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ASSESSMENT OF CONTRACT ADMINISTRATION PERFORMANCE IN ETHIOPIAN ROAD SECTOR

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Abstract— The underperformance of road construction projects in Ethiopia has led to time delays, budget overruns, substandard quality, and dissatisfaction of stakeholders, among other issues. It was largely believed that they were caused by poor contractor's performance. Each construction project party can be the cause of these performance issues. Contract administration performance of the client or the consultant significantly affect the success of the project. The objective of this study was to assess the performance of Ethiopian Roads Sector (ERS) contract administration (CA). A five-point Likert scale based questionnaire was prepared to gather the opinions of clients

Measure, Relative importance Index, Road Contracts

(ERS CA), contractors and consultants. Depending on a non-probability sampling technique, 87 respondents were considered for the study. Cronbach's alpha (α), which is the measure of reliability of collected data, was 0.98. It indicated that the values were internally consistent and highly reliable. Relative importance index (RII) and ranking were conducted for 21 major performance indicator groups. The results indicated that the performance of ERS CA in performance monitoring and reporting management, project governance and start-up, as well as regularity of field visit were highly important performance indicators (RII ≥ 0.8) ranked 1 to 3 consecutively. The least performance indicators were ERS CA team were free from corruption, contract risk management, and timely solving of row, quarry site and camp land problems (0.6 ≤RII<0.8) ranked 19 to 21 consecutively. It was concluded that ERS CA performance was acceptable and very satisfactory at 85.71%.

I. Introduction

Road is the dominant mode of freight and passenger transport in Ethiopia and thus plays a vital role in supporting accelerated and sustained growth of the country's economy [1]. In the case of ERS, there was lack of integrated and modernized flow of the core work processes. The implementing capacity of local contractors and consultants in project management resulted in inferior design and poor construction works. Besides, incapable and non-ethical professionals aggravated the problem and contributed to cost

and time overrun of projects as well as substandard quality work [2].

Construction is the process of carrying out the task as specified in the contract. A project's overall development typically involves multiple phases that call for a wide range of specialist services [3-5]. The actions required to carry out and assess whether the parties to the construction contract have fulfilled the terms of the agreement is referred to as construction contract administration (CCA). It should be in line with the contract's value, risk, and complexity [3, 6].

The CA oversees enforcing the conditions of the parties' construction contract. In certain situations, the CA will function as the employer's agent; in other situations, however, they must make unbiased decisions. The obvious contradiction of this 'dual' role can give rise to difficult issues [7-8]. One essential component for the successful delivery of the project is contract administration. Inadequate completion of related responsibilities and procedures could result in disagreements between the parties to the contract. In addition to the contractor's inefficiency to handle the project, the contract administrator can be the reason for poor site management and supervision, schedule delay in payments progress, poor communication and financial difficulties, adversarial relationship between parties, poor quality workmanship [9-12].

In the construction industry, particularly in developing countries, the application of Performance Measurement Systems [PMS] has been given minimal attention, despite being one of the most important factors for assessment of project success [10].

Critical success factors in contract administration and management are work force processes, relationships, leadership, policies and requirements [9]. The level of construction project management practice in Ethiopia in terms of adapting general project management procedures, project management

functions, tools and techniques was unsatisfactory. There was very little effort applied in the areas of safety, risk, and time management [13]. CA is a very critical issue in Ethiopian road sector because there is rapid increment of construction and maintenance projects, weak capacity in contract oversight and supervision, poor contract management, disputes and legal challenges as well as corruption and lack of transparency [14-18].

A. Problem Statement

Construction of roads is complex in its nature due to the involvement of many construction parties such as owner or client, consultant, contractors, insurance companies, regional government among others. The performance of road construction contractors in Ethiopia was poor, and this resulted in time overrun, cost overrun and poor quality of roads. The efforts of all construction parties are to make sure that the projects are performed with desirable quality, time and cost. One of the major factors that affect contractors' performance is the clients' performance in administering the contract.

In most of the literatures reviewed, time overrun, cost overrun and poor quality of the road project were the attributes of contractor's performance. They ignore the responsibilities of clients and consultants in administering the project. The contribution of clients and consultants towards the success of a project is significant. In this research the performances of ERS contract administration were investigated.

B. Research Objectives

The objective of the study was to evaluate the performances of ERS contract administration and examine the status of contract administration in ERS against performance indicators.

II. Research Methodology

This study evaluated contract administration performance of Ethiopian Road Sector (ERS). Quantitative methodology was used. Based on purposive sampling method, 87 employees whose from ERS (61),

contractor (17) and consultant firms (9) were selected. Primary data was collected using close-ended questionnaires. The questionnaires were collected and analyzed by using Statistical Package for Social Science (SPSS). Table 1 shows the performance indicators used in this study.

A five-point Likert scale, which ranges from one (strongly disagree) to five (strongly agree), was applied to gather respondents' opinion. Relative Importance Index (RII) was used to compute and rank the performance indicators based on the Likert scale responses.

Table 1: Performance Indicators

Group	Performance Indicator
1	Project Governance and Start-Up
2	Contract Administration Team Management
3	Communication and Relationship Management
4	Quality and Acceptance Management
5	Performance Monitoring and Reporting Management
6	Document and Records Management
7	Financial and Payment Management
8	Changes and Changes Control Management
9	Claims and Disputes Resolution Management
10	Contract Risk Management
11	Contract Close-Out Management
12	Possession of well trained and experienced human resource
13	ERS insured value for money in terms of Time
14	ERS insured value for money in terms of Quality
15	Contract administration team is free from corruption
16	Resistance of Influence of contractors and consultants
17	Timely management of grievance from societies
18	Systematic approach to handle the task
19	Regularity of field visits
20	Organized decision-making system
21	Timely solving of ROW, quarry site, camp land problems

III. Data Analysis

The Relative Importance Index (RII) as given in Equation (1) was used to prioritize the performance indicators in this study.

$$RII = \frac{\sum Wx\ X}{AxN} \quad (1)$$

where:
W = weight given to each response
X = frequency of each response
A = highest weight (5 in this case)
N = total number of respondents (87 in this case)

IV. Results and Discussion

A. Cronbach's Alpha Reliability Coefficients

Performance of contract administration for ERS were evaluated through Cronbach's alpha reliability. There was high internal consistency for the data set in which Cronbach's alpha is more than 0.7 [19]. Table 2 shows the level of reliability based on Cronbach's alpha value.

Table 2: Reliability Table

Reliability Statistics	
Cronbach's Alpha	Number of Respondents
0.98	87

B. Relative Importance Index

After the RII values were computed, the performance indicators were ranked accordingly, as presented in Table 3. On the other hand, to decide on the overall performance of ERS CA, this research used the criteria stated in Table 4.

Table 3: Performance Indicators and Their Ranking

Performance Indicator	Median	RII	Rank
G5-Performance Monitoring and Reporting Management	4.44	0.850	1
G1-Project Governance and Start-Up	4.18	0.797	2
G19-Regularity of Field Visits	4.12	0.795	3
G4-Quality and Acceptance Management	4.21	0.790	4
G3-Communication and Relationship Management	3.95	0.760	5
G7-Financial and Payment Management	3.93	0.750	6

G2-Contract Administration Team Management	3.74	0.740	7
G6-Document and Record Management	3.93	0.740	7
G9-Claims and Disputes Resolution Management	3.75	0.730	9
G11-Contract Close-Out Management	3.85	0.730	9
G20-Organized Decision-Making System	3.72	0.726	11
G12- Possession of well Trained and Experienced Human Resource	3.7	0.722	12
G14- ERS Insured Value for Money in Terms of Quality	3.65	0.713	13
G13- ERS Insured Value for Money in Terms of Time	3.55	0.692	14
G18-Systematic Approach to Handle the Task	3.59	0.692	14
G16-Resist Influence of Contractors and Consultants	3.5	0.683	16
G-8changes and Changes Control Management	3.51	0.680	17
G17-Timely Management of grievances from Societies	3.47	0.676	18
G15-Contract Administration Team is Free from Corruption	3.37	0.657	19
G10-Contract Risk Management	3.37	0.650	20
G21-Timely Solving of Row, Quarry Site, Camp Land Problems	3.24	0.632	21

Table 4: Performance Criteria

Verbal Interpretation [20]	Verbal Interpretation [21]	Arbitrary Value	Range Value	Variables Number	Percentage /21 Variable
Highly Acceptable	Excellent	5	4.5-5	Na	Na
Acceptable	Very Satisfactory	4	3.5-4.49	18	85.71%
Moderately Acceptable	Satisfactory	3	2.5-3.49	3	14.29%

Fairly Acceptable	Fair	2	1.5-2.49	Na	Na
Not Acceptable	Poor	1	1-1.49	Na	Na

The internal consistency reliability of the data was excellent, with a Cronbach's alpha value of 0.98. It indicated the reliability of the responses for further analysis. Based on the computed RIIs, the performance indicator G5 (Performance Monitoring and Reporting Management) was ranked as number 1 with a high RII ranging from 0.8 to 1 (i.e. $0.8 \leq RII \leq 1$).

Next were the following performance indicators ranked in order of their RIIs from number 2 to number 21 (i.e. $0.6 \leq RII \leq 0.8$): G2, G19, G4, G3, G7, G6, G2, G11, G20, G12, G14, G13, G18, G16, G8, G17, G15, G9, G10, G21. The result indicated that ERS CA had poor performance in controlling the influence of contractor and consultants on CA operation, solving delay in change management, handling and satisfying of stakeholders and solving of ROW, quarry site, camp land problems. The performance ERS CA was at the acceptable and very satisfactory level (85.71%). The remaining 14.29% of the ERS CA performance was at the moderately acceptable and satisfactory level.

V. Conclusion

This study was carried out to evaluate the effectiveness of contract administration (CA) within the Ethiopian roads sector (ERS). The performance of ERS CA was mostly acceptable and very satisfactory in most of the performance indicators. ERS performed well in project startup, monitoring and field visits, as well as quality management. ERS CA needs improvement in timely solving of Right of way problems, stakeholder satisfaction, reduction of corruption and reduction of influence of contractors and consultants.

It was recommended that the survey respondent should be increased and distributed

proportionally among the construction parties to reduce skewness and increase reliability of the results. ERS CA should timely solve of ROW, quarry site, camp land problems; reduce and control corruption; timely manage grievances from societies; proactively handle and manage changes and resist influence of contractors and consultants in CA operations.

In future studies, the response of the contractors, consultants and ERS CA need to be separately analyzed to show the effects of the different opinions.

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