugenda & Mugemda, 2006), a Conceptual framework is a hypothesized model identifying the model under study and the relationships between the dependent variable and the independent variables.

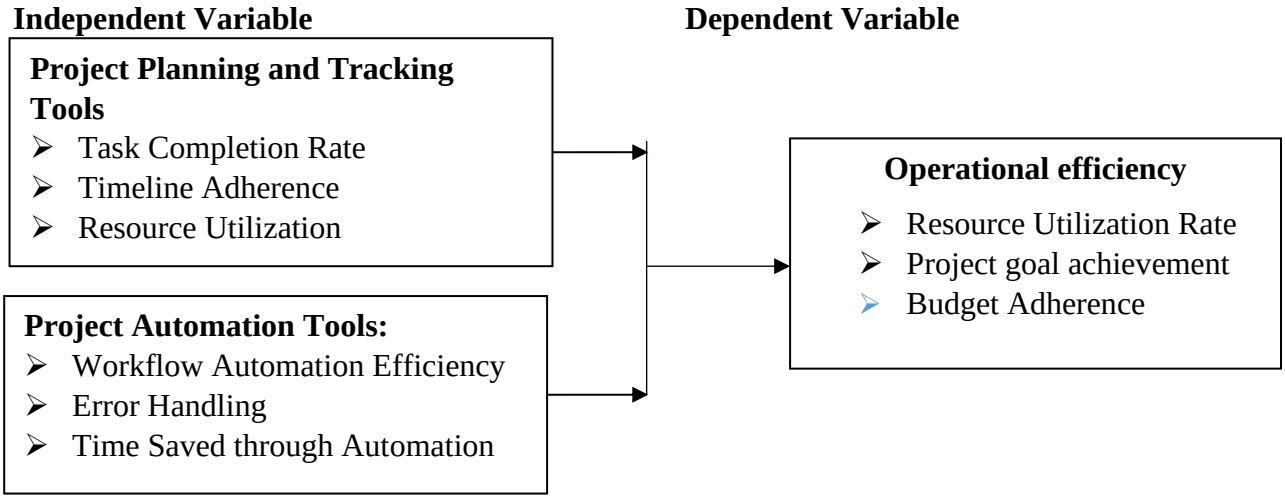

Figure 2.1: Conceptual Framework

Table 2.2 Operationalization of Variables

Variable	Indicators	Data collection tool	Data analysis	Supporting Literature
Project Planning and Tracking Tools	• Task Completion Rate • Timeline Adherence • Resource Utilization	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis	Ordonez, et al,, 2017), PMI, 2021, (Landaeta, 2008), Loufrani-Fedida, et al., 2015, Sankarasubramanian, (2009), (Duffield, 2016)
Project Automation Tools	• Workflow Automation Efficiency • Error Handling • Time Saved through Automation	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis	Niwamanya (2012), Khaled (2013)

RESEARCH METHODOLOGY

Research Design

Descriptive survey research, according to Kim (2014), sought to get data that depicts existing marvels by getting some information about their usage, disposition, conduct, or qualities. This research adopted the positivist philosophy that believes that the truth is steady and can be portrayed from a target perspective without meddling with the phenomenon being observed (Cresswell, 2008) This research borrowed heavily from a positivist research approach

Sampling fame and Sample size

The unit of analysis of the research Selected commercial banks listed to operate within the territory of Kenya by the Central Bank of Kenya. The thirty-nine selected commercial banks operational in Kenya (CBK, 2024) shall be the target population. The unit of observation within the firm was the supply/procurement managers, human resource managers, and financial managers within the commercial state corporations.

Sampling Design and Sampling Size

The sample frame for the research was the top managers within the state commercial corporations. A sample is a proportion of the subjects of the study used to represent the whole population (Cooper & Schindler, 2012)Stratified random sampling was used to select appropriate sample size as shown in the Table 3.1 below involving all the relevant employees from the selected commercial banks (5 Selected commercial banks, see as listed in the Appendix).

Table 3.1 Distribution of Target Population

Department	Number of Employees
Project Management	25
IT	30
Operations	35
Human Resources	15
Finance	20
Marketing	15
Total	**140**

Data Collection Instruments

The study utilized organized surveys to gather information. The selection of questionnaires wasbased on the nature of the quantitative data to be collected. Questionnaires are preferred as a method of data collection since they can be used to cover wide geographical areas. Questionnaires are also relatively cheap and enable the researcher to avoid interview biases (Saunders, et al., 2009)

Pilot Study

Before the actual study, a pilot study was conducted at KCB Bank, Nairobi City County. This choice is based on the bank's relevance in the banking sector and its distinct organizational structure, ensuring the questionnaire's clarity and effectiveness. The pilot study aims to identify and rectify any potential issues with the research instrument (Creswell, 2018).

Data Analysis

Descriptive statistics, correlation, and regression analysis was used to examine the quantitative data that has been obtained. Results from regression model was generated by data analysis using SPSS, the Statistical Package for the Social Sciences. Insights into the connections between project management software and efficient use of resources emerged from these examinations. The objective of the regression model is to deduce the complex connections between project management software and efficient use of bank resources in Kenya. This model serves as an analytical compass, guiding an exploration of how diverse project management tools contribute to the nuanced landscape of resource optimization within Selected commercial banks, Nairobi, enhancing our understanding of organizational dynamics and resource management intricacies in the banking sector.

- Equation Symbolism: Symbolized as $Y = \beta 0 + \beta 1X1 + \beta 2X2 + \varepsilon$
- Dependent Variable: Operational efficiency (Y)
- Independent Variables:
    1. Project Planning and Tracking Tools (X1)
    2. Project Automation Tools (X2)
- Constant Term: ($\beta 0$) establishes a baseline
- Beta Coefficients ($\beta 1 - \beta 2$): Quantify the magnitude and direction of each tool's impact
- Error Term (ε): Accommodates unobserved factors

RESEARCH FINDINGS AND DISCUSSIONS

Descriptive Analysis

In this section Likert scale questions are presented by the study where research participants were required to tell their opinion on a number of statements concerning project management tools. Relates to operational efficiency in selected commercial banks in Kenya. The research utilized a five-point Likert scale ranked as follows, 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree.

Project Planning and Tracking Tools

To obtain information about the first independent variable Project Planning and Tracking Tools , numerous statements were asked and the respondents required to provide feedback on a likert scale of one (1) to five (5), for 1 being strongly disagree, 2 being disagree, 3 being neither agree nor disagree, 4 being agree and 5 being strongly agree to the statements. On the statement “There is information sharing between the selected commercial banks and project planning teams within the sector” 15.1% strongly disagreed to the statement, 13.9% of the respondents disagreed to the statement, 35.5% of the respondents neither agreed nor disagreed to the statement, 24.7% of the respondents agreed to the statement whereas 10.8% of the respondents strongly agreed to the statement, with a mean of 3.02 and standard deviation 1.195.

On the statement “The selected commercial banks have adopted data acquisitions and storage processes within the sector” 13.5% strongly disagreed to the statement, 8.8% of the respondents

disagreed to the statement, 10.8% of the respondents neither agreed nor disagreed to the statement, 43.8% of the respondents agreed to the statement whereas 24.1% of the respondents strongly agreed to the statement, with a mean of 3.54 and standard deviation 1.306. On the statement "The selected commercial banks have adopted cost-related data review processes in the sector", 5.2% strongly disagreed to the statement, 23.9% of the respondents disagreed to the statement, 19.1% of the respondents neither agreed nor disagreed to the statement, 20.7% of the respondents agreed to the statement whereas 31.1% of the respondents strongly agreed to the statement, with a mean of 3.49 and standard deviation 1.291. Regarding the statement "There is data processing within the selected commercial banks have been enhanced through PPTT", 4.8% strongly disagreed to the statement, 15.9% of the respondents disagreed to the statement, 7.6% of the respondents neither agreed nor disagreed to the statement, 47.0% of the respondents agreed to the statement whereas 24.7% of the respondents strongly agreed to the statement, with a mean of 3.71 and standard deviation 1.145.

On the statement "The selected commercial banks have put in place a robust feedback system process" 4.8% strongly disagreed to the statement, 29.9% disagreed to the statement, 5.2% of the respondents neither agreed nor disagreed to the statement, 41.8% of the respondents agreed to the statement whereas 18.3% of the respondents strongly agreed to the statement, with a mean of 3.39 and standard deviation 1.223.

Table 4:1: Project Planning and Tracking Tools Frequencies

Project Planning and Tracking Tools	**Strongly Disagree**	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**	**Mean**	**Std. Dev.**
There is information sharing between the selected commercial banks and project planning teams within the sector.	15.1	13.9	35.5	24.7	10.8	3.02	1.195
The selected commercial banks have adopted data acquisitions and storage processes within the sector.	13.5	8.8	10.8	43.8	24.1	3.54	1.306
The selected commercial banks have adopted cost-related data review processes in the sector.	5.2	23.9	19.1	20.7	31.1	3.49	1.291
There is data processing within the selected commercial banks have been enhanced through PPTT	4.8	15.9	7.6	47.0	24.7	3.71	1.145
The selected commercial banks have put in place a robust feedback system process.	4.8	29.9	5.2	41.8	18.3	3.39	1.223

Project Automation Tools

To obtain information about the second independent variable Project Automation Tools, numerous statements were asked and the respondents required to provide feedback on a likert scale of one (1) to five (5), for 1 being strongly disagree, 2 being disagree, 3 being neither agree nor disagree, 4 being agree and 5 being strongly agree to the statements. On the statement "The selected commercial banks the strengthen their automation capacity" 2.0% strongly disagreed to the statement, 2.8% of the respondents disagreed to the statement, 11.6% of the respondents neither agreed nor disagreed to the statement, 30.7% of the respondents agreed to the statement whereas 53.0% of the respondents strongly agreed to the statement, with a mean of 4.30 and standard deviation 0.922.

On the statement "The selected commercial banks are segmented based on their quality within the banking operations systems" 5.6% strongly disagreed to the statement, 7.2% of the respondents disagreed to the statement, 5.6% of the respondents neither agreed nor disagreed to the statement, 53.8% of the respondents agreed to the statement whereas 27.9% of the respondents strongly agreed to the statement, with a mean of 3.91 and standard deviation 1.058. On the statement "The selected commercial banks are segmented based on the operational efficiency obtained from the relationship, 5.6% strongly disagreed to the statement, 27.1% of the respondents disagreed to the statement, 19.1% of the respondents neither agreed nor disagreed to the statement, 27.5% of the respondents agreed to the statement whereas 20.7% of the respondents strongly agreed to the statement, with a mean of 3.31 and standard deviation 1.229.

Regarding the statement "The segmentation of services within the firm are categorized based on the cost-effectiveness of the partnerships in the banking industry.", 10.4% strongly disagreed to the statement, 2.8% of the respondents disagreed to the statement, 19.1% of the respondents neither agreed nor disagreed to the statement, 41.8% of the respondents agreed to the statement whereas 25.9% of the respondents strongly agreed to the statement, with a mean of 3.70 and standard deviation 1.188. On the statement "The selected commercial banks segments customers based on the nature of products or services required/offered" 21.9% strongly disagreed to the statement, 29.1% of the respondents neither agreed nor disagreed to the statement, 39.0% of the respondents agreed to the statement whereas 10.0% of the respondents strongly agreed to the statement, with a mean of 3.15 and standard deviation 1.284.

On the statement "The commercial banks have improved their practices based on teamwork and collaborations of stakeholders and strategic teams " 7.6% strongly disagreed to the statement, 5.6% disagreed to the statement, 17.9% of the respondents neither agreed nor disagreed to the statement, 52.6% of the respondents agreed to the statement whereas 16.3% of the respondents strongly agreed to the statement, with a mean of 3.65 and standard deviation 1.061.

Table 4:2: Project Automation Tools Frequencies

Project Automation Tools	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Std. Dev.
The selected commercial banks the strengthen their automation capacity.	2.0	2.8	11.6	30.7	53.0	4.30	0.922
The selected commercial banks are segmented based on their quality within the banking operations systems.	5.6	7.2	5.6	53.8	27.9	3.91	1.058
The selected commercial banks are segmented based on the operational efficiency obtained from the relationship.	5.6	27.1	19.1	27.5	20.7	3.31	1.229
The segmentation of services within the firm are categorized based on the cost-effectiveness of the partnerships in the banking industry.	10.4	2.8	19.1	41.8	25.9	3.70	1.188
The selected commercial banks segments customers based on the nature of products or services required/offered	21.9	-	29.1	39.0	10.0	3.15	1.284
The commercial banks have improved their practices based on teamwork and collaborations of stakeholders and strategic teams.	7.6	5.6	17.9	52.6	16.3	3.65	1.061

Correlation Analysis

Correlation analysis identified the existence or otherwise of relationship Operational Efficiency of selected Commercial Banks in Kenya and all the other variables. Pearson Product Moment Correlation coefficient was used, the correlation coefficient (r) was used to establish whether there was linear relationship between the variables of interest in the study. The coefficient of determination (r^2) was used to check for goodness - of - fit. The value of r ranges between -1 and +1, r = 0 implies no correlation, r = 1 means perfect correlation.

From table 4.3 below, there is a positive significant relationship between Operational Efficiency and Project planning and tracking tools. The Pearson's correlation coefficient was 0.653, p-value <0.001. This implied that 65.3% of Operational Efficiency of selected Commercial Banks in Kenya is explained by Project planning and tracking tools.
Likewise, there was a strong positive significant relationship between Operational Efficiency and Project Automation Tools, with a Pearson's correlation coefficient of 0.763 and a p-value<0.001, implying that 76.3% of Operational Efficiency of selected Commercial Banks in Kenya is explained by Project Automation Tools.

Table 4.3: Correlation matrix

		Y	X_1	X_2
Y	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	123		
X_1	Pearson Correlation	.653**	1	
	Sig. (2-tailed)	0		
	N	123	123	
X_2	Pearson Correlation	.763**	.598**	1
	Sig. (2-tailed)	0	0	
	N	123	123	123

Regression Analysis

To determine how Project Management Tools affects Operational Efficiency, the study computed multiple regression analysis. The results were placed on three tables presented and discussed in coming subsections.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.877	.868	.012367

a. Predictors: (Constant), project planning and tracking tools and project automation tools

According to the results presented in Table 4.4, the value of R square is 0.877. This shows that 87.7% difference in Operational Efficiency can be credited to these changes in project planning and tracking tools and project automation tools. The remaining 12.3% suggests other factors exist that are helpful in explaining variation in Operational Efficiency in listed Commercial Banks excluded in this study. The results also suggest the independent variables (project planning and tracking tools and project automation tools).

Table 4.5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.233	2	.617	617	.000[b]
	Residual	.173	120	.001		
	Total	1.406	122			

a. Dependent Variable: Operational Efficiency in listed Commercial Banks
b. Predictors: (Constant), project planning and tracking tools and project automation tools

From the findings in Table 4.5, the significance of 0.000 is below the chosen significance level of 0.05, meaning it can be considered significant. These results prove that the F-calculated value (617) was above the F-critical value ($F_{2,120}$=2.550); this insinuates that the variables, Project team collaboration tools ,Project Planning and Tracking Tools , Project Automation Tools and Digitization of Bank Services can be used to predict Operational Efficiency.

Table 4.6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.347	0.258		5.221	.000
	Project planning and tracking tools	0.347	0.103	0.439	3.369	.001
	Project Automation Tools	0.338	0.138	0.402	2.449	.018

a. Dependent Variable: Operational Efficiency

This regression equation model was used to fit the regression coefficient.

$Y = 1.347 + 0.347 X_1 + 0.338 X_2$.....v

Observing the equations, it can be noted that when all the other variables (project planning and tracking tools and project automation tools) remain at constant zero, a constant value of 1.347 was held by the Operational Efficiency of listed Commercial Banks.

The results depict Project Management Tools significantly impacting Operational Efficiency of listed Commercial Banks (β=0.347, p=0.001). These results insinuate that project planning and tracking tools is significantly influences Operational Efficiency in a positive way. Meaning, a unit rise in Project Management Tools leads to a rise in Operational Efficiency, by 0.347 units.

Project Automation Tools has an influence on Operational Efficiency of listed Commercial Banks (β=0.338, p=0.018). The studies also revealed that decision-making procedures on investment had a desirable impact on Operational Efficiency in listed Commercial Banks. These findings imply that investing decision-making procedures exhibit a favourable impact on Operational Efficiency in listed Commercial Banks. As a result, a unit increase in Project Automation Tools processes leads to a 0.338 unit rise in the Operational Efficiency. The study's findings accord with Mweresa (2018) that investment in manufacturing has a huge effect on a company's Operational Efficiency in listed Commercial Banks.

Conclusion

The study concludes that project planning and tracking tools have a positive and significant effect on operational efficiency in selected commercial banks in Kenya. Findings revealed that task completion rate, timeline adherence and resource utilization influences operational efficiency in selected commercial banks in Kenya.

In addition, the study concludes that project automation tools have a positive and significant effect on operational efficiency in selected commercial banks in Kenya. Findings revealed that workflow automation efficiency, error handling and time saved through automation influences operational efficiency in selected commercial banks in Kenya.

Recommendations

Based on the findings, the study recommends that commercial banks should strengthen project planning and tracking tools by adopting advanced data acquisition and cost management systems to enhance decision-making. Additionally, increasing the adoption of project automation tools will optimize operational workflows, reduce errors, and improve resource utilization.

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