Journal of Entrepreneurship & Project Management

Project Managers' Leadership Behaviour and Success of Completed Public Infrastructural Mega Projects in Kenya

Moses Tawuo & Dr. Johnbosco Mutuku Kisimbi, PhD

ISSN: 2616-8464

Stratford Peer Reviewed Journals and Book Publishing
Journal of Entrepreneurship & Project Management
Volume 9||Issue 3 ||Page 16-35||August|2025|
Email: info@stratfordjournals.org ISSN: 2616-8464

Project Managers' Leadership Behaviour and Success of Completed Public Infrastructural Mega Projects in Kenya

[1]Moses Tawuo & [2]Dr. Johnbosco Mutuku Kisimbi, PhD
[1]Postgraduate Student, University of Nairobi, Kenya
[2]Senior Lecturer, University of Nairobi, Kenya.
***Email of the Corresponding Author: mosestawuo07@gmail.com**

How to cite this article: **Tawuo, M., & Kisimbi, J. M. (2025). Project Managers' Leadership Behaviour and Success of Completed Public Infrastructural Mega Projects in Kenya.** ***Journal of Entrepreneurship & Project Management,*** **9(3), 16-35. https://doi.org/10.53819/81018102t5379**

Abstract

Leadership is central to project management and greatly contributes to whether a project succeeds or fails. A lack of effective leadership capabilities is often associated with project failure. Even with the progress made in project management practices, many projects still fall short, with only about one in ten being delivered on time and within the allocated budget. Thus, this study examined the relationship between project managers' leadership behaviour and the success of completed public infrastructure megaprojects in Kenya. The study was anchored on three theoretical frameworks: Transformational, Situational, and contingency leadership theories. A descriptive research design was employed, targeting a population of 44 project team members from key ministries involved in overseeing major projects implemented between 2014 and 2024. Data collection was done using structured questionnaires, and descriptive and inferential statistics were used to analyse the data. The results revealed that in the absence of all leadership variables, namely adaptive, predictive, hybrid, and motivational, the baseline success rate of public infrastructural mega projects in Kenya stood at 21.502. Statistical analysis revealed that a unit increase in adaptive leadership led to a 0.689 rise in project success, with significance confirmed by a p-value below 0.05. Similarly, each one-unit increase in predictive leadership resulted in a 0.711 rise in project success, a statistically significant relationship supported by a p-value of 0.001. Additionally, enhancing hybrid leadership by one unit led to a 0.633 improvement in project success, with the statistical significance confirmed by a p-value less than 0.05. Finally, a one-unit increment in motivational leadership led to a 0.618 rise in project success, supported by a p-value of 0.008. These outcomes indicate that all four leadership styles significantly affect the success of public infrastructural mega-projects in Kenya at a 95% confidence level. Predictive leadership emerged as the most influential, followed by adaptive, then hybrid, with motivational leadership having the least impact. The study also noted uncertainty regarding whether leaders demonstrated flexibility in decision-making. It was found that while leaders did provide experiences that helped others acquire new skills and were capable of analysing complex issues to foresee outcomes, they often lacked effective communication support and a deep understanding of organisational objectives. The study recommends that project leaders strengthen their adaptability to more effectively manage the dynamic and changing demands of mega projects. It further suggests the implementation of leadership development programmes and training focused on improving decision-making agility and problem-solving capabilities. The study calls upon the government and other stakeholders to invest in ongoing leadership training tailored to the distinctive challenges of managing infrastructure projects. Such training should encompass project management, stakeholder coordination, and strategic leadership competencies.

Keywords: *Leadership Behaviour, Success, Public, Infrastructural Mega Projects, Kenya*

1.0 Introduction

Megaprojects are associated with significant stakes and exert substantial social, economic, and environmental influence (Brunet, 2020). Employing sustainable practices at various phases serves as an effective means of enhancing the success of megaprojects (He et al., 2019). These initiatives are typically "greenfield" in nature, as they often involve the creation of new assets and make use of diverse delivery models based on their inherent complexity, as noted by Welch and Eichler (2019). Study by Walsh & Walker (2021) describes megaprojects as complex, transformational, large-scale ventures costing a billion dollars. The study further affirmed that, to deliver such mega projects, it involves multiple public and private stakeholders, takes many years to build and develop, and has an effect on millions of people (Walsh & Walker 2021). The stakeholders are an integral part of mega projects and where the project team are drawn from. According to research by the Project Management Institute, leadership skills were identified as the most critical factor in effectively managing complexity within megaprojects (PMI, 2020).

Leadership has historically been seen as the defining element between success and failure (PMI, 2013). Project managers involved in some of the earliest documented endeavours, such as the building of monumental structures or events recorded in biblical accounts, were required to approach leadership with intentionality and structure to achieve success (Cooke-Davies, 2011). This study was anchored on three theories: Transformational leadership theory, situational leadership theory, and contingency theory. Transformational leadership theory (Bass & Riggio, 2006) emphasises vision-setting and inspirational motivation. Situational leadership theory helps leaders remain flexible and enables adaptive problem-solving, which is critical for navigating Kenya's complex mega-project environment, including bureaucratic delays, stakeholder conflicts, and managing diverse teams. It is through the project managers' behaviour that teams draw their strength. For instance, Kadir (2020) found that transformational and situational leadership theories were among the styles most strongly associated with higher project success rates, as they promote team commitment and innovation – factors critical in addressing infrastructural challenges such as cost overruns. Contingency theory focuses on leaders who prioritise ensuring that goals are completed well and on time. The main focus for these leaders is completing tasks within the required timeframe and effectively. Since mega projects are complex, they require such leaders (Brady & Davies, 2014).

Across the globe, megaprojects are considered highly risky undertakings. For the past 70 years, consistent and comparable data show that issues such as cost overruns, schedule delays, and shortfalls in expected benefits have persisted at high levels. It is common for these overruns to reach up to 50% in real terms, and instances exceeding 50% are not unusual (Flyvbjerg, Ansar, Budzier, Buhl, Garbuio & Vann, as cited in Wee, 2018). Globally, projects often exceed budgetary constraints and timelines, a phenomenon observed in various infrastructural and IT developments. For instance, the Sochi Winter Olympics in 2014 significantly overran its initial budget, reportedly becoming the most expensive Olympics at that time (Flyvbjerg et al., 2018). In East Africa, infrastructural projects like the Standard Gauge Railway (SGR) have faced similar challenges. The connecting of major cities in the region faced delays and budget escalations due to land acquisition issues and unforeseen logistical challenges (Chege, Mwenja, Kiambati & Mbugua, 2019).

1.1 Statement of the Problem

Although project management methodologies have advanced, failure rates remain high, with just one in ten projects finishing on time and within budget (Flyvbjerg, 2014). Beyond the

classic measures of schedule, cost, and quality, a full assessment of success must also address the caliber of project-management processes, the effectiveness of leadership, and the extent to which stakeholder expectations are satisfied, as these constitute additional success dimensions (2015). Studies consistently demonstrate that leadership, when exercised by the project manager, is a powerful though moderate driver of project outcomes. Accordingly, PMI maintains that an effective project manager must combine domain-specific technical expertise with robust industry knowledge and insights tailored to the particular project.

However, a deficiency in leadership skills by project managers is directly associated with project failure, as affirmed by Chris (2016). Leadership skills have consistently been identified as the most critical factor for effectively managing complexity in megaprojects (PMI, 2013). A wide range of studies have explored infrastructure megaprojects, with Omonyo's (2019) work offering extensive insights into leadership behaviour. For a project to reach its intended goal, each element must move through the defined phases of the project lifecycle. This structured framework equips project managers with a systematic approach to plan and implement tasks and activities, ultimately aiming for optimal project results. Effective project management leadership, as noted in a study by Augner and Schermuly (2023), requires an organised approach. Recent research highlights the importance of exploring leadership not only within project management organisations but also across wider institutional settings in order to effectively tackle emerging challenges and maximise the benefits of leadership (Baxter et al., 2023; Hansen & Svejvig, 2023; Mergel, 2023). Hence raising a fundamental research question on what the leadership behaviours of public infrastructure megaproject managers are and how those behaviours influence successes. Therefore, studying leadership behaviour in relation to the success of public infrastructure megaprojects in Kenya is of significant importance.

1.2 Research objectives

This study aimed to examine the relationship between project managers' leadership behaviour and the success of completed public infrastructure megaprojects in Kenya. Specifically, the study aimed to:

1. Identify the most common project leadership behaviours among public infrastructural megaproject managers.
2. To Determine the influence of project leadership behaviour on Success of Public Infrastructural Mega Projects in Kenya

2.0 Review of Literature

This section discussed the components of the project manager's leadership behaviours and styles that include adaptive, predictive, hybrid and motivational leadership behaviours

2.1 Adaptive leadership behaviour and Success of Public Infrastructural Mega Projects

The word 'adaptive' is used in a situation or to be flexible, while 'leadership' has its definition captured through Kurt in 1939. Some projects exhibit a command-and-control structure, aligning with situational or predictive approaches as outlined by PMI (1969). In contrast, other projects reflect a servant-leadership model, where PMI underscores fostering creativity during the planning phase and offering guidance during execution. Laufer et al. (2015) further confirm that predictive approaches rely on practices like long-term planning and risk management throughout project implementation. These are components of leadership attributes that become a catalyst of success. Jamous et al. (2021) assert that the iterative (agile) approach enhances transparency and encourages regular inspection and adaptation or the situation at frequent, small intervals. Over recent years, predictive approaches have evolved with the integration of

agile practices, offering flexibility to adapt as changes arise (Laufer et al., 2015; Worley et al., 2016). Similarly, Akhwaba, Bowa, and Keiyoro (2020) examined leadership skills, stakeholder management, and the implementation of fibre optic infrastructure, showing how leaders adapt to some situations throughout the project cycle. Their findings indicate that leadership abilities combined with effective stakeholder management significantly enhance the execution of fibre optic projects. This highlights the importance of engaging stakeholders from project inception through to closure.

Zakaria, Mohamed, Ahzahar, and Hashim (2015) investigated project managers' leadership skills for successful construction projects. They suggest that a leader should adapt to develop strategic plans to complete a project efficiently. Establishing collaborative relationships with stakeholders is essential, as stakeholders' interests and influence can shift during implementation. This study emphasises the need for skilled project leaders capable of navigating these dynamics. (Zakaria et al., 2015)

2.2 Predictive leadership Behaviour and Success of Public Infrastructural Mega Projects

Project managers need to tell their team members instructions on what to do and how to do it. This style might be viewed as more take-charge and goal-orientated. In their recent publication on Leadership Styles for Effective Project Management, the American Management Association (2021) asserted that it helped millions of people bring about their performance to results. According to Talib et al. (2011), the study observed that top management should take the lead in providing strong support throughout the implementation of projects in any government sector organisation. Different stakeholders have different observations of success (Davis, 2014).

Researchers have identified the project proponent and the project manager as two key stakeholders in mega projects, each holding distinct perspectives. According to Wang et al. (2021), these differing viewpoints significantly shape the key factors influencing project success. Leadership is perhaps the most researched and formally and informally discussed topic when compared to other topics, but the demands of society. For example, Mithamo & Chowdhury (2022) suggest a three-dimensional approach to leadership that should be adopted by project managers. The directional approach includes upwards, to uphold the support of project owners and sponsors; outwards, to win the support of resource suppliers and other stakeholders; and downwards, rallying the members and, in the process, winning their commitment to the project. The findings of this study showed that the ability of a team leader to provide direction is a great leading talent, as it adds to creative quality and also leads to improved core relationships. Research has shown that TFL contributes to numerous favourable outcomes, such as stronger knowledge management capabilities (Le et al., 2022), increased innovation (Le & Le, 2023), better responsiveness to change and enhanced organisational performance (Le & Le, 2021), greater perceived fairness in workplace practices (Phong & Son, 2020), and elevated levels of trust among employees (Cao & Le, 2022). Collectively, these benefits foster a project environment conducive to achieving success.

2.3 Hybrid behaviors and Success of Public Infrastructural Mega Projects

Hybrid leadership combines centralised individual leadership with patterns of distributed and emergent leadership styles, as noted by Gronn (2008). Bourgeois (2004) defines hybrid leadership as the integration of both male and female leadership strengths to achieve a more impactful and effective outcome. Subsequently, Bourgeois (2013) outlined several factors that influence hybrid leadership and, in turn, impact employee performance. According to Cardno and Youngs (2013), individuals exhibiting hybrid leadership often demonstrate a blend of both masculine and feminine characteristics, which contribute to strengthening employee

capabilities. A comparative analysis of two monumental projects, one exceeding US$ 7 billion and the other surpassing US$ 13 billion in cost, was undertaken by Brady & Davies (2019). These projects were successfully completed due to the integrated teams who put their effort into devising innovative challenges. The London Olympics project adopted a tight-loose leadership approach, wherein loosening behaviours facilitated interaction, exploration, experimentation, and information flow, while tightening behaviours streamlined execution, standardisation, and information control, as affirmed by Uhl-Bien et al. (2022). Equally, Blaskovics et al. (2023) indicated that project managers employ a unique blend of leadership theories rooted in expressive intelligence and behavioural traits. The study underscored the pivotal role of democratic elements in communication, empowerment, and the cultivation of an environment conducive to innovative idea generation in bolstering project success. Buba et al. (2017) affirmed trans leadership in accomplishing project goals. For instance, the style emphasises the attainment of the project team's tasks. It makes sure that project team members are motivated through contingent rewards for meeting targets.

2.4 Motivational leadership and Success of Infrastructure Mega Projects

Motivation is a key factor in promoting team cohesion and enhancing the likelihood of project success. In a recent study, Luo et al. (2023) explored the impact of organisational leadership on project citizenship behaviour and overall managerial performance, focusing specifically on complex construction projects. The results offered valuable insights into effective leadership practices, highlighting the critical importance of visionary guidance. The study concluded that visionary leadership plays a pivotal role in managing complex construction environments by encouraging innovation and adaptation, fostering shared values, and motivating teams to exhibit project citizenship behaviours. The study also affirmed that interaction and communication between management and key stakeholders improves management deficiencies and therefore enhances successful project performance (Luo et al., 2023).

In addition, Buba et al. (2017) affirmed that transformational leadership emphasises accomplishing project goals. For instance, this style emphasises the achievement of the project team's tasks and ensures that project team members are motivated through contingent rewards for meeting targets. Additionally, transactional leaders apply the principles of management by exception by taking corrective actions when tasks do not follow the planned critical path. Herzberg's theory identifies key factors that influence employee performance, including appreciation, achievement, the nature of the work itself, opportunities for advancement, relationships with colleagues and direct supervisors, job security, salary, company policies, and working conditions. Appreciation has been identified as a key motivator in construction project teams, as highlighted in earlier studies (Sekhar et al., 2013; Gido & Clement, 2011; Kibuchi, 2012; Orando, 2013), which point to the human need for recognition and respect for one's efforts. These studies highlighted that acknowledging employees for their contributions greatly enhances motivation, encourages greater effort, and fosters loyalty to the organisation.

3.0 Research Methodology

The study used a descriptive research design. The study target population was 44 project team members drawn from key ministries dealing with mega projects from 2014 to 2024. The study utilised both random and purposive sampling methods. As a result, the sample comprised 44 project team members, including line managers, quantity surveyors, project engineers, and architects, all of whom reported directly to the project manager. Assuming each project had four team members or more, hence 44 respondents. Data was collected through the use of questionnaires and observation. Quantitative as well as qualitative data were gathered, put into code, and evaluated using statistical packages for social sciences (SPSS Version 23) computer

software and excel. Descriptive statistics were used to analyse the data in frequency distribution and percentages that were later used to present findings in tables and charts. Inferential statistics was used to analyse data, namely, basic and multiple regression analysis.

4.0 Results and Discussions

The results and discussions were done in sections.

4.1 Adaptive leadership behaviour.

Assessed how adaptive leadership (AL) impacts the success of public infrastructure megaprojects in Kenya A summary of their responses was captured in table 1

Table 1: Level of Agreement on AL on Success of Infrastructural Mega Projects

	Mean	Std Dev.
The leader is flexible in work-related activities	2.461	0.921
The leader encourages others to handle important work decisions on their own	3.085	0.946
The leader gives others the freedom to handle difficult situations in the way they feel is best	4.079	0.569
The leader sacrifices their interests to meet others' needs	4.370	0.641
The leader has the capacity to analyse and solve work problems with new or creative ideas.	4.400	0.673
If others need to make important decisions at work, they do not need to consult the leader.	4.121	0.852
The leader does what they can to make others' jobs easier.	2.115	0.559
Composite Mean/STDEV	**3.37**	**0.738**

The findings revealed that respondents strongly agreed the leader tackles work problems with innovative ideas (mean = 4.400) and willingly puts others' needs before their own (mean = 4.370). They also agreed that team members can make important decisions without consulting the leader (mean = 4.121) and are free to handle difficult situations as they judge best (mean = 4.079). Respondents were neutral about whether the leader actively encourages them to make key work decisions independently (mean = 3.085). They disagreed that the leader is flexible in work-related activities (mean = 2.461) and that the leader consistently strives to make others' jobs easier (mean = 2.115). Overall, with a composite mean of 3.37 and a standard deviation of 0.738 (below 1), respondents considered adaptive leadership effective for executing megaprojects in Kenya.

4.2 Predictive leadership behaviour

This study aimed to assess how directive leadership, specifically predictive leadership behaviour (PLB), affects the success of public infrastructure megaprojects in Kenya. The results, as presented in Table 2, provide insights into how predictive leadership practices

contribute to the performance and successful delivery of megaprojects in the Kenyan public sector.

Table 2: Level of Agreement on PLB on Success of Infrastructural Mega Projects

	Mean	Std Dev.
The leader gives others the responsibility to make important decisions about their jobs	4.679	0.924
The leader sets standards for the performance of group members	3.521	0.925
The leader communicates actively with group members	4.346	0.743
The leader shows flexibility in making decisions.	2,830	0.702
Composite Mean/STDEV	**3.844**	**0.824**

The results indicate that respondents strongly agreed that the leader delegates responsibility for key job-related decisions, as evidenced by a high mean score of 4.679. They also agreed that the leader maintains active communication with team members (mean score of 4.346) and sets performance standards for the group (mean score of 3.521). However, respondents were uncertain about the leader's flexibility in decision-making, indicated by a mean score of 2.830. The composite mean score was 3.844, and the standard deviation (STDEV) was 0.824, which is below 1. This indicates a general consensus among respondents and supports the conclusion that predictive leadership behaviour (PLB) positively influences the success of public infrastructural megaprojects in Kenya.

4.3 Hybrid leadership behaviour

The purpose of this section was to examine the role of innovative leadership, referred to here as hybrid leadership behaviour (HLB), in contributing to the success of public infrastructure megaprojects in Kenya. A set of statements relating to hybrid leadership behaviour (HLB) was presented, and respondents were asked to rate their agreement. The results are summarised in Table 3.

Table 3: Level of Agreement on HLB on Success of Infrastructural Mega Projects

	Mean	Std Dev.
The leader is multi-skilled and can think through complex problems.	3.691	0.972
The leader provides others with work experiences that enable them to develop new skills.	4.249	0.544
The leader can solve work problems with new or creative ideas.	3.436	0.803
Composite Mean/STDEV	**3.792**	**0.773**

The findings show that respondents agreed the leader offers work experiences that support skill development, reflected in an average rating of 4.249. They also agreed that the leader is multi-skilled and capable of thinking through complex problems, reflected by an average score of 3.691. However, respondents were uncertain about whether the leader can solve work problems using new or creative ideas, which had an average rating of 3.436. The composite mean for this construct was 3.8, with a standard deviation of 0.8, which is below 1. This indicates a general agreement that hybrid leadership behaviour positively influences the success of megaprojects.

4.4 Motivational leadership behaviour

To examine the impact of motivational leadership on the performance of public infrastructure megaprojects in Kenya, participants rated their agreement with a set of related statements. The consolidated results are displayed in Table 4.

Table 4: Level of Agreement on ML on Success of Infrastructural Mega Project

	Mean	Std Dev.
The leader cares more about others' success than their own.	4.321	0.571
The leader is interested in making sure others reach their career goals	3.897	0.777
The leader puts others' best interests above their own.	3.006	0.881
The leader has a thorough understanding of the organization and its goals	1,982	0.800
The leader wants to know about others' career goals	3.376	0.551
The leader does what they can to make others' jobs easier	4.139	0.642
The leader enjoys getting into details of how things work	4.079	0.720
Technical things fascinate the leader	3.576	0.974
The leader's main concern is to have supporting communication	2.315	0.659
Getting all parties to work together is a challenge the leader enjoys	4.242	0.616
The leader tells group members what they are supposed to do	2.733	0.764
The leader sets goals for followers that are quite challenging	4.152	0.560
The leader consistently sets challenging goals for followers to attain	3.629	0.823
Composite Mean/STDEV	**3.490**	**0.734**

The findings revealed that respondents agreed the leader cares more about others' success than their own (mean 4.321), enjoys the challenge of getting all parties to work together (mean 4.285), sets challenging goals for followers (mean 4.152), and makes efforts to ease others' jobs (mean 4.139). They also agreed that the leader enjoys getting into the details of how things work (mean 4.079), is interested in helping others achieve their career goals (mean 3.897), consistently sets ambitious targets (mean 3.629), and finds technical matters fascinating (mean 3.576). These responses indicate strong support for the positive influence of motivational leadership on project execution. However, respondents were uncertain whether the leader wants to know about others' careers (mean 3.376), puts others' best interests above their own (mean 3.006), or whether group members clearly understand their responsibilities (mean 2.733). There was disagreement that the leader prioritises communication support (mean 2.315) and possesses a thorough understanding of the organisation and its goals (mean 1.982). With a composite mean of 3.5 and a standard deviation of 0.734 (less than 1), the results suggest a general agreement that motivational leadership positively contributes to the success of public infrastructure megaprojects in Kenya.

4.5 Success of public infrastructural megaprojects in Kenya

Respondents were asked to rate their level of agreement with a range of statements concerning the success of public infrastructure megaprojects in Kenya. Table 5 illustrates the respondents' findings.

Table 5: Level of Agreement on the Success of infrastructural mega projects

	Mean	Std Dev.
Many mega infrastructure projects in Kenya are completed within the planned schedule.	3.733	0.821
Many mega infrastructure projects in Kenya are normally delayed in terms of their schedule.	3.109	0.910
Many megaprojects' infrastructure in Kenya experience budget overruns.	4.085	0.760
Many megaprojects undergo variations in Kenya.	3.297	0.531
Many mega-infrastructure projects experience scope changes.	2.988	0.910
Composite Mean/STDEV	**3.44**	**0.786**

The results showed that the respondents agreed that many in Kenya experience budget overruns, as shown by a mean of overruns, and many mega infrastructure projects in Kenya are completed within the planned schedule, as shown by a mean of 3.733. The respondents were not sure that many megaprojects undergo change variations in Kenya, as shown by a mean of 3.297. Many megaprojects' infrastructure in Kenya is normally delayed in terms of the schedule, as shown by a mean of 3.109, and many mega infrastructure projects experience scope changes, as shown by a mean of 2.988. The five indicators influence success of mega projects in Kenya at 3.44 composite mean and 0.786 STDEV, which is less than 1

4.6 Diagnostic tests

The study conducted several diagnostic tests as discussed below.

4.6.1 Tests of Normality

Normality describes the distribution pattern of a metric variable and its conformity to the normal distribution, which is a key assumption in many statistical procedures. It is considered one of the core assumptions in multivariate analysis. Within regression analysis, this assumption applies to the distribution of the variables involved in the model (Hair et al., 2010).

Table 6: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Success of public infrastructural m	.129	31	.213	.965	31	.671
Adaptive leadership	.106	31	.412	.942	31	.508
Predictive leadership	.138	31	.098	.932	31	.745
Hybrid leadership	.084	31	.203	.991	31	.620
Motivational leadership	.118	31	.219	.965	31	.805

As seen in Table 6, the Shapiro–Wilk test results show that all variables have significance values above 0.05. This includes the success of public infrastructural mega projects ($p = 0.671$), adaptive leadership ($p = 0.508$), predictive leadership ($p = 0.745$), hybrid leadership ($p = 0.620$), and motivational leadership ($p = 0.805$). Since all Shapiro–Wilk p-values are greater

than 0.05, the study concludes that the data for all key variables are normally distributed. Therefore, the assumption of normality is satisfied, allowing for the use of parametric tests such as multiple regression analysis.

4.6.2 Multicollinearity

It is assumed one of the factors that affects the standard error of a partial regression coefficient is the degree to which that independent variable is correlated with the other independent variables in the regression equation. Everything else remaining constant, an independent variable that is very highly correlated with one or more other independent variables could have a relatively large standard error. This suggests that the limited regression coefficient is unstable and will vary from one sample to the next. This is the multicollinearity. It does exist when an independent variable is greatly correlated with one or more of the other independent variables in a multiple regression equation. Multicollinearity becomes a problem since it undermines the statistical significance of the independent variable. Ceteris paribus the larger the standard error of a regression coefficient, the less the coefficient will be statistically significant. In the presence of multicollinearity, Mason et al. (2011) demonstrated that the coefficient estimates may change erratically in response to small changes in the model or the data. Nevertheless, Greene (2013) affirmed that any decision to drop an item depends on a second step, where the Variance Inflation Factor (VIF) is applied. The VIF discovers the degree to which the variance of multicollinearity has been inflated. A VIF greater than 10 is an indicator of harmful multicollinearity, as stated by Baum (2006).

Table 7: VIF Coefficients

Model	Collinearity Statistics	
	Tolerance	VIF
Adaptive leadership	.955	1.047
Predictive leadership	.963	1.038
Hybrid leadership	.954	1.049
Motivational leadership	.876	1.142

The VIF was determined for all the constructs, as shown in Table 7. Baum (2006) suggests that a Variance Inflation Factor (VIF) exceeding 10 may indicate potential multicollinearity concerns. In regression analysis, it is assumed that error terms are not correlated across observations, an indication of no autocorrelation. The VIF values obtained in this study were as follows: adaptive leadership (1.047), predictive leadership (1.038), hybrid leadership (1.049), and motivational leadership (1.142). These values, all well below the critical threshold, indicate the absence of multicollinearity among the independent variables. Consequently, the predictors were deemed appropriate for inclusion in the regression model.

4.6.3 Heteroscedasticity Test

Homoscedasticity and heteroscedasticity refer to the behaviour of the variance of error terms in a regression model. Heteroscedasticity is a key concern in linear regression analysis, particularly in models that regress through the origin. However, as noted by Knaub Jr (2007; 2023), such models come with limitations that can affect the reliability of the regression results when heteroscedasticity is present. When variance is assumed to be constant and the regression is not necessarily through the origin, the method is referred to as ordinary least squares regression. In contrast, linear regression that accounts for non-constant variance is known as

weighted least squares regression (Knaub Jr., 2007; 2023). To detect heteroscedasticity issues, this study employed the Glejser test, as shown in Table 8.

Table 8: Glacier Test Coefficients

Model	Unstandardized Coefficients	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
Model	**B**	**Std. Error**	**Beta**		
(Constant)	75.939	6.689		11.352	0.000
Adaptive leadership	0.735	.027	.345	5.057	0.120
Predictive leadership	0.596	.080	-.335	1.561	0.267
Hybrid leadership	0.824	.054	.070	1.114	0.323
Motivational leadership	0.725	.062	-.099	0.992	0.165

All independent variables recorded p-values greater than 0.05: Adaptive Leadership (0.116), Predictive Leadership (0.193), Hybrid Leadership (0.248), and Motivational Leadership (0.104). This suggests that none of the predictors significantly influence the variance of the residuals. Since all p-values are above 0.05, the null hypothesis of homoscedasticity is not rejected. Therefore, it can be concluded that heteroscedasticity is not a problem in this model, and the assumption of constant variance holds true across the data set as captured in Table 8

4.6.4 Autocorrelation Test

Autocorrelation serves as a mathematical tool for detecting repeating patterns or relationships within time series data. It is commonly used to identify the appropriate model order in time series analysis by measuring the correlation of a variable with its past values over successive time lags. It plays a crucial role in the development and evaluation of moving average and autoregressive models (Ke, Z. et al., 2018). Additionally, errors connected with one observation are uncorrelated with the errors of any other observation. The Durbin-Watson test was applied as shown in Table 9, where if the computed data is nearest to 2 in the application, then there is an autocorrelation concern.

Table 9: Autocorrelation Test

Model	Durbin-Watson
1	1.875

According to the results shown in Table 9, the Durbin-Watson statistic for the model was 1.875, falling within the acceptable threshold of 1.5 to 2.5. This suggests that autocorrelation is not present in the data, and thus, the null hypothesis of autocorrelation can be rejected.

4.7 Multiple Regression

A multiple regression analysis was conducted to assess the impact of adaptive, predictive, hybrid, and motivational leadership behaviours on the success of public infrastructure megaprojects in Kenya. The results of this analysis are detailed in Tables 10, 11, and 12.

Table 10: Model Summary

Model	R	R Square	Adj. R Square	Std. Error of the Estimate
1	0.867	0.751	0.714	3.126

a. Predictors :(Constant), the outcome as illustrated in table 10 established that the adjusted R-S value is 0.714, showing the independent variables (adaptive leadership, predictive leadership, hybrid leadership, and motivational leadership) explain 71.4% of the variation in the dependent variable (success of public infrastructural mega projects).

Table 11: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	884.022	4	221.006	20.351	7.89E-08
Residual	293.209	27	10.860		
Total	**1177.231**	**31**			

a. Dependent Variable: Success of public infrastructural mega projects

b. Predictors: (Constant), adaptive leadership, predictive leadership, hybrid leadership, and motivational leadership. The results are shown in Table 11, which found that the model had predictive value, and thus it was significant. This was because its p-value was less than 5%, and the calculated F **(20.351)** was significantly larger than the critical F value **(2.7278**). The implication of this result is that the independent variables, taken together, significantly contribute to explaining the variability in the success of public infrastructural mega projects. Thus, the model has strong explanatory power and does not result from random chance. Model coefficients provide unstandardised and standardised coefficients to explain the direction of the regression model and to establish the level of significance of the study variables. The results were depicted in Table 12.

Table 12: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	21.502	6.880		3.125	0.004
Adaptive leadership	0.689	0.314	0.674	2.194	0.037
Predictive leadership	0.711	0.213	0.682	3.338	0.002
Hybrid leadership	0.633	0.095	0.533	6.663	0.000
Motivational leadership	0.618	0.230	0.512	2.687	0.012

a. Dependent Variable: Success of public infrastructural mega projects
As per the SPSS-generated table 12 above, the equation ($\mathbf{Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + X + \varepsilon}$) becomes:

= 21.502 + 0.689X + 0.711X 0.633X + 0.618X

The constant term of 21.502 implies that if all leadership behaviours were held at zero, the baseline predicted success of a project would be 21.502. Each of the four leadership variables

shows a positive unstandardised coefficient, suggesting that an increase in any of these behaviours is associated with a corresponding increase in project success. The regression output showed that the unstandardised coefficient (B) for adaptive leadership was 0.689, with a p-value of 0.037. This indicates that, holding all other leadership behaviours constant, a one-unit increase in adaptive leadership behaviour is associated with a 0.689-unit increase in the success score of public infrastructural megaprojects. The p-value of 0.037 < 0.05 confirms that this relationship is statistically significant at the 5% level. Therefore, adaptive leadership positively and significantly contributes to project success, likely due to its emphasis on flexibility, problem-solving, and responsiveness to change. Predictive leadership had an unstandardised coefficient (B) of 0.711 and a p-value of 0.002. This suggests that a one-unit increase in predictive leadership behaviour leads to an estimated 0.711-unit increase in project success, assuming all other variables are held constant. Since the p-value is well below the 0.05 threshold, this effect is highly statistically significant. Predictive leadership thus emerges as the most influential variable in the model, reflecting the importance of foresight, planning, and anticipatory decision-making in ensuring project delivery and performance. The coefficient for hybrid leadership was 0.633, with a p-value of 0.000. This indicates that increasing hybrid leadership behaviour by one unit is expected to improve project success by 0.633 units, all else being equal. The very low p-value signifies a very strong statistical association between hybrid leadership and project outcomes. This finding suggests that leaders who integrate various styles, combining strategic vision with operational flexibility, are particularly effective in managing complex mega projects. For motivational leadership, the unstandardised coefficient (B) was 0.618, and the p-value was 0.012. This means that a one-unit increase in motivational leadership behaviour contributes to a 0.618-unit rise in the success of public infrastructural mega projects. The p-value is below 0.05, indicating that the effect is statistically significant. This supports the idea that leaders who inspire, support, and align their teams around shared goals have a meaningful impact on the success of large infrastructure initiatives, though to a slightly lesser extent than predictive or adaptive leadership. As per the results, at a 95% confidence level, all the constructs were important, as the P-value was less than 0.05. The study infers that predictive leadership at 71% had the greatest effect, followed by adaptive leadership at 69% and hybrid leadership at 63.3%, while motivational leadership at 62% had the least effect on the success of public infrastructural mega-projects in Kenya.

4.8 Discussion of the findings

The study found that adaptive leadership behaviour significantly influences the success of public infrastructural megaprojects through several key mechanisms. Leaders demonstrated the capacity to solve challenges with creative ideas, willingly sacrificed their personal interests to meet team needs, and empowered others to handle difficult situations independently. These findings align with Walsh et al. (2021), who confirmed that delivering megaprojects involves making multiple decisions through various stakeholders while affecting millions of people. The research also revealed that team members could make important work-related decisions without necessarily consulting their leaders, supporting the effectiveness of distributed decision-making in project environments. Notable gaps emerged in adaptive leadership implementation that warrant attention. Leaders showed uncertainty in encouraging others to handle important work decisions independently and demonstrated limited flexibility in work-related activities. Additionally, leaders did not consistently take proactive steps to make others' jobs easier. These findings contradict Pisarski et al. (2021), who emphasised that essential characteristics like affective and emotional intelligence interact to produce leadership behaviours that increase the likelihood of project success. The disconnect suggests that while

leaders possess problem-solving capabilities, they may lack the emotional intelligence and cognitive flexibility necessary for optimal adaptive leadership in megaproject environments.

Predictive leadership behaviour plays a crucial role in megaproject success through effective delegation and strategic support. Leaders demonstrated strength in giving others the responsibility to make vital choices about their jobs, which aligns with Talib et al. (2011), who observed that top management should take a leading role in providing strong support throughout project implementation in government sectors. The research confirmed that the project proponent and project manager serve as critical stakeholders with differing viewpoints that significantly influence project success factors, as identified by Davis (2014) and Wang et al. (2021). However, limitations emerged in the flexibility dimension of predictive leadership that could impact overall effectiveness. There was uncertainty regarding whether leaders showed adequate flexibility in decision-making, which Mithamo et al. (2022) identified as a critical leadership competency. Nevertheless, the research confirmed the strong relationship between project managers' skills and project achievement, as observed by Buba et al. (2017). The findings highlighted that a team leader's ability to provide clear direction serves as a significant leadership talent that enhances project quality and improves core stakeholder relationships.

Hybrid leadership behaviour contributes to megaproject success by creating developmental opportunities and fostering problem-solving capabilities. Leaders effectively provided team members with work experiences that enabled skill development and enhanced their ability to think through challenging problems. This finding corresponds with Blaskovics (2021), who revealed that project managers employ a unique blend of leadership styles rooted in emotional intelligence and behavioural traits. The research underscored the pivotal role of democratic elements in communication, empowerment, and the cultivation of environments conducive to creative idea generation.

Success perception in hybrid leadership contexts varies significantly among stakeholders, reflecting the multifaceted nature of megaproject evaluation. As Davis (2014) identified, the project proponent and project manager represent two of the most critical stakeholders in megaprojects, each holding differing viewpoints that contribute to success factors. Projects may be considered successful despite exceeding initial budgets or experiencing completion delays, and clients may regard outcomes as satisfactory even when certain objectives are not fully met, as noted by Seidu et al. (2021). This understanding of success highlights the importance of managing diverse stakeholder expectations in megaproject environments. Motivational leadership behaviour encompasses multiple dimensions that collectively contribute to megaproject success. Leaders demonstrated several key characteristics, including caring more about others' success than their own, setting challenging goals for followers, making proactive efforts to ease others' jobs, showing genuine interest in operational details, and maintaining focus on helping others achieve their career goals. These behaviours reflect a comprehensive approach to team motivation that extends beyond traditional task-orientated leadership to encompass personal and professional development of team members. This holistic approach proves particularly valuable in the long-term nature of infrastructural megaprojects, where sustained team commitment and performance are essential for successful project delivery.

5.0 Conclusions

The study concludes that adaptive leadership significantly impacts the success of Kenya's public infrastructure megaprojects through demonstrated problem-solving capabilities and team empowerment. The leader demonstrates commendable traits such as problem-solving

with new or creative ideas, sacrificing personal interests for the team, and giving freedom for others to handle difficult situations. However, areas of concern emerged where the leader appears inflexible in work-related activities and lacks proactive efforts to make others' jobs easier. The findings highlight the need for leaders to enhance adaptability in certain aspects to optimise the impact on project success. Predictive leadership affects the success of public infrastructural megaprojects in Kenya significantly through effective delegation and communication practices. The leader's tendency to delegate important decisions to others, actively communicate with group members, and set performance standards contributes positively to project success. Uncertainties arise regarding the leader's flexibility in decision-making, suggesting a need for further exploration into the balance between predictive and adaptive leadership for optimal outcomes in the context of megaprojects.

Hybrid leadership affects the success of public infrastructural megaprojects in Kenya significantly by combining multiple leadership approaches effectively. The research highlighted the positive influence of providing diverse work experiences for team members and the leader's ability to think through challenging problems. Uncertainties regarding the leader's creative problem-solving skills warrant attention. To maximise the potential of this leadership style, fostering an environment that encourages and rewards creative problem-solving may be beneficial for the success of infrastructural projects. Motivational leadership affects the success of public infrastructural megaprojects in Kenya significantly, revealing a mix of strengths and areas for improvement. The leader's commitment to others' success, setting challenging goals, and active efforts to make others' jobs easier contribute positively to project outcomes. Uncertainties surround aspects such as the leader's understanding of organisational goals, desire to know about others' career goals, and the promotion of supporting communication. Addressing these uncertainties may enhance the effectiveness of motivational leadership in ensuring project success and team performance.

6.0 Recommendations

The study recommends that leaders should actively cultivate adaptability in work-related activities to navigate the dynamic nature of megaprojects. Leadership training programmes and workshops should be implemented, focusing on fostering flexibility in decision-making and problem-solving. Additionally, leadership development initiatives should highlight strategies to make leaders more proactive in facilitating conducive working environments for teams, thereby enhancing project efficiency. Leaders should ensure flexibility in predictive leadership decision-making processes to maximise effectiveness. Leadership training programmes should focus on providing leaders with skills to adapt their approach based on project requirements. Open communication channels should be encouraged, and feedback from team members should be actively sought to enhance the effectiveness of directive leadership and foster collaborative working environments. Leaders should actively work towards cultivating cultures that encourage creative problem-solving within hybrid leadership frameworks. Cross-functional collaboration, brainstorming sessions, and reward systems for innovative ideas should be implemented.

Leadership training programmes should target enhancing leaders' creative thinking skills to ensure holistic approaches to problem-solving in infrastructural projects. Leaders should promote cross-functional collaboration among team members given the multifaceted nature of public infrastructural megaprojects. Interdisciplinary teams should be formed to bring diverse perspectives and ensure comprehensive approaches to project planning and execution. Regular communication and collaboration between different departments and stakeholders should be facilitated to prevent silos and foster integrated project management processes. Leaders should

prioritise transparent and proactive communication strategies with all stakeholders throughout project lifecycles. Stakeholders should be kept informed about project developments, challenges, and milestones to maintain project momentum. Regular feedback loops should be established, and local communities should be engaged to build trust and support, thereby mitigating potential obstacles during project implementation.

REFERENCES

Adhikari, A., Bhandari, B., & Shrestha, P. K. (2007). Strengthening institutional capacity of farmers' research committees (FRCs) in promoting farmer-led participatory maize breeding in the Middle Hill of Western Nepal: Local Initiatives for Biodiversity. *Research and Development (LI-BIRD) Final Technical Report*.

Alcock, P. (2009). Targets, indicators and milestones: What is driving area-based policy action in England? *Public Management Review*, *6*(2), 211-227.

Al-Ghazali, B. M. (2020). Transformational leadership, career adaptability, job embeddedness and perceived career success: A serial mediation model. *Leadership & Organisation Development Journal*, *41*, 993-1013. https://doi.org/10.1108/LODJ-10-2019-0455

Armstrong, G. (2019). Quality and safety education for nurses' teamwork and collaboration competency: Empowering nurses. *The Journal of Continuing Education in Nursing*, *50*(6), 252-255.

Aspen Institute Rural Economic Policy Program. (1996). *Measuring community capacity building: A workbook-in-progress for rural communities*.

Barth, R. (2003). *Lessons learnt: Shaping relationships and the culture of the workplace*. Corwin Press.

Benn, S., Dunphy, D., & Griffiths, A. (2006). Enabling change for corporate sustainability: An integrated perspective. *Australasian Journal of Environmental Management*, *13*(3), 156-165.

Bennis, W., & Nanus, B. (1985). *Leaders: Strategies for taking charge*.

Biswas, A. K. (1996). Capacity building for water management: Some personal thoughts. *Water Resources Development*, *12*(4), 399-405.

Bonham, S. S. (2008). *Actionable strategies through integrated performance, process, project, and risk management*. Artech House.

Bowman, W. (2011). Financial capacity and sustainability of ordinary nonprofits. *Nonprofit Management and Leadership*, *22*(1), 37-51. https://doi.org/10.1002/nml.20039

Brinkerhoff, D. W., & Goldsmith, A. A. (1992). Promoting the sustainability and development of institutions: A framework for strategy. *World Development*, *20*, 369-383.

Brown, L., LaFond, A., & Macintyre, K. (2001). *Measuring capacity building*. MEASURE Evaluation, Carolina Population Centre, University of North Carolina at Chapel Hill.

Brown, R., & Clarke, J. (2007). *Transition to water-sensitive urban design: The story of Melbourne, Australia*. Facility for Advancing Water Biofiltration and National Urban Water Governance Program, Monash University.

Bryman, A., Stephens, M., & Campo, C. (1996). The importance of context: Qualitative research and the study of leadership. *The Leadership Quarterly*, *7*(3), 353-370.

Bryson, J. M. (2011). *Strategic planning for public and non-profit organisations: A guide for strengthening and sustaining organisational achievement*. Wiley Publishers.

Bryson, J. M., & Roeing, W. D. (1995). Implications of strategic planning by governments. *Public Administration Review*, *48*(6), 995-1095.

Buba, S. P. G., & Tanko, B. L. (2017). Project leadership and quality performance of construction projects. *International Journal of Built Environment and Sustainability*, *4*(2).

Cairns, B., Harris, M., & Young, P. (2005). Building the capacity of the voluntary non-profit sector: Challenges of theory and practice. *International Journal of Public Administration*, *28*, 869-885.

Canadian Council on Social Development. (2003). *Funding matters: The impact of Canada's new funding regime on non-profit and voluntary organisations*. Canadian Council on Social Development.

Casey, M. M., Payne, W. R., & Eime, R. M. (2009a). Building the health promotion capacity of sport and recreation organisations: A case study of regional sports assemblies. *Managing Leisure*, *14*(2), 112-124.

Casey, M. M., Payne, W. R., & Eime, R. M. (2009b). Partnership and capacity-building strategies in community sports and recreation programmes. *Managing Leisure*, *14*, 167-176.

Cheers, B., Cock, G., Keele, L. H., Kruger, M., & Trigg, H. (2005). Measuring community capacity: An electronic audit tool. *2nd Future of Australia's Country Towns Conference*, Bendigo.

Cheung, S. O., Suen, H. C. H., & Cheung, K. K. W. (2004). PPMS: A web-based construction project performance monitoring system. *Automation in Construction*, *13*, 361-376.

Chikati, J. (2009). *Project cycle management: An integrated approach and logical framework*.

Cohen, E., & Rossimiller, R. (2007). Research on effective schools: Implication for less developed countries. *Comparative Education Review Journal*, *31*(3), 377-399.

Cooper, C. R., & Schindler, P. S. (2008). *Business research methods* (10th ed.). McGraw-Hill.

Davidson, L. C. (2010). Budgeting for sustainability: A Florida perspective. *Government Financial Review*, *26*(2), 51-55.

Drom, R. A. (2007). New metrics for measuring the success of a non-profit RTO. *Energy Law Journal*, *28*(2), 603-630.

Elinwa, A. U., & Joshua, M. (2001). Time overrun factors in Nigeria's construction industry. *Journal of Construction Engineering and Management*, *127*(5), 419-425.

Emlet, C. A. (2006). "You're awfully old to have this disease": Experiences of stigma and ageism in adults 50 years and older living with HIV/AIDS. *The Gerontologist*, *46*(6), 781-790.

Enshassi, A., Mohamed, S., & Abushan, S. (2009). Factors affecting the performance of construction projects in the Gaza Strip. *Journal of Civil Engineering and Management*, *15*(3), 269-280.

Ernst, C., & Chrobot-Mason, D. (2010). *Boundary-spanning leadership: Six practices for solving problems, driving innovation, and transforming organisations*. McGraw-Hill.

Fangel, M. (2008). *Proactive project management: How to make common sense common practice*. Fangel Projektledelse A/S.

Frederic, E. C. (2010). *Research methods in ecology: The classics*. United States.

Gido, J., & Clement, J. P. (2011). *Successful project management* (5th ed.). Cengage Learning.

Goleman, D. (2017). Leadership that gets results. *Harvard Business Review*, *78*(2), 78-90. https://doi.org/10.4324/9781315250601-9

Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2005). *Research methods for business*. John Wiley and Sons.

Harris, A. (2002). Improving schools through teacher-leadership. *Education Journal*, *59*, 22-23.

Harris, A., & Lambert, L. (2003). *Building leadership capacity for school improvement*. Open University Press.

Henkel, T., Recker, J., & vom Brocke, J. (2020). Contextualising leadership in project-based organisations. *International Journal of Project Management*, *38*(6), 348-360.

Horton, D. (2002). *Planning, implementing, and evaluating capacity development*. International Service for National Agricultural Research (ISNAR) Briefing.

Horton, D., Alexaki, A., et al. (2008). *Evaluación del desarrollo de capacidades: Experiences de investigation desarrollo alrededor del mundo*. Centro Internacional de Agricultura Tropical (CIAT).

Jerry, A., & Anne, G. (2008). Participatory monitoring and evaluation in practice. *INTRAC-Praxis Paper*, *21*, 9-11.

Josephson, P. E., & Lindstrom, J. (2007). Measuring performance in construction projects. In R. Milford & T. O. Haupt (Eds.), *Construction for development: Proceedings of CIB 2007* (pp. 383-394). International Council of Building Research (CIB).

Kenya National Highways Authority. (2023). *Annual report on infrastructural project performance*.

Kibuchi, P. (2012). *The contribution of human factors in the performance of construction projects in Kenya: A case study of construction project team participants Nairobi* [Doctoral dissertation]. University of Nairobi.

Kloppenborg, T., Anantatmula, V., & Wells, K. (2019). *Contemporary project leadership*. Routledge.

Kothari, C. (2004). *Research methodology, methods, and techniques*. New Age International Publishers.

Kotloff, L. J., & Burd, N. (2012). *Building stronger nonprofits through better financial management: Early efforts in 26 youth-serving organisations*. Public/Private Ventures, The Wallace Foundation.

Kuprenas, J. A. (2003). Project management actions to improve design phase cost performance. *Journal of Management in Engineering*, *19*(1), 25-32.

Kusek, J. Z., & Rist, R. C. (2004). *Ten steps to a results-based monitoring and evaluation system*. The International Bank for Reconstruction and Development, The World Bank.

LaFond, A., & Brown, L. (2003). *A guide to monitoring and evaluation of capacity building intervention in the health sector in developing countries: Measures evaluation manual series* (No. 7). Carolina Population Centre, University of North Carolina.

Ling, F. Y. Y., Low, S. P., Wang, S. Q., & Lim, H. H. (2007). Key project management practices affecting Singaporean firms' project performance in China. *International Journal of Project Management*.

Linnell, D. (2003). *Evaluation of capacity building: Lessons from the field*. Alliance for Nonprofit Management.

Long, N. D., Ogunlana, S., Quang, T., & Lam, K. C. (2004). Large construction projects in developing countries: A case study from Vietnam. *International Journal of Project Management*, *22*, 553-561.

Morgan, D. L. (2002). Focus group interviewing. In J. F. Gubrium & J. A. Holstein (Eds.), *A handbook of interview research: Context & method*. Sage.

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. African Centre of Technology Studies, Nairobi Acts Press.

Nachmias, C. F., & Nachmias, D. (1996). *Research methods in the social sciences*. St Martin's Press.

Naoum, S., Fong, D., & Walker, G. (2004). Critical success factors in project management. *Proceedings of the International Symposium on Globalisation and Construction*, Thailand.

Navon, R. (2005). Automated project performance control of construction projects. *Automation in Construction*, *14*, 467-476. https://doi.org/10.1061/40754(183)29

Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative approaches*.

Nyonje, R. O., Ndunge, K. D., & Mulwa, A. S. (2012). *Monitoring and evaluation of projects and programmes: A handbook for students and practitioners*. Aura Publishers.

Ogula, P. A. (2002). *Monitoring and evaluation of educational projects and programmes*. New Kemit Publishers.

Ogula, P. A., & Jane, O. (2009). *Handbook on teaching and learning in higher education*. CUEA Press.

Orodho, A. J. (2009). *Techniques of data analysis using Statistical Package for Social Sciences (SPSS)*. Computer Program.

Orodho, A. J., & Kombo, D. K. (2002). *Research method*. Kenyatta University Press, Institute of Open Learning Module.

Owusu-Manu, D., et al. (2021). Mindset and leadership in Ghana's construction sector. *Engineering, Construction and Architectural Management*, *28*(9), 2690-2711.

Palella, F. J., Jr., Delaney, K. M., Moorman, A. C., et al. (1998). Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection.

Pheng, L. S., & Ting, D. L. L. (1998). Factors influencing design development time of commercial properties in Singapore. *Facilities*, *16*(1/2), 40-51.

Raziq, A., et al. (2018). Leadership styles, goal clarity, and project success: Evidence from project-based organisations in Pakistan. *Leadership & Organisation Development Journal*, *39*, 309-323. https://doi.org/10.1108/LODJ-07-2017-0212

Rodgers, P., & Williams, B. (2006). Evaluation for practice improvement and organisational learning. In *The SAGE handbook of evaluation*. Sage Publishers.

Schwandt, T. A., & Burgon, H. (2006). Evaluation and the study of lived experience. In I. F. Shaw, J. C. Greene, & M. M. Mark (Eds.), *The handbook of evaluation*. Sage Publishers.

Shapiro, J. (2001). *Monitoring and evaluation*. CIVICUS: World Alliance for Citizen Participation.

Singh, D. K., & Nyandemo, S. N. (2004). *Aspects of project planning, monitoring, and evaluation implementation*. Bishen Singh Mahendra Pal Singh.

Slater, L. (2008). Pathways to building leadership capacity. *Educational Management Administration & Leadership*, *36*(1), 55-69. https://doi.org/10.1177/1741143207084060

Stier, J., & Kjellin, M. S. (2009). Communicative challenges in multinational project work. *Journal of Intercultural Communication*, *21*. https://doi.org/10.36923/jicc.v9i3.489

Stoll, L. (1999). Realising our potential: Understanding and developing capacity for lasting improvement. *School Effectiveness and School Improvement*, *10*(4), 503-532.

Stringer, E. (2008). *Action research in education*. Pearson Education.

Zaman, U., et al. (2019). Linking transformational leadership and "multi-dimensions" of project success: Moderating effects of project flexibility and project visibility using PLS-SEM. *International Journal of Managing Projects in Business*, *13*, 103-127. https://doi.org/10.1108/IJMPB-10-2018-0210