



AGILE PROJECT MANAGEMENT STRATEGIES AND PERFORMANCE OF PROJECTS IN REAL ESTATE FIRMS IN NAIROBI CITY COUNTY, KENYA

¹Muli Faith, ²Dr. Muchelule Yusuf

¹.Scholar, Master In Project Management of Jomo Kenyatta University of Agriculture and Technology

².Lecturer, Jomo Kenyatta University of Agriculture and Technology

ABSTRACT

The general objective was to determine the effect of agile project management strategies and performance of projects in real estate firms in Nairobi City County, Kenya. The specific objectives were to examine effect of; iterative strategy, adaptive strategy on performance of projects in real estate firms in Nairobi City County, Kenya. This study employed descriptive research design. The study target was 78 project managers of the real estate firms. Census was used in sampling the firms. The study data was collected using questionnaires. A pilot test was conducted with 8 project managers representing 10% of the sample. 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. The regression analysis yielded statistically significant coefficients for the predictors Adaptive strategy ($\beta = 0.225$, $p < 0.05$), and Iterative strategy ($\beta = 0.187$, $p < 0.05$), indicating their positive significant relationships with project performance. These findings underscore the importance of implementing these strategies effectively to enhance project outcomes in real estate firms in Nairobi City County, Kenya. By leveraging Adaptive, and Iterative strategies effectively, firms can better navigate the complexities of real estate projects, mitigate risks, and maximize value delivery to stakeholders. Moreover, continuous monitoring and evaluation of project performance should be emphasized, allowing for timely adjustments and improvements based on feedback.

Key Words: Agile Project Management Strategies, Iterative Strategy, Adaptive Strategy, Performance of Projects Real Estate Firms

Background of the Study

Agile project management (APM) is a project management methodology that concentrates on agile production. Agile project management is known to be an iterative approach to deliver the project to end-users in a defined time limit. The primary objective of agile project management is to break the entire project into different sets of tasks that can be completed in short iterations or sprints. The adoption of the strategy is focused on enabling the organizational team to quickly adapt to the dynamically changing environment and deliver projects on time (Qureshi, 2012). Agile project management has three types of strategies; Fernandez & Fernandez (2018) described the different types of agile and traditional strategies and elaborated each one of them with their advantages. Agile project management combines strategies such as iterative strategy, and adaptive strategy .

Larson and Gray (2018) noted that the primary advantage of adopting agile methodology over the traditional approach is that the agile approach can be implemented with fewer people in the team. However, in order to implement an agile approach for project management on a larger scale it is important that it is applied through a condition called “scaling” in order to reap fruitful results in terms of profitability and growth for the organization. Agile Project Management provides new opportunities for management based on the acceptance of change as an unavoidable ingredient of the project management process in the construction sector. Agile project management is characterized by rapid iterative cycles of planning and development that allow a project team to constantly evaluate its work and receive immediate feedback from other team members and, if possible, from stakeholders. Iterations are based on simple planning, on defining requirements and designing solutions that are continuously implemented throughout project implementation. This approach is similar to cyclic waves. It allows for immediate adjustments to work (Bogdanova, Parashkevova, & Stoyanova, 2020).

Project managers find it an unconventional method that is bound to be counterproductive if not planned appropriately. Project managers have traditionally taken a structured and planned management approach to avoid differences in plans, with APM adapting to changing circumstances. The capabilities of APM for any working environment are all influenced by their adaptability to people and processes as well as their quality and reliability (Sherehiy, Karwowski, & Layer, 2017). As agile management encourages the internal stakeholders of the project to seek continuous feedback from one another as well as from the clients throughout the process. Doing so reduces the amount of ambiguity from the development phase as much as possible and induce desired changes along the process. Thus, the finished project is much more of a reflection of the client’s expectations and assurance of enhanced performance (Serrador & Pinto, 2015).

Statement of the Problem

The real estate sector plays a vital role in economic development. Real estate remains one of the fastest-growing industries with its activities supporting sustained economic growth and the potential of higher returns. The sector contributed 8.6% to GDP in 2022 (Economic Outlook Survey, 2022). The Kenya government in collaboration with private developers continue to allocate huge financial resources to finance real estate development in a bid to earn from its investment. Despite the Kenyan Government and private developers investment in the real estate sector, more than 70% of construction projects in the real estate sector in Nairobi County experience time overrun of a magnitude of over 50%, while 50% of the projects experience excess cost budget of a magnitude of more than 20%.

In the past 10 years, investors have heavily invested in shopping malls but the investors are yet to realize their return on investments due to low uptake of the mall space. In the year 2021, office space absorption levels dipped, rental levels for retail outlets stagnated while the residential accommodation uptake was low (Knight Frank, 2021). In 2023, selling prices for all the properties in the Nairobi Metropolitan Area (NMA) registered a 1.1% decline in Q3'2023, compared to 0.8%

increase in Q3'2022 (Cytonn, 2023). On the collapse of buildings, the 2023 have reached an 'alarming rate' in the past few years with several buildings structurally failing (Kioko, 2023). Defaults on mortgage stood at 38 billion shillings by December 2021 (Central Bank of Kenya, 2021).

There exist some studies on value chain and performance in Kenya. Bii and Kamaara (2018) sought to establish the effect of agile project management techniques on performance of public funded projects in Kenya. Findings revealed that resource mobilization, stakeholder's participation and project team competence had a positive and significant relationship with project performance. Organizational strategy had a positive but insignificant relationship with project performance. Chelangat, and Karanja (2019) studied the effect of agile project management and project success in the construction of commercial properties in Nairobi City County, Kenya. The findings revealed that agile planning, iterative methods, close collaboration and continuous improvement is statistically significant for project success. This shows that there is study scarcity on the effect of agile project management strategies on project performance. The study hence sought to determine the effect of agile project management strategies and performance of projects in real estate firms in Nairobi City County, Kenya.

Specific Objectives of the study

- i. To examine effect of iterative strategy on performance of projects in real estate firms in Nairobi City County, Kenya.
- ii. To determine the effect of adaptive strategy on performance of projects in real estate firms in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Framework

Contingency Theory

The theory was developed by Fielder in the mid-1960s. The scholar studied the personality and characteristics of leaders. The model states that there is no one best style of leadership. Instead, a leader's effectiveness is based on the situation. According to Betts (2003), the basic assertion of contingency theory is that the environment is a determining factor in the way in which an organization structures itself. Likewise, the position of organizational theorists in contingency theory holds the view 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 agile organization has a greater likelihood of responding to external demands from the environment. This theory enables organizational leaders to flexibly respond and base their decisions on the external information that shape and direct the organization to its success trajectory. According to contingency theory, organization is defined as a social system consisting of subsystems that are highly interdependent. According to Luthans and Stewart (1977), organizational goals and objectives are defined by constituents of the social system in terms of relevant environmental and resource constraints. Organizations must be agile from top management in order for employees to buy-in and embrace agile strategies, sufficient resources whether human or non-human should be made available to support agility, and subsequently, the organization can easily and quickly renew itself, adapt, change, and succeed in a turbulent, rapidly changing environment.

Chaos Theory of Management

The theory was developed by Tom Peters in the 1980s. He stated that managers must be prepared for environmental and technological changes. According to this chaos theory, organizations are viewed as a chaotic system. Organizations have different interacting forces that push or pull organizational system (Thietart & Forgues, 1995). Some of the forces push the system towards stability and order which include forces of planning, structuring and controlling. While other forces pull the system towards instability and disorder which include forces such as innovation, initiative, and experimentation. The integration of these forces can lead to a highly chaotic organization. In

this case, organizations should be highly organized in order to minimize the complex, chaos situation. Forces that push the system towards stability and order can closely be compared to agility enablers such as structure and organization, processes, technology, human resources, and network. Likewise, forces that pull the system towards instability and disorder can be closely compared to agility drivers such as market changes, technological changes, and globalization. To engage in agile activities means that the organization become vulnerable but cautious, transparent but vigilant to other organizations or parties in the broader environment. The smooth strategic interaction and interdependency put an organization in a strategic position to compete and ultimately improves its' performance.

Conceptual Framework

The conceptual framework shows that agile management strategies may enable real estate firms to improve project performance. The Figure 2.1 shows the relationship between the dependent and independent variables.

Independent Variables

Dependent Variables

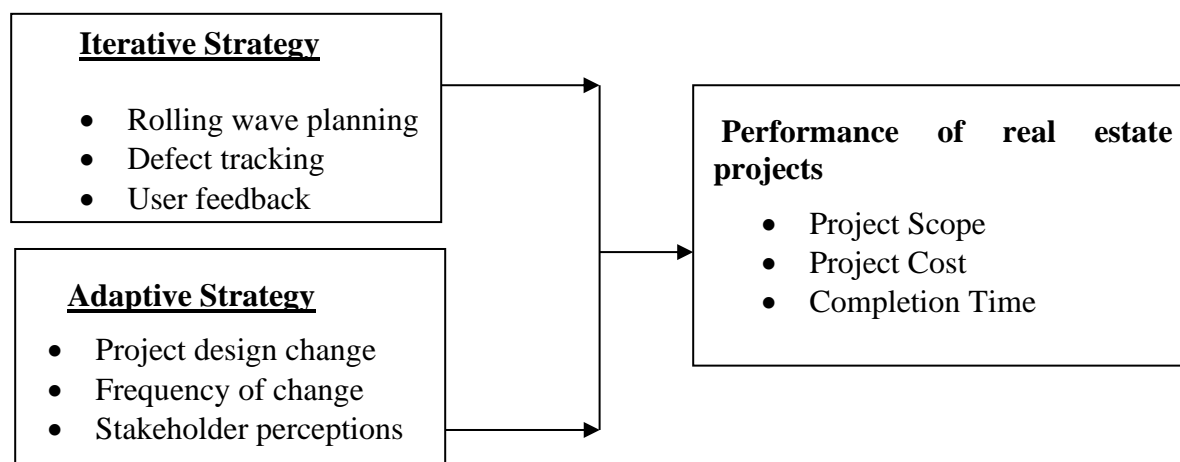


Figure 2. 1: Conceptual Framework

Iterative Strategy

The iterative process is the practice of building, refining, and improving a project, product, or initiative. Teams that use the iterative development process create, test, and revise until they're satisfied with the end result (Martins, 2022). Feedback is received after ending a series of stages to allow for adjustments based on the customer request, the advantages of this strategy is that it allows for improvements and scope change between iteration. To complete an increment, a project team will iterate multiple times over the analysis, design, implementation, integration, and testing of the classes in this increment. The first pass may be a quick setup pass where issues are scoped, risks are assessed, and resources are obtained and allocated. Next there may be one or more prototyping passes where issues are explored and solutions are refined. Then one or more development iterations occur during which the production classes are implemented. Finally, there is a clean-up iteration where deliverables are reviewed, code is polished, and documentation is finished for that increment. This increment is now considered complete. One does not return to any of the deliverables in this increment unless an error or serious flaw is discovered, or a requirement change that affects this increment is negotiated. Completion of an increment is a major project milestone (Korson, 2015). Bourgeois and Whynot (2018) found that evaluations are methodically used in organizations for instrumental and conceptual purposes at the programme level to authenticate prevailing programme management concerns and to enhance changes in programme strategy and delivery.

Adaptive Strategy

During adaptive strategy, the changes are made after each iteration which allows for constant adjustments for the next iteration, it has the ability to adapt to changes by planning and deliver the desired value within the specified costs and time (Adek, 2016). Identifying the project scope involves defining the length, breadth, and depth of the project. On the other hand, it's equally essential to outline functions, deadlines, tasks, features, and services. Upon identifying the project scope, the very next step is to outline the project deliverables. The project deliverables include defining the product or services needed. Flexibility is essential to successfully manage the unpredictability in long term projects. Hence, planning should provide mitigation measures for changes to project scope, cost, timelines or quality. The project schedule is essential in documenting project details and providing a forecast of resources required, limitations that may result in delays and additional cost such as inadequate data or gaps in experience and techniques (Baymount, 2015).

The adaptive life cycles, also known as change-driven or agile methods, are used in cases of high levels of change or application areas such as IT. Adaptive methods are also iterative and incremental, but the difference is that iterations are very rapid (typically with a duration of 2 to 4 weeks) and are fixed in time and cost. Sometimes the processes within the iterations can be going on in parallel. A thorough identification of project stakeholders is essential. It is better to have meetings with team members and experts to identify project stakeholders. Documentation of relevant information on stakeholders and their impact on the successful completion of the project is required. The key stakeholders include direct beneficiaries, individuals, accountable for the resources, national policymakers, donors, and development partners. Involving stakeholders in the monitoring and evaluation process extends the goal of promoting participatory development. Stakeholder engagement helps to maintain stakeholders' interests and achievement of the success of the project (Khan et al.,2021).

Organizations must put in mind individual matters and groups that may influence their activities when making decisions and attaining the goals of the organization (Gibson, 2000). This can only be achieved through proper stakeholder mapping that shows all the relevant stakeholders, the role(s) they play, their interests and power/ influence. Stakeholders interests are identified, analyzed and should be fulfilled. Stakeholders are either from within or outside the organization. Management of stakeholders throughout the project cycle is curial for the success of the project and it involves continuous identification of stakeholders, understanding their influence and addressing expectations or concerns. Stakeholders who are positively affected by a project are likely to support it will those who are adversely affected will oppose it (Anderson, et al, 2012).

Empirical Review

Iterative Strategy and Project Performance

Nisa (2015) sought to examine the relationship between project design, monitoring and evaluation, and project success in NGOs in Pakistan. The results showed that M&E practices are frequently used in NGO projects in Pakistan, key considerations have been taken while designing the projects, and both variables have a positive relationship with project success. M&E showed a significant impact compared to project design on project success. Ashiokai (2016) studied the effect of implementation of Total Quality Management practices in the Ghanaian Construction Industry. The study employed a deductive approach. Primary data was collected through questionnaires. Secondary information was collected from books, articles, journals and periodicals. The population was 250 contractors. Findings revealed that the benefits gained from implementing TQM comprise reduction in rework and waste, reduction in construction cycle time, reduction in client's complaints and savings on cost incurred.

Ouma, (2017) did a study on factors influencing effective monitoring and evaluation of small and medium enterprise projects in Rachuonyo district in Kenya. Results showed that monitoring and evaluation officers were crucial in the achievement of organizational goals, and that their training, knowledge and skills were also important. Njuki, Kaaria, Chitsike, and Sanginga, (2017) also did a study on participatory monitoring and evaluation for stakeholder engagement, assessment of project impacts, and for institutional and community learning and change. Preliminary results from this study indicate that scientists are beginning to apply the Participatory Monitoring and Evaluation (PM&E) process to engage their stakeholders in joint planning, developing common objectives and vision, and in collectively assessing progress. At the community level, PM&E data is being applied to adjust project activities, reflect and make decisions on various aspects of community initiatives, and to plan and monitor the implementation of activities.

Gathege and Yusuf (2019) sought to establish the influence of monitoring and evaluations on the sustainability of women-based agricultural projects in Kenya. The study adopted a descriptive survey design with mixed approaches. The target population comprised 219 women-based agricultural projects. The study used stratified and random sampling techniques to select 116 representative samples from the sub-county governments. Also, the researchers used questionnaires and interview schedules to collect data. The study established that women-based agricultural projects with high performers are effective communicators. Engaging in good communication strategies in the enterprises outlines programmatic outcomes for women's farming projects

Adaptive Strategy and Project Performance

Nibyiza (2015) analyzed the scope change management as a tool for project success in Rwanda. A descriptive research was used. The target population of this study was 30 staff in Akazi kanoze projects. Census technique was used in sampling the entire target population. Questionnaires and interview guides were used for collecting primary. Results found out that changes in project activities provoke the changes in project cost, time and quality of the product/service of the project. The study indicated that when activities are changed without changing project cost or time; it increases the risk of not completing the project on time as well risk of not having enough resources.

Matyoko (2019) examined the effectiveness of Monitoring and Evaluation Systems on the sustainability of Projects in Tanzania. The study used a descriptive research design. The findings established a positive relationship between monitoring and evaluation of the sustainability of NGO projects. The researcher also noted that a positive correlation exists between stakeholder's engagement in monitoring and evaluating processes and the sustainability of NGOs project. Beluhu (2021) conducted a research to analyze the impact of the monitoring and evaluation framework on development projects in the education bureau in Somalia. The study used a descriptive research design with a sample size of 47 respondents. The findings established that lack of community involvement was a significant hindrance to the success of educational projects. It advocated for M& E framework to be implemented to enable the success of projects and conduct training to build capacity and participation.

Ali (2019) investigated the impact of stakeholders on the performance of CDF projects through the use of community leaders and discovered that planning and scheduling affected the performance of the national government constituency development fund project in the Wajir West Constituency. The findings revealed that planning significantly positively impacted the implementation of CDF agendas. Odhiambo (2014) studied influence of skills and knowledge on the relationship between project scope management and implementation of economic stimulus projects in public secondary schools in Kisumu County, Kenya. The study targeted Boards of Management and Project management Committees of 7 secondary schools that benefited from the government initiative of ESP projects in Kisumu County. This gave a target population of 189 respondents from which a sample size of 128 respondents was drawn. In this study, descriptive

survey research design was used. Both qualitative and quantitative research approaches were used. Significant relationship was established between project initiation, scope planning, scope definition, scope verification and project change control and implementation of Economic Stimulus Projects

RESEARCH METHODOLOGY

The research employed a descriptive research design. The study's target population was the real estate firms in Nairobi County. The study used census. Since the number of the project managers is 78, all the firms' project managers were sampled. The study data was collected using questionnaires. Data was analyzed using SPSS Version 28. Descriptive and inferential statistics were used. The descriptive statistics included frequency, percentage, and mean while inferential statistics included correlation and regression. Findings were tabulated.

RESEARCH FINDINGS AND DISCUSSION

The study sample size was 78 project managers of the real estate firms in Nairobi City County. The returned questionnaires were verified for accuracy and completeness and 62 were found to be valid and reliable, and suitable for further analysis and reporting. The response rate for the study was 88.6%. According to Sekaran and Bougie's (2016), a response rate of 50% or above is adequate, 60% or above is good, and 70% or above is excellent for analysis.

Descriptive Analysis of Study Variables

In this section, the study presents summary of findings on questions asked to the respondents on various statements relating to each objective of the study. This includes Likert scale questions which were analyzed using means and standard deviation. They used a 5-point Likert scale where 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree. The means and standard deviations were used to interpret the findings where a mean value of 1-1.4 was strongly disagree, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree and 4.5-5 strongly agree. Standard deviation greater than 2 was considered large meaning responses were widely spread out and not tightly clustered around the mean.

Iterative strategy

The first objective of the study was to examine effect of iterative strategy on performance of projects in real estate firms in Nairobi City County, Kenya. On a scale of 1-5 respondents were asked to rank Iterative strategy aspects. Table 1 presents summary of the findings obtained.

Table 1: Descriptive Statistics on Iterative strategy

STATEMENTS	Mean	Std. Dev.
Monitoring and evaluation of projects is effectively carried out	3.905	0.448
Baseline surveys are frequently conducted for all projects	3.723	0.314
Evaluations are conducted for all projects	3.845	0.708
We make changes to project plans and implementation depending on M&E feedback	3.838	0.28
Quality assurance helps to avoid project defects	3.501	0.128
Subcontractors are evaluated and selected based on their ability to meet specified requirements	3.728	0.718
Quality Plans are prepared before initiating health projects	3.663	0.479
Aggregate Score	3.743	0.439

The findings show that on average, the respondents agreed that monitoring and evaluation of projects is effectively carried out (M= 3.905, SD= 0.448); that baseline surveys are frequently conducted for all projects (M= 3.723, SD= 0.314);that evaluations are conducted for all projects

(M= 3.845, SD= 0.708); and that they make changes to project plans and implementation depending on M&E feedback (M= 3.838, SD= 0.28). Respondents further agreed that quality assurance helps to avoid project defects (M= 3.501, SD= 0.128); that subcontractors are evaluated and selected based on their ability to meet specified requirements (M= 3.728, SD= 0.718); and that quality Plans are prepared before initiating health projects (M= 3.663, SD= 0.479).

The findings of the study, supported by an aggregate mean of 3.743 (SD= 0.439), demonstrate a consensus among respondents regarding the significant influence of iterative strategy on project performance within real estate firms in Nairobi City County, Kenya. This agrees with Martins (2022) who emphasizes the iterative development process as a means to continuously refine and improve projects until satisfactory results are achieved, echoing the sentiment of the respondents regarding the effectiveness of iterative strategies. Additionally, Bourgeois and Whynot (2018) highlight the systematic use of evaluations in organizations to validate program management concerns and enhance program strategy and delivery, which correlates with the findings suggesting the importance of iterative approaches in responding to feedback and refining project outcomes.

Adaptive strategy

The second objective of the study was to determine the effect of adaptive strategy on performance of projects in real estate firms in Nairobi City County, Kenya. On a scale of 1-5 respondents were asked to rank Adaptive strategy aspects. Table 4.6 present summary of the findings obtained.

Table 2: Descriptive Statistics on Adaptive strategy

STATEMENTS	Mean	Std. Dev.
The project design is flexible to achieve better project results.	3.611	0.418
There are regular planning meetings by the M&E team at the constituency	3.833	0.618
Change in project activities results to change in project schedule/time	3.554	0.485
Stakeholders are often engaged by the project team to review project achievements against set objectives	3.901	0.727
Stakeholders are involved in identifying corrective actions to address issues and risks properly	3.795	0.244
Stakeholder's decisions are effective in ensuring uninterrupted flow of project activities	3.56	0.687
Stakeholder's feedback is well documented and analysed for execution	3.652	0.613
Aggregate Score	3.701	0.542

The findings show that the respondents were in agreement that the project design is flexible to achieve better project results (M= 3.611, SD= 0.418); that there are regular planning meetings by the M&E team at the constituency (M= 3.833, SD= 0.618); that change in project activities results to change in project schedule/time (M= 3.554, SD= 0.485); and that stakeholders are often engaged by the project team to review project achievements against set objectives (M= 3.901, SD= 0.727). They further agreed that stakeholders are involved in identifying corrective actions to address issues and risks properly (M= 3.795, SD= 0.244); that stakeholder's decisions are effective in ensuring uninterrupted flow of project activities (M= 3.56, SD= 0.687); and that stakeholder's feedback is well documented and analyzed for execution (M= 3.652, SD= 0.613).

The findings above supported by an aggregate mean of 3.701 (SD= 0.542) show that the respondents agreed that adaptive strategy affects performance of projects in real estate firms in Nairobi City County, Kenya. The findings agree with Adek (2016) who advocates for adaptive strategies as a means to effectively respond to changes and deliver desired value within specified constraints, resonating with the findings suggesting the importance of adaptive approaches in navigating uncertainties and challenges within real estate projects. Additionally, Matyoko's (2019) examination of monitoring and evaluation systems underscores their positive relationship with

project sustainability, aligning with the notion that adaptive strategies facilitate ongoing assessment and adjustment to enhance project outcomes. Furthermore, Ali's (2019) study on the impact of stakeholders on project performance emphasizes the role of planning and scheduling in driving the implementation of projects, which correlates with the findings suggesting the importance of adaptive strategies in responding to stakeholder needs and evolving project requirements.

Project Performance

The main objective of the study was to determine the effect of agile project management strategies and performance of projects in real estate firms in Nairobi City County, Kenya. On a scale of 1-5 respondents were asked to rank stakeholder interest aspects. Table 4.8 presents summary of the findings obtained.

Table 3: Descriptive Statistics on Project Performance

Statements	Mean	Std. Dev.
Timely delivery of projects	3.83	0.469
The quantity of project deliverables	3.791	0.558
Project costs	3.721	0.107
Client satisfaction with projects	3.607	0.669
Aggregate Score	3.737	0.451

The study findings show that the respondents agreed on average regarding timely delivery of projects (M= 3.83, SD= 0.469); the quantity of project deliverables (M=3.791, SD=0.558); project costs (M= 3.721, SD= 0.107); and client satisfaction with projects (M= 3.607, SD= 0.669). Firstly, in support of the finding on timely delivery of projects, Martins (2022) emphasizes the importance of iterative development processes in ensuring projects are completed on schedule. Iterative approaches allow for continuous refinement and adjustment, facilitating timely delivery. Secondly, the finding regarding the quantity of project deliverables aligns with the emphasis on scope management in project literature. Kerzner (2017) highlights the significance of defining project scope to ensure the delivery of required deliverables, thus corroborating the importance of quantity in project success. Thirdly, the finding on project costs corresponds to literature on project budgeting and financial management. Adek (2016) advocates for adaptive strategies in managing project costs effectively, aligning with the finding that respondents acknowledge the influence of project costs on overall performance. Lastly, the finding on client satisfaction with projects can be linked to literature on stakeholder management. Gibson (2000) emphasizes the importance of considering stakeholder interests and satisfaction in project management, highlighting the significance of client satisfaction as a measure of project success.

Inferential Statistical Analysis

Correlation Analysis

The study computed Correlation analysis to determine the strength and the direction of the relationship between the variables being studied. If the correlation values are $r = \pm 0.1$ to ± 0.29 then the relationship between the two variables is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and above there is a strong relationship between the two variables under consideration. Table 4 presents the findings obtained.

Table 4: Correlation Analysis

		performance	Iterative strategy	Adaptive strategy
Performance of real estate projects	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	62		
Iterative strategy	Pearson Correlation	.729**	1	
	Sig. (2-tailed)	.000		
	N	62	62	
Adaptive strategy	Pearson Correlation	.744**	.723**	1
	Sig. (2-tailed)	.000	.000	
	N	62	62	62

There is a very strong positive correlation ($r = 0.729$, $p < 0.05$) between iterative strategy and the performance of real estate projects. This indicates that real estate projects that utilize iterative approaches tend to demonstrate superior performance. Martins (2022) highlights the iterative development process as a means to continuously refine and improve projects until satisfactory results are achieved, supporting the significance of this finding.

The correlation analysis also reveals a very strong positive correlation ($r = 0.744$, $p < 0.05$) between adaptive strategy and the performance of real estate projects. This suggests that real estate projects implementing adaptive strategies tend to achieve higher performance levels. Adek (2016) advocates for adaptive strategies as a means to effectively respond to changes and deliver desired value within specified constraints, corroborating the importance of adaptive approaches in enhancing project performance.

Regression Analysis

Regression analysis was computed to examine the effect of agile project management strategies and performance of projects in real estate firms in Nairobi City County, Kenya. The findings were presented in three tables discussed in sub-sections below.

Model Summary

The model summary provides an overview of the amount of variation the regression model used to predict the performance of real estate projects based on the strategies employed (Incremental strategy, Adaptive strategy) explains.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804 ^a	.646	.621	.37976

a. Predictors: (Constant), Incremental strategy, Adaptive strategy

The correlation coefficient (R) of 0.804 highlights a robust positive correlation between the predictors and project performance, indicating a significant relationship between the considered strategies and project outcomes. Meanwhile, the coefficient of determination (R Square) of 0.646 suggests that roughly 64.6% of the variability in project performance is accounted for by these strategies, underscoring their considerable influence on project outcomes. However, the remaining 35.4% of unexplained variance implies that other factors beyond the scope of this model may also impact project performance. Nevertheless, the model summary emphasizes the critical role of Incremental strategy, and Adaptive strategy in predicting real estate project performance, collectively explaining a substantial portion of the variability in project outcomes.

Analysis of Variance

Analysis of Variance (ANOVA) indicates how well the model explains the variation observed in the data. To determine the fitness of the model, the study conducted an F-test at 95% confidence level. The significance was based on the P-value of the variable coefficients at 0.05 significance level. The decision in the fitness of the model was accepted if p-values was below 0.05 and rejected if it was above 0.05.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.019	4	3.755	26.035	.000 ^b
	Residual	8.220	57	.144		
	Total	23.239	61			

a. Dependent Variable: Performance of real estate projects

b. Predictors: (Constant), Incremental strategy, Adaptive strategy

The analysis of variance (ANOVA) results indicate a significant model fit for predicting the performance of real estate projects based on the strategies employed, including Incremental strategy, and adaptive strategy,. The regression model explains a substantial portion of the variability in project outcomes, as evidenced by the significant F-value of 26.035 ($p < 0.05$). This suggests that the predictors collectively contribute to explaining the variance in project performance beyond what would be expected by chance alone. These findings highlight the efficacy of the regression model in capturing the relationship between the selected strategies and the performance of real estate projects; that is the mode is fit.

Beta Coefficients of the Study Variables

From the coefficients Table regression model was fitted.

Table 7: Coefficients of Study Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.181	.357		3.308	.015
Iterative strategy	.422	.186	.365	2.269	.027
Adaptive strategy	.498	.118	.530	4.220	.000

a. Dependent Variable: Performance of real estate projects

From the coefficients in Table 4.12, the following regression model was fitted;

$$Y = 1.181 + 0.422 X_1 + 0.498 X_2$$

Where: Y is the performance of real estate projects; X_1 Iterative strategy; X_2 Adaptive strategy.

Iterative Strategy has beta coefficient of 0.422. The p-value for Iterative strategy is .027, indicating its statistical significance in predicting project performance. This implies that employing Iterative strategies contributes significantly to the performance of real estate projects. This finding resonates with Martins (2022), who discusses the benefits of Iterative development processes in continuously refining and improving project outcomes.

Adaptive Strategy was also seen to have beta coefficient of 0.498. The p-value associated with Adaptive strategy is .000, signifying its high level of significance in predicting project performance. This suggests that Adaptive strategies play a crucial role in influencing project outcomes. This finding is consistent with Adek (2016) who emphasizes the importance of adaptive strategies in responding effectively to changes and delivering desired value within specified constraints.

Conclusions

In the case of Iterative Strategy, the study's analysis demonstrates its significant influence on project performance within real estate firms in Nairobi City County, Kenya. The findings suggest that iterative approaches, characterized by continuous monitoring and evaluation, baseline surveys, and adaptability to feedback, contribute positively to project outcomes. This study concludes that embracing iterative strategies in project management positively and significantly enhances project performance by fostering adaptability and responsiveness to evolving project requirements and stakeholder needs.

Regarding adaptive strategy, the analysis indicates its substantial impact on the performance of real estate projects in Nairobi City County, Kenya. The findings suggest that adaptive approaches, characterized by flexible project design, stakeholder engagement, and effective change management, significantly influence project outcomes. The study also found that adopting adaptive strategies in real estate project management facilitates agility and resilience, enabling project teams to navigate uncertainties and challenges effectively, thereby enhancing overall project performance. The study therefore concludes that adaptive strategy positively and significantly affects performance of projects in real estate firms in Nairobi City County, Kenya.

Recommendations

For iterative strategy, it is recommended that real estate firms emphasize continuous monitoring and evaluation throughout project lifecycles. This involves conducting frequent baseline surveys, implementing changes to project plans based on M&E feedback, and ensuring quality assurance to avoid project defects. Furthermore, evaluating subcontractors based on their ability to meet specified requirements and preparing quality plans before initiating projects is essential. Real estate firms should establish robust mechanisms for stakeholder engagement and feedback analysis to improve project outcomes continually.

Regarding Adaptive Strategy, real estate firms are advised to embrace flexible project design and effective change management practices. Regular planning meetings by the M&E team should be conducted, and changes in project activities should be promptly reflected in project schedules. Stakeholders should be actively engaged in reviewing project achievements against set objectives, and corrective actions should be identified collaboratively to address issues and risks effectively. Real estate firms should prioritize stakeholder satisfaction and feedback analysis to enhance project adaptability and resilience.

Suggestions for Further Studies

The remaining 35.4% of unexplained variance implies that other factors beyond the scope of this model may also impact project performance. Therefore, future studies could explore additional variables, such as leadership styles, team dynamics, and stakeholder relationships, to provide a more holistic understanding of project success factors in the real estate industry. Also, further studies can explore the moderating role of contextual factors, such as organizational culture, project complexity, and external market conditions, could provide deeper insights into the effectiveness of these strategies. Furthermore, longitudinal studies tracking project performance over time and across multiple projects could offer a more comprehensive understanding of the long-term impact of these strategies. Moreover, qualitative research methods, such as interviews and focus groups, could complement quantitative findings by providing rich contextual insights into the underlying mechanisms driving the relationship between project management strategies and performance outcomes.

REFERENCES

- Amina, M. & Ngugi, L.(2022). Effects of Utilization of Monitoring and Evaluation Results on Project Performance. *European Journal of Social Sciences Studies*, 7(5)104-114
- Anderson, M., Teisl, W., & Noblet, C. (2012). Giving voice to the future in sustainability: Retrospective assessment to learn prospective stakeholder engagement. *Ecological Economics*, 1-6
- Betts, S. C. (2003). Contingency theory: science or technology? *Journal of Business & Economics Research*, 1(8).
- Bii, M. K., & Kamaara, D. M. (2018). Effect of Agile Project Management Techniques on Performance of Public Funded Projects: A Case of Kenya Urban Roads Authority. *Journal of Entrepreneurship & Project Management*, 2(1).
- Bogdanova, M., Parashkevova, E. & Stoyanova, M. (2020). Agile Project Management in Governmental Organizations Methodological Issues. *International E-Journal of Advances in Social Sciences*, 6(16)262-275
- Chelangat, N., & Karanja, P.N. (2019). Agile Project Management and Project Success in the Construction of Commercial Properties in Nairobi City County, Kenya. *Strategic Journal of Business & Change Management*, 5.
- Khan, A., Waris, M., Panigrahi, S., Sajid, M. R., & Rana, F. (2021). Improving the performance of public sector infrastructure projects: Role of project governance and stakeholder management. *Journal of Management in Engineering*, 37(2), 04020112.
- Luthans, F., & Stewart, T. I. (1977). A general contingency theory of management. *Academy of Management Review*, 2(2), 181-195.
- Nibyiza, F. (2015). *Analysis of project scope change management as a tool for project success* (Doctoral dissertation, Doctoral dissertation, Jomo Kenyatta university of agriculture and technology
- Odhiambo, K. O. (2014). *Influence of skills and knowledge on the relationship between project scope management and implementation of economic stimulus projects in public secondary schools in Kisumu county, Kenya* (Doctoral dissertation, University of Nairobi).
- Serrador P, & Pinto, JK. (2015). Does Agile work?—A quantitative analysis of agile project success. *International Journal of Project Management*, 33(5):1040–51
- Sherehiy, B., Karwowski, W., & Layer, J. K. (2017). A Review of Enterprise Agility: Concepts, Frameworks, and Attributes. *International Journal of Industrial Ergonomics*, 37(5), 445-460.
- Swinnerstone, E. & Lubega, J. (2019). Utilization of Agile Project Management Methodologies and the Success of Software Development Projects at Flock of Birds Uganda. *International Journal of Technology and Management*
- Thietart, R. A., & Forgues, B. (1995). Chaos theory and organization. *Organization science*, 6(1), 19-31.
- Wepukhulu J. (2017). *Factors influencing utilization of monitoring and evaluation results in county governments: a case of Busia county Kenya*. Unpublished Masters' Thesis, University of Nairobi
- Xue, Y., Turner, J. R., Lecoeuvre, L., & Anbari, F. (2013). Using results-based monitoring and evaluation to deliver results on key infrastructure projects in China. *Global Business Perspectives*, 1(2), 85-105.