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PROJECT MANAGEMENT

PROJECT TEAM DESIGN AND PERFORMANCE OF INFORMATION TECHNOLOGY BASED PROJECTS IN COMMERCIAL BANKS IN KENYA

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Abstract

The expected outcome of projects is to achieve a positive performance consistently. Yet, there is no agreed definition of project performance, which complicates the achievement of the purpose. Projects in Kenya are mostly complex and difficult to manage and project team management practices are mostly used in projects for effective functioning. However, project managers in Kenya have been focusing on technical constraints of projects and neglecting project teams' related constraints. The objective of the study was to investigate the influence of project team design on project performance in commercial banks in Kenya. The study adopted a pragmatic research approach. Cross-sectional study design and explanatory research design were adopted in the study. The unit of analysis was 429 projects in the 39 commercial banks operating in Kenya as at close of business on 31st December 2020 categorized into 20 types of Information technology projects. The target population was 195 Information Technology project managers as well as 78 staff working in human resource department, 78 staff working in finance department and 78 staff working in operations departments in the 39 commercial banks operating in Kenya. The study used stratified random sampling to choose 206 respondents from the study population. Secondary and primary data was employed in this study. Annual reports of commercial banks provided secondary data. In addition, a semi-structured questionnaire was adopted to obtain data. Qualitative data, which was obtained from open-ended questions, was analyzed by use of thematic analysis and the results were presented in a descriptive form. Inferential and descriptive statistics will be used to analyze quantitative data with the help of Statistical Package for Social Sciences (SPSS version 26). Descriptive statistics included frequency distribution, mean, standard deviation and percentages. Inferential statistics included univariate regression analysis and Pearson correlation. The study found that project team design has a positive and significant effect on the performance of information technology-based projects in commercial banks in Kenya. The study recommends that commercial banks should implement a comprehensive project team design strategy that focuses on diversifying tasks among team members and fostering problem-solving skills.

Keywords: *Project Team Design, Project Performance, Information Technology*

1. Introduction

In the last decade, liberalized local regulation, increased global competition, increased innovation, and exponential IT growth have led to significant changes in different organizations (Machek, 2017). Therefore, the success of organizations is highly related to the firm's ability to accommodate their structures and implement possible relations within their environment (Chan, Ko & Yeung, 2018). To increase efficiency and decongest banking halls, financial institutions have increased their number of branches, adopted digital channels such as internet, mobile and agency banking and even established modern automated teller machines. The establishment of digital platforms, establishment of ATMs and bank branches necessitate heavy financial investments and hence the need for proper project management to ensure success.

Currently, organizations are increasingly adopting management through projects, also referred to as project-based organizations. The success and performance of projects is normally estimated by the ability to achieve quality goals within the budgeted time and the budgeted cost (Rodriguez, Ortega & Concepcion, 2016). However, the performance of a project can further be estimated through team satisfaction, client impact, future preparations, and business success. Globally, despite the heavy investment in projects to ensure effective and efficient service delivery in the banking industry, projects in commercial banks have been experiencing high project failure rates in terms of cost and delivery schedule (Nguyen & Hadikusumo, 2017).

In the past, instead of managing projects as behavioral systems, they were managed as technical systems whereby the human resource sector has been given very little attention (Ubah, 2016). Nevertheless, the Project Management Institute indicates that among the six essential functions of project management is human resource management (Fionov & Mustafayev, 2017). Human resource management is concerned with the coordination of all employees of the organization with a view of achieving company goals. Generally, it can be interpreted as a systematic approach planned to manage the workforce by training, motivating, and retaining employees that results in employee and team performance through several human resource practices (Naqvi, Bokhari & Aziz, 2017).

As a component of project team management, project team design plays a crucial role in project management by structuring and organizing the team to optimize performance and achieve project goals efficiently. Effective team design involves selecting team members with the right skills and expertise, defining clear roles and responsibilities, and establishing communication channels and workflows (Bhoola & Giangreco, 2018). It ensures that team members are well-aligned with project objectives, can collaborate effectively, and are motivated to contribute to the project's success. Proper team design also helps in managing conflicts, ensuring accountability, and adapting to changes, which ultimately enhances the project's overall execution and outcomes (Umulisa, Mbabazize & Shukla, 2017). A thoughtful project team design enhances performance by ensuring that the team is well-equipped, coordinated, and motivated, leading to more effective execution, higher quality results, and a smoother overall project experience.

Projects in various sectors in different parts of the world have been facing performance-related challenges, which include failure to achieve the set objectives, client dissatisfaction, cost and time overrun among others (Geambasu, Jianu & Gavrila, 2017). The Standish Group (2016) reports that 32 per cent of projects in the United States were successful in ensuring on time delivery, budgeting and required characteristics and functions; 44 per cent could not deliver on time, they also utilized more than what was budgeted. In addition, they could not adhere to the described features and

functions, and 24 per cent failed to deliver and cancelled the project before its completion. In Pakistan, Sarwar, Sarwar and Shahid (2016) indicated that two out of various project team management practices, team design had a significant influence on the success of projects in project-oriented organizations in southern Punjab, Pakistan.

Over the years, in Africa, there has been massive investment in big projects from all sectors including the banking sector. In addition, organizations in Africa have been relying more on the management of projects for the goal achievement (Ochwoto & Ogolla, 2017). However, most organizations have very good measures to ensure project success; these include policies, plans, well-outlined visions and objectives. However, many researchers reveal abandonments, failure and poor performance of projects in Africa; they also indicate that the poor performance of these projects has negatively affected development. Umulisa, Mbabazize and Shukla (2017) indicate that project team design had an influence on performance of Agaseke Project in Kigali, Rwanda. This indicated that an improvement in team design would lead to an improved level of project performance. In South Sudan, Ong'ondi (2017) indicated that project team management practices include project team design have a significant effect on project performance.

Various studies conducted in Kenya have highlighted the poor performance of projects in different sectors (Nziva, 2018; Kuria & Kimutai, 2018). According to Ubah (2016), the performance of projects in Kenya is related to both project teams and practices of managing the team members. Njogu (2018) revealed that project performance in Nairobi County is influenced by project team design. In addition, Ochwoto (2017) indicated that project performance in Ripples international was greatly affected by project team deisgn. The findings further revealed that project team design had an insignificant influence on project implementation. Wanja (2019) established that project team design have no significant impact on the performance of projects.

1.1 Statement of the Problem

Commercial banks play a critical role in national economies, acting as essential intermediaries between savers and borrowers. A 2019 study by the Kenya Bankers Association estimated that the banking sector contributes 10.8% to Kenya's GDP, emphasizing its significant economic impact (Kenya Bankers Association, 2019). To remain competitive in the banking sector, commercial banks have invested in various types of projects including information technology projects. These projects play a crucial role in various aspects of commercial bank operations, driving innovation, efficiency, and ultimately, success (Muhinja & Nyanga'u, 2021). The implementation of information technology projects in commercial banks in Kenya requires an effective project team to ensure coordination, resource optimization, risk mitigation, and stakeholder engagement throughout the project lifecycle (Buvik & Tvedt, 2018).

According to Muhinja and Nyanga'u (2021), 25% of all information technology projects in commercial banks in Kenya fail in terms of time and implementation time, 20 to 25% do not show any return on investment; and 50% needed reworking by the time they are finished. In addition, Maina and Mungai (2024) established that 56% of ICT projects implemented in commercial banks in Kenya fail to meet their objectives, and more than 60% experience cost overrun and time overrun. As observed by Scott-Young and Samson (2018), project team design improves project performance in terms of cost, time, and performance by 30%. Assaf, Hassanain and Mughal (2018) indicate that teams with cooperative behavior are more likely to achieve their set goals properly and within the set budgets and timelines. Despite its importance in information technology projects, project team design has not received enough attention in project management and only

43% of project managers consider project team design during project implementation (Charo & Gachengo, 2023). As such, as indicated by Mongare (2017), in projects related to the banking industry, are characterized by poor project team design.

Several studies have been conducted on project teams and performance (Njue & Chandi, 2019; Waweru, 2017). However, Njue and Chandi (2019) study was conducted Community-Based Projects in Embu County. In addition, both construction projects and community-based projects require different resources and technical skills from information technology projects. This study therefore sought to examine the effect of project team design on project performance in commercial banks in Kenya.

The following are the null hypothesis that was tested in this study:

1. **H_{01}:** Project team design has no significant influence on information technology-based project performance in Kenya Commercial Banks

2. Theoretical Review

The study was anchored on Bruce Tuckman's Team-Development Theory, which was proposed for the first time in 1965 by Bruce Tuckman. The theory states that 4 phases are necessary for the growth and development of a team. The phases include forming, storming, norming and performing (Tuckman & Jensen, 1977). In the forming stage, team members familiarize themselves with each other and identify their strengths, weaknesses and the mission at hand. Due to the need for acceptance to the group, team members at this stage play nice to avoid conflicts. At this stage, the group members further try to understand the objective and the mission that must be accomplished, hence finding the need for teamwork. In addition, the group members try to work independently by focusing on practical details like who, what, where and why as they try to understand where they perfectly fit in the group (Manges, Scott, Cawiezell & Ward, 2016).

When group members feel secure, they may assert their rights, leading to conflicts from personality and working style differences, which harm team performance. To resolve these conflicts, members need a clear work plan to address problems and challenges as they arise, fostering openness and cooperation (Wu, Zhao, Zuo & Zillante, 2019). In the norming stage, members plan collaboratively, assign duties based on skills, and acknowledge each other's strengths and weaknesses, building trust and socialization (Manges, Scott-Cawiezell & Ward, 2017). In the performing stage, teams follow established procedures, work with minimal supervision, and prioritize perspectives over conflicts, achieving high performance. However, dissolving the group after tasks are completed can be challenging for members with strong work passion and relationships, highlighting the need for team leaders to guide plans (Buvik & Tvedt, 2018; Rickards & Moger, 2019).

Bruce Tuckman's Team-Development Theory offers valuable insights into understanding the impact of project team design on the performance of information technology-based projects in commercial banks in Kenya. According to Tuckman, teams go through four stages of development: forming, storming, norming, and performing. In the context of project teams in commercial banks, the forming stage represents the initial phase where team members come together, often with diverse backgrounds and skill sets, to work on IT projects (Popaitoon, 2020). During this stage, the team's effectiveness may be influenced by factors such as the composition of the team, the clarity of project goals, and the leadership style of the project manager. Effective project team design at this stage involves carefully selecting team members with the right skills and expertise,

establishing clear project objectives, and providing strong leadership to guide the team through the forming process.

As the project progresses, the team may enter the storming stage, characterized by conflicts and disagreements as team members assert their ideas and preferences. In the context of information technology-based projects in commercial banks, this stage may involve challenges related to technical issues, resource constraints, or conflicting priorities. Effective project team design during the storming stage requires fostering open communication, resolving conflicts constructively, and providing support and guidance to help the team navigate through challenges (Wu et al., 2019). By understanding and applying Tuckman's Team-Development Theory, commercial banks in Kenya can optimize their project team design to enhance the performance of information technology-based projects and achieve successful project outcomes.

2.1 Conceptual Framework

According to Mitchell and Jolley (2017), conceptual framework refers to diagrammatic representation presumed association between variables under investigations (Saunders, Lewis & Thornhill, 2016). Figure 1 presents and interprets the hypothesized relationship between the independent variable and the dependent variable. The independent variable in this research was project team design and the dependent variable was project performance in commercial banks in Kenya.

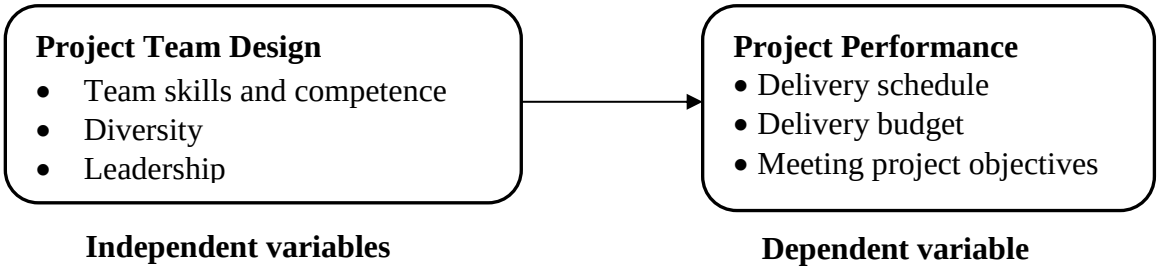

Figure 1: Conceptual Framework

2.2 Empirical Review

Scott-Young and Samson (2018) examined the association between project performance and project team management in capital projects in process industries in the US. Target population comprised of 56 completed projects from 500 firms in the pressing sector. The results indicated that cost effectiveness of projects was greatly influenced by team efficacy, selectiveness in team structure and virtual office usage. Furthermore, the findings revealed that project schedules were highly predicted by team structure, incentives and cross-functional project teams. On the other hand, plant operability was greatly predicted by well-established and clear project goals and good office design ensuring effectiveness in communication.

Markulis *et al.* (2016) researched on the impact of team-leadership modes on team productivity in the USA. The study deployed a quasi-experimental design. The study targeted ABSEL university students. Findings indicated that team leader modes had no significant influence on project performance. Furthermore, 80 percent of the respondents indicated that students should be granted a chance of being team leaders, 50 percent indicated that business school was not responsible for training students as leaders. Xu and He (2018) researched on the influence of team attitude and behavior on information system project success in the US. The study deployed descriptive survey

design; the study targeted different firms in the US. The success of IT projects was greatly determined by commitment and quality teamwork. The direct and indirect influence of goal commitment on project success shows the need for teamwork attitude to complete an information system project successfully.

Liang, Liu and Lin (2017) researched the influence of team diversity on software project performance in Taiwan. The study developed a research framework. Findings revealed that knowledge diversity significantly influences team performance. It was further revealed that team diversity negatively influences team performance. In addition, member diversity like gender and social category has an impact on team performance. Assaf, Hassanain and Mughal (2018) researched on project teams' effectiveness and how they influence project performance in Saudi Arabia. The study deployed two questionnaires for data collection. The study targeted 13 teams of large construction projects. Study findings revealed that there was a high correlation between project success and team effectiveness. It was further revealed that team leadership, role and responsibility, as well as goal and responsibility had a great influence on project success.

In South Africa, Bond-Barnard, Fletcher and Steyn (2018) conducted a study linking collaboration and trust in project teams to success of project management. The study used Structural Equation Modeling (SEM) model. The study targeted 151 project practitioners. The study findings revealed that trust and cooperation among group members influenced project performance. As indicated by the study, collaboration factors included commitment, physical proximity, relationships incentives, conflicts and coordination. The study further indicated that imported trust, expectations and exchange of knowledge were the factors affecting the level of trust. In Kenya, Njeri and Were (2017) researched on the influence of project team commitment on project performance in Non-Governmental Organizations. The research employed descriptive research design. The study targeted 304 respondents composing of senior managers, field officers, branch managers, and accountants. It was revealed that project team commitment has significant influence on project performance in NGOs in Kenya.

3. Research Methodology

This study adopted a pragmatic research approach and hence it will combine both qualitative and quantitative approaches. The research designs adopted included cross-sectional study design and explanatory research design. The target population was 195 Information Technology project managers as well as 78 staff working in human resource department, 78 staff working in finance department and 78 staff working in operations departments in the 39 commercial banks operating in Kenya.

Slovin's Formula was used in the current research to calculate the sample size. The study made use of 95 percent confidence level and 5 percent error of margin.

$$n = \frac{N}{1 + NE^2}$$

Whereby: E = error margin (0.05); n = no. of samples; and N = total of targeted population

$$n = \frac{429}{1 + (429 * 0.05^2)}$$

$$n = 206$$

When selecting 206 respondents from the target population, the current study used stratified random sampling. The strata in this study were cadres of staff working in ICT projects including Information Technology project managers as well as staff from human resource, finance and operations departments working in the ICT projects. Stratified random sampling technique is often used when a particular researcher wants to have accurate representation of the entire population under investigation (Mitchell & Jolley, 2017). The current research used proportionate stratified sampling technique since each stratum is proportionate to the entire population under investigation, implying that each stratum will have equal sampling fraction.

Table 1: Sample Size Distribution

Category	Target Population	Sample Size
Information Technology project managers	195	92
Staff working in human resource department	78	38
Staff working in finance department	78	38
Staff working in operations departments	78	38
Total	**429**	**206**

The study used both primary and secondary data. A data extraction tool was used to gather secondary data pertaining to performance of projects for all the selected 103 projects in the 39 commercial banks in Kenya. A semi-structured questionnaire was used in collecting primary data. The questionnaire comprised of both closed-ended and open-ended questions. A pilot study was carried out in the three commercial banks, which include Middle East Bank, Access Bank and Spire Bank. The study focused on three types of validity, which include construct, content and face validity. The content validity was improved through seeking experts' opinions in the area of study, specifically the supervisors. In the current research, face validity was improved through consulting university supervisors and other professionals in the field of human resource. Construct validity was assessed by use of confirmatory factor analysis. Reliability of the research instrument was tested using Cronbach's alpha.

The questionnaire generated both qualitative and quantitative data. Quantitative data was generated from closed ended questions and was analyzed using thematic analysis. Descriptive and inferential statistics were used to analyze data in the current research through application of statistical software known as Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics entailed frequencies, percentages, mean and standard deviation. In this study, inferential statistics will include univariate regression analysis and Pearson correlation analysis. Before conducting inferential analysis, diagnostic tests such as auto-correlation test, linearity test, normality test and heteroskedasticity test were conducted. The regression model was as follows;

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Whereby, Y = Project performance in commercial banks in Kenya; B_0 =Constant; β_1 =Coefficients of determination; X_1 = Project team design; and ε = Error term

4. Research Findings and Discussions

The sample size of this study consisted of 95 information technology project managers 37 heads and assistant heads of human resource department, 37 heads and assistant heads of finance department and 37 heads and assistant heads of operations departments. The response rate was as shown in Table 2.

Table 2: Questionnaires' Response Rate

Category	Sample Size	Responses	Response Rate
Information Technology Project managers	95	84	88.42
Heads and Assistant Heads of human resource department	37	35	94.59
Heads and Assistant Heads of finance department	37	36	97.30
Heads and Assistant Heads of operations departments	37	34	91.89
Total	**206**	**189**	**91.75**

Out of 206 questionnaires that were distributed, 189 responses were obtained, which gives a 91.75% response rate. According to Babbie (2017), a response rate of 50% is sufficient for effective analysis and reporting, a response rate of 60% is good while a response rate of 70% is regarded as excellent. This implies that the response rate (91.75%) in this study was within acceptable limit for drawing conclusion and making recommendations.

Project Performance

The respondents were asked to indicate their level of agreement with statements regarding project performance in commercial banks in Kenya, using a scale where 5 represents Strongly Agree, 4 represents Agree, 3 represents Neutral, 2 represents Disagree, and 1 represents Strongly Disagree. The results were as shown in Table 3.

Table 3: Measures of Project Performance

	Mean	Std. Deviation
Commercial banks' projects are completed within specified time frame	3.349	1.098
Projects are handed over to beneficiaries on time	2.386	1.122
There are incidences of time overrun during development of project	3.545	1.222
Commercial banks 'projects are completed on budget	3.285	1.322
The cost incurred for developing projects match with that stipulated in project plan	2.254	1.228
The total project cost of commercial banks' projects are accurately forecast	1.534	1.252
Stakeholders are satisfied with the outcome of commercial banks' projects	3.254	1.300
Project stakeholders 'provide positive feedback on project outcomes	3.471	1.209
Commercial banks' projects perform according to its intended goals	3.318	1.226

As shown by a mean of 3.545 (Std. Deviation=1.222), in Table 3, the respondents expressed agreement that there are incidences of time overrun during the development of projects. These findings agree with Scott-Young and Samson (2018) findings that information technology projects normally experience time overrun. In addition, the respondents disagreed with a mean of 1.534 (Std. Deviation=1.252) with the statement indicating that the total project cost of commercial banks' projects is accurately forecast. These findings agree with Muhinja and Nyanga'u (2021) findings that that 25% of all information technology projects in commercial banks in Kenya are not completed within budget.

The respondents expressed a moderate level of agreement with a mean of 3.471 (Std. Deviation=1.209) that project stakeholders provide positive feedback on project outcomes. The respondents disagreed, as shown by a mean of 2.386 (Std. Deviation=1.122) with the statement indicating that projects are handed over to beneficiaries on time. Assaf, Hassanain and Mughal (2018) had earlier observed that most of the projects exceed their delivery time. Similarly, Muhinja and Nyanga'u (2021) observed that more than one quarter of all information technology projects in commercial banks in Kenya fail in terms of time and implementation time. With a mean of 3.349 (Std. Deviation=1.098), the respondents indicated a moderate level of agreement that commercial banks' projects are completed within the specified time frame.

With a mean of 3.318 (Std. Deviation=1.226), the respondents indicated a moderate level of agreement that commercial banks' projects perform according to their intended goals. The respondents indicated a moderate level of agreement with a mean of 3.285 (Std. Deviation=1.322) that commercial banks' projects are completed on budget. With a mean of 2.254 (Std. Deviation=1.228), the respondents disagreed with the statement indicating that the cost incurred for developing projects matches that stipulated in the project plan. These findings agreed with Muindi and Kule (2017) findings most of the projects in commercial banks incur cost overrun. With a mean of 3.254 (Std. Deviation=1.300), the respondents indicated a moderate level of agreement that stakeholders are satisfied with the outcome of commercial banks' projects.

The respondents were asked to suggest ways of improving performance of commercial banks projects in Kenya. From the findings, it was recommended that project managers should involve stakeholders throughout the project lifecycle, from planning to monitoring and evaluation stages. The findings are in concurrence with Assaf, Hassanain and Mughal (2018) observation that all stakeholders should be involved throughout the project lifecycle. The respondents also suggested that fully functionalizing the Project Management Office (PMO) and ensuring a skilled workforce, as well as implementing governance measures such as closing prerequisites before project kickoff and continuous prioritization based on the Pareto Principle, should be implemented.

In addition, embracing new innovations like e-solutions, such as AI adoption for effective risk management, and instilling project discipline across team members by defining and locking project scope to prevent scope creep are vital. They also suggested properly estimating project time and cost, evenly distributing resources among project streams, and conducting frequent reviews of project plans versus delivery are crucial for success. The findings are in line with Muindi and Kule (2017) assertion that the success of a project depends on its cost, delivery time and quality. Furthermore, the respondents suggested separating sub-projects associated with different project elements, allocating sufficient time for comprehensive requirements gathering and resource planning, and setting achievable targets based on past experiences are recommended strategies.

Project Team Design

The respondents were asked to indicate their level of agreement regarding the influence of project team design on project performance in Kenyan commercial banks. The results were as presented in Table 4.

Table 4: Project Team Design

	Mean	Std. Deviation
Team members effectively convey ideas and issues that result to improvement of project performance.	3.693	1.101
Team members have the skills and competency required to fulfill project goals.	3.697	1.070
Team members demonstrate capacity to collaborate effectively during project development	3.836	.933
Team members with combined compatible personalities are involved in project activities	3.666	1.026
Teaming up enhance knowledge sharing during project development	3.814	1.058
Diversification of task among team members enhance critical thinking	3.714	1.199
Project team members are involved in problem solving	3.777	.963
Team members set expectations and acceptable interaction patterns	3.809	.981
Project team members provide feedback during meetings	3.762	1.052
Project team members synchronize and combine individual team member contributions	3.799	.900

As shown in Table 4, with a mean of 3.836 (Std. Deviation=0.933), the respondents agreed with the statement indicating that team members demonstrate the capacity to collaborate effectively during project development. These findings agree with Markulis *et al.* (2016) findings that highlighted the importance of collaboration among team members to ensure project delivery within schedule. With a mean of 3.814 (Std. Deviation=1.058), the respondents agreed with the statement indicating that teaming up enhances knowledge sharing during project development. The respondents agreed with a mean of 3.809 (Std. Deviation=0.981) with the statement indicating that team members set expectations and acceptable interaction patterns.

The respondents agreed with a mean of 3.799 (Std. Deviation=0.900) with the statement indicating that project team members synchronize and combine individual team member contributions. These findings agree with Xu and He (2018) findings that team member contributions should be put into consideration during project implementation. With a mean of 3.777 (Std. Deviation=0.963), the respondents agreed with the statement indicating that project team members are involved in problem-solving. With a mean of 3.762 (Std. Deviation=1.052), the respondents agreed with the statement indicating that project team members are involved in feed provisions during meeting sessions. The respondents expressed a moderate level of agreement with a mean of 3.714 (Std. Deviation=1.199) with the statement indicating that diversification of tasks among team members enhances critical thinking. These findings are in line with Liang, Liu and Lin (2017) findings that diversity among team members plays a critical role in ensuring critical thing and diversity of views.

With a mean of 3.693 (Std. Deviation=1.101), the respondents agreed with the statement indicating that team members effectively convey ideas and issues that result in the improvement of project performance. The respondents indicated a moderate level of agreement with a mean of 3.666 (Std. Deviation=1.026) with the statement indicating that team members with combined compatible personalities are involved in project activities. The respondents agreed with a mean of 3.697 (Std. Deviation=1.070) with the statement indicating that team members have the skills and competency

required to fulfill project goals. The findings are in concurrence with Assaf, Hassanain and Mughal (2018) findings that project team members skills are important in the achievement of objectives in a project.

The respondents were also asked to suggest other ways of improving project team design on performance of commercial banks' Projects in Kenya. From the findings, they indicated that senior management should value and consider the input of actual project members in decision-making processes. They also indicated that avoiding the assignment of non-performing individuals to project teams is crucial to maintain team efficiency and effectiveness. The respondents also indicated that continuous training opportunities should be provided to enhance the skills and knowledge of project team members, ensuring they are well-equipped to handle project challenges. In addition, establishing a feedback system that allows project owners to receive constructive feedback from team members can facilitate continuous improvement and prompt issue resolution. The findings are in concurrence with Markulis *et al.* (2016) observation that a feedback system led to an improvement in continuous improvement.

Also, implementing mechanisms for upskilling through training and development programs can keep the team competitive and adaptable. The findings agree with Xu and He (2018) argument that training and development ensures that the project teams has necessary skills. Also, involving all team members at every stage of project delivery is essential to identify and address potential risks early on. Encouraging active participation of team members in decision-making processes fosters ownership and commitment to project objectives. The respondents indicated that recruiting skilled and qualified individuals for project teams ensures the team has the necessary expertise for successful project delivery. They further indicated that empowering project team members by providing access to the best resources within the organization enhances team effectiveness and productivity.

Inferential Statistics

Inferential statistics is a branch of statistics that involves using sample data to make inferences or draw conclusions about a population. Inferential statistics in this study include correlation analysis and regression analysis.

Correlation Analysis

Correlation analysis quantifies the degree of association between two or more variables, assessing the direction and strength of their relationship. Table 5 presents the correlation results on the relationship between project team design and performance of information technology-based project performance in Kenya Commercial Banks.

Table 5: Correlation Coefficients

		Project Performance	Project Team Design
Project Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	189	
Project Team Design	Pearson Correlation	.773**	1
	Sig. (2-tailed)	.000	
	N	189	189

The results, as shown in Table 5 indicate that there is a strong positive and significant relationship between project team design and project performance (r = 0.773, p =0.000), indicating that higher levels of project team design are associated with improved project performance within commercial banks in Kenya. The findings agree with Scott-Young and Samson (2018) findings that project team design had a significant effect on project performance in capital projects.

Regression Analysis

Regression analysis is a statistical method used to examine the relationship between one dependent variable and one or more independent variables. Linear regression analysis was used to assess the weight of the influence of project team design on performance of information technology-based projects in commercial banks in Kenya.

Table 6: Model Summary of Project Team Design and Project Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.459[a]	.210	.206	.71366

a. Predictors: (Constant), Project Team Design

The r squared (R^2) represents the proportion of variance in the outcome variable (performance of information technology-based projects) that can be explained by the predictors included in the model. In this case, as shown in Table 7, the R^2 was 0.210, indicating that approximately 21.0% of the variance in the performance of information technology-based projects can be accounted for by the project team design.

Table 7: ANOVA of Project Team Design and Project Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.391	1	25.391	49.853	.000[b]
	Residual	95.242	187	.509		
	Total	120.633	188			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Project Team Design

The Analysis of Variation (ANOVA) results provide information about the overall fit of the regression model and the significance of the predictor in explaining the variance in the dependent variable (performance of information technology-based projects As shown in Table 4.5, the F-statistic is 49.853was greater than the F-critical of 2.372 from the F-distribution table. In addition, a significance level (Sig.) less than a chosen alpha level (commonly 0.05) indicates that the regression model is statistically significant. Therefore, a Significance Level of 0.000 indicates that the regression model is highly significant. The results show that the regression model, which includes project team design is highly significant in explaining the variance in the performance of information technology-based projects.

Table 4. 1: Coefficients of Project Team Design and Project Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.245	.306		4.061	.000
	Project Team Design	.571	.081	.459	7.061	.000

a. Dependent Variable: Project Performance

Regression equation was;

$Y = 1.245 + 0.571X_1 + \varepsilon$

The findings show that project team design has a positive and significant effect on the performance of information technology-based projects in commercial banks in Kenya (β_1=0.509, p-value=0.000). This means that for every one-unit increase in project team design, the performance of information technology-based projects in commercial banks in Kenya is predicted to increase by 0.509 units. The associated p-value (Sig.) is 0.000, which is less than 0.05. This indicates that the coefficient is statistically significant, suggesting that project team design significantly predicts the performance of information technology-based projects in commercial banks in Kenya. The findings are in line with Liang et al. (2017) findings that team design has an effect on software project performance in Taiwan.

5. Conclusions

The study concludes that project team design has a positive and significant effect on performance of information technology-based projects in commercial banks in Kenya. The study indicated that problem-solving, diversification of tasks and feed provisions influence performance of information technology-based projects. This means that improving project team design (problem-solving, diversification of tasks and feed provisions) enhances performance of information technology-based projects in commercial banks in Kenya.

6. Recommendations

The study found that project team design—including problem-solving strategies, task diversification, and feedback provisions—positively and significantly influences the performance of IT-based projects in commercial banks in Kenya. To capitalize on this, commercial banks should implement a comprehensive project team design strategy that focuses on diversifying tasks among team members and fostering problem-solving skills. This should involve creating diverse teams with varied expertise and structuring tasks to encourage collaboration and innovation. By diversifying tasks and structuring problem-solving approaches, banks can enhance critical thinking, improve the quality of solutions, and streamline project execution.

The study established that effective collaboration, knowledge sharing, and synchronization of individual contributions among team members have a significant positive impact on IT project performance in commercial banks. To enhance these aspects, banks should promote a collaborative work environment by setting clear expectations for interaction, encouraging open communication, and facilitating knowledge sharing through structured processes and tools. Enhancing collaboration and knowledge sharing will improve team cohesion, streamline project development, and ensure that all team members' contributions are effectively integrated into the project. Clear

interaction patterns and collaborative practices will lead to more synchronized efforts, better problem-solving, and increased overall project efficiency.

7. Areas for Further Research

The general objective of this study was to determine the influence of project team design on the performance of information technology-based projects in commercial banks in Kenya. However, the study focused on information technology-based projects hence, the findings cannot be applied to other projects in commercial banks in Kenya like corporate social responsibility projects, construction projects and renovation projects. As a result, this study recommends that more studies should be conducted to determine how project team design influences the performance of other projects in Kenyan commercial banks'. Also, having been limited to commercial banks in Kenya, the findings of the study cannot be generalized to other financial institutions in Kenya. Therefore, the study suggests further studies on the influence of project team design on the performance of information technology-based projects in microfinance banks and Savings and Credit Co-operatives in Kenya. Further, the study found that project team design can explain 21.0% of the performance of information technology-based projects in commercial banks in Kenya. As such, more studies should to be conducted to examine other factors that influence performance of information technology-based projects in commercial banks in Kenya.

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