

Project Team Culture And Performance Of Road Construction Projects: The Case Of Embu County, Kenya

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Abstract : Performance of road construction project is a concern as far as delivery of the intended outcomes is concerned. Of interest is performance Embu-Siakago ring road project whose performance was perceived to be embedded on the commitment and determination of the team members. The study examined how project team culture influenced performance of Embu-Siakago ring road construction project in Embu County, Kenya. The research was founded on Fisher's theory of decision emergence in groups and Maslow's theory of motivation. To achieve this objective, survey design was used. The target population was 200 comprising of 2 team leaders (1 Resident engineer and 1 project manager), 36 technicians and 162 team members (technicians and ground men) involved in the construction of Embu-Siakago ring road project. A sample size of 132 was arrived at using Krejcie and Morgan table of sample determination. Data was collected using structured Likert questionnaires and unstructured interview guide were used. Data was analyzed using descriptive statistics: frequency, percentage, mean and standard deviation and Pearson product correlation, ANOVA and regression analysis. F-test was used to test the model at 95% confidence interval. Narrative data from the interviews was transcribed, coded and summarized into themes and sub themes. Data from correlational analysis revealed that for the $r=0.15$ project team culture had a very weak positive relationship with performance of Embu-Siakago ring road construction project. This showed that project team culture is an important soft project management skill essential for improving performance of projects. Conclusion was made that project team culture has no significance influence on the performance of road construction project. The Government of Kenya should develop appropriate policies that promote positive cultures that maintain spirited and highly performing project teams. Project managers can use the findings from this study to enhance their soft skills when integrating performance requirements, team needs and a working culture so as to inculcate the sense of commitment and determination. Researchers can use the findings to test how team culture moderates project performance across different contexts.

Key Words: Project team culture, Road construction project, Performance of project

1.0 INTRODUCTION

1.1 Background

In modern times, transportation is a key driver to the socio-economic growth and development of nations and civilization of humanity. While the classical transportation models include: land including road and rail, water and air, advancement in engineering technology has given rise to new transportation modes like pipeline, cable and space (Flyvbjerg, Skamris, Mette, Buhl, 2015). Nonetheless, the increased demand for movement of goods and services in less urbanized areas continues to exert pressure for establishment of more reliable and efficient means of transport. For this reason, international, national and local development partners have continued to shape the road construction and investment policies in strive towards realization of sustainable road transport (The World Bank Group, 2017; Irandu, 2017).

In developed countries like USA, France, Germany and Canada, there is consistent cultural shift to modern technologies in road transport investments which has resulted in the reduction of transportation cost and stimulation of economic development (Claudia, Uwe, Yishen, Harris, 2017). In European Union, the road investment strategy sets high performance standards for modernization of strategic highway networks (UK Government, 2020). The demand for more reliable and efficient road networks is compelling many Asian nations to increase their budgetary allocation towards road construction projects and programmes (Meijer, Huijbregts, Schotten and Schipper, 2018). In developing countries, road development policies are rationalized on increasing road network using cost effective means. However, outdated technologies and inadequate finances has costed the quality of road infrastructure in African Countries whereby at least 80% of goods and 90% of people are ferried on road (Claudia et al., 2017). Nonetheless, many unindustrialized countries in Middle East and Africa are struggling with road infrastructure challenges that continue to hinder their social-economic growth and development (UNESCO, 2019).

As East African States gear towards regional integration, little progress has been realized in the implementation of harmonized road transport and investment projects and strategies. But Kenya has enjoyed tremendous progress in road planning, institutional and policy reforms. For example, the road transport is managed by three institutions namely Kenya National Highways Authority (KeNHA), Kenya Urban Roads Authority (KURA) and Kenya Rural Roads Authority (KeRRA). Whereas KeNHA focuses on highways in Kenya, KURA is specialized on urban roads and KeRRA's mandate is rehabilitation of rural roads in Kenya (Government of Kenya, 2017). However, road transport service provision is regulated by the National Transport Safety Authority (NTSA). In recent past, Kenya has experienced massive investment in roads infrastructure. That was the aspirations of Kenya's Vision 2030 and the National Transport Master Plan (NATMAP) that aims to at ensuring efficient and effective transport infrastructure investment.

The Embu-Siakago ring road construction project was a Government of Kenya infrastructural project commissioned in 2016 with an aim of providing the community of Embu County with all-weather connectivity and improve transport services between Embu, Kianjokoma, Runyenjes and Siakago towns. The Embu-Siakago ring road construction project costed Kenya Shillings 3.2 Billion. The scope of the work included upgrading to bitumen standard road or tarmac road from Embu Hospital-Kianjokoma-Runyenjes-Siakago Road covering 63.1 kilometers under the leadership Kenya Rural Roads Authority (Government of Kenya, 2020). Once completed, the Embu-Siakago ring road was expected to reduce transport costs, time for people, goods and services. The expected completion date was December, 2019. However, the project was not yet completed in time (Government of Kenya, 2020). Delays and poor performances of road projects are associated with ineffective team and stakeholder management (Wambui et al., 2015). Mucheke and Paul (2019) stresses on the importance of upholding collective responsibilities between team members and project managers so as to safeguard and enhance project performance. The findings from past studies have suggested that effective project team culture stimulates performance (Zwikael, 2019; Mehek, 2020). Nevertheless, there lacks empirical framework for effective team engagement. Although team members need to be developed through teaching and involvement, such practices cannot be generalized to all project contexts. In order to develop a practical strategy towards effective team management for better performance, this study sought to examine the influence of project team culture on performance of Embu-Siakago ring road construction project in Embu County, Kenya.

Basically, team culture reflects the peoples' ways of life in terms of values, attitudes, practices, traditions among other aspects (Calciolari, Prenestini and Lega, 2018). Awadh, and Saad (2013) asserts that the norms and values of a team influences employee relationships which in turns determines the synergy towards coordination of project tasks and their performance outcomes. Equally, strong team culture as characterized by values, rituals and heroes has gainful impacts on individual and overall organizational performance (Paschal and Nizam, 2016). Culture not only determines employees' satisfaction and innovation but also the organization (Stephen and Stephen, 2016). Thus peoples' culture has significant influence on organization's performance (Joseph and Kiber, 2019). It implies that appropriate cultural development strategies strengthen and reinforces workers' desire to perform. Hence it is important to identify and analyze how team culture relates to the performance of road construction projects so as to advice the manager on the best strategy towards improving the performance of road projects in Kenya

1.2 Statement of the Problem

Road network is an essential enabler to socio-economic development of any nation because it triggers efficient mobility of people and commodities. The Kenyan government has immensely been investing in road construction projects across the 47 Counties. A good example is the Embu-Siakago road construction project whose transportation benefits were expected to link Embu town to Siakago, Runyenjes and Kianjokoma market centers. While the expected completion date of the project was 4th December 2019 after three-year contract, the project is still lagging behind the schedule with the overall progress being 93.09% since commencement date (Government of Kenya, 2020). The prolonged delays in the completion of the project raises concerns over the spiraling fluctuation of the cost of building materials which could negatively impact on the budget. In addition, the dragged construction of the road causes anxiety among road users due to increased cost of transport as the commuters and transporters continue to use the elongated road diversions. There are frequent road accidents along the diversions which could easily have been avoided if the road project was completed on time (Kamau, 2020). Furthermore, extended completion time of the project is increasing the pollution time as the negative impacts to the environment continue to accrue during the construction time. The question that bothers is why the project is not meeting the expected delivery time and performance.

Past studies suggest that project team culture has significant contribution to project performance and growth (Mehek, 2020; Meredith and Zwikael, 2019; Bang and Midelfart, 2017). Whereas effective project team culture maintains team productivity and performance (Jayarathn and Weerakkody, 2016), these findings cannot be generalized due to contextual and geographical limitations. Generalizations are also constrained due to methodological, conceptual and theoretical limitations. This knowledge gap was filled by examining how project team culture influenced performance of Embu-Siakago ring road construction project in the County of Embu, Kenya.

1.3 Research Objective

The study examined how project team culture influences performance of Embu-Siakago ring road construction project in Embu County, Kenya

1.4 Research Hypothesis

The null hypothesis (H_0) stated that there is no significant relationship between project team culture and performance of Embu-Siakago ring road construction project in Embu County, Kenya.

2.0 LITERATURE REVIEW

2.1 Performance of Road Projects

Project performance refers to the effective delivery of outcomes (PMI, 2017). In measuring performance, one tries to gather helpful information to manage decisions and actions concerning improvement of project outcomes. Performance measurement is used to make management decisions like control, change management, risk management among others essential for successful completion of project. Traditionally, project performance was assessed on objective indicators of the triple constraints of time, cost and quality (PMI, 2017). Overtime, subjective indicators have emanated from the dynamic needs of the project environment. So, new indicators such as customer satisfaction, innovation of systems, new opportunities created, project stability, milestones have thrived.

Past studies have explored project performance from various dimensions. For example, Molaei, Bosch-Rekvelde and Bakker (2019) proposes the following dimension of viewing project performance: project characteristics like awareness, management processes like applicability, contracting prowess, team leadership, stakeholder engagement, management agility as well as resource, time and cost efficiency. According to Bonghez and Grigorou (2013), project performance encompasses schedule (time), budget (cost) and quality, goals, client acceptance, reputation, alignment to business strategy, ethical behaviors, team

cohesiveness. Thus, performance can be evaluated at three levels namely: individual, team and project as whole. (Bhuinyan, Gadekar, Agrawal, Basak and Rau, 2019) identified three key performance indicators that increase the levels of effectiveness and efficiency in terms of time, cost and quality. However, the authors recommend for greater view performance in term of profitability, task completion time, management growth, ordering of materials, quality assurance, safety, client satisfaction, risk management and productivity. The performance dimension by Bhuinyan, Gadekar, Agrawal, Basak and Rau (2019) takes consideration of all contextual aspects of a project. Project performance is attributed to the success in achieving results within time and budget Bhuinyan, Gadekar, Agrawal, Basak and Rau. (2019). The assessment of project performance by the triple constraints of time, cost and quality is empirically consented (Mobegi, Sang, James, 2019; Olawale and Sun, 2018; Labuschagne, 2017). Kerzner (2009) recommends the following measures of performance: cost and schedule overrun, team effectiveness, achievement of set targets and customer satisfaction. Project performance can be assessed using the following measures: financial, process, customer, learning and growth, innovation and learning (Pennypacker, 2020).

According to Shenhar and Davir (2010), contemporary assessment of project performance should be anchored on the following indicators: attaining goals, benefits to customers, gains to the organization, the sector and overall success. However, not a single performance measure is universally applicable to all project. This is due to dynamic environment in which each project operates (Alsulamy, Wamuziri and Taylor, 2012). The appropriateness of each measure relies on the project's uniqueness and context. This new perception has shifted measurements of project performance from product-orientation to process-based measures (Haponava and Al-Jibouri, 2010). It implies that project managers especially in highly risky construction projects need to be effective in coordinating team efforts. The reason being construction related projects are exposed to multifaceted uncertainties of quality, time and cost (PMI, 2017). Thus in assessing the performance of a road construction project there is to consider factors that optimize on risks and uncertainties. Due to the perception that team management affects performance behaviors, this study adopted Chams-anturi, Gomez, Escorcia-Caballero, and Soto-Ferrari (2020) organizational behavior measures to evaluate performance Embu-Siakago ring road construction project.

2.2 Project Team culture and Performance of Road Project

Team culture refers to the traditions, attitudes, values and practices that distinguish a group of people from another (Calciolari, Prenestini and Lega, 2018). Projects operates in a very dynamic and competitive environment which puts pressure on managers and teams to be consistent in monitoring and improvement performance per client and stakeholders' expectations (Joseph and Kibera, 2019). However, development of a performance-oriented culture among project leaders is often faced by personal differences that resonate around competing values. Therefore, managers and leaders of the various projects should strive to establish a freely shared culture amongst its members in order to control and shape their behavior towards performance. These norms and values of individuals tilts employee relationships and synergy in task and group performance (Awadh, and Saad, 2013). This means that appropriate strategies to team culture reinforces performance.

A survey by Paschal and Nizam (2016) on the correlation of culture and employee's performance in Malaysia revealed that cultural aspects like rituals, values and heroes have significant impact on performance. Likert-questionnaires were used in the collection of data from a random sample of 150 employees whereby the inferential statistics were not discussed based any theoretical framework thus diminishing the construct validity. The current study advanced the findings by Paschal and Nizam (2016) by using theory of motivation to assess the influence of team culture on performance of Embu-Siakago road construction project.

Findings from another research on correlation between culture and employee performance in Nigeria by Stephen and Stephen (2019) showed that different cultures had different impacts on organization performances. The current research used descriptive-survey design, random sample size of 120 team members, closed-headed questionnaires, simple percentage, tables and Chi square in testing hypothesis. The findings highlighted important aspects of team culture for bettering performances, direction and strength of the influence of culture on performance was missing. The knowledge gap was addressed by use of correlation analysis techniques in order to explore the relationship between team culture and performance of Embu-Siakago ring road construction project. So far, no study has been done on the relationship between team culture and performance of Embu Siakago road project thus the need to undertake the current study.

2.3 Theoretical Framework

The present research was founded on three theories namely: Fisher's theory of decision emergence in groups and Maslow's theory of motivation.

2.3.1 Fisher's Theory of Decision Emergence in Groups

Fisher's theory of decision emergence in groups was developed by Mr. Aubrey Fisher in 1970 as a guide to team leaders for the effective and successful team management. Fisher's theory states that when members are integrated into task and decision-making processes, it makes the team stronger and more focused towards the realization of the expected results (Fisher, 1970). For successful adoption of this theory, Fisher proposed four stages namely: orientation, conflict, emergence and reinforcement. In the orientation stage, team members are newly assembled and lack some sense of direction hence there is need to promote trust and confidence through effective communication and motivation. The conflict stage is characterized by disagreements or disputes over competing roles, space, resources, values, ideologies, goals etc. and team leader must motivate and facilitate in problem solving. In the emergence stage, the members are motivated to norm into a new structure which is orderly, respectful and purpose oriented. The last stage is reinforcement whereby members are motivated to develop commitment in the execution of their plans in order to achieve the set goals. This theory is applicable to the project team culture strategies that seek to boost performance. In particularly, this theory is significant in this study since team members are accorded a crash-landing scenario and was required to rank items in the degree of significance in relation to project performance. Thus, the choice of Fisher's theory of decision emergence in groups fits well within the framework of the predictor variable namely project team culture. There are empirical

studies which have used Fisher's theory to argue that effective team management promotes favorable performance (Madigosky, Colarelli and Nordon-Craft, 2020; Cor. 2020).

2.3.2 Maslow's Theory of Motivation

Proposed in 1943 by Abraham Maslow, this theory was developed to guide managers in acting humanly towards subordinates and fellow workers in order to deliver best results. Maslow's theory of motivation states that human beings are motivated when their needs are motivated or satisfied. These five needs are: physiological or basic needs, safety or security needs, and social or love needs, and esteem and fulfilment or actualization needs. According to Maslow, motivational needs are satisfied in a hierarchical order from basic need (at bottom) to actualization needs (at the top) as illustrated in Figure 1.



Figure 1: Maslow's Theory of Motivation (Simons, Irwin and Drinnien 1987)

The basic principle or assumption in Maslow's hierarchy of needs is that human need is satisfied systematically and in vertical order right from basic needs to actualization needs. One cannot be fully motivated by satisfying higher order need unless the lower order needs are satisfied (Simons, Irwin and Drinnien 1987). Psychological or basic needs are strongest needs essential for life support like air, shelter, food, warmth, drink, sex, sleep etc. Safety needs are security needs in terms of physical or emotional or financial/ job security, order, law, protection, limits and stability and they are satisfied in support of basic needs (Sagimo, 2002). Social needs refer to family, relationships, love, team work, affection and sense of belonging with others and are motivated by the desires to overcome feelings of loneliness and alienation. Esteem needs are satisfied by achievements, status / respect, responsibility, prestige, recognition, confidence, competence and appreciation from others. When esteem needs are satisfied, the person feels self-confident and valuable. Self-actualization needs relate to one's growth, use of potentialities and abilities to the fullest in the most creative way (Sagimo, 2002).

In this study, Maslow's theory of motivation was important to the concept of project team culture in relation to performance because team members and workers are dynamic in terms of values. To ensure that the members are not distracted or lose their commitment to performance, leaders must act in a way to eliminate elements that devalue workers. In this regard, Maslow's theory of motivation was used to argue that effective team culture maintains a highly performing team. Maslow's theory of motivation has been used in past studies to support that satisfied workers strive to ensure that projects are delivered successfully (Rukaram, 2018; Ekundayo et al., 2018).

2.4 Conceptual Framework

Figure 2 shows the relationship between project team culture and performance of Embu-Siakago ring road construction project in Embu County, Kenya

Conceptual Framework

Independent Variable

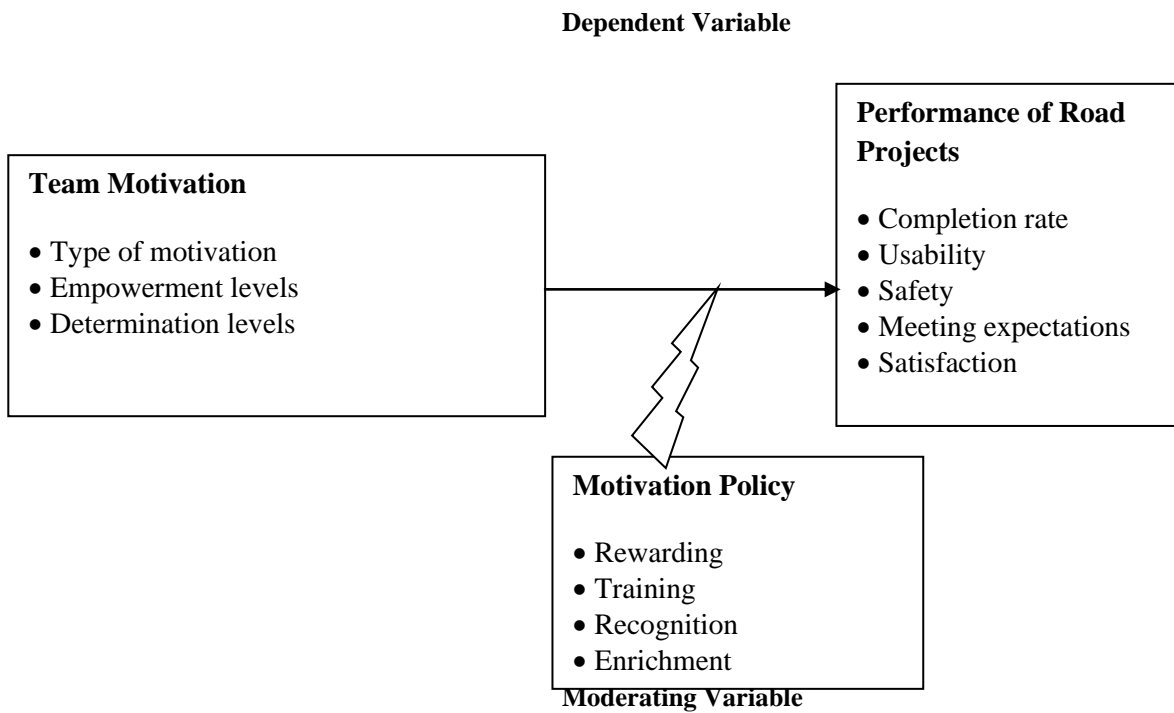


Figure 2: conceptual framework showing the relationship between project team culture and performance of Embu-Siakago ring road construction project in Embu County, Kenya.

3.0 METHODOLOGY

3.1 Research Design

A case study research design was used to guide implementation of the study.

3.2 Target Population

This research targeted 200 workers involved during construction of Embu-Siakago ring road project in Embu County (Government of Kenya, 2020). The target population comprised of 2 team leaders (1 Resident engineer and 1 project manager) and 198 team members (technicians and ground men). The target population was characterized by active involvement in the implementation of the project thus having adequate knowledge and understanding performance requirements of the project.

3.3 Sampling

Guided by the Krejcie and Morgan (1970) table for sample determination, a sample size of 132 was drawn from the population of 200. The sample size of 132 was not only above the minimum recommendation of 100 for meaningful results but also adequate for higher statistical computation like correlational analysis (Alshibly, 2018). Proportionate stratified random sampling was used to draw 24 technicians and 106 ground men from 26 technicians and 162 ground men respectively.

3.4 Data Collection Instruments

Data was collected by means of interviews and questionnaires. 5-point Likert type questionnaire was used to solicit numerical data from the team members. In designing the questionnaire, attention was given to simplicity and clarity of the questions for easy self-administration. The questionnaire was used to obtain data from the 130 team members of the Embu-Siakago ring road construction project. Key informant interviews were physically administered to the team leaders (project manager and resident engineer) of Embu-Siakago ring road construction project. Unstructured questions were used to collect views and perceptions from two team leaders in order to supplement the numerical data to be collected from the team members through the use of questionnaires. Interviews are recommended when the researcher seeks to obtain confidential information from privileged people (Kothari, 2004)

3.5 Validity and Reliability of the Instruments

Validity is the accuracy of instrument in measuring what it ought to measure (Kothari, 2004). Content validity was safeguarded by matching the indicators of research variables to the design of the questions. Criterion validity was boosted by selecting data collection instruments which have reliably been used in past related studies and results were conclusive (Asafu, 2018; Eisenberg, Post and DiTomaso, 2019). However, expert's opinion was sought on the fitness, appropriateness and relevance of the research questions and the comments was integrated into the design improvement. Reliability was established through split-half method and accepted at Cronbach's alpha coefficient of at least (α) equals 0.70 (Lance, Butts and Michels., 2006). The correlation coefficient was 0.72 which was above $\alpha = 0.7$ thus safeguarding reliability.

3.6 Data Analysis Techniques

Numerical data that were obtained by use of structured questionnaire were analyzed using Statistical Packages for Social Sciences (version 25) in order to generate descriptive statistics like: percentages, arithmetic mean as well as standard deviations. In addition to this, inferential statistics namely: Pearson's Product Moment Correlation Coefficient (r), Analysis of Variance (ANOVA) and Regression analysis was generated. Data from the interviews was analyzed through content analysis. The procedure for content analysis entailed organizing the content per the study theme, coding, summarizing followed by discussions. The summaries of data from the interviews was corroborated with data from the questionnaires (descriptive and inferential statistics) and used in the discussions.

The following research model was tested:

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

Whereby Y= Performance of Embu-Siakago ring road construction project in Embu County, Kenya, X_1 = Project Team Culture, β_0 is a constant term, while β_1 coefficient of determination for X_1 , and ε is the error term.

4.0 MAIN FINDINGS

4.1 Descriptive Results on Project Team Culture and Performance of Embu-Siakago Ring Road Construction Project

Respondents were asked to indicate their level of agreement with item on project team culture and performance of Embu-Siakago Ring Road Construction Project and the findings are shown in Table 1

Table 1

Team Culture and Performance of Embu-Siakago Ring Road Construction Project

Aspects	Strongly disagree	Disagree	None	Agree	Strongly agree	Mean	Standard deviation
Respondent always knew what was expected from them	0(0.0%)	1(0.9%)	5(4.5%)	51(45.9%)	54(48.7%)	4.42	0.63
Respondent always focused on performance	1(0.9%)	0(0.0%)	4(3.6%)	84(75.7%)	22(19.8%)	4.14	0.55
Respondent needs were greatly valued	2(1.8%)	4(3.6%)	3(2.7%)	86(77.5%)	16(14.4%)	3.99	0.69
Varying opinions were always accepted	1(0.9%)	1(0.9%)	6(5.4%)	77(69.4%)	26(23.4%)	4.14	0.63
Feedbacks were given in time	0(0.0%)	1(0.9%)	11(9.9%)	78(70.3%)	21(18.9%)	4.07	0.57
Respondent was allowed to devise working strategies	0(0.0%)	0(0.0%)	3(2.7%)	63(56.8%)	45(40.5%)	4.38	0.54
Respondent was inspired to work in the project	0(0.0%)	0(0.0%)	6(5.4%)	65(58.6%)	40(36.0%)	4.31	0.57
Performance reviews were regularly conducted	1(0.9%)	7(6.3%)	16(14.4%)	41(36.9%)	46(41.4%)	4.12	0.94
Respondent had never thought of leaving the work	3(2.7%)	6(5.4%)	10(9.0%)	54(48.7%)	38(34.2%)	4.06	0.95
Composites						4.18	0.67

Table 1 shows that the composite mean for team culture was 4.18 which implied that majority of the respondents conceded that team culture added to performance of Embu-Siakago ring road construction project. The standard deviation was 0.67 which signified low variation of scores about the mean. Statements whose mean scores were above the composite mean of 4.18 were: respondent always knew what was expected from them, respondent was allowed to devise working strategies and respondent was inspired to work in the project. Items whose mean score was below the composite mean of 4.18 were: respondent always knew what was expected from me, respondent always focused on performance, varying opinions were always accepted, feedbacks were given in time, respondent was allowed to devise working strategies, respondent was inspired to work in the project, performance reviews were regularly conducted and respondent have never thought of leaving the work.

4.2 Inferential Results on Team Culture and Performance of Embu-Siakago Ring Road Construction Project

The relationship between team culture and performance of Embu-Siakago ring road construction (ESRC) project was computed using Pearson's Correlation method and the results are shown in Table 2.

Table 2

Correlation Between Team Culture and Performance of Embu-Siakago Ring Road Construction Project

	Performance of ESRR Project	Team Culture Project
Performance of ESRR Project	Pearson Correlation	1
	Sig. (2-tailed)	
	N	111

Team Culture	Pearson Correlation	0.15	1
	Sig. (2-tailed)	0.13	
	N	111	111

Table 2 shows that at a confidence level of 95%, the correlation of team culture and performance of Embu-Siakago ring road construction project was 0.15 for $p=0.13 > 0.05$. This implies that there exists no significant relationship between team culture and performance of Embu-Siakago ring road construction project. Thus, the null hypothesis was not rejected as there was enough evidence to conclude that team culture has no significant influence on the performance of Embu-Siakago ring road construction project.

Project team culture was regressed against performance of Embu-Siakago ring road construction project in Embu County and the regressions results are presented in Table 3.

Table 3

Regression of Project team culture and Performance of Embu-Siakago Ring Road Construction Project in Embu County.

Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics			Sig. Change	
					R ² Change	F Change	df1	df2	
1	0.14 ^a	0.02	0.01	0.33	0.02	2.39	1	109	0.13

a. Predictors: (Constant), Project team culture

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.26	1	0.26	2.39	0.13 ^b
	Residual	11.60	109	0.11		
	Total	11.86	110			

a. Dependent Variable: Performance of Embu-Siakago Ring Road Construction Project in Embu County.

b. Predictors: (Constant), Project team culture

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	3.42	0.38		9.12	0.00
	Project team culture	0.14	0.09	0.15	1.55	0.13

a. Dependent Variable: Performance of Embu-Siakago Ring Road Construction Project in Embu County.

According to the data in the model summary in Table 3, project team culture predicted 2% variation in the performance of Embu-Siakago Ring Road Construction Project in Embu County for $R^2 = 0.02$. The balance of 98% was accounted by other factors beyond the study.

The data in the ANOVA shows that $F=2.39$ for $p=0.13$ which is greater than $0.00 < 0.13$, which implies that project team culture was not significant in estimating performance of Embu-Siakago Ring Road Construction Project in Embu County. Therefore, the model was not fit in predicting performance of Embu-Siakago Ring Road Construction Project in Embu County.

The coefficient data shows that if other factors were held constant, performance of Embu-Siakago Ring Road Construction Project in Embu County would remain constant at 3.42. Also, a unit increase in project team culture would lead to 0.14 variation in the performance of Embu-Siakago Ring Road Construction Project in Embu County when other factors were held constant. The solved model becomes:

Model: $Y = 3.42 + 0.14X_1 + \varepsilon$ where,

Y = Performance of Embu-Siakago Ring Road Construction Project in Embu County, X_1 = Project team culture and ε = Error term.

4.3 Qualitative Results for Project Team Culture and Performance of Embu-Siakago Ring Road Construction Project

During interview sessions, project leader 2 viewed team culture as destructive to both performances. For example, when asked how team diversity inspired performance, Project Leader 2 said:

"Team diversity increased language barriers for example some local causal workers could always speak in their mothers' tongue and some could not even understand instructions well in English. Sometimes you could see these categories of members working in seclusion which hindered collective effort towards performance."

Some members were more aggressive than others which also created discontent of individuals and team value and interests. Nonetheless, there frequent team building sessions to promote team cohesion and unity for purpose which increased project performance” (project leader 2)

Project leader 1 had traditional view of the influence of team culture on performance of the project. When asked to explain on the dimensions of team culture that contributed to the performance of the Embu-Siakago ring road construction project, Project Leader 1 said:

“There was great respect of team diversity. Team members differed in gender, age, experiences, skills and values but this did not deter their commitment to work. Everybody valued work. This diversity inspired togetherness in accomplishing common mission. Team members worked together united for a purpose. There was strong commitment mutual respect. Strengths were recognized and celebrated. Members were attached to each other and appreciated one another. Team culture that encouraged loyalty and promotion of healthy work completion and performance. The project team members enjoyed a strong team culture that fostered communication, cohesion, dispute resolution, creativity and job satisfaction leading to greater productivity and overall organization performance. Nevertheless, there were incidence of conflict between personal and team cultures like goals and values and these has serious consequences on the team performance. I overcame this by inculcating a sense of shared culture which promoted good relationship between members and fostered unity in achieving set targets” (project leader 1)

4.4 Discussion on Project Team Culture and Performance of Embu-Siakago Ring Road Construction Project

From the descriptive data, team culture was found to contribute to the performance of Embu-Siakago ring road construction project. However, increase in team culture was found to have no significant influence on the performance of Embu-Siakago Ring Road Construction project. Qualitative data showed that team culture served as a buffer to maintain the project organization in operation. Past studies support that strong values have gainful impacts on project performance (Paschal and Nizam, 2016). Further, positive culture maintains employee relationships and synergy essential for successful coordination of project tasks and performance (Calciolari, Prenestini and Lega, 2018; Awadh, and Saad, 2013; Awadh, and Saad, 2013). This is because culture binds people together and determines how employees are satisfied and innovative in solving performance challenges (Stephen and Stephen, 2016; Joseph and Kiber, 2019). In the current study, team culture was found to have dualistic effects on the performance of a project. However, project leaders were quick to promote shared culture among team members in order to reinforce performance. Hence team culture in an important factor that contributes to performance of project.

This implies that there exists no significant relationship between team culture and performance of Embu-Siakago ring road construction project. The results contradict those of Paschal and Nizam (2016) that cultural aspects like ritual, value and heroes have significant impact on performance. However, Stephen and Stephen (2019) observes that culture have differing impacts on organization performances. In this study, culture is found to have no significant influence on performance of Embu-Siakago ring road construction project. Accordingly, culture is argued to play a maintenance role rather than predictive role towards performance of Embu-Siakago ring road construction project. Hence, team culture is not a critical consideration when planning to improve performance of road construction projects.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The objective of the study was to determine how project team culture influences performance of Embu-Siakago ring road construction project in Embu County, Kenya. Based on descriptive and inferential results, it is concluded that project team culture is not a critical influencer of the performance of Embu-Siakago ring road construction project in Embu County, Kenya. Instead, team culture serves to maintain the spirit of determination to perform.

5.2 Recommendations

Government can utilize the findings from this study to develop appropriate guidelines for maintain a culture of commitment and determination so as to promote performance of future road projects. Implementers and planners of future road construction projects can use the findings from this study to design for strategies that integrate performance requirement with the prevailing work environment so as to sustain conducive culture that enables performance. Also, project managers can use the findings to improve their soft project management skills in managing performances through multicultural team management.

5.3 Suggestions for Further Study

A case study research design was used to implement this inquiry. Future methodologies can adopt mixed approaches in order to derive knowledge from multiple realities. In addition, future studies can triangulate data collection methods in order to generate more generalizable conclusions. Future studies can also examine how team culture moderates project performance in different contexts.

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