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AN ASSESSMENT OF FACTORS AFFECTING MATERIAL STOCK CONTROL PRACTICE ON SELECTED CONSTRUCTION SITES IN NIGERIA

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ABSTRACT
This research examines the stock control methods utilized by construction firms on construction sites with a view to assessing the factors affecting material stock control practice by construction firms as well as determining the impact of factors affecting material stock control on building project performance. Data were collected with the aid of well-structured questionnaire administered on a number of construction professionals and technicians in some randomly selected building construction firms in South Western Nigeria. The data generated were further analyzed using descriptive statistics. The study showed that the stock control method utilized by most construction firms on their sites is the Action Level method. Also, the identified factors that affect material stock control practice on construction sites have significant impact on building project performance in respect of cost, time and quality. Based on the findings, it was recommended that material stock control should be practised on all sites and by all categories of building construction firms in strict compliance with Action Level Method coupled with proper use of project bill of quantities, schedule of materials, construction programme, specification, proper stock accounting and security systems; also a competent and experienced personnel with basic managerial skills in material management should be engaged on site as store officer to enhance material stock control practice.

KEYWORDS: Material stock control practice; Bill of quantities; Schedule of materials; Construction programme; Specification; Stock accounting; Security system.

INTRODUCTION

Construction has a strong link with many economic activities, and whatever happens to the construction industry will directly or indirectly influence other industries and ultimately the wealth of the country (Ogunsemi and Aje, 2005). Oforeh and Alufohai (2000) remarked that this industry is seen and used as a convenient tool for regulating the economy because the relatively large investment commitment to construction makes the industry an important source of demand generation. Therefore, Iwegbue (1998) opined that improving construction efficiency by means of project stock control would certainly contribute to cost savings for the construction industry in particular and the country as a whole.

However Iwegbue (1998) noted that the primary objective of material stock control as a function of material management system is to ensure that optimum stock of materials is maintained at a level consistent with the level of activity of an organization. This, according to him, can only be successfully implemented if a well conceived plan or what is required is carefully thought out, and procedures as well as policies outlined to achieve the set goal. Iwegbue (1998) further enlightened that whatever system of operation is established for stock control work, the procedure adopted in its implementation and the workers concerned matter a great deal on the expected results. The logical point therefore, in commencing any worthwhile stock control work, is to analyze the stock being held by an organization. By analyzing the stock held, the appropriate section can best determine what amount of efforts would be spent in controlling the various ranges of stock. Stock control methods on construction sites, argued Johnston (1981) were not of any significance, however modern construction management has now made effective stock control on

construction sites very significant and unavoidable. Skoyles and Skoyles (1981) opined that material stock control procedure involves not only procurement and supply of materials to site but also their supply in the right quantity, at the right place, and at the right time. Inyang-Udoh (2002) also documented that effective stock control ensures that materials for use on building projects are made available at the right place, at the right time and at the right price, as well as in the correct quantity and quality according to a bill of quantities, schedule of materials, specification and construction programme so as to reduce materials shortage and wastage on construction sites. Hence, material stock control involves proper inspection and testing of materials delivered to site, stock taking, stock recording, stock accounting, stock auditing and various methods of stock control.

Furthermore, Iwegbue (1998) documented the following three methods used in stock control: ABC analysis, EOQ formula and Issue control methods. Meanwhile, Inyang-Udoh (2002) opined that there are many methods/systems meant for the control of stock, both manual and automatic; also there are really only two basic approaches on which the methods/systems are based. These two approaches are commonly called the Action level and the Periodic Review approaches.

There has been much work identifying the factors affecting material stock control practice by construction firms. It is very pertinent to assess the factors and determine the most significant ones so that efforts can be made to control them in order to achieve optimal cost, time and quality performance of building projects.

Theoretical background

Basically, according to Iwegbue (1998), stock control is the operation of continuously arranging receipts and issues to ensure that stock balances are adequate to support the current rate of consumption. It involves recording details of stock movements and balances in value, full particulars of individual receipts, issues and balance of stock, physical verification of the quantities and conditions of goods; also review of obsolete and surplus stock, stores coding, materials pricing and costing.

On the other hand, Jossop and Morrison (1986) further enlightened that material stock control is the activity of determining the range and quantities of materials which should be stocked and the regulation of receipts and issues of these materials. Hence, effective stock control ensures that materials for use on building projects are made available at the right place, at the right time and in the correct quantity and quality according to a bill of quantities, schedule of materials, specification and construction programme, so as to reduce materials shortage and wastage on construction sites as opined in Inyang-Udoh (2002). Meanwhile, Iwegbue (1998) also maintained that stock control is a mechanical practice for implementing an inventory policy. It is a vital element in materials management and effective control of stock has the advantage of ensuring effective management of stores, prevention of stock outs, indiscriminate issues, theft and also reduces the incidents of deterioration and obsolescence. Costs may therefore be considerably reduced and this in turn enhances company's profitability. To achieve these goals, necessary process of stock control must be put in place. The stock controller or inventory control manager's responsibilities should be made known to all concerned; he must be given proper authority and duly motivated for effective functioning.

Furthermore, Inyang-Udoh (2002) documented that there are many methods/systems meant for the control of stock, both manual and automatic; also there are really only two basic approaches on which the method/systems are based. These two approaches are commonly called the Action level and the Periodic Review approaches.

Under the Action level method, the balance of stock on hand is checked after every issue and as soon as the balance falls below the reorder level. The basic method of controlling stock by quantity is by means of fixing for each commodity, stock levels which are recorded in the stock control system and subsequently used as a means of indicating when some action is necessary (Inyang-Udoh, 2002). According to Burton (1988), the fundamental stock control levels are minimum, ordering, hastening and maximum levels. However, Jossop and Morrison (1986) argued that all these are not necessary or desirable for every item and they should be employed with discretion because the fixing of too many levels makes the works

provisionally or unduly complicated. The minimum stock level is the amount of unit which the stock of any given material should not be allowed to fall. The level is also referred to as "danger level" when reached. It triggers off urgent action to bring forward delivery of next order. In fixing the minimum level, the main factor to consider is the effect the run-out of stock would have upon the flow of work on site.

Moreover, the Periodic Review approach is useful where a range of similar commodities can be ordered at one time; the value of individual order will be much greater and possibility of lower prices more likely. In general terms, this involves examining either the physical stocks or the stock records for a particular class of materials at regular intervals and taking simultaneous action for all items requiring replenishment (Inyang-Udoh, 2002). Meanwhile, Jossop and Morrison (1986) were of the opinion that this method should be supplemented by using maximum and minimum stock levels as additional safeguard since there could be unexpected variations in the construction or deliveries of materials.

There has been much work identifying the factors affecting material stock control practice by construction firms. According to (Inyang-Udoh, 2002; Jossop and Morrison, 1986 and Fakolujo, 2006) the following have been documented as factors affecting material stock control practice: Bill of quantities, Schedule of materials, Specification; Construction programme; Accounting system; Stock control method; Traits of store officer or stock controller and Security system.

According to Inyang-Udoh (2002), a Bill of Quantities which is typically prepared for a contract giving full particulars of materials required is a very necessary document needed in stock control. With the information given in the bill of quantities in conjunction with schedule of materials and specification, delivery of materials can be arranged in the proper quantities and quality, at the right price, on the actual site or at the right stockyard. Furthermore, Inyang-Udoh (2002) enlightened that construction programme shows when the various parts of construction work would start and finish e.g. substructure, concrete work, blockwork, metal work, floor, wall and ceiling finishings, painting and decorating etc. The information given in the programme of work allows for proper planning in respect of ordering and delivery of materials at the appropriate time whether at the stockyard or on the actual site.

Bailey and Gerald (1980) stressed that stock represents cash and invariably, cash is looked after very carefully. A cashier is appointed to control cash and it is locked up when not in use. Every time cash is received or issued, it is counted; the balance in hand is checked at frequent intervals. Cash books are kept in details to record all transactions and maintain proper accounting system. If any of the checks made discloses a discrepancy, the most searching inquiries are pursued to find explanation. Buyers and Holmes (1961) cited in Inyang-Udoh (2002) further supported that since stock is equivalent of cash, it follows that it should be carefully protected, counted and checked in a similar way.

Most organizations find it difficult to monitor and control properly their stocks because of the stock control methods employed. It is either they are too complex or improper or quite tasking for use and thereby making it quite boring and uninteresting. The improper method could be scanty in terms of information that would be required both for recording level (maximum and minimum level) and usage feedback records. The action level and periodic review methods as earlier described analyze the proper approach suitable for stock control within an organization or on construction sites (Inyang-Udoh, 2002). Store officers, or stock controllers are very important in achieving a well delivered stock control process since they generate most of the necessary information about the stock in their custody. When a store officer is not skilled in this particular field of operation, the stock control method employed and the general management of stock become a problem. Information from the store officer or controller must be genuine, fast and free of errors (Inyang-Udoh, 2002). According to Calvert (1981), a competent store keeper is a necessity and an investment on any sizeable contract both for adequate control of bulk stocks and the identification as well as location of special components and materials. Activities for such store keeping should include the basic recording of receipts and issues, the operation of minimum re-order levels, accounting for returnable packages/empties, transfer between contracts, and annual or monthly stocktaking.

Meanwhile, the location of a suitable stockyard is of paramount importance and the type of security personnel employed. Loopholes from these two ends are always very disastrous. Staff not concerned with affairs of store and non-staff should be restricted to entrance of stockyard so as to avoid theft and displacement of materials on site. This indicates that stockyards must be properly located in a secured accommodation since stocks are equivalent of cash. Fence with gate should be constructed round the construction site so as to prevent intruders and thieves from entering the site. (Inyang-Udoh, 2002).

The Problem

The present state of the building construction industry in Nigeria reflects various problems ranging from delays in project execution/delivery, substandard work, disputes, to cost and time overrun as a result of material shortage and wastages on sites, theft and displacement of materials on sites, as well as poor accounting and security system of the concerned sites/firms (Adafin, 2008). Non-compliance strictly with project bill of quantities, schedule of materials, specifications and construction programme in material stock control practice is another contributing factor which tends gradually to decrease profitability of a project also often leads to extension of time respectively, and hence no proper material stock control practice (Inyang-Udoh, 2002).

Moreover, material stock control practice by construction firms on construction sites becomes imperative so that projects can be executed and completed within planned time, cost and to the required quality standard, thereby ensuring value for money for the client.

Objectives of the Study

The objectives of the study are to:

1. identify the stock control methods utilized by construction firms on construction sites.
2. assess factors affecting material stock control practice on construction sites.
3. determine the impact of factors affecting material stock control on building project performance (cost, time and quality).

METHODOLOGY

The study was carried out between July, 2010 and November, 2010 mainly by means of “Questionnaire”. Data were collected with the aid of well structured Questionnaires which provided a set of alternative responses from which the respondents selected. The population of this study was made up of construction professionals and technicians in the Nigerian building construction industry, but it was not practicable to study the building construction industry in Nigeria in its totality in the situation which was investigated, hence a sample of the population was taken. The sampling technique adopted for this study was the multi-stage but simple random sampling was used at each stage. The study was carried out by administering well-structured questionnaires on selected construction professionals and technicians (Builders, Quantity Surveyors, Engineers and Purchasing/supply personnel) who by position are Storekeepers/Stock Controllers, Site Supervisors, Site Quantity Surveyors, Site Engineers and Project Managers of forty-eight (48) randomly selected building construction firms in different categories viz: small, medium and large size, located in Lagos, Oyo, Osun, Ogun and Ondo States of South Western Nigeria. Ninety-six (96) construction sites being managed by these firms were considered in this study and were located in the same region. A total of 102 questionnaires were administered and 87 were returned and used for analysis. This represented a return rate of 85 percent and was considered adequate. Meanwhile, the questionnaires were validated before administration on respondents. This was done by sending copies of the questionnaire to experts and senior colleagues for assessment in order to ensure that the instrument measured the quality which the research was designed to measure. The comments made, helped the questionnaire not only to have face validity but also content validity. Most of the questions asked required quantitative answers using a 5-point scale, typical of the “Likert Scale” of 1 for “not frequent”; 2 for “less frequent”; 3 for “frequent”; 4 for “more frequent” and 5 for “most frequent”. The data generated were analyzed using descriptive statistical tools such as percentages, mean/averages, frequencies and mean score ranking respectively.

RESULTS

Table 1: (a) Demographic Characteristics of the Respondents

Variable	Freq	Freq cum	%	% cum
1. Designation of the Respondents (N = 87)				
• Store Keeper/Stock Controller	30	30	35	35
• Site Supervisor	20	50	23	58
• Site Quantity Surveyor	16	66	18	76
• Site Engineer	12	78	14	90
• Project Manager	9	87	10	100
2. Academic Qualifications of Respondents (N = 87)				
• ND	10	10	11	11
• HND	27	37	31	42
• BSc	32	69	37	79
• MSc	18	87	21	100
3. Professional Qualifications of Respondents (N = 87)				
• NIPsS	22	22	34	34
• NIOB	19	41	29	63
• NIQS	14	55	22	85
• NSE	10	65	15	100
4. Years of Experience of Respondents (N = 87)				
Years	Freq (f)	(%)	x	Fx
• 1 – 5	9	(10)	3	27
• 6 – 10	16	(19)	8	128
• 11 – 15	36	(41)	13	468
• 16 – 20	20	(23)	18	360
• 21 – 25	6	(7)	23	138
Total	87	(100)		1121
Mean ≈ 13 years				

B	Demographic Characteristics of the Building Construction Firms					
S/N	Variable	Freq	Freq.cum	%	% cum	Staff Capacity
5.	Size of the Firm (N = 48)					
•	Small size	14	14	29	29	<25
•	Medium size	16	30	33	62	>25<50
•	Large size	18	48	38	100	>50<500
6.	Years of Work Experience of the Firms (N = 48)					
	Years		Freq (f)	(%)	x	Fx
•	1 – 5		4	(8)	3	12
•	6 – 10		9	(19)	8	72
•	11 – 15		11	(23)	13	143
•	16 – 20		14	(29)	18	252
•	21 – 25		10	(21)	23	230
	Total		48	(100)		709
	Mean ≈ 15 years					

The data collected for the study consisted of primary data collected via structured questionnaire administered on construction professionals and technicians (Builders, Quantity Surveyors and Engineers) as well as purchasing and supply personnel in forty-eight (48) randomly selected building construction

firms in South Western Nigeria. The preliminary section of the questionnaire relates to the demographic background of both the respondents and the construction firms as presented in Table 1. Respondents on this study are top management or senior technician staff with vast knowledge and experience in materials management. Majority of the respondents are Storekeepers/Stock Controllers (35%); Site Supervisors (23% of the respondents) are next and Site Quantity Surveyors (18% of the respondents) as well as Site Engineers (14% of the respondents). The least on the table are the Project Managers (10% of the respondents). Basically, 37% of the respondents are BSc holders while 31% of them are HND holders; also 21% of them are MSc holders. Meanwhile, 34% of the respondents are qualified with the Nigerian Institute of Purchasing and Supply (NIPS), while 29% of them are qualified with the Nigerian Institute of Building (NIOB) and 22% of them with the Nigerian Institute of Quantity Surveyors (NIQS), also 15% of the respondents are professionally qualified with the Nigerian Society Engineers (NSE). Years of experience of the respondents in the building construction industry were examined and the results showed that the average number of working years of all the 87 respondents surveyed is 13 years as it can be seen on Table 1a. Also, the average number of working years of all the 48 firms surveyed is 15 years and the demographic characteristics of the firms in respect of staff capacity was presented on Table 1b. Hence, it can be inferred that the data obtained for analysis are reliable enough to form a good basis for this research work as can be seen from the qualities of the respondents and firms in terms of their vast experience in stock control practice. Moreover, the assessment of the variables presented in Tables 2, 3 and 4 was carried out with the aid of mean score ranking method.

Results emanating from this study are now presented as follows:

- The most frequently utilized stock control method by the construction firms surveyed as identified and confirmed by the respondents is the Action Level Method.
- Six variables were identified and confirmed by the respondents as the most critical factors affecting material stock control practice by construction firms on selected construction sites. These include Bill of quantities; Schedule of materials; Construction programme; Specification; Accounting system and Security system.
- Factors confirmed by the respondents as having very high impact on cost, time and quality performance of building projects surveyed include the Bill of Quantities; Schedule of Materials; Construction Programme; and Specification. While those factors confirmed as having just high impact on building project performance include Security System; Accounting System; Traits of Store Officer and Nature/Type of stock control method employed.

DISCUSSION

Stock Control Methods

Table 2 shows the analysis of the stock control methods utilized by construction firms on construction sites from the respondents' view points. The analysis revealed that the most frequently utilized stock control method by construction firms on the construction sites surveyed is Action Level. This method was strongly agreed upon by most of the respondents and was ranked first based on the mean item score (4.85) on the table which is very close to 5.00 meaning "most frequent" on the

Table 2: Stock control methods utilized by construction firms on construction sites as perceived by the Respondents

		Respondents' Score									
S/N	Identified Methods		MF	VF	F	LF	NF	N	ΣFX	Mean Score	Rank
		X=	5	4	3	2	1				
1.	Action Level	F	78	8	0	0	0	87	422	4.85	1
2.	Combination of Action Level and Periodic Review	F	0	0	44	22	20	87	196	2.25	2
3.	Periodic Review	F	0	0	0	12	74	87	98	1.13	3

5 = Most Frequent (MF); 4 = Very Frequent (VF); 3 = Frequent (F); 2 = Less Frequent (LF); 1 = Not Frequent (NF)
X = Mean item score (MIS); F = Frequency/Respondents' score;
X = Weighting; N = Total Number of Respondents (87).

5 - point rating interval scale used. Also, this is evidenced in Inyang-Udoh (2002) that though, almost all firms acknowledge the need for stock control on sites but it is carried out to a reasonable extent only on large construction sites by large construction firms. He further stressed that the use of Action Level method by most firms could be attributed to the simplicity of the method and that the method is straight forward. Meanwhile, the use of the combination of both Action Level and Periodic Review Methods as well as the Periodic Review Method itself by the firms is less frequent as revealed on the table and based on their mean item scores and ranks respectively.

Material Stock Control Practice

Table 3 shows the analysis of factors that affect material stock control practice by the selected construction firms on their construction sites from the respondents' view points. The analysis indicates six most important factors based on the construction industry experience of the store officers, site supervisors, site quantity surveyors, site engineers and project managers as well as the ranking of the mean item scores MIS. The six most important factors are: bill of quantities, schedule of materials, construction programme, specification, accounting system and security systems. This also agreed with a submission in Inyang-Udoh (2002) that bill of quantities and schedule of materials are very essential documents needed in material stock control practice by construction firms. The documents are typically prepared for contracts giving full particulars of materials required, hence the delivery of materials can be arranged in proper quantities on the actual site or at the right stockyard. Inyang-Udoh (2002) further revealed that materials ordered for by construction firms, most times are not in compliance with the bill of quantities and schedule of materials; also materials are ordered often times outside the specified

Table 3: Respondents' Assessment of Factors Affecting Material Stock Control Practice on Construction sites

		Respondents' Score									
S/N	Identified Factors		MI	VI	I	LI	NI	N	ΣFX	Mean Score	Rank
		X=	5	4	3	2	1			(X)	
1.	Bill of Quantities	F	72	10	3	2	-	87	413	4.75	1
2.	Schedule of Materials	F	70	12	3	2	-	87	411	4.72	2
3.	Construction Programme	F	68	10	6	3	-	87	404	4.64	3
4.	Specification	F	68	10	6	3	-	87	404	4.64	3
5	Accounting System	F	69	9	6	2	1	87	404	4.64	3
6.	Security System	F	67	9	6	2	1	87	404	4.64	3
7.	Traits of Store Officer	F	0	32	34	20	1	87	271	3.12	7
8.	Nature/Type of Stock Control Method	F	0	30	36	20	1	87	269	3.09	8

5 = Most Important (MI); 4 = Very Important (VI); 3 = Important (I); 2 = Less Important (LI); 1 = Not Important (NI).

specification which is equally an essential document required for stock control practice and usually incorporated in bill of quantities in form of preamble. This tends gradually to decrease profitability of projects concerned and hence no proper stock control practice. Meanwhile, the sequencing of work programme is another factor emphasized in Inyang-Udoh (2002). According to him, construction programme shows when the various parts of the job would start and finish. The information given in the programme of work allows for proper planning as regards ordering and timely delivery of materials at the appropriate time whether at the stockyard or on the actual construction site. Failure to adhere strictly to this programme of construction works does not allow for proper stock control practice and often leads to extension of time or time overrun.

Moreover, according to Buyers and Holmes (1961) cited in Inyang-Udoh (2002) stock control will be a great problem if a construction firm is not operating a proper stock accounting system, and the firm will be

running at a loss. Hence, this situation affects contractor's profit. This was further corroborated by Bailey and Gerald (1980) that stock represents cash and invariably cash is booked very carefully. Each time cash is received or issued, it is counted; the balance in hand is checked at frequent intervals. Cash books are kept in details to record all stock transactions and if any of the checks made discloses a discrepancy, the most searching enquiries are pursued to find explanation.

Inyang-Udoh (2002) further submitted that the location of a suitable stockyard is of paramount importance and the type of security personnel employed. Loopholes from these two ends are always very disastrous as high rate of theft and displacement of materials are inherent in such a situation. This reflects improper stock control practice and in turn usually leads to increase in the cost of the project, especially cost to the contractor. The analysis revealed that the factors identified and confirmed by the respondents were highly important based on the mean item scores on the table which are very close to one another, and are also close to 5.00 meaning "most important" on the 5-point rating interval scale used. Hence, this implies that all the factors involved are considered important and confirmed as factors affecting material stock control practice on construction sites as revealed on the table and based on their respective mean item scores. The ranking only shows that some factors are more important than others.

Building Project Performance

From Table 4, cost, time and quality are areas employed to measure the performance of the building projects surveyed. The table shows the degree of impact of factors affecting material stock control practice on building project performance on percentage and rank bases. The Bill of Quantities, Schedule of Materials, Construction Programme and Specification were identified and confirmed as factors having very high impact (81 – 100%) on the performance of building projects

Table 4: Impact of Factors Affecting Material Stock Control on Building Project Performance (Cost, Time, and Quality) as Perceived by the Respondents

S/N		Cost Performance		Time Performance		Quality Performance		Average	R
	Identified Factors	Weighted Average	R	Weighted Average	R	Weighted Average	R	%	
1.	Bill of Quantities	87.39	1	85.44	2	84.21	2	85.68	1
2.	Schedule of Materials	86.93	2	85.44	2	82.52	3	84.96	2
3.	Construction Programme	84.17	3	86.30	1	81.80	4	84.09	3
4.	Specification	84.17	3	73.60	5	86.20	1	81.32	4
5.	Security System	84.17	3	73.60	5	52.62	6	70.13	5
6.	Accounting System	84.17	3	58.89	7	50.90	7	64.65	6
7.	Traits of Store Officer	56.66	8	56.17	8	80.62	5	64.48	7
8.	Nature/type of Stock control Method Employed	56.90	7	85.44	2	50.01	8	64.12	8

0 – 20% = Very Low (VL); 21 – 40% = Low (L); 41 – 60% = Average (A); 61 – 80% = High (H); 81 – 100% = Very High (VH); R = Rank.

surveyed. The table also revealed the status of other identified factors, also having just high impact (i.e. 61 – 80%) on project performance; such factors as Security System; Accounting system, Traits of Store Officer, and Nature/Type of stock control method employed. Hence, this is an indication that all the factors involved are considered important and their impact on project performance in respect of cost, time and quality has been confirmed high as revealed on the table and based on their respective average percentages and ranks. The ranking only shows that some factors are more important than others.

RECOMMENDATIONS

Having discussed factors affecting material stock practice by construction firms and the impact of those factors on building project performance; in view of the findings of the study, the following recommendations are made towards the achievement of strict compliance with the established material stock control practice in the Nigerian building construction industry:

- Material stock control should be practised on all sites and by all categories of building construction firms, whether large, medium or small using preferably Action Level method of stock control because of its simplicity and straight-forwardness.
- There should be a proper planning of material stock control right from the inception of project execution and strict compliance with the project bill of quantities, schedule of materials, construction programme, specification, proper stock accounting and security systems is essential so as to ensure timely project execution and standard work delivery within reasonable cost, time and quality.
- The use of incompetent hands (e.g. skilled and unskilled labour) as store officer or stock controller on construction sites should be discouraged. A competent and experienced personnel with basic managerial skill in material stock control or material management should be engaged in order to enhance material stock control practice.

CONCLUSION

This study provided enough research evidence from which reliable opinion and conclusion could be drawn. From the analysis of the investigation carried out and findings made; the study revealed that the stock control method used by most construction firms on site is the Action Level Method owing to the fact that the method is simple and straight-forward. Also, most of the respondents agreed that lack of effective stock control practice or specifically, non-compliance strictly with the identified factors affecting material stock control very often contributes to delay in project execution on sites, disputes, sub-standard work delivery, cost and time overrun as much as possible; and also decreases profitability of the entire contracting organization. However, it was concluded that factors affecting material stock control have significant impact on building project performance in respect of cost, time and quality. Effective stock control is achieved through the adoption and implementation of well-articulated and cost-effective material stock control procedure that can guarantee increased productivity. Hence, tasks are completed within planned duration, cost and quality standard.

REFERENCES

Adafin, J.K. (2008): "Practice and Procedure of Material Stock Control In some Selected Construction Firms In Nigeria"; *Continental Journal of Applied Sciences, Nigeria*; 3, 65 – 76.

Bailey, P and Gerald, T (1980): *Design of Stock Control Systems and Records*"; 3rd Edition; London; Gower Press Ltd.

Burton J.H. (1988): *"Stores Account and Control"*; 3rd Edition; London; Pitman Publishing Ltd.

Calvert, R.E. (1981): *"Introduction to Building Management"*; 3rd Edition; London: Butterworth & Co (Publisher) Ltd.

Fakolujo, B.O. (2006): "A Study of Material Stock Control System in the Nigerian Construction Industry"; Unpublished PGD Dissertation; Department of Quantity Surveying; The Federal University of Technology, Akure.

Inyang-Udoh, U.I. (2002): "Appraisal of Stock Control System on Building Sites"; *The Quantity Surveyor*; 38(1), 17 – 21.

Iwegbue, S.O. (1998): "Effective Stock Control in Construction and Civil Engineering Firm"; *Construction and Civil Engineering Senior Staff Association Newsletter;* 2(2), 29 – 30.

Johnston, J.A. (1981): "*Control of Materials on Sites*"; 2nd Edition, London: Billing & Sons Press.

Jossop, A and Morrison, J. (1986): "*Storage and Control of Stock*"; 2nd Edition; London; Pitman Publishing Ltd.

Oforeh, E.C. and Alufohai, A.H. (2000): "*Management Estimating an Budgeting for Electrical Installations*"; 2nd Edition; Lagos; Cosines (Nig) Ltd.

Ogunsemi, D.R. and Aje, I.O. (2005): "A Model for Contractor's Selection in Nigeria"; *The Quantity Surveyor;* 50(1), 3-7.

Skoyles, E.R. and Skoyles, J.R. (1981): *"Waste Prevention on Sites";* 3rd Edition; London; Mitchell Publishing Co. Ltd.

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