



AGILE PROJECT MANAGEMENT STRATEGIES AND PERFORMANCE OF E-RESOURCES CENTRE PROJECT IN RIFT VALLEY REGION, KENYA

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ABSTRACT

Agile project management is recognized as a repetitive method for timely completion of projects with minimal changes. The agile project management's objective is to split the project into different tasks that can be finished quickly. Adopting the agile project management centers on finishing projects on a timely basis and adjusting to a constantly changing environment. The general objective was to determine the effect of agile project management strategies and the performance of e-Resources Centre Project in Rift Valley Region, Kenya. The specific objectives were to examine the effect of; incremental strategy, and interactive strategy on the performance of projects in e-resource center projects in Kenya. The study was guided by the incremental theory of decision-making and Contingency Theory. This study employed a descriptive research design. The study targeted 14 e-resource centers in Rift Valley Region, Kenya. The unit of observation was the 14 centers' Head Librarian, 28 Managers/Directors, 28 deputy Managers/Director, 56 assistant librarians, and 28 library technicians. Yamane's 1967 sampling formula was used to obtain a sample of 111 respondents. The study data was collected using questionnaires. A pilot test was conducted with 111 respondents representing 10% of the sample. Data was collected using questionnaires. In this study, face and content validity was used. Cronbach's Alpha Coefficient method was used to measure the reliability of quantitative instruments. Data was analyzed using SPSS Version 28. Descriptive and inferential statistics were used. Findings were tabulated. Findings show that; incremental strategy has a strong positive significant correlation with performance of e-Resources Centre Project ($r=0.584$, $p=0.000$), and iterative strategy has a strong positive significant correlation with performance of e-Resources Centre Project ($r=0.823$, $p=0.000$). The study recommends that the project managers should; consult professional project cost management consultants, ensure regular training, benchmarking, skills and capabilities assessment to equip the project teams with the necessary project management skills, have flexible project designs enable them to incorporate changes that may be suggested by the stakeholders, and real-time absorption of the M&E results to avoid delays in decision making which might be brought about by deliberations of the M&E findings.

Key Words: Agile Project Management Strategies, Performance of E-Resources Centre Projects, Incremental Strategy, Interactive Strategy

Background of the Study

The project management methodology known as agile project management (APM) focuses on agile production. Agile project management is recognized as a repetitive method for timely completion of projects with minimal changes. The agile project management's objective is to split the project into different tasks that can be finished quickly. Adopting the agile project management centers on finishing projects on a timely basis and adjusting to a constantly changing environment (Qureshi, 2012). There are three primary types of agile project management strategies. Fernandez and Fernandez (2008) examined each of the agile and traditional strategy types and contrasted them with each other's benefits.

Larson and Gray (2018) advocate for the use of agile project management as it can still be used with few team members. Companies must use a strategy known as scaling when working with big projects to ensure positive results and profitability. Quick iterative planning and development cycles that entails a team reviewing the progress of the project and getting feedback from team members and, if , stakeholders. Iterations, which are used repeatedly throughout project execution, are built on basic planning, defining requirements, and building solutions. This tactic is similar to cyclical waves, it makes it possible to make quick adjustments (Bogdanova, Parashkevova, & Stoyanova, 2020).

Project managers view it as an unorthodox approach that, if improperly designed, is certain to be ineffective from plans, since time immemorial, project managers have made use of a structured and planned management style, with the ability of adjusting to changing conditions. The ability to adapt to processes, people and all factors that affect their suitability for any working environment (Sherehiy, Karwowski, & Layer, 2017). As part of the process, agile management asks the project's internal stakeholders to solicit ongoing input from one another and the clients. ambiguity is lowered in the development phase thereby making way for desired modifications to be made. In the end, the completed product depicts the expectations of the client thereby ensuring there is improved performance (Serrador & Pinto, 2015). Like with any other change, there is a good chance that project management teams will oppose and be reluctant to implement such changes (Highsmith, 2009).

Statement of the Problem

Kenya's Information and Communication Technology (ICT) industry has been a significant driver of the nation's economic growth, contributing substantially to its GDP. Since 2016, the ICT sector has experienced an impressive average annual growth rate of 10.8% (Ochieng, 2022). By 2025, the digital economy is projected to account for 9.24% of Kenya's GDP, underscoring the increasing reliance on digital technologies across various sectors (Communications Authority of Kenya, 2023). Innovations such as M-PESA, PesaLink, and Pesapal have significantly boosted financial inclusion, with M-PESA alone being used by over 30 million Kenyans, representing more than 50% of the country's population (Central Bank of Kenya, 2022). These platforms have revolutionized access to financial services, contributing to an annual increase in GDP growth by approximately 0.5% (World Bank, 2022).

The ICT sector's impact extends beyond financial services, reaching educational initiatives such as the digitization of library services. The Communications Authority of Kenya, in collaboration with the Kenya National Library Services (KNLS), has transformed ten libraries into digital hubs, aiming to enhance access to information resources for millions of Kenyans (Kenya National Library Services, 2023). However, the rollout and implementation of the e-Resources Centres Project have faced significant challenges that limit their effectiveness. Despite these advancements, the e-Resources Centres Project, which aims to provide communities with access to computers and the internet, is hindered by several issues. A significant 63% of users have reported slow internet connectivity as a major barrier to effective resource utilization (Gathoni & Gikandi, 2021). Furthermore, 54% of users experience difficulties due to restrictive password requirements on some sites, which impedes seamless access to information. Poor search skills among 45% of users highlight a lack of adequate training and support, further exacerbating the problem (Gathoni & Gikandi, 2021). Additionally, a survey conducted by the Kenya Library Association revealed that over 70% of e-resource center users expressed dissatisfaction with the current ICT infrastructure, citing frequent technical issues and inadequate support staff (Kenya Library Association, 2023).

According to Mwaura and Namande (2020), the e-Resources Centres had a completion rate of 70%, which means that a significant portion of the intended infrastructure and services remains unrealized. Furthermore, 65% of users rely heavily on the Kenya Library and Information Services Consortium's (KLISCs) resources, but only 40% feel confident in accessing and utilizing these resources effectively due to insufficient training and guidance (Mwaura & Namande, 2020). A study by Merande, Mwai, and Ogalo (2021) found that 29.7% of users experienced significant difficulties with accessing digital platforms, with many citing issues such as outdated software and lack of technical support. Moreover, while 73% of e-resource users in Kenyan public libraries have access to e-journals, only 32% report frequent usage due to barriers in accessing these platforms efficiently (Merande, Mwai, & Ogalo, 2021).

These statistics indicate significant gaps in the usability and accessibility of digital resources, which can be attributed to inadequate project management practices. The need for agile project management strategies is crucial in addressing these challenges and improving the performance of the e-Resources Centres Project. Agile project management is renowned for its flexibility, iterative progress, and stakeholder collaboration, making it well-suited for addressing complex problems in dynamic environments (Verma et al., 2019). There are various studies on Kenyan agile project management effectiveness. Bii and Kamaara (2018) sought to determine how agile project management methods affected Kenyan public-funded project performance. Results showed that project performance correlated with mobilization of resources, participation by stakeholders, and competence of project teams. Project performance and organizational strategy showed a slight but substantial correlation. Chelangat and Karanja (2019) examined the use of agile project management on the success of projects in Nairobi County, Kenya and highlighted that project success is statistically significantly correlated with agile planning, iterative methodologies, close collaboration, and continual improvement. This demonstrates the dearth of research on how agile project management techniques impact project success. Therefore, the study aimed to determine the relationship between agile project management strategies and performance of e-resource centers projects in Kenya.

General Objective of the Study

To determine the relationship between agile project management strategies and performance of e-Resources Centre Project in Rift Valley Region, Kenya.

Specific Objectives of the Study

- i. To examine the relationship between incremental strategy and performance of e-Resources Centre Project in Rift Valley Region, Kenya.
- ii. To determine relationship between iterative strategy and performance of e-Resources Centre Project in Rift Valley Region, Kenya.

LITERATURE REVIEW

Theoretical Framework

The Incremental Theory of Decision Making

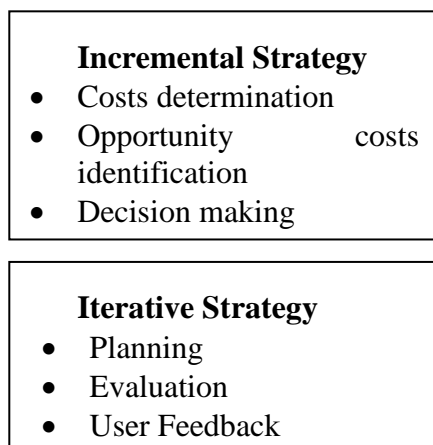
As explained in the incremental theory of decision-making by Charles Lindblom, decision-makers make their decisions by evaluating past actions, policies and concentrate their efforts on gradually changing previous activities, or processes (Dye, 2013). The incremental model breaks down the decision-making process into small increments. By "muddling through," steps that focus on the use of strategies like knowledge, intuition, and educated guesses. Every step of the decision-making process entails looking at minimal options and outcomes, thereby reducing expenses. Since each stage merely suggests a tiny adjustment, its immediate impact is usually minimal and not disruptive. The simplicity and adaptability of the incremental model are further advantages. Making decisions incrementally makes complexity and change easier to manage. Additionally, it enables the stakeholders to concentrate on both trivial and important decisions. Therefore, incremental decision-making can generate value by maximizing operational effort and opening up new possibilities.

Contingency Theory

Fielder created the theory in the 1960s by examining the traits and personalities of leaders. According to the model, the effectiveness of a leader is determined by the circumstances. The contingency theory, according to Betts (2003), is that the environment impacts how an organization organizes itself. As with contingency theory, organizational theorists hold the opinion that "the best way to organize depends on the nature of the environment to which the organization relates" (Betts, 2003 as cited in Scott, 1992, p.89). The possibility of the agile organization responding to external pressures from the environment is higher. This idea gives organizational leaders the ability to adapt their responses and base their choices on the outside data that molds and guides the organization to its success trajectory. Contingency theory describes a company as a system made up of interconnected subsystems. Luthans and Stewart (1977), assert that the system's members establish organizational goals and objectives in terms of any relevant environmental and resource restrictions. For employees to support and adopt agile practices, organizations must be agile from the top down. Enough resources, both human and non-human, should be made available to support agility so that the organization can easily and quickly renew itself, adapt, change, and succeed in a turbulent, quickly changing environment.

Conceptual Framework

Independent Variables



Dependent Variables

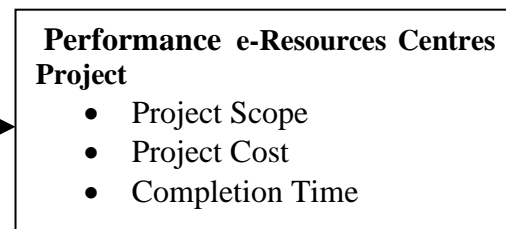


Figure 2.1: Conceptual Framework

Incremental Strategy

The incremental approach is focus on the notion that every team member in the project should concentrate only on core business goals that the project seeks to meet (Karlsson, 2016). Planning has several key benefits, including the ability to decrease or completely eliminate uncertainty, boost productivity, better comprehend project objectives, and provide a framework for task monitoring and management (Kerzner, 2017). Understanding the viability of the project early on is critical. By evaluating the viability of the project based on law, economics, technology and operations. Examining the challenges likely to occur can help to address and reach the right solutions.

A project manager needs to create a financial plan to know the budget and project deliverables. The budget plan should have the costs for equipment, labor, and material. The budget plan helps the project managers to manage and track expenditures (Gbahabo & Ajuwon, 2017). Instead of creating resources from the beginning, incremental offers efficient and contextualized access or adapting resources to certain situations. While gradual will focus on creating, reusing, and leveraging useful resources to assist researchers in managing their data, it acknowledges that this will be best accomplished within a welcoming institutional context (both in terms of policy and provision). When long-term preservation and data exchange are taken into account, the necessity for institutional assistance becomes even more clear. If these actions are handled at more aggregated levels (such as repositories), they are

unquestionably more effective and long-lasting. Early planning ensures that a system is in place to track the project's activities, interventions, and success (Faten et al., 2020).

Iterative Strategy

The interactive process consists of developing, modifying, and improving a project or product. Iterative development teams produce, test, and revise until they are happy with the final product (Martins, 2022). The benefits of this technique are that it enables improvements and scope changes between iterations. Feedback is collected after concluding several phases and making adjustments by listening to the customer's requirements. A project team will go through several iterations of the analysis, design, implementation, integration, and testing of the classes in an increment before it is complete. A fast setup passes where issues are scoped, risks are evaluated, and resources are acquired and allocated can make up the first pass. Then, problems are investigated and solutions are polished over one or more prototype passes. Following that, the production classes are implemented over the course of one or more development iterations. The last iteration is a clean-up iteration where the documentation for that increment is finalized, the deliverables are reviewed, and the code is polished. This advancement is currently regarded as finished. Unless a mistake or major fault is found or a requirement modification that affects this increment is negotiated, no deliverables from this increment are revisited. A significant project milestone is the completion of an increment (Korson, 2015). Bourgeois and Whynot (2018) discovered that evaluations are methodically employed in organizations for conceptual and instrumental reasons at the program level to increase adjustments in program strategy and delivery and to authenticate prevailing program management issues.

Empirical Review

Incremental Strategy and Project Performance

Ahsan and Gunawan (2013) conducted research on the cost difficulties affecting ADB-sponsored projects that are hosted by several Asian nations. They conducted an empirical analysis of 100 Asian Development Bank-sponsored projects in several Asian nations. According to their assessment, cost overruns affected the majority of the late-completed projects. It has been highlighted that a project's money can determine the success or failure of a project.

Mbogo and Mirara (2022) sought to identify how financial allocation affected the monitoring and evaluation of project planning for humanitarian aid. A descriptive survey was used in this investigation. In a survey of 46 International Rescue Committee staff, information was gathered via questionnaires. The results showcase that budgetary allocation had a positive impact on humanitarian project plans.

Siborurema, Shukla, and Mbera (2015) sought to determine the impact of project funding on project performance in Rwanda. The target respondents were divided into two groups: one group was made up of those responsible for planning and funding the initiatives, while the other group was made up of those in charge of overseeing their implementation. Utilizing questionnaires, existing document consultation, and interviewing protocols, data was gathered. The cost calculation and technical design both significantly impact the planned project implementation time and the funding strategy for the project, according to the findings. Before the budget lines for the public institutions are verified, the researchers advised the Ministry to set up teams of specialists with the responsibility of evaluating and questioning the project plans to ensure they are not poorly prepared.

Turtahebwa, Sunday, and Ssekajugo (2013) conducted a study in Western Uganda to establish the association between financial management techniques and project success. A positivist (quantitative) perspective was adopted. The owners/managers of 335 businesses operating in Mbarara, Sheema, and Bushenyi served as the study's unit of inquiry. Data collection involved the use of questionnaires. According to the study's findings, financial management procedures were responsible for 33.8% of the variation in project performance; as a result, project managers should have knowledge of financial or budgetary management techniques to hasten productive performance.

Saisi, Ngahu, and Kalio (2015) identified the financial variables that impact the completion of construction projects successfully in public universities. The research design was a descriptive survey. The sampled respondents were given a standardized questionnaire to complete. The results established a high correlation between access to infrastructure financing and the completion of construction projects successfully. Findings confirmed that financial issues are a key cause of delays for university development projects. Junge, Bosire, and Kamau (2014) focused on 22 public secondary schools in the municipality of Nakuru to investigate the association between financial practices and performance. According to the study, budgeting procedures like budget estimation, determination, and control positively impacted schools' performance. The study also made note of the significance of budget allocation and annual budget planning for bettering financial management in public sector enterprises.

In Kwale, Mombasa, and Kilifi Counties, Adhiambo (2020) evaluated the impact of monitoring and evaluation planning on the mariculture initiatives implementation. Questionnaires were used to collect data. Results demonstrate a considerable positive association between monitoring and evaluation plans and the implementation of the mariculture project. Munyoki (2014) carried out a descriptive analysis to determine the factors that impact the completion of building projects in Kenya. The findings revealed a favorable and significant correlation between project planning and construction project completion.

Iterative Strategy and Project Performance

Nisa (2015) aimed to investigate the connection between project planning, oversight, and success in Pakistani NGOs. The findings demonstrated that crucial factors were taken into account while developing the projects and that both variables had a favorable link with project success. M&E approaches are often applied in NGO projects in Pakistan. M&E demonstrated a considerable impact on project success in comparison to project design. Ashiokai (2016) examined impact of implementing Total Quality Management practices in the construction industry in Ghana. The study used a deductive methodology. In-depth information was gathered via questionnaires from 250 contractors. The results showed that using TQM has several advantages, including a decrease in rework and waste, a shortening of the construction cycle, a decrease in client complaints, and cost savings.

In the Kenyan Rachuonyo district, Ouma (2017) conducted research on the variables influencing the efficiency of small and medium enterprise project monitoring and assessment. The outcomes demonstrated that monitoring and evaluating officers' training, knowledge, and abilities were critical in achieving organizational goals. Njuki, Kaaria, Chitsike, and Sanginga (2017) studied effect of participatory monitoring and evaluation for stakeholder participation, project outcomes, and community learning. According to this study, there is the adoption of PM&E process in modifying project activities, considering community initiatives and making judgments.

Gathege and Yusuf (2019) sought to determine how monitoring and evaluations affected the viability of programs in Kenya that focused on empowering women via agriculture. There were 219 women-based agricultural projects in the target population. The study chose 116 representative samples from the sub-county governments using stratified and random sampling approaches. Additionally, the researchers employed interview schedules and questionnaires to gather data. According to the report, agricultural enterprises run by women that do well are good communicators. Using effective communication techniques in business operations provides programmatic results for women's farming projects.

RESEARCH METHODOLOGY

A descriptive research design was used for this study. The study targeted e-resources centers projects in rift-valley region, Kenya. According to the KNLS (2023), there are 14 e-resources projects in the public libraries in Kenya. The 14 e-resource centers projects were the target. The target was as shown in Table 3.1.

Table 3. 1: Target Population

Target Category	Target Population
Head Librarian	14
e-resource Project Manager/Director	28
e-resource Deputy Project Managers	28
Assistant Librarian	56
Library Technician	28
Total	154

The sample size of 111 was determined using Yamane 1967 sampling formula. The study used stratified random sampling. The respondents were sampled according to their job descriptions. In every stratus, the researcher randomly selected the respondents until the desired sample is attained. The study data was collected using questionnaires. Data was analyzed using SPSS Version 28. Descriptive and inferential statistics were used. Descriptive statistics includes frequency, percentage, and mean while inferential statistics include correlation and regression. Findings were tabulated.

RESEARCH FINDINGS AND DISCUSSIONS

The sample size of study was 111 respondents. The pilot test was conducted with 11 respondents representing 10% of the sample size. The pilot respondents were not included in the actual study hence 100 questionnaires were administered out of which 90 were answered successfully. The response rate was 90% which according to Mugenda and Mugenda (2008) is adequate for analysis. The researcher closely monitored data collection process and constantly reminded the respondents about the survey which helped in acquiring a suitable response rate.

Descriptive Analysis

The section presents findings on Likert scale questions where respondents were asked to indicate their level of agreement with various statements related to stakeholder management practices and project sustainability. The questionnaires used a 5-point Likert scale where 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree. The means and standard deviations were used to interpret the findings where a mean value of 1-1.80 was Strongly Disagree, 1.81-2.60 Disagree, 2.61-3.20 Neutral, 3.20-4.20 Agree and 4.20-5.00 Strongly Agree. Standard deviation less than 2 was suitable meaning responses were closely clustered around the mean.

Incremental Strategy

The first objective sought to examine the relationship between incremental strategy and performance of e-Resources Centre Project in Rift Valley Region, Kenya. Respondents were asked to tick on the extent to which they agree/disagree with statements related to identify stakeholder. Findings are shown in Table 1.

Table 1: Incremental Strategy

Key: SD=Strongly disagree, D=Disagree, N=Neutral, A=Agree, SA= Strongly agree, M=Mean, Std=Standard Deviation.

Statements	SD %	D %	N %	A %	SA %	M	Std.
M&E plans clearly defines the roles of project team members	4.4	18.9	4.4	11.1	61.1	4.06	1.325
The project managers have a clear Work Breakdown Structure	6.7	8.9	4.4	8.9	71.1	3.71	1.283
Decision-making involves all the project team members and the clients	14.4	1.1	3.3	27.8	53.3	4.04	1.389
An adequate budget is allocated for the projects	55.6	24.4	6.7	0	13.3	1.91	1.355
There is effective and efficient cost control of project resources	40.0	24.4	3.3	21.1	11.1	2.39	1.466
Estimation of the project budget helps in easier facilitation of project activities.	5.6	2.2	3.3	35.6	53.3	4.29	1.041
Average						3.40	1.310

N==90

Findings show that M&E plans clearly defines the roles of project team members as strongly agreed by 61.1%. The statement was supported by the mean (M =4.06, std = 1.325). This is an indication that the project managers have suitable M&E plans and ensures that the role of every project team member is clearly defined. This ensures that the team members understand the project deliverables expected from them. The project managers have a clear Work Breakdown Structure as strongly agreed by 71.1%. The statement was supported by the mean (M = 3.71, std = 1.283). The findings indicate that the project tasks are cleared outlined and the timelines for each activity indicated which makes it easier to plan, organize, and track project progress. Decision-making involves all the project team members and the clients as strongly agreed by 53.3%. The statement was supported by the mean (M = 4.04, std = 1.389). This implies that there is stakeholder involvement in project management which enhances brainstorming and stakeholder satisfaction with project outcome. The budget allocated for the projects is inadequate as strongly disagreed by 55.6%. The statement was supported by the mean (M = 1.91, std = 1.355). This is an indication that there are no adequate resources to implement the projects which may lead to project delay. There is no effective and efficient cost control of project resources as strongly disagreed by 40%. The statement was supported by the mean (M = 2.39, std = 1.434). Findings indicate that the project resources are at times not used effectively leading to loss of project resources. Estimation of the project budget helps in easier facilitation of project activities as strongly agreed by 53.3%. The statement was supported by the mean (M = 4.29, std = 1.041). This indicates that accurate estimate of project budget ensures that there is no shortage of project financial and human resources.

The findings supported by an aggregate mean of 3.40 (Std= 1.310) show that the respondents agreed that incremental strategy affects performance of e-Resources Centre Project in Rift Valley Region, Kenya. Results are in agreement with Ahsan and Gunawan (2013) that cost overruns affected the majority of the late-completed projects. Project's costs determine the success or failure of a project. In addition, Siborurema, Shukla, and Mbera (2015) found that cost calculation and technical design significantly impact the planned project implementation time and the funding strategy for the project.

Iterative Strategy

The second objective sought to determine relationship between iterative strategy and performance of e-Resources Centre Project in Rift Valley Region, Kenya. Respondents were asked to tick on the

extent to which they agree/disagree with statements related to iterative strategy. Findings are shown in Table 2.

Table 2: Iterative Strategy

Statements	SD %	D %	N %	A %	SA %	M	Std.
Monitoring and evaluation of projects are effectively carried out	22.2	1.1	3.3	18.9	54.4	3.82	1.619
Baseline surveys are frequently conducted for all projects	22.2	22.2	1.1	6.7	47.8	3.64	1.731
Evaluations are conducted for all projects	18.9	55.6	2.2	8.9	14.4	2.02	1.406
We make changes to project plans and implementation depending on M&E feedback	22.2	1.1	2.2	6.7	67.8	3.97	1.666
Quality assurance helps to avoid project defects	20.0	8.9	3.3	15.6	52.2	3.71	1.630
Subcontractors are evaluated and selected based on their ability to meet specified requirements	3.3	20.0	1.1	5.6	70.0	3.81	1.340
Quality Plans are prepared before initiating projects	14.4	20.0	1.1	1.1	63.3	3.79	1.652
Average						3.54	1.577

Findings show that monitoring and evaluation of projects are effectively carried out as strongly agreed by 54.4%. The statement was supported by the mean ($M = 3.82$, $std = 1.619$). This implies that the project managers ensure that the projects are frequently monitored and evaluated. Baseline surveys are frequently conducted for all projects as strongly agreed by 47.8%. The statement was supported by the mean ($M = 3.64$, $std = 1.731$) which indicates that the project managers employ various methods to collect data on project performance. This enables them to get feedback regarding project performance. Evaluations are not conducted for all projects as strongly disagreed by 55.6%. The statement was supported by the mean ($M = 2.02$, $std = 1.406$). This implies that some e-resources projects are not evaluated and the project managers may lose track on their performance. The project managers make changes to project plans and implementation depending on M&E feedback as strongly agreed by 67.8%. The statement was supported by the mean ($M = 3.97$, $std = 1.666$). This is an indication that the project managers implement the M&E reports resulting to improvement of project quality. Quality assurance helps to avoid project defects as strongly agreed by 52.2%. The statement was supported by the mean ($M = 3.71$, $std = 1.630$) which implies that there are effective project quality assurance practices. Subcontractors are evaluated and selected based on their ability to meet specified requirements as strongly agreed by 70%. The statement was supported by the mean ($M = 3.81$, $std = 1.340$). This shows that the project managers evaluate the contractors to ensure that they attain the credentials that will enable them to achieve quality projects. Quality plans are prepared before initiating projects as strongly agreed by 63.3%. The statement was supported by the mean ($M = 3.79$, $std = 1.652$). This indicated that there is effective quality planning in the management of e-resources projects.

The findings supported by an aggregate mean of 3.54 ($Std = 1.577$) show that the respondents agreed that iterative strategy affects performance of e-Resources Centre Project in Rift Valley Region, Kenya. Findings are in agreement with Mithika and Moronge (2017) that project quality planning and project funding were important factors that needed to be enhanced to boost effective quality management of water and sanitation infrastructure projects. Rachuonyo district, Ouma (2017) demonstrated that monitoring and evaluating officers' training, knowledge, and abilities were critical in achieving organizational goals.

Performance of E-Resources Centre Project

Respondents were asked to tick on the extent to which they agree/disagree with statements related to performance of e-Resources Centre Project in Rift Valley Region, Kenya. Findings are shown in Table 3.

Table 3: Performance of e-Resources Centre Project

Key: SD=Strongly disagree, D=Disagree, N=Neutral,, A=Agree, SA= Strongly agree, M=Mean, Std=Standard Deviation.

Statements	SD %	D %	N %	A %	SA %	M	Std.
Projects are delivered on time	72.2	1.1	3.3	10.0	13.3	1.91	1.541
Project are delivered within the set budget	71.1	5.6	2.2	6.7	14.4	1.88	1.520
Therefore is positive feedback on project ease of use	16.7	45.6	4.4	14.4	18.9	2.28	1.438
Project objectives and deliverables are achieved	21.1	2.2	7.8	13.3	55.6	3.80	1.616
Average						2.46	1.522

N=90

Findings show that projects are not delivered on time as strongly disagreed by 72.2%. The statement was supported by the mean (M =1.91, std = 1.541). This implies that the e-Resources Centre Projects are not time bound and they are don't meet scheduled project delivery timelines. Project are not delivered within the set budget as strongly disagreed by 71.1%. The statement was supported by the mean (M =1.88, std = 1.520) which indicates that projects surpass set timeliness. Therefore is no positive feedback on project ease of use as disagreed by 45.6%. The statement was supported by the mean (M =2.28, std = 1.438) indicating that users are facing challenges in using e-resources projects. Project objectives and deliverables are achieved as strongly agreed by 55.6%. The statement was supported by the mean (M =3.80, std = 1.616). This implies that the project managers make efforts to ensure that the project deliverables are delivered as outlined in the project plans. The findings supported by an aggregate mean of 2.46(Std= 1.522) show that the respondents disagreed with statements related to performance of e-Resources Centre Project in Rift Valley Region, Kenya. Findings support Mwaura and Namande (2020) that the the e-Resources Centres had a completion rate of 70. Furthermore, 65% of users rely heavily on the Kenya Library and Information Services Consortium's (KLISCs) resources, but only 40% feel confident in accessing and utilizing these resources effectively due to insufficient training and guidance. Merande, Mwai, and Ogalo (2021) found that 29.7% of users experienced significant difficulties with accessing digital platforms, with many citing issues such as outdated software and lack of technical support

Correlation Analysis

Correlation analysis was conducted to determine the strength of relationship between the independent and dependent variable. Correlation value of ± 0.5 shows a strong correlation, ± 0.30 to ± 0.49 moderate correlation while ± 0.29 is a weak correlation. Correlation is statistically significant at .05 levels (Gray et al, 2012). Correlation results are presented in Table 4

Table 4: Coefficient of Correlation

Variables	Project performance	incremental strategy	Iterative strategy
Project performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	90	

Incremental strategy	Pearson Correlation	.584**	1	
	Sig. (2-tailed)	.000		
	N	90	90	
Iterative strategy	Pearson Correlation	.823**	.457	1
	Sig. (2-tailed)	.000	.000	
	N	90	90	90

** . Correlation is significant at the 0.05 level (2-tailed).

Incremental strategy has a strong positive significant correlation with performance of e-Resources Centre Project ($r=0.584$, $p=0.000$). This implies that an increase in incremental strategy could lead to an increase in performance of e-Resources Centre Project. Findings are in agreement with Munyoki (2014) that there is a positive and significant correlation between project planning and construction project completion.

Iterative strategy has a strong positive significant correlation with performance of e-Resources Centre Project ($r=0.823$, $p=0.000$). This implies that an increase in iterative strategy could lead to an increase in performance of e-Resources Centre Project. Results concur with Nisa (2015) that M&E has a significant effect on project success.

Regression Analysis

Multivariate regression analysis was used to determine the relationship between the independent variables (incremental, interactive,

and the dependent variable (performance of e-Resources Centre Project in Rift Valley Region, Kenya).

Table 5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant/Y Intercept	2.658	.437		6.077	.000
Incremental strategy	.408	.071	.296	5.729	.000
Iterative strategy	.668	.059	.605	11.335	.000

Results further show that; incremental strategy show a statistically significant positive coefficient ($\beta = .408$, $\text{sig} = .000$), indicating that changes in incremental strategy result to changes in performance of e-Resources Centre Project in Rift Valley Region, Kenya. Incremental strategy has the second highest effect on performance of e-Resources Centre Project in Rift Valley Region, Kenya at 29.6% (std Beta = .296). The findings are in agreement with Adhiambo (2020) that there is positive association between monitoring and evaluation plans and the implementation of project.

Iterative strategy show a statistically significant positive coefficient ($\beta = .408$, $\text{sig} = .000$), indicating that changes in iterative strategy result to changes in performance of e-Resources Centre Project in Rift Valley Region, Kenya. Iterative strategy has the highest effect on performance of e-Resources Centre Project in Rift Valley Region, Kenya at 29.6% (std Beta = .296). The findings are in agreement with Gathege and Yusuf (2019) Using effective communication techniques in business operations provides programmatic results for women's farming projects

Conclusion

Incremental strategy has a strong positive significant correlation with performance of e-Resources Centre Project. Incremental strategy has the second highest effect on performance of e-Resources Centre Project in Rift Valley Region, Kenya. This strategy includes M&E plans, a project work breakdown structure, involvement of stakeholders in project management, budget allocation, project cost control, and budget estimation. Allocation of project resources enables the project managers to acquire the resources required to carry out various project activities.

Iterative strategy has a strong positive significant correlation with performance of e-Resources Centre Project. Iterative strategy has the highest effect on performance of e-Resources Centre Project in Rift Valley Region, Kenya. Iterative strategy include project M&E, baseline surveys, project evaluations, implementing project changes, project quality management, and subcontractor assessment. The quality of the projects is assured through ensuring that the projects comply with the laws and regulations. The project managers also ensures that the suppliers selected deliver quality and certified materials needed in project implementation. Contractors' assessments also ensures that quality projects are delivered.

Recommendations of the Study

The project managers should consult professional project cost management consultants. This will ensure that there are suitable project cost estimation and control. This will also ensure that project resources are adequate to implement all project activities successfully. The project team should be supervised and inspected frequently to ensure that they are doing what they are supposed to do. The project management could also consider outsourcing experts in monitoring and evaluating projects.

There should be through controlled actions to ensure changes do not have a negative impact on project. The project managers need to hire competent monitoring and evaluation staff to ensure that there is constant monitoring and evaluation of projects. The management should ensure regular training, benchmarking, skills and capabilities assessment to equip the M&E project teams with the necessary project management skills. They should improve on the staff capacity to ensure that they are conversant with the M&E practices and systems. This will ensure that the practices are effectively carried out and desired project quality achieved.

Areas for Further Studies

This study sought to establish the agile project management strategies and performance of e-Resources Centre Project in Rift Valley Region, Kenya. However, this study was limited to e-Resources Centre Project in Rift Valley Region, Kenya. Hence the findings cannot be generalized to e-Resources Centre Project in other regions in Kenya. Therefore, the study recommends that further studies should be conducted on the performance e-Resources Centre Project in other regions in Kenya.

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