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Procurement of Labour and Performance of Road Construction Projects in Kenya: A Case of Nairobi County

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Abstract:
This study sought to establish the influence of procurement of labour on performance of road construction projects in Kenya: A case of Nairobi County. The objective of the study was to establish the extent to which procurement of labour influences performance of road construction projects in Kenya. This study was anchored on the theory of controlling, theory of construction management, and stakeholder theory. The paradigm used was pragmatism and the research approach used was mixed methods. Cross sectional descriptive survey and correlational research design were used. The sample size was 74 senior engineers which comprised 30 senior engineers from consulting engineering firms and 44 senior engineers from construction companies; 74 managing directors which comprised 30 managing directors from consulting engineering firms and 44 managing directors from construction companies. A five point Likert type scale questionnaire was used to collect quantitative data while interview guides were used to collect qualitative data. The statistical tools of analysis that were used for descriptive data were frequencies, percentages, arithmetic mean and standard deviation while the statistical tools that were used for inferential statistics were Pearson's Product Moment Correlation and Linear Regression. The Fisher (F) test was used to test the hypotheses. The results indicated that with $R^2=0.390$, $F(4,42)=6.719$, $p=0.000<0.05$, H_1 was accepted and it was concluded that procurement of labour had a statistically significant influence on the performance of road construction projects. The study recommends that organizations that deal with road construction should have appropriate policies on procurement of labour since there is a statistically significant relationship between procurement of labour and performance of road construction projects.

Keywords: *Procurement of labour, performance of road construction projects*

1. Introduction

The performance of roads in Kenya has not been satisfactory as evidenced by the presence of potholes on the majority of roads. Traffic congestion has become endemic especially in the urban areas and this has resulted in huge economic losses in terms of loss of man-hours and wastage of fuel. It is imperative to study the influence of procurement of labour on the performance of road construction projects in Kenya. Performance of road construction projects is the dependent variable whilst procurement of labour is the independent variable. The indicators of procurement of labour are recruitment of personnel, training of personnel, control of personnel, and outsourcing of personnel. This study is anchored on the theory of controlling, theory of construction management, and stakeholder theory propagated by Koskela and Howell (2002), Radosavljevic and Bennett (2012) and Phillips, Freeman and Wicks (2003) respectively.

1.1. Statement of Problem

The performance of roads in Kenya has not been satisfactory as evidenced by the presence of potholes on the majority of roads. Traffic congestion has become endemic especially in the urban areas. Gachanja (2015) contends that traffic congestion is one of the key concerns affecting performance of the transport system in Nairobi. In 2008, the economic cost of traffic jams in Nairobi Metropolitan Region was estimated at KShs. 1.9 billion annually, on account of cost of additional time spent on travel due to congestion. The type of traffic congestion being witnessed in Nairobi leads to increased costs, longer travel times, constrained economic productivity, and adverse health and environmental externalities. It has been observed that roads turn into rivers when there

is downpour due the failure of the road drainage system. In response to this problem, this study proposed to investigate how the performance of road construction projects is influenced by procurement of labour. Procurement of labour is critical in the performance of road construction projects in that labour is required to operate construction equipment and also to carry out the various manual activities in road construction. The purpose of this study was to investigate the influence of procurement of labour on performance of road construction project.

1.2. Objective of the Study

The objective of the study was to establish the extent to which procurement of labour influences performance of road construction projects in Kenya.

1.3. Hypothesis of the Study

The following hypothesis was tested:

- H_0: There is no significant relationship between procurement of labour and performance of road construction projects.
- H_1: There is a significant relationship between procurement of labour and performance of road construction projects.

2. Literature Review

Managing human resources is often overlooked in projects (Lewis, 2007). Richardson (2015) contends that recruitment is the set of activities and processes used to legally obtain a sufficient number of qualified people at the right place and time so that the people and the organization can select each other in their own best short and long term interests. Loosemore, Dainty and Lingard (2003) indicate that a successful organization must harness the efforts of the human resources at its disposal. Joy (1991) asserts that the construction organization shall recruit meritorious candidates with the appropriate qualifications, experience, capability, and potential for development. Wandera (2011) researched on the effects of short term employment contracts on organizations in Kenya. The study revealed that short term employment resulted in unscheduled turnover in an organization, low staff morale, and low productivity.

Rakib (2013) carried out a study on employee recruitment and selection procedures of non-governmental organizations(NGOs) in Bangladesh. Findings revealed that the largest NGOs emphasized professionalism and career orientations and implemented long-term, forward-looking approaches in their selection, recruitment, and remuneration. Kumari (2012) conducted a study on recruitment and selection process in India. Findings revealed that the company considered portals as the most important medium of hiring employees. Nabi and Wei (2014) researched on effective recruitment and selection procedures in Pakistan. Findings revealed that organizational politics and line management had a great influence on the effectiveness of fair recruitment and selection procedures. Hamid, Singh and Jamadi (2013) carried out a study on foreign labour employment in construction projects in Malaysia. Findings revealed that there were more foreign workers than local workers in construction projects in Malaysia and that foreign workers had more work experience than local workers.

Loosemore, Dainty and Lingard (2003) assert that training, personal development and knowledge creation lie at the very heart of achieving a motivated workforce and an efficient, effective, creative and innovative industry which has a positive public image. Joy (1991) contends that the construction organization shall have a training scheme aimed at improving its employees' skills, competence, and quality of performance and thereby the organization getting better output in terms of quality and quantity. Ikediashi, Ogunlana, Awodele and Okwuashi (2012) researched on personnel training policies of construction companies in Nigeria. Findings revealed that there was a disparity in the training policies of most companies regarding both categories of staff and did not favour the technical personnel. On-the-job training was the most effective method of staff development in the companies. A study was conducted by Ojambati, Akinbile and Abiola-Falemu (2012) on personnel training and development for construction workers in Nigeria. The study revealed that on-the-job training method, management and supervisory development, and career development methods were used. It was also revealed that employees became more valuable to the firm when trained.

Tabassi and Bakar (2009) carried out research on training, motivation and performance in construction projects in Iran. Findings revealed that many Iranian construction workers had low levels of education, low income, lack of motivation, and family problems. Tabassi, Ramli and Bakar (2011) carried out a study on training and teamwork improvement in construction firms in Iran. The study revealed that workers' participation, recognition, awards, promotions, financial incentives and paid time off were effective methods of motivating the employees for training. Langford, Hancock, Fellows and Gale (1998) assert that as a defense against uncertainty of workload, economic slump and unstable demand, an increasing amount of construction work is being undertaken by subcontractors. Huws (2012) states that outsourcing, or subcontracting, is not new. As production processes have become more complex, and companies larger and more international, supply chains in manufacturing have got longer. Construction Industry Development Board (2013) points out that subcontracting, including specialist, generalist, trade and labour-only subcontractors, is an integral component of the construction industry. The most prevalent type of subcontracting is the labour-only where skilled tradesmen provide labour-only services, while the main contractor provides the materials and supervision.

International Labour Organization (2001) states that in the last two to three decades (since the mid-1970s) there is evidence of a massive shedding of labour by contractors (and subcontractors) in many countries in favour of outsourcing. Ritz (1994) maintains that a convenient way to expand the human resources on a project is through the use of subcontractors. This method is often used to expand a firm's capability in a particular area of expertise. Roy and Potter (1996) argues that increasingly, business organizations are concentrating on core activities and contracting out or outsourcing other functions to external suppliers. Koch and Bennett (2014) indicate that professional engineering service companies of medium size are currently the most aggressive in pursuing global sourcing,

including off-shoring of engineering knowledge work. Dapper (2013) researched on personnel outsourcing and corporate performance in Nigeria. Findings revealed that there was a significant effect of personnel outsourcing on corporate performance. A study was conducted by Mavuso, Hove and Karodia (2014) on outsourcing of manual sugarcane cutting at a company in Swaziland. Findings revealed that outsourcing was understood more by the directors of contractors and the management of the company than by other employee categories. Research was done by White and Marasini (2014) on the management of interface between main contractor and subcontractors for successful project outcomes. Findings revealed that lack of trust was a key factor affecting the relationship between the main contractor and subcontractors which affected the successful completion of construction projects.
Idoro (2011) carried out a study on the influence of in-sourcing and outsourcing of consultants on construction project performance in Nigeria. The results of the study revealed that clients engaged both in-sourced and outsourced consultants in project development and that the practice had significant influence on project performance. It also revealed that the use of the two approaches had differing benefits on project delivery time and cost. Sattineni (2008) researched on outsourcing and off-shoring in the construction industry in the United States. Findings revealed that communication and training were key factors to the success of companies dealing with outsourcing in the construction industry. Soltani and Esmaeely (2013) carried out a study on the impact of outsourcing on effectiveness of structural dimensions of organization and productivity in Iran. Findings revealed that outsourcing had a positive effect on productivity and effectiveness of structural dimensions of the organization. Maku and Iravo (2013) researched on effects of outsourcing on organizational performance in Kenya. Findings revealed that outsourcing had enabled the company to have greater access to modern technology and expertise and this had enabled the organization to increase its production capacity.

2.1. Theoretical Framework
This study is anchored on the following theories: theory of controlling, theory of construction management, and stakeholder theory.

2.1.1. Theory of Controlling
The proponents of the theory of controlling were Koskela and Howell (2002). The core process of controlling is divided into two sub-processes: performance reporting and overall change control. Based on the former, corrections are prescribed for the executing processes, and based on the latter, changes are prescribed for the planning processes. Here only performance reporting is considered, based on performance baseline and associated corrections to execution. It clearly corresponds to the cybernetic model of management control (thermostat model) that consists of the following elements: there is a standard of performance; performance is measured at the output (or input); and the possible variance between the standard and the measured value is used for correcting the process so that the standard can be reached. The theory of controlling supports this study in the sense that when road construction is being executed, reference must be constantly made to the specifications and programme of works to ensure adherence. Any deviation is corrected to ensure that the project is brought back on track and ensure its timely completion. The dependent variable, performance of road construction projects, is therefore linked to the theory of controlling.

2.1.2. Theory of Construction Management
The theory of construction management was propagated by Radosavljevic and Bennett (2012). A focus only on project management has limited construction's performance. The development and progress of the construction industry will depend on an understanding of project management to be combined with an equal focus on company management. The theory of construction management begins with the theory that construction management aims to enable construction to be undertaken efficiently and effectively within agreed objectives. The first requirement in achieving the objective of construction management is to select competent teams to undertake all the essential construction actions. Construction team members include: designers, managers, building team, manufacturers, production specialists, and commissioning specialists. The theory of construction management accepts that construction faces inherent difficulties that are unavoidable. The theory is based on the rigorous view that the purpose of construction management is to reduce inherent difficulty. This theory is relevant to this study in that road construction ought to be done efficiently and effectively to ensure completion within time and budget. The dependent variable, performance of road construction projects, is therefore linked to the theory of construction management.

2.1.3. Stakeholder Theory
The stakeholder theory, according to Phillips, Freeman and Wicks (2003), is a theory of organizational management and ethics. Managing for stakeholders involves attention to more than simply maximizing shareholder wealth. Attention to the interests and well-being of those who can assist or hinder the achievement of the organization's objectives is the central admonition of the theory. Traditionally, according to Takim (2009), the main participants in a construction project coalition are the client, the architect and the contractor. The interactions and interrelationships between these participants largely determine the overall performance of a construction project, and have the crucial responsibility for delivering a project to successful completion. Stakeholders are defined as people or groups that have, or believe they have, legitimate claims against the substantive aspects of a project. Stakeholders, according to Chinyio and Olomolaiye (2010), are individuals or groups that benefit from an organization. Further, stakeholders can be harmed or have their rights affected by an organization. Fundamentally, stakeholders affect and are affected by an organization and its activities. Stakeholders can affect an organization's functioning, goals, development and even survival. Stakeholders are beneficial when they help an organization to achieve its goals and they are antagonistic when they oppose the organization's mission. In effect, stakeholders have power to be either a threat or a benefit to an organization.

Austen, Seymour, Brown, Furneaux and McCabe (2008) contend that being able to manage construction stakeholder's expectations and concerns is a crucial skill for managers of construction projects, as failure to address these has resulted in countless project failures, primarily because construction stakeholders tend to have the resources and capability to stop construction projects. Successful completion of construction projects is therefore dependent on meeting the expectation of stakeholders. Stakeholders include clients, project managers, designers, subcontractors, suppliers, funding bodies, users, owners, employees and local communities. In this study, government establishments, consulting engineering firms, and construction companiesare stakeholders in the construction of roads and therefore the stakeholder theory is pertinent.

2.2. Conceptual Framework

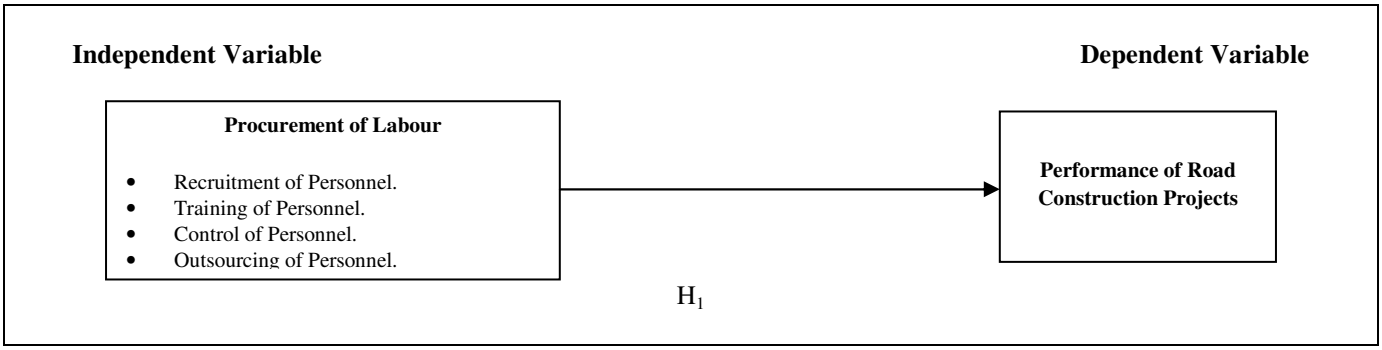

Figure 1: Conceptual Framework for Procurement of Labour and Performance of Road Construction Projects

3. Research Methodology

The research paradigm used in this study was pragmatism. Wambugu, Kyalo, Mbii and Nyonje (2015) state that pragmatists do not see the world as an absolute unity. Mixed method researchers look at many approaches for collecting and analyzing data rather than subscribing to only one way either qualitative or quantitative. Bryman (2006) indicates that research that involves the integration of quantitative and qualitative research has become increasingly common in recent years. Migiro and Magangi (2011) state that mixed methods research encourages researchers to use multiple approaches to collecting and analyzing data within a single study, recognizing the limitations of using a single method. In this study, quantitative data was collected using structured questionnaires whilst qualitative data was collected using interview schedules. Therefore, the paradigm of pragmatism was the most suitable for the study.

The research designs that was used in this study were cross-sectional descriptive survey design and correlational research design. Creswell (2012) indicates that correlational designs provide an opportunity to predict scores and explain the relationship among variables. In correlational research designs, investigators use the correlation statistical test to describe and measure the degree of association (or relationship) between two or more variables or sets of scores. Researchers use inferential statistics to determine whether an expected pattern designated by the theory and hypotheses is actually found in the observations (Nachmias & Nachmias, 2005; Kothari, 2004; Leedy, 1997; Kombo & Tromp, 2006; Sekaran, 2003).

The sample sizes for this study were: 30 senior engineers and 30 managing directors in consulting engineering firms, and 44 senior engineers and 44 managing directors in construction companies drawn from the following target population sizes: 30 senior engineers and 30 managing directors in consulting engineering firms, and 44 senior engineers and 44 managing directors in construction companies. The criteria stipulated by Krejcie and Morgan (1970) and Sekaran (2003) were used in the determination of the sample size in this study. The sampling technique adopted in this study was a census of all consulting engineering firms dealing with civil works and belonging to the Association of Consulting Engineers, and also a census of all road contractors falling under Category 'A' at the Ministry of Public Works. Primary data was used in this study. Raw data was gathered directly from the respondents and was used to analyze the relationships that were being investigated in the study. The research instruments that was used for data collection were self-administered structured questionnaires and interview guides. Questionnaires are commonly used to obtain important information about a population (Mugenda & Mugenda, 2003; Bhattacherjee, 2012; Kothari, 2004; Somekh& Lewin, 2008; Kombo & Tromp, 2006). In interviews, the researcher can ask key respondents about the facts of a matter as well as their opinions about events (Rubin & Rubin, 2005; Yin, 2009).

Pilot testing was carried out by administering questionnaires to six senior engineers; three from consulting engineering firms and three from construction companies. Interviews were also conducted on six managing directors; three from consulting engineering firms and three from construction companies. The questionnaire was pretested to a selected sample which was similar to the actual sample used in the study (Kombo & Tromp, 2006; Bell, 2005; Alreck & Settle, 1995; Mugenda & Mugenda, 2003).Testing the validity of research instruments ensures that the instrument measures what it is supposed to measure. In this study, the validity of the research instruments was tested through the content-related method where a panel of experts assessed the content validity. Reliability measures the degree to which a research instrument produces consistent results. In this study, the Cronbach's alpha method was used. A figure of 0.737 for

the Cronbach's Alpha coefficient was obtained. According to Bryman (2012), a figure of 0.70 is an acceptable level of internal reliability.

4. Findings and Discussions

Questionnaires were administered to 74 senior engineers from organizations dealing with construction of road construction projects out of which 47 were filled and returned forming a response rate of 64%. Saunders, Lewis and Thornhill (2009) state that a response rate of 50% and above is reasonable for statistical generalization.

4.1. Background Information of the Respondents

The background information of the respondents is shown in Table 1

Respondents Profile		**Frequency**	**Percentage**
Age Bracket (Years)			
a)	18 - 20	0	0.00
b)	21 - 30	3	6.38
c)	31 - 40	7	14.89
d)	41 - 50	21	44.68
e)	Above 50	16	34.04
Total		**47**	**100**
Gender			
a)	Male	45	95.74
b)	Female	2	4.26
Total		**47**	**100**
Highest Education Level			
a)	Certificate	0	0.00
b)	Diploma	2	4.26
c)	Bachelors	21	44.68
d)	Masters	24	51.06
e)	PhD	0	0
f)	Other	0	0
Total		**47**	**100**
Status in Organization			
a)	MD	1	2.13
b)	Director	4	8.51
c)	Manager	3	6.38
d)	Senior Staff	36	76.60
e)	Supervisor	3	6.38
Total		**47**	**100**
Work Experience (Years)			
a)	Less than 5	0	0.00
b)	5 - 10	7	14.89
c)	11 - 15	9	19.15
d)	16 - 20	9	19.15
e)	Above 20	22	46.81
Total		**47**	**100**
Length of Time the Organization has been Operating (Years)			
a)	Less than 10	8	17.02
b)	10 - 20	9	19.15
c)	Above 20	30	63.83
Total		**47**	**100**

Table 1: Background Information of the Respondents

On age, the research findings in Table 1 indicate that 6.38% of the respondents were between 21-30 years, 14.89% were between 31-40 years, 44.68% were between 41-50 years, and 34.04% were above 50 years of age. These findings show that majority of the senior engineers in construction companies and consulting engineering firms were above 40 years and hence experienced in their work. Therefore, the roads constructed by them are expected to perform. On gender, the findings also indicate that 95.74% of the respondents were male while 4.26% of the respondents were female. These findings show that the engineering profession is male dominated, despite the constitution encouraging gender balance in various professions.

On level of education, the research findings indicate that 51.06% of the respondents had Master's degree, 44.68% had Bachelor's degree and 4.26% had Diploma. These findings showed that majority of the staff in construction companies and consulting engineering firms have Bachelor's degree and above as highest level of education and are therefore adequately qualified. This implies that the performance of constructed roads is expected to be of quality. On status in organisation, results show that 2.13% of the respondents were Managing Directors, 8.51% were Directors, 6.38% were Managers, 76.6% were Senior Staff, and 6.38% were Supervisors. Therefore, the vast majority of the respondents were Senior Staff and this implies that roads constructed by them are expected to perform.

On work experience, it was found that 14.89% of the respondents had 5-10 years' work experience, 19.15% had 11-15 years, 19.15% had 16-20 years, and 46.81% had above 20 years work experience. Therefore, the majority of the senior engineers in construction companies and consulting engineering firms had over 20 years work experience and this implies that the engineers are expected to utilise their long experience to construct roads that perform. On length of time the organization has been operating, the findings indicate that 17.02% of the organizations had operated for less than 10 years, 19.15% had operated for 10-20 years, and 63.83% had operated for above 20 years. Therefore, the majority of the organizations had operated for more than 20 years. This implies that they have accumulated years of experience in road construction projects and therefore they are expected to produce quality work output.

4.2. Likert-Type Data

In this study the following Likert Scale was used: 1=To a very little extent; 2=To a little extent; 3=To a moderate extent; 4=To a great extent; and 5=To a very great extent. The following scale was also used: 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; and 5=Strongly Agree. The following scoring was used: To a very little extent (VLE) 1.0<VLE<1.8; To a little extent (LE) 1.8<LE<2.6; To a moderate extent (ME) 2.6<ME<3.4; To a great extent (GE) 3.4<GE<4.2; and To a very great extent (VGE) 4.2<VGE<5.0. The following scoring was also used: Strongly Disagree (SD) 1<SD<1.8; Disagree (D) 1.8<D<2.6; Neutral (N) 2.6<N<3.4; Agree (A) 3.4<A<4.2; and Strongly Agree (SA) 4.2<SA<5.0. The mentioned scales give an equidistance of 0.8. The above scale was used successfully by Kinyanjui (2014).

4.3. Recruitment of Personnel and Performance of Road Construction Projects

Recruitment of personnel was measured by providing respondents with statements rated on a five point Likert scale ranging from: To a very little extent (VLE); To a little extent (LE); To a moderate extent (ME); To a great extent (GE); and to a very great extent (VGE) from which to choose. The findings are presented in Table 2.

Statements	VLE F (%)	LE F (%)	ME F (%)	GE F (%)	VGE F (%)	Mean	SDV	Total F (%)
a) Our company was able to find qualified and experienced workers.	2 (4.3)	3 (6.4)	16 (34.0)	11 (23.4)	15 (31.9)	3.72	1.12	47 (100)
b) Our company was able to match skilled workers to appropriate jobs.	2 (4.3)	3 (6.4)	6 (12.8)	21 (44.7)	15 (31.9)	3.94	1.05	47 (100)
c) Our company was able to retain talented workers.	3 (6.4)	11 (23.4)	11 (23.4)	15 (31.9)	7 (14.9)	3.26	1.17	47 (100)
Composite for Recruitment of Personnel	**3.64**	**0.89**						

Table 2: Recruitment of Personnel and Performance of Road Construction Projects

The research findings presented in Table 2 show that out of 47 respondents who participated in the study, 16(34.0%) of the respondents indicated that to a moderate extent their companies were able to find qualified and experienced workers, 21(44.7%) indicated that to a great extent their companies were able to match skilled workers to appropriate jobs,and 15(31.9%) indicated that to a great extent their companies were able to retain talented workers. The parameter that has the most influence in the performance of road construction projects is that the company was able to match skilled workers to appropriate jobs. In road construction projects, it is very important to match skilled workers to appropriate jobs in order to achieve high quality work.

The research findings show that to a great extent (M=3.72, SDV=1.12) companies were able to find qualified and experienced workers and also to a great extent (M=3.94, SDV=1.05) companies were able to match skilled workers to appropriate jobs. To a moderate extent (M=3.26, SDV=1.17) companies were able to retain talented workers. Overall, the surveyed companies to a great extent (M=3.64, SDV=0.89) managed to recruit personnel appropriately. The results imply that recruitment of personnel is very important in the performance of road construction projects since skilled workers deliver high quality work.

4.4. Training of Personnel and Performance of Road Construction Projects

Training of personnel was measured by providing respondents with statements rated on a five point Likert scale ranging from: To a very little extent (VLE); To a little extent (LE); To a moderate extent (ME); To a great extent (GE); and to a very great extent (VGE) from which to choose. The findings are presented in Table 3.

Statements	VLE F (%)	LE F (%)	ME F (%)	GE F (%)	VGE F (%)	Mean	SDV	Total F (%)
a) Our company offered on-the-job training to our workers.	4 (8.5)	7 (14.9)	23 (48.9)	12 (25.5)	1 (2.1)	2.98	0.92	47 (100)
b) Our company sponsored our workers to training institutions.	10 (21.3)	23 (48.9)	9 (19.1)	4 (8.5)	1 (2.1)	2.21	0.95	47 (100)
c) Our company assisted our workers in personal career development.	9 (19.1)	15 (31.9)	11 (23.4)	9 (19.1)	3 (6.4)	2.62	1.19	47 (100)
Composite for Training of Personnel	**2.60**	**0.80**						

Table 3: Training of Personnel and Performance of Road Construction Projects

The findings in Table 3 show that out of 47 respondents who took part in the study, 23(48.9%) of the respondents indicated that to a moderate extent their companies offered on-the-job training to their workers,23(48.9%) indicated that to a little extent their companies sponsored their workers to training institutions, and 15(31.9%) indicated that to a little extent their companies assisted their workers in personal career development, The parameter that has the most influence in the performance of road construction projects is that the company offered on-the-job training to its workers. In road construction projects, it is very important to offer on-the-job training to workers so as to enhance their skills which can be utilized to deliver high quality work.

The research findings show that to a moderate extent (M=2.98, SDV=0.92) companies offered on-the-job training to their workers and to a little extent (M=2.21, SDV=0.95) companies sponsored their workers to training institutions. To a moderate extent (M=2.62, SDV=1.19) companies assisted their workers in personal career development. Overall, the surveyed companies to a moderate extent (M=2.60, SDV=0.80) managed to train their personnel. The results imply that training of personnel is very important in the performance of road construction projects since skilled workers deliver high quality work.

4.5. Control of Personnel and Performance of Road Construction Projects

Control of personnel was measured by providing respondents with statements rated on a five point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.

Statements	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SDV	Total F (%)
a) Labour productivity was high in the project.	5 (10.6)	2 (4.3)	7 (14.9)	24 (51.1)	9 (19.1)	3.64	1.17	47 (100)
b) Labour absenteeism was high in the project.	12 (25.5)	17 (36.2)	16 (34.0)	2 (4.3)	0 (0)	2.17	0.87	47 (100)
Composite for Control of Personnel				**2.91**	**0.60**			

Table 4: Control of Personnel and Performance of Road Construction Projects

The findings presented in Table 4 show that 24(51.1%) of the respondents agreed that labour productivity was high in the project, and 17(36.2%) of the respondents disagreed that labour absenteeism was high in the project. The parameter that has more influence in the performance of road construction projects is that labour productivity was high in the project. In road construction projects, it is very important to ensure that labour productivity is high in order to complete the project on time.

The research findings show that respondents agreed (M=3.64, SDV=1.17) that labour productivity was high in their projects. They disagreed (M=2.17, SDV=0.87) that labour absenteeism was high in their projects. Overall, the surveyed companies were neutral (M=2.91, SDV=0.60) on the matter of control of personnel. The results imply that control of personnel is very important in the performance of road construction projects since high labour productivity results in delivering the project on time.

4.6. Outsourcing of Personnel and Performance of Road Construction Projects

Outsourcing of personnel was measured by providing respondents with statements rated on a five point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); and Strongly Agree (SA) from which to choose. The findings are presented in Table 5.

Statements	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SDV	Total F (%)
a) Labour subcontractors were employed in the project.	1 (2.1)	15 (31.9)	8 (17.0)	21 (44.7)	2 (4.3)	3.17	1.01	47 (100)
b) Personnel temporarily transferred from other companies were utilised in the project.	14 (29.8)	18 (38.3)	5 (10.6)	10 (21.3)	0 (0)	2.23	1.11	47 (100)
Composite for Outsourcing of Personnel	**2.700.78**							

Table 5: Outsourcing of Personnel and Performance of Road Construction Projects

The research findings in Table 5 show that out of 47 respondents who participated in the study, 21(44.7%) of the respondents agreed that labour subcontractors were employed in their projects, and 18(38.3%) disagreed that personnel temporarily transferred from other companies were utilized in the project. The parameter that has more influence in the performance of road construction projects is that labour subcontractors were employed in the project. In road construction projects, it is sometimes important to engage labour subcontractors who can effectively manage the productivity of their workers and eventually ensure that the project is completed on time.

The research findings show that respondents were neutral (M=3.17, SDV=1.01) on the matter of employment of labour subcontractors in their projects. They disagreed (M=2.23, SDV=1.11) that personnel temporarily transferred from other companies were utilized in their projects. Overall, the surveyed companies were neutral (M=2.70, SDV=0.78) on the matter of outsourcing of personnel. The results imply that outsourcing of personnel is very important in the performance of road construction projects since outsourcing can lead to high labour productivity which in turn leads to delivery of the project on time.

4.7. Overall Descriptive Analysis on Procurement of Labour

The overall findings on the extent to which organizations utilize procurement of labour are shown in Table 6.

Components of Procurement of Labour	n	Mean	SDV
a) Recruitment of Personnel.	47	3.64	0.89
b) Training of Personnel.	47	2.60	0.80
c) Control of Personnel.	47	2.91	0.60
d) Outsourcing of Personnel.	47	2.70	0.78
Overall Procurement of Labour		**2.96**	**0.45**

Table 6: Means and Standard Deviations for Procurement of Labour

The research findings in Table 6 show that the overall mean for procurement of labour was 2.96 and the standard deviation was 0.45. The most dominant indicator was recruitment of personnel (M=3.64, SDV=0.89), followed by control of personnel (M=2.91, SDV=0.60), outsourcing of personnel (M=2.70, SDV=0.78), training of personnel (M=2.60, SDV=0.80), in that order. This implies that recruitment of personnel is very important in performance of road construction projects and it ensures that the project delivers high quality work.

Results of interviews held with managing directors of construction companies and consulting engineering firms indicate that procurement of labour influences performance of road construction projects to a great extent.

4.8. Correlational Analysis of Procurement of Labour and Performance of Road Construction Projects

Correlational analysis using Pearson's Product Moment technique was done to determine the relationship between indicators of procurement of labour and performance of road construction projects. It was meant to identify the strength and direction of the association between the indicators of procurement of labour and performance of road construction projects. The results are summarized in Table 7.

		Recruitment of Personnel	Training of Personnel	Control of Personnel	Outsourcing of Personnel	Procurement of Labour
Performance of Road Construction Projects	Pearson Correlation	.317*	.175	-.357*	.435**	.305*
	Sig. (2-tailed)	.030	.240	.014	.002	.037
	N	47	47	47	47	47
***Correlation is significant at the 0.01 level (2-tailed)*						
**Correlation is significant at the 0.05 level (2-tailed)*						

Table 7: Correlation Matrix for Procurement of Labour and Performance of Road Construction Projects

The correlation results in Table 7 indicate significant coefficients between the indicators of procurement of labour and performance of road construction projects. Recruitment of personnel had a weak, positive and statistically significant relationship with performance of road construction projects (r=.317, p-value<0.05). Training of personnel had no statistically significant relationship with performance of road construction projects. Control of personnel had a weak, negative and statistically significant relationship with performance of road construction projects (r=-.357, p-value<0.05). Outsourcing of personnel had a moderate, positive and statistically significant relationship with performance of road construction projects (r=.435, p-value<0.01). Procurement of labour had a weak, positive and statistically significant relationship with performance of road construction projects (r=.305, p-value<0.05).

4.9. Inferential Analysis of Influence of Procurement of Labour on Performance of Road Construction Projects

The following hypothesis was tested using simple regression model to satisfy the objective.

- H_0: There is no significant relationship between procurement of labour and performance of road construction projects.
- H_1: There is a significant relationship between procurement of labour and performance of road construction projects.

The null hypothesis was tested using the following linear regression model:

$y = a + b_1X_1 + e$

Where:

y – Performance of Road Construction Projects

a – Constant Term

b_1– Regression Coefficient

X_1 – Procurement of Labour

e – Error Term

The results are presented in Table 8.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.519	.364		6.926	.000
	RecruitPersonTotal	.125	.062	.267	2.004	.052
	TrainPersonTotal	.043	.068	.082	.628	.533
	ControlPersonTotal	-.254	.085	-.365	-2.997	.005
	OutsourcPersonTotal	.197	.066	.370	3.009	.004
Predictors: (Constant), Recruitment of Personnel, Training of Personnel, Control of Personnel, Outsourcing of Personnel						
Dependent Variable: Performance of Road Construction Projects						

Table 8: Regression Results for Influence of Procurement of Labour on Performance of Road Construction Projects

R = .625
R Square = .390
F (4,42) = 6.719 at level of significance p=0.000<0.05

The study findings in Table 8 show that r is equal to 0.625, indicating that procurement of labour has a strong influence on performance of road construction projects. The value of R squared is 0.390, indicating that procurement of labour explains 39.0% of the variation in the performance of road construction projects. The Beta (β) coefficients for the indicators are as follows: recruitment of personnel is 0.267; training of personnel is 0.082; control of personnel is -0.365; and outsourcing of personnel is 0.370. The β values imply that one-unit change in performance of road construction projects is associated with 26.7% change in recruitment of personnel, 8.2% change in training of personnel, 36.5% change in control of personnel, and 37.0% change in outsourcing of personnel. The results indicate that recruitment of personnel had no statistically significant influence on the performance of road construction projects (β=-0.267, t=2.004, p=0.052>0.05). Training of personnel had no statistically significant influence on the performance of road construction projects (β=-0.082, t=0.628, p=0.533>0.05). Control of personnel had a statistically significant influence on the performance of road construction projects (β=-0.365, t=-2.997, p=0.005<0.05). Outsourcing of personnel had a statistically significant influence on the performance of road construction projects (β=-0.370, t=3.009, p=0.004<0.05).

The overall F-statistic was (4,42) =6.719 with p=0.000<0.05 suggesting that there was a statistically significant relationship between procurement of labour and performance of road construction projects. Based on the research findings, we reject the null hypothesis which stated that there is no significant relationship between procurement of labour and performance of road construction projects and conclude that procurement of labour has a statistically significant influence on the performance of road construction projects.

Using the statistical findings, the regression model can be substituted as follows:

$y = 2.519 + 0.267R + 0.082T – 0.365C + 0.370S$

Where y – Performance of Road Construction Projects

R – Recruitment of Personnel
T – Training of Personnel
C – Control of Personnel
S – Outsourcing of Personnel

5. Conclusion and Recommendations

This section presents the conclusions made in the study in the context of the findings. The conclusions are made in line with the objective and hypothesis. The research objective was to ascertain the extent to which procurement of labour influences performance of road construction projects in Kenya. The indicators for procurement of labour were recruiting of personnel, training of personnel, control of personnel, and outsourcing of personnel. The most dominant indicator was recruitment of personnel, followed by control of personnel, outsourcing of personnel, training of personnel, in that order. The results indicate that recruitment of personnel had no statistically significant influence on the performance of road construction projects. Training of personnel had no statistically significant influence on the performance of road construction projects. Control of personnel had a statistically significant influence on the performance of road construction projects. Outsourcing of personnel had a statistically significant influence on the performance of road construction projects. Overall, there was a statistically significant relationship between procurement of labour and performance of road construction projects.

This study has revealed that outsourcing of personnel has an influence on the performance of road construction projects. Since personnel can also be outsourced from outside the Kenyan borders, it is recommended that the government relaxes the stringent work permit laws particularly on foreign workers who are technically qualified. This study has also revealed that there is a statistically significant relationship between procurement of labour and performance of road construction projects. It is recommended that organizations that deal with road construction should have appropriate policies regarding procurement of labour so as to enhance performance of road construction projects.

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