

A Study on the Performance Improvement Measures for Contractors in Kenya

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Abstract: *The performance of contractors in the construction industry in Kenya as in many other parts of the world has been faulted and blamed as one of the reasons as to why they fail to secure major construction projects in the country. This has led to a number of studies aimed at finding out the factors affecting the performance of contractors in the various construction industries of the world, with the aim of finding ways of improving on it. This study therefore sought to find out the performance improvement measures that are specific to the construction industry in Kenya and that can be adopted in a bid to improve on the performance of contractors in the country. The study employed the qualitative strategy as well as the cross-sectional research design. Qualitative data was collected through the use of structured questionnaires with an open ended question which were administered to local contractors of category NCA 1, 2 and 3. The contractors were sampled using the stratified random sampling and the systematic random sampling techniques. The method used for data analysis was thematic analysis. Four themes stood out as measures that can be adopted to improve on the performance of contractors in the country. These were: financial, managerial, technical and external measures.*

Keywords: *Performance improvement measures, Construction industry, Contractors performance*

I. INTRODUCTION

The performance of contractors is very critical as it is a measure of their competitiveness. Despite this fact, in most construction industries in the world, the performance of contractors has been rated as poor. This is evidenced by the many studies done on the factors affecting the performance of contractors. On the other hand, studies to find ways of improving the performance have been done so as to come up with measures that can be utilized by participants in the industry to curb the problem of poor performance in various industries of the world. This paper therefore seeks to give performance improvement measures that are specific to the construction industry in Kenya.

II. PERFORMANCE IMPROVEMENT MEASURES

This section gives the findings from the literature review on the measures that can be used to improve on the performance of contractors. It has been divided into thirteen sections with each section representing measures that can be adopted for each specific performance indicator.

2.1. Cost Performance Improvement Measures

One fundamental condition to be fulfilled for a project to be considered successful is the completion within the allocated budget. But as found out in various studies,

Most construction projects undergo cost overruns. This has led to a number of studies in an effort to try and come up with measures of improving on the cost performance. For instance, Aftab, Ismail, and Ade, (2012), give the following measures: effective strategic planning, proper project planning and scheduling, effective site management and supervision, frequent progress meetings, proper emphasis on past experience of contractors when awarding contracts, use of experienced subcontractors and suppliers, use of appropriate construction methods, use up to date technology utilization, clear information and communication channels, frequent coordination between the parties, performing a preconstruction planning of project tasks and resources needs, developing human resources in the construction industry, comprehensive contract administration, systematic control mechanism, improving contract award procedure by giving less weight to prices and more weight to the capabilities and past performance of contractors

2.2. Time Performance Improvement Measures

In order to achieve success in any construction project, one of the fundamental conditions is that the project should be finished within the contracted duration. In the past few decades, many researchers have conducted studies to find out ways of improving the time performance of construction projects. For example, Tumi, Omran, and Pakir, (2009), found out that, proper planning and proper payments from the client are the basic improving measures to avoid time overrun. Gunduz and Hanna (2005) suggested that as a way of improving on contractor's time performance, contractors who lack sufficient expertise should not be rewarded any project. Aftab et al., (2012) also, cited that contractors should pay more attention to prepare effective planning and scheduling if their performance is to improve. Besides that, he stated that, regular site meetings between all functional groups are helpful in understanding the construction problems at early stage so as to enable the management to suggest a change in construction method or use different technology so as to improve the time performance. Abdul-Rahman et al., (2006) in his study also identified the improvement methods to mitigate and also recover the time overrun as being dependent on the type of the problem/s that cause the delay of the project. Other writers for instance, Rahman, Memon, A., Ade, and Abdullah, (2012), Enshassi, Al-Najjar, and Kumaraswamy, (2009) and Tumi et al., (2009) give the following measures for improving on the performance of contractors: proper planning of work, committed leadership and management, close monitoring, effective communication, hiring of skilled workers to achieve good progress, avoid poor quality of work,

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more rectification and double handling, focusing on the quality, cost and delivery of the project, training and development of

All participant to support delivery process, use of new construction technologies and fully utilization of the construction team.

2.3. Quality Performance Improvement Measures

Quality is the other pillar in the iron triangle of performance measurement indicators. As indicated in various studies, most construction projects fail to meet the quality requirement of the project. This intern has led to various studies to be conducted so as to verify ways of improving the quality of construction works. For example a study conducted by Agbenyega, (2014) in Ghana revealed the following quality improvement methods: management commitment, communication between managers and employees, employee involvement, detailed and logical work program, regular inspection and audit of quality report, training and education of team members, well-defined roles and responsibilities of project participants, clearly defined goals and objectives, incentives for good performance, subcontractors involvement in the quality process and regular meetings of project participants.

2.4. Productivity Performance Improvement Measures

In the construction industry of developing countries, productivity loss is one of the greatest and severe problems arising from lack of documented data for estimating, scheduling and control of the project (Gwaya, Masu and Githae, 2014). In Kenya, there is an abundant supply of semi-skilled and unskilled labor which needs to be engaged so as to promote the creation of employment (KNBS, 2012). Therefore, in order to engage all this labour, it is very important that measures of improving labour productivity be looked for and then implemented.

The review of literature identified various measures of improving the construction labour productivity. For instance, Makulsawatudom and Emsley, (2002) gave the following measures of improving productivity which are: ensuring the availability of materials, provision of complete drawings, inspection to be done in good time, employment of competent supervisors, improving on instruction time, ensuring the availability of tools and equipment, improving on communication, improving on site conditions, avoidance of rework, training of workers, specialization, outsourcing and incentives to labourers.

2.5. Client Satisfaction Performance Improvement Measures

Client satisfaction in the construction industry can be defined as how well a contractor meets the client's expectations. Client's expectations and perceived service quality are the functions of his/her satisfaction. Therefore, in order to improve the clients' satisfaction, the contractor should improve on the quality of the work and meet customer's expectations.

2.6. Profitability Performance Improvement Measures

Profitability is an important success measure in construction projects though; many contractors fail to maximize profitability because they do not properly implement good

management practices (Lee, Cooper and Aouad, 2001). Therefore, in order to improve on the profitability performance of contractors, various methods have been identified from various studies. These methods are: estimating for profit, managing job production for profit, analyse for profit, effective communication and hiring of professional office staff (Leslie, 2013).

2.7. Project Participants' Satisfaction Performance Improvement Measures

Munns and Bjeirmi (1996) consider a project to be successful if it has achieved the specified objectives, which involve a series of activities and tasks that consume resources. Project success means different things to different project participants. This is because the project participants for this case, owners, designers, consultants, contractors, sub-contractors, suppliers, the community and other stakeholders have their own project objectives and criteria for measuring success. For example, architects may view aesthetics or functionality as the main criterion rather than building cost. However, the client may have different views such as time and cost adherence by contractors as well as quality workmanship. Contractors may view profitability as a success on their part where as the community may value job creation by the project as satisfying to them (Parrif and Sanvido, 1993). Therefore, in order to improve on the project participants' satisfaction various objectives of the various participants should be met by the contractors.

2.8. Community Satisfaction Performance Improvement Measures

In order to understand the methods of improving community satisfaction, it is important to first of all understand the construction activities factors that influence on community satisfaction. First, any construction project being undertaken in a particular community will have both positive and negative influences on the community satisfaction. For instance on the positive side, the construction activities will lead to job creation to the people, it will increase on the built environment and many other contributions. One way for improving on the community satisfaction will therefore be to work in such a way that the positive impacts of the construction activities are more than the negative ones. Secondly, in order to improve on the community satisfaction, construction firms must participate in community needs through what is known as social corporate responsibility. These responsibilities may be the provision of scholarships, environmental cleaning, job creation to the residents among others (Richey, 2012).

2.9. Sustainability Performance Improvement Measures

Sustainability performance of an individual construction project across its life cycle is an indispensable aspect in attaining the goal of sustainable development (Shen et al., 2006). Reports by the World Commission on Environment and Development have defined sustainable development as meeting the basic needs of the public and satisfying their aspirations for a better life without compromising the ability of future generations.

Emphasis of this definition is placed on the balance among social development, economic development, and environmental sustainability. By adopting this conception therefore, the impacts of construction.

Activities on sustainable development can be considered in three main aspects: social, economic, and environmental (Shen, Li Hao, Tam, and Yao, 2007).

Since the promotion of sustainable building practices is to pursue a balance among economic, social, and environmental performance in implementing construction projects, in order for the contractor to improve on the sustainability of the development, all the three sustainability issues must be met (Akadiri, Chinyio, and Olomolaiye, 2012). Therefore, the following methods may be applied so as to improve on the sustainability of the development: reducing and recovering construction waste, reuse and recycling, the storage and disposal of construction waste, specify durable materials, specify natural and local materials and government engagement (Esin and Cosgun, 2007).

2.10. Health and Safety Performance Improvement Measures

Review of literature has pin-pointed six major factors that are relevant to the governance and health and safety of sites. They are; management activities, incentives, process, policy, personnel, technical and process related factors.

Management Activities: Fang, Xie, Huang, and Li (2004) suggested five valid safety management activities. They are: safety inspection, safety meeting, safety regulation enforcement, safety education and safety communication.

Incentives: This factor is one of the determinants that motivate workers to behave in a desired manner to safety regulations on site. It can be viewed a psychological approach that rewards workers for their adhered routine on site (Chan, Scott, and Chan, 2004). Teo, Ling, and Chong (2005) suggested that incentives programs consist of three main elements such as monetary, non-monetary and disciplinary action.

Therefore, a reward system that utilizes money, coupled with non-monetary incentives in the form of holidays, recognitions, promotions can encourage workers to monitor their own safety behavior thus an improvement in health and safety performance.

Disciplinary action on the other hand is a form of punishment to the personnel who violates established sets of safety rules and regulations on site. It can take the form of hefty fines and compounds for violators. Combination of reward and punishment can be regarded as a strategy that inculcates safe behaviours among workers on site (Tepper et al., 2009).

Policy factors: Safety policy is an illustration of the organization's expression in prioritizing safety in workplace (Törner and Pousette, 2009). It is the duty of the employer to formulate safety policies to be followed by his employees in workplace. Notably, having high characteristics standard policies will harness positive management attitudes, formal conditions, collective values and individual attitudes that will foster better safety performance (Törner and Pousette, 2009).

Personnel factors: Personnel factors are factors related to any issues concerning human aspects in the workplace that

impact on the performance of the projects. Teo et al., (2005) suggested that personnel factors consist of both management attitude towards safety, and supervisors and workers attitude towards safety. For instance, direct support and involvement in safety by management is a sign of management positive attitude towards safety (Ng, Cheng, and Skitmore, 2005). Similarly, a high safety attitude among supervisors will yield a positive safety culture on site.

Technical Factors: Technical aspects comprises layout of work, equipment, degree of automation, design of work environment, maintenance and also safety related systems such as risk control systems, personal protective equipment and emergency control system (Sgourou, Katsakiori, Goutsos, and Manatakis, 2010).

Process Factors: Process factors can be defined as the way of doing a particular task in the effort to achieve objective, goals or producing final product. The focal point in process factor is the effectiveness of control measure towards personnel due to the vast variation of construction activities (Teo et al., 2005).

2.11. Communication Performance Improvement Measures

The construction industry is wholly reliant upon effective communication between individuals, teams and organisations. Being a project-based industry, interaction tends to be characterised by unfamiliar groups of people coming together for short periods before disbanding to work on other endeavours. This temporal dimension complicates an already problematic communication environment in which technical language, an adversarial culture and noise/distraction all combine to prevent straightforward information flow from one party to the other (Dainty et al., 2006). Therefore, for improvement of communication, (Shen et al., 2006) developed a concept model for communication improvement on construction projects which entails the following aspects: human aspects of communication, information quality, technical aspects of information management, information sender's capacity and preparation, information receivers' attention and the organisation structure.

2.12. Environmental Protection Performance Improvement Measures

From the previous researches, it is evident that the impacts from construction activities on the environment are considerable and in multiple ways (Hua, 2003). Though protection of the environment had been given a low priority for many years, in recent years several research works on environment protection have been conducted and from these researches the development of various management systems and methods formulated to aid in the improvement of environmental protection performance. For example, ISO 14000 was developed as an international standard for promoting environmental protection across industries (Shen and Tam, 2002).

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This system though, is faced with a limitation on the proper measurement of the contractor's real environmental performance (Shen and Zhang, 1999). This limitation has therefore led to the development of other systems of promoting environmental management. For instance, the Building Research Establishment Environmental Assessment Method (BREEAM) which was launched in UK. This system is designed to provide authoritative guidance on ways of minimizing the adverse effects of building process and building products on the environment (Roger, 1998).

Other environmental management schemes developed are: The Green Building Tool (GBTool), Leadership in Energy and Environmental Design (LEED) and Sustainable Building Assessment Tool (SBAT). GBTool is used to assess the environmental performance of commercial, residential and school buildings. The LEED allows for comprehensive assessment of building environmental performance by adopting a life-cycle approach. The SBAT assists in assessing the sustainable development, namely, social, economic and environmental aspects of a development (Hua et al, 2003).

All the above systems have contributed significantly to promoting environment protection in construction activities (Shen and Tam, 2002).

2.13. Functionality Performance Improvement Measures

Functionality of the development is an important factor to the performance of any construction project (Gamba, 2016). Therefore, in order to improve on the functionality of the development, the contractor must deal with the negative factors influencing functionality so as to create competitiveness among contractors. For tangible improvements in quality and technical performance of projects, the practice of incentives/disincentives contract to check out the quality failures of construction projects can be utilised. The condition of contract should also incorporate penalty clauses against non-adherence to specification, remedial works related to poor functionality and, as well incentivizing excellent functionality performance.

III. RESEARCH METHODOLOGY

This research employed the qualitative research strategy as well as the cross-sectional research design. The sample size was comprised of 80 contractors which were broken down as follows: NCA 1-26, NCA 2-22 and NCA 3-32. Stratified random sampling as well as systematic random sampling techniques was used to sample these contractors. Structured questionnaires with an open ended question were administered to these local contractors seeking to find out the ways of improving the performance of contractors. Out of the 80 questionnaires distributed, 56 were returned representing a 70% response rate. Data collected was analyzed using the thematic analysis method.

IV. ANALYSIS AND RESULTS

4.1. Respondents Response Rate

Out of the 80 questionnaires distributed, only 56 were returned giving a 70% response rate as indicated in the table 4.1.

Table 4.1-Response Rate

Respondents	Questionnaires Distributed	Questionnaires Returned	% of Response
Contractors	80	56	70%
TOTAL	80	56	70%

4.2. Results and Discussion on The Performance Improvement Measures

Thematic analysis was carried out on the open ended question in the questionnaire which sought the information on ways of improving the performance of contractors in Kenya. From the analysis of the data, the following themes emerged as improvement measures that can be adopted in the construction industry in Kenya.

4.2.1. Financial Measures

In the study of factors influencing the performance of contractors in Kenya, it was found out that financial constraints had the major negative influence on the performance of contractors in the country. Therefore, 90% of the respondents argued that if contractors' and clients' financial issues were dealt with, the performance of the contractors would improve drastically. Some of the ways of dealing with these financial constraints as obtained from the respondents were as follows:

a) Having Alternative Sources of Money by the Contractors-Most respondents felt that, due to the rise in the cost of financing in terms of high interest rates, contractors needed to find other sources of money instead of relying solely on banks and other money lending financial institutions.

b) Lowering of the cost of performance bonds, insurance and advance payments guarantees-Respondents felt that these project requirements were too high and were taking up most of their money that could be used to finance the project. Therefore they suggested that if these requirements could be lowered from the current average of 10% to about 1% this could enable them remain with more money to finance their projects thus lowering on their financial constraints.

c) Low interest rates on loans-Respondents suggested that interest rates on borrowed capital from banks and other institutions should be lowered so as enable them access cheap capital and thus also reduce on their financial challenges.

d) Prompt payments by the clients-The issue of delayed payments by the clients is ranked high as a factor influencing on the performance of contractors negatively. Thereby, respondents suggested that if clients would pay the contractors in good time, this would ease on their difficulties and thus they would be able to run smoothly with their work.

e) Introduction of advance payments to contractors-Most of the respondents suggested that if a certain percentage of the construction cost could be advanced to them before the commencement of work, this would serve as a great financial boost to them and will also contribute to the improvement of their performance.

f) Scaling down of VAT, giving its exemption on some materials and plant and equipment as well as hastening the tax refunds. All these measures were suggested by the respondents as important as they could contribute to the improvement of the financial capability of the contractor thus lead to improvement on their performance.

g) Proper financial management by the contractors-Most respondents attributed the poor performance of contractors To poor financial management skills thus in order for the contractors to improve on their performance, they need to be trained on proper financial management skill so that they are able to manage their finances well.

h) Formation of cooperatives by contractors-Most respondents suggested the formation of cooperatives by contractors so as to enable them access finances at lower interest rates and thereby improve on their performance.

i) Proper financial allocation by the clients-Studies have revealed that some clients start on a project without sufficient money to complete it. This leads to financial challenges such as delayed payments to contractors thus affecting on the positive performance by the contractors. Thereby clients need to have sufficient funds before they start a project.

4.2.2. Managerial Measures

Another factor that negatively influence on the performance of contractors as found out in previous studies is the managerial factors. Respondents in this study indicated that poor management practices affected their performance negatively. Some of the measures to be followed so as to improve on the performance of contractors from the managerial point of view as indicated by the respondents in this study are as follows:

a) Having proper organization structure by the contractors' firms-Most contractors do not have an elaborate and proper organization structure. Having an organization structure by the contractors was thereby cited as a way of improving on the performance of contractors by the respondents. This is because, construction being an industry in which many participants are involved in one project, the relationship and hierarchy of all these participants is necessary so that harmony may exist in carrying out of the project. The organization structure would also help in solving disputes that may exist thus contribute to the improvement of contractors performance.

b) Teamwork by all the participants-Most respondents suggested that all the project participants should work closely as a team in order to enhance on their performance.

c) Training on proper planning and scheduling-Planning is very crucial for any project to succeed. Thereby, respondents indicated that contractors did not perform very well due to poor planning and scheduling. For this reason, they suggested that contractors should be trained on how to use project planning tools so as to enable them improve on their performance.

d) Improve on communication amongst the project participants-The respondents indicated that communication amongst the projects should be improved if the contractors are to perform well.

e) Proper employee motivation and training by the contractors-Employees are very crucial for any construction project to perform. It has been found out that most contractors do not motivate their employees properly leading to low productivity. As a measure of enhancing on the performance of contractors, respondents indicated that contractors in Kenya should find out ways of motivating their employees as this will consequently lead to an improvement in their performance.

f) Training of contractors-Studies has found out that most contractors in the construction industry are not trained in the related discipline. This has made the industry to be infiltrated by quacks that end up performing poorly leading to a poor reputation of contractors in Kenya. Training of contractors was suggested by the respondents as one way in which contractors can be assisted in improving of their performance. This training as suggested may be done by relevant bodies such as the NCA, colleges and other technical institutions as well as through the contractor bodies. The training that respondents identified as the most crucial to the contractors is the training on managerial as well as financial skills as these were the main problem areas for contractors.

g) Improved site management and supervision by the contractors-Site management and supervision of works are very crucial to the overall performance of contractors. Studies have revealed that poor site management and supervision by some contractors has negatively impacted on their performance and thus these should be dealt with if the performance of contractors is to improve.

h) Proper safety regulation enforcement by contractors-Health and safety in construction projects is mainly measured by the number of accidents that occurred during the construction period. A contractor is considered to have performed well if there were few or no accidents at all in the project. Therefore, the respondents cited that formulation of safety policies by the contractors, holding regular site safety inspection as well as safety meetings by the contractors as necessary to improve on the performance of contractors in the country.

i) Put in place measures to solve conflicts faster-Construction projects do involve many participants and at times conflicts are bound to occur. These conflicts can slow down the progress of work thus impacting negatively on the performance of contractors. Therefore, in order to improve on the performance of contractors, measures to solve conflicts faster once they occur should be devised and used by the contractor.

4.2.3. Technical Measures

Studies have shown that shortcomings by the contractors in terms of technical capability are key contributor to their poor performance. The following measures were therefore identified by the respondents as ways of improving on the performance of contractors as far as their technical capability is concerned.

a) Facilitate cheap acquisition of plant and equipment-

Most respondents indicated their shortage of plant and equipment as a factor that negatively influenced on their performance. They therefore suggested if the government can facilitate cheap acquisition of plant and equipment, through exemptions of VAT on imports of these plants and equipment, more contractors will be able to afford these equipment and thus improve on their performance.

b) Use of up-to-date technology-Construction industry in Kenya, as found out in the study on factors influencing the performance of contractors, is still too traditional. This means that, the rate of adoption of new technology by the

Participant is too low. New technology enhances the performance of contractors and thus respondents felt that, for contractors in Kenya to perform well, they need to embrace new technology.

c) Increased skilled labour production-Studies have revealed that there is a shortage in skilled labourers in the country. Thereby, respondents suggested that technical institutions should produce more and more skilled labourers so as to fill the gap and thus aid in the improvement of the contractors.

4.2.4. External Measures

Apart from issues emanating from the contractors, this study has revealed other external factors such as contractor organizations, statutory bodies and the government as also having a role to play in the improvement of the performance of contractors. The following suggestions were given as ways of improving the performance of contractors.

a) Speeding up of application approvals for upgrading by the NCA.

b) Contractors bodies to engage with the contractors more regularly.

c) Contractors' bodies to arrange more financing for contractors and most especially for the government funded projects which experience delayed payments more often.

d) NCA together with the contractors bodies to regulate the persons entering the business to ensure that they meet certain standards.

e) NCA to re-evaluate the contractors' performance and to vary the category as it is necessary.

f) Disciplining and de-registering those contractors that are rogue and not awarding tenders to those that fail to deliver.

g) Reduction in the number of regulators to a one stop shop.

h) Reduction in the number of licences and approvals.

i) Reduction in the number of levies charged and their cost.

j) Strict measures in regulations and inspection to rid the industry of quacks.

k) Tighten policies when it comes to approval and inspection of building materials and most especially the imported ones.

l) Political interference on construction projects to be done away with.

m) Strict measures to be put in place to curb any unethical practices in the construction industry.

V. CONCLUSION

Contractors in Kenya need to fully embrace the financial, managerial, technical and external measures recommended in this study if they are to improve in their performance.

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