

# An Investigation into Civil Engineering Construction Equipments Rentals in Nigeria

Gana A. J. & Theophilus Tsado

Department of Civil Engineering, Landmark University, Omu-Aran, Kwara state  
Department of Civil Engineering, Federal University of Technology Minna, Niger State  
**Email:**doctorgana@yahoo.com; teaoggie@yahoo.com

**Corresponding Author:** Gana A. J.

## ABSTRACT

Civil Engineering construction equipments play a vital role in the execution of construction projects in any country. This is a true picture of large construction companies whose successful activities depends on the sophisticated equipments that are available for daily operations in the field of Engineering. The Nigerian case of equipments rentals had in the past. Contributed in a great dimension to the success recorded in the field of Civil Engineering but of late diverse forms of negative observational concerns were noted. This study examiners fundamental of Civil Engineering construction equipments, classification of equipments, need for equipments hiring, its benefits, advantages of established plant hiring firms and challenges associated with construction equipments rentals in Nigeria. The study proffered recommendation and conclusion which are vital for consideration

**Keywords:** Investigation, Civil Engineering, Construction, Equipments, Rentals

## INTRODUCTION

Nigeria is on the threshold of a new era with a growing private sector, increasing economic growth and expanding foreign investment. It is launching an impressive construction projects that will strain resources of existing local construction firms, introduce foreign competition into the domestic market and offer a significant many opportunities to developed modern contracting industries in all spheres of engineering construction. However, because of limited

budget and credit policies, local entrepreneurs face great difficulties in acquiring the needed number and quality of equipment to meet the expanding demand. Equipments that are currently in use by many Engineering constructions in the country are outdated and lack the operating efficiencies of equipments; even large contractor may choose to hire rather them own outright with currently prevailing high interest rates, weak capital market and constraints on interactional borrowing. The main objective of

this paper is to advocate the creation of more privately owned enterprises in Nigeria, to own and hire out heavy construction equipments to contractors and subcontractors, with special emphasis on local enterprises

### **MATERIALS AND METHOD**

- (i) A proper visits to most construction companies and construction sites in Kwara state provided a benchmark for accessing the present picture on what Engineering construction equipments is now, and in the past
- (ii) A proper discussion with companies involved in equipment hiring also provided a platform for detailed information for this study

### **DISCUSSION**

Every civil engineering project involves earth -cutting, earth moving, hauling of excavated earth and other construction materials in small, manual labour and becomes the best method. On large or big projects, conventional methods and heavy construction equipment becomes efficient. The selection of the appropriate type and size of any construction equipment often affects the required amount of time and effort, and also the job-site productivity of a project. It is therefore important for site engineers, managers and

construction planners to be familiar with the characteristics of the major type of equipment most used in civil engineering construction projects.

### **Fundamentals of Civil Engineering Construction Equipments**

The fundamental of civil engineering construction equipment knowledge expected of an engineer are as follows:-

- 1) The use of equipment
- 2) Running cost
- 3) Size of the equipment
- 4) Availability in the market
- 5) Working conditions of the equipments
- 6) Capacity of the machine
- 7) Working efficiency of the machines.

### **CLASSIFICATION OF CONSTRUCTION EQUIPMENTS**

Construction equipments are generally classified as:

#### **(A)Intermittent type**

- (i) Bulldozers
- (ii) Scrapers
- (iii) Power shovels
- (iv) Concrete mixers
- (v) Drag lines

#### **(B)Continuous flow type**

- (i) Air compression
- (ii) Belt collages

#### **(C)Mixed type**

- (i)Motor graders

## THE NEED FOR EQUIPMENTS HIRING

Contractors handling the execution of civil Engineering projects are not always able to obtain the financial means to realize their potential. Plant hiring of equipments usually provide construction equipments the market rates to enable contractors to participate in, and benefit from the largely donor funded programmes of infrastructural construction projects.

High domestic interest rates and a dearth of domestic capital usually restrict the ability of local contractors to acquire operating equipment from credit banks and institutions, a condition which should be addressed by an equipments renting firm

## BENEFITS OF EQUIPMENTS HIRE COMPANIES

A few benefits that are associated to equipment hiring companies are as follows:-

**Breakdowns:** Every equipment is usually subject to occasional breakdown. However, when rented equipment breaks down, idle time is eliminated because the rental company replaces the actual equipment immediately.

**Cost Control:** Having the true knowledge of the true cost of owned equipment is usually

difficult. Rented equipment normally offers accountable cost figure that may be difficult to those hiring the equipment for use.

**Disposal Costs:** The preparation and the use of every obsolete equipment for resale, advertising and selling time are the sole factors of the owners, and they do not occur during renting of the equipments

**Taxes and Licenses:** Generally, personal property taxes and license costs are always eliminated on any rented equipments.

**Increase in Borrowing Capacity :** Contractors that are usually involved in renting equipments instead of purchasing normally find borrowing easier with better ratio of assets to liabilities, sine equipments does not appear as a liability for their usage.

**Maintenance:** Rented equipment usually includes full maintenance with no repair shop, no spare parts, inventory, no mechanics and no added maintenance pay roll record keeping. Every cost related to the equipment is usually at the expense of the rental company.

**Right Equipment for the Job:** This normally eliminates the hidden costs of inefficiency due to the use of right size or type of equipments. Rented equipment usually ensures

the right types of equipment for the right job.

**Warehousing:** The use of rental equipments usually eliminates the actual need for large storage of areas or buildings for use. Thus, the overhead cost involved in carrying out the business is usually eliminated

### **Advantages of Established Plant Hiring Firms**

There are many advantages that accompany the establishing of equipments hiring firms. A few of these are briefly stated below:-

- (i) An international significant foreign investment that will assist in its efforts to develop its reputation and attractiveness for foreign investment will actually occur.
- (ii) The lower local contract costs through the increased use of domestic and local equipments rather than depending on the international contractors will increase.
- (iii) Constant increased training in the equipment operations and applications with construction contract execution
- (iv) Reduction in the risk of construction project failures and unrealistic completion process.
- (v) Competition to owe standard hiring equipment for construction projects will increase.

### **CHALLENGES ASSOCIATED WITH CONSTRUCTION EQUIPMENTS RENTALS IN NIGERIA**

- (i) **Registration of Contractors:** Most of the contractors that are involved in the use of construction equipments are not properly registered by the government, and this has made it difficult to actually identify those that are involved in the business of the profession.
- (ii) **Conditions of Construction Equipments:** The reality has shown that many construction equipments hiring companies across the country are out dated. Most of them can not used the for standard construction projects, while some will even work For a short time and break down.
- (iii) **Maintenance Approach:** Little attention is pay to regular maintenance of the construction equipments by hiring companies, and this is the reason for the reduction of life span of such equipments during use.
- (iv) **Operations of Equipments:** The wrong use of equipment for the execution of construction project is common by many contractors. This is one of the reasons why many projects don't fulfill the required life span, especially road projects.
- (v) **Unskilled Operators:** Unskilled operators are being

unemployed for the operations of construction equipments without going through the proper training that is required for the job. This happens most of the times as a result of the employment situation in the country, which is tied to non-availability of labour.

(vi) **Warehousing:** Lack of proper warehousing, storage areas as buildings for housing the equipment are not available. Most hiring equipment companies abandoned their equipments in an open space against the damage of rain, sun, and other environmental hazards.

(vii) **Increase in Borrowing:** Daily increase in borrowing of construction equipments by contractors instead of becoming ownership of such is a common practice in many parts of the country. This is one of the reasons why it has become very difficult to identify those that are involved in the business, because of the Non-availability of offices for such contractors

### **Registrations of Construction Equipments**

Most construction equipments that comes in to the country often times are not properly checked or even registered before handling over to the required companies that order for their purchased.

### **RECOMMENDATION**

(i) Government should establish a standard construction equipment rental firms in the country that would improve the operating capacity with the mechanism for construction equipments rental in the country.

(ii) Taxation analysis and regulations for operating construction equipment rentals should be improved on in the country

(iii) Foreign investment in to construction equipment hiring and setting of standard should be allowed and properly monitored in the country

### **CONCLUSION**

Construction equipments rental is a business all over the world. Customers are attracted by the shift of ownership risks, minimal inventory requirements, less repair headaches and improved cost control. For it to succeed in Nigeria, market intelligence and marketing activities in the construction sector within Nigeria as a country is a must. There is a need to identify committed local and International partners which should be motivated. Identified issues need to be resolved and participation by an established independent technical partner is very crucial.

## REFERENCES

- Gurcharan Singh (2005) building construction and materials, Ninth edition, published by Rajinder Kumar Jain, prop. Standard book house. Nai Sarak, Delhi India.
- S.k. Deodhar (2000) construction equipment and job planning, published by Romesh Chander Khanna, Nath market Nai sarak, Delhi India (2<sup>nd</sup> Edition)
- B.L. Gupta, Amit Gupta (2007) maintenance and Repair of civil structures –published by A. K. Jain for standard publishers distributors, Nai sarak, Delhi, India
- Bizuneh Shiferaw (2001) equipment rental in Ethiopia –published by Ethiopian association of civil engineers, Addis-Ababa.
- S. S. bhavikatti (2005) elements of civil engineering (4<sup>th</sup> edition) – published by vicar publishing house P V T. Ltd Masjid road, Jangura, new Delhi, India
- B. L. Gupta, Amit Gupta (2010) Highway and bridge engineering – published by
- A.K. Jain for standard publishers distributors, Nai sarak, delhi, India