

**THE NIGERIAN INSTITUTE OF QUANTITY
SURVEYORS: 3RD RESEARCH CONFERENCE
– NIQS RECON3**

25TH – 27TH SEPTEMBER 2017

BOOK OF ABSTRACTS

**THEME: CONFLUENCE OF RESEARCH,
THEORY AND PRACTICE IN THE BUILT
ENVIRONMENT**

**EDITORS:
PROF. YAKUBU IBRAHIM
DR. NURU GAMBO
DR. IDRIS KATUN**

**THEME:
CONFLUENCE OF RESEARCH, THEORY AND
PRACTICE IN THE BUILT ENVIRONMENT**

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FOREWORD

This is the Third Research Conference of The Nigerian Institute of Quantity Surveyors (NIQS) which is building on the theme “*Confluence of Research, Theory and Practice in Quantity Surveying Profession for a Sustainable Built Environment*”. The maiden edition was held in September, 2013 in Abuja, the second one at the Federal University of Technology, Akure in September 2015. Here we are again in September 2017 in Bauchi for the third edition. The NIQS Research Conference is dedicated to providing stimulating debates and discussions between researchers and practitioners from within and outside Nigeria whilst providing the basis for new areas of research in Quantity Surveying and the Construction Industry.

Research is a systematic inquiry that investigates hypotheses, suggests new interpretations of data or texts, and poses new questions for future research. Research is very important as it helps us find answers to issues that were previously unknown and attempts to fill gaps in knowledge. The real object of research is to “*extend human knowledge* of the physical, biological, or social world beyond what is already known.”

A theory is a set of interrelated concepts, definitions, and propositions that explains or predicts events or situations by specifying relations among variables. Theories are formulated to explain, predict, and understand phenomena and, in many cases, to challenge and *extend existing knowledge* within the limits of critical bounding assumptions. Theories are not ‘guesses’ but reliable accounts of the real world which have been substantiated based on a body of facts that have been researched.

Over the years, practitioners in the Nigerian Construction Industry (NCI) have dispensed their acquired academic training in their various organisations and institutions. However, there is a paradigm shift in the way Quantity Surveying and indeed all professions in the Built Environment are being practiced. Traditional roles and responsibilities are being extended beyond what was the previous norm. There are emerging roles that need to be explored and one way to do this is to conduct research into the applicability of such principles and theories guiding these roles.

Knowledge management is key to social, economic and sustainable development of any profession and this research conference is a way-forward to achieving such developments. The combination of technological developments and the tremendous advancements in the use of Information and Communications technology has necessitated research in order to understand the current status quo while seeking for better ways to extend existing knowledge. We must grow continuously and challenge the status quo if we are to be practitioners who can extend our skills beyond traditional roles and beyond geographical boundaries.

The interactions between practice and academia has been on-going and the research policy of the Institute provides for further strengthening with such forums as this research conference. This conference brings together professionals in academia, and industry; and together we can seek for ways to adopt the findings of research as a means of growing the profession and promoting our influence. We are a profession with a capacity to engage the government and provide policy solutions that would build a sustainable built environment.

It is my expectation that this third research conference by the Nigerian Institute of Quantity Surveyors will provide a bridge

between the research efforts of academics and the practice solutions by practitioners in the Industry and Government.

I wish to heartily congratulate the Professional Development Committee of the Institute headed by Mr Adebowale Oyinleye *FNIQS*, the Chairman and members of the Conference Organising Committee and all who contributed to the success of the conference.

QS Mercy T. Iyortyer, FNIQS
President
The Nigerian Institute of Quantity Surveyors
September, 2017

PREFACE

The 3rd Research conference (RECON3) of Nigerian Institute of Quantity Surveyors (NIQS) is a follow up on the 1st and 2nd conferences held in 2013 and 2015 respectively. This Research conference aims at providing a forum for further research and discussions in the Built Environment, it was therefore expanded to include additional thematic areas in order to encourage more participation and to remove boundaries in areas of research interest which is fast becoming a global best practice.

It was anticipated that the theme “Confluence of Research, Theory and Practice in the Built Environment” would raise awareness and understanding regarding issues of collaboration between the scholars and/or professionals. The level of interest in the subject matter of the conference was maintained from the previous event and over 180 suitable abstracts were submitted for presentation at the conference. These were subjected to a double blinded peer review process before selection of final papers for the conference.

The selected topics depicted a vast pool of knowledge, resources and expertise of the research community, which in turn made a substantial contribution to the quality of the papers. The conference was highly successful, the 66 presented papers maintained the high promise suggested by the written abstracts and the programme was chaired in a professional and efficient way by the session chairmen who were selected for their standing in the subject.

Driven by the fast paced advances in the Built Environment, papers focused on issues in Building Information Modelling (BIM), Cost and Value Management, Construction Financing, Project Management and Construction Procurement and

Contract Administration. Others in the field of Alternative Dispute Resolution, Asset, Property and Facility Management, Public Private Partnership, Ethic and Professional Issues were also welcome. Furthermore, papers on Change Management, Disaster Management, Health and Safety, ICT in construction and Knowledge Management and Construction Organisation provided a broad array of topics in the conference.

This required the programme to be organised in four parallel sessions, each on a specific theme, to provide each paper with sufficient time for presentation and to accommodate all of them within the overall time allocated. The sessions, therefore, represented a unique platform encouraging Local/International scholars and professionals by augmenting their experiences and invaluable insights. The conference offered a truly comprehensive view of the research while inspiring the authors and participants to come up with propositions to interrogate existing theories as opined by W. Edward Deming that “If you do not know how to ask the right questions, you discover nothing”. It inextricably addressed academics and practitioners and provides a colloquy for a number of perspectives, based on either conjectural analysis or empirical case studies that enhances excogitation and exchange of ideas

In this year’s conference we have succeeded in getting more practice-based research showing the high level of interest in the conference framework. This is evidenced by the large number of academic Institutions and Practitioners represented by the authors and participants. However, there are further areas of researches to be explored in the future and we cannot afford to rest on our oars.

I would like to take this opportunity to appreciate the President of The Nigerian Institute of Quantity Surveyors, Mrs Mercy Iyortyer, FNIQS and the National Executive Council (NEC)

2015-2017 for their commitment and support. I also wish to thank the keynote speakers Mallam Abba Bello Ingawa and Prof. Kabir Bala, the resource persons and authors for their invaluable contribution, and the local organising committee led by Prof Yakubu Ibrahim for their commitment to the success of the conference.

Oyinleye Adebawale. O, FNIQS

*Secretary, Professional Development & Library
The Nigerian Institute of Quantity Surveyors
September, 2017*

ACKNOWLEDGEMENTS

We are very grateful to the President of the Nigerian Institute of Quantity Surveyors (Mrs Mercy T. Iyortyer, FNIQS, RQS, MAPM) and the entire members of the National Executive Council 2015-2017, particularly the Secretary for Professional Development and Library (Mr Oyinleye A. O, FNIQS, MRICS, PMP) for their vision, leadership and support which has made this third edition of research conference a reality. We are also grateful to the people and organisations who have contributed to the success of the conference: authors, delegates, local organising committee, scientific committee and members of the Professional Development and Library committee of the NIQS.

We are particularly grateful to firms and organisations that provided sponsorship towards hosting of the conference. We would like to thank the Keynote Speakers: Mal. Abba Bello Ingawa and Prof. Kabir Bala. We are also grateful to the Resource Persons that anchored the Research Skills Workshop: Prof. D. R. Ogusemi, Prof. A.D. Ibrahim, Prof. Y.M. Ibrahim, Prof. Fred Job, Dr K.J Adogbo, Dr (Mrs). A.D. Lamptey-Puddicambe, A. Y. Waziri and Dr. I.I Inuwa. We are also grateful to Dr. Idris Katun (Conference Secretary) for ensuring excellent administration and smooth running of the conference organisation.

Finally, we are grateful to the Secretariat of the Nigerian Institute of Quantity Surveyors for the logistic and administrative support.

Editors:

Prof. Yakubu Ibrahim

Dr. Nuru Gambo

Dr. Idris Katun

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**THE NIGERIAN INSTITUTE OF QUANTITY SURVEYORS
PROGRAMME FOR THE 3RD RESEARCH CONFERENCE (ReCon3) 2017**

Theme: “Confluence of Research, Theory and Practice in Quantity Surveying Discipline for a Sustainable Built Environment”

DAY 1	MONDAY(25/09/2017)	OPENING SESSION (500 TWIN EXAMINATION HALL A)			
	08:00 -5.00pm	ARRIVAL AND REGISTRATION OF PARTICIPANTS			
		OPENING SESSION (10:00-2:30 pm)			
	9:00 - 9:20 am	Arrival of Special Guest of Honour, other Dignitaries and Invitation to the High table			
	9:20 - 9:30 am	Opening Prayer			
	9:30 - 9:40 am	National Anthem			
	9:40 - 9:50 am	Welcome Address by the Secretary Professional Development and Library			
	9:50 - 10:00 am	Opening Address by NIQS President			
	10:00 -10:10 am	Opening Remark by QSRBN President			
	10:10 -10:20 am	Goodwill Messages			
	10:20 -10:40am	Speech by Special Guest- H.E M.A. Abubakar, Executive Governor of Bauchi State			
	10.40 – 12.10am	Keynote Paper Presentation by Prof Kabiru Bala and Mallam Abba Bello Ingawa			
	12.10 – 12.25pm	Acknowledgement of Sponsors and other Partners by the Secretary International Affairs			
	12:25- 12:35 pm	Vote of thanks by the LOC Chairman			
	12:35 – 12:50pm	Closing Prayer			
	12:50 – 1.10pm	National Anthem			
	1:10 - 1:25pm	GROUP PHOTOGRAPH			
	1:25 – 2:00 pm	Tea Break			
	2:00 -16:15pm	PARALLEL SESSION			
	VENUE	STREAM 1(TWIN EXAMINATION HALL A)	STREAM 2(TWIN EXAMINATION HALL B)	STREAM 3(PETROLUM ENGINEERING LECTURE THEATRE)	STREAM 4(PHASE II)
	SUB - THEME	Building Information Modelling (BIM)	Project Management	ICT, Knowledge Management and Construction Organization	Change Management
	CHAIR	Dr. M.M Muktar	Dr. K.A Mohammed	Ass. Prof Alhassan Dahiru	Dr O.A. Awodele

	2:00 - 2:15 pm	Bim: A Healthy Disruption To A Fragmented And Broken Process by <i>Esthoj Multi-Disciplinary Group</i>	Strategic Application Of Lean Philosophy In Construction by Olajide, O; & Jesse, A. E.	Knowledge Management Practice in Nigerian Construction Industry by Katun, M.I; Bhadmus, R. T. & Bello K.	Towards Change Orders Causes and Impacts On Construction Projects In Nigeria by <i>Arowosegbe, A. A. & Salawu A. R.</i>
	2:15 - 2:30 pm	Adoption Of Building Information Modelling (BIM) To Enhance And Expand The Profession Of Quantity Surveying Practice In Nigeria by <i>Umezina, N. J.</i>	Assessment Of The Payment Options Adopted In The Delivery Of Public Projects In Nigeria by Olatunji, S. O. Ogunsemi, D. R; Akinradewo, F. O. & Akinola, J. A.	The Impact of Leadership Styles On Knowledge Management Application Strategies in Multinational Construction Organization in Nigeria by Kolawole, A. R; Bobbo H. D & M.M. Raji.	The Influence Of Claims On Total Cost Of Building Project by <i>Idris M. S; Kasimu M.A; Kabiru M.U & Adebisi R.T.</i>
	2:30 - 3:30pm	LUNCH BREAK			
	3 :30 - 3:45pm	Prioritization of Factors Affecting the Adoption of Building Information Modelling in Construction Design Firms in Nigeria. by <i>Abubakar, S.Y.; Abdulrazaq, M & Abdullahi, M.</i>	Professionals' Perceptions On Construction Material Waste and Cost Overruns At The Design Stage Of A Project In Abuja, Nigeria by Saidu, I. & Shakantu W. M.W.	The Role Of Information And Communication Technology (ICT) In Construction Supply Chain Management by Mu'azu, U	Assessment Of Change Management Practice In Construction Projects In Nigeria by <i>Mohammed M. M.</i>
	3:45- 4:00 pm	Building Information Modelling Application In The Nigerian Construction Industry by <i>Olaleye, O.Y; Garba, A. & Abdulkadir, B. L.</i>	Evaluation of Risk Factors Affecting Cost Performance Of Hospitals Projects in Jalingo, Taraba State by Ajator U. O.		
	4:00 - 4:30 pm	Discussion	Discussion	Discussion	Discussion
	4.30pm	Close			

DAY 2	TUESDAY	OPENING SESSION (500 TWIN EXAMINATION HALL A)			
	26/09/2017	Chairman of Parallel Session : Prof Y.M. Ibrahim			
	08:30-08:45 am	Introduction of the day's activities			
	PARALLEL SESSIONS (9:00-17:30 PM)				
	VENUE	STREAM 1(TWIN EXAMINATION HALL A)	STREAM 2(TWIN EXAMINATION HALL B)	STREAM 3(PETROLUM ENGINEERING LECTURE THEATRE)	STREAM 4(PHASE II)
	SUB - THEME	Ethic and Professional Issue;Alternative Dispute Resolution	Project Management	Construction Procurement and Contract Administration	Sustainability in Construction
	CHAIR	Dr. LuqmanOyewobi	Dr. A.A Ajayi	Dr. S. Ofide	Dr A. Shittu
	9:00 -9:15 am	Effect Of Code Of Ethics On Quantity Surveying Practices In Ondo State, Nigeria <i>by Oke, A.E.; Aghimien, D. O & Aigbavboa, C O</i>	Evaluation of Innovation Practices in Building Industry in Edo State, Nigeria <i>by Ebekozien, A.</i>	Significant Factors Influencing Cost Overrun of Mechanical and Electrical Services Installation On Building Projects <i>Yusuf, G. A; Salami, T.O & Mustapha, L. A.</i>	Appraising Waste Management System On Construction Sites In Nigeria <i>by Olasijibomi, O.</i>

	9:15 -9:30 am	Appraisal Of Service Delivery Of Multi-skilled Quantity Surveyors In Nigeria <i>by Akinola, J. A.</i>	Assessing The Capability Of Project Management Practice On Large Infrastructure Projects In Nigeria by Muhammad, R. S.	Time And Cost Overruns In Infrastructure Projects In Nigeria: Causes, Effects And Remedies <i>by Usman, P. G.</i>	Environmental Impact Of Construction Projects Development In Tertiary Institutions In Ondo State, Nigeria by Uzoma, M. & Moyanga, D. T.
	9:30 -9:45 am	An Assessment of Quantity Surveyors Participation in The Evolved Roles of the Profession. by Abdulrazaq, M. & Odeh, I. G	Assessment Of Risks On Highway Construction And Rehabilitation Projects In Nigeria: A Fuzzy Logic Approach by Salawu, R.A. & Arowosegbe, A. A.	Impact Of Procurement Risks On Time Performance Of Construction Projects In Edo State by Oso, S. B.	Reducing The Impacts Of Climate Change Built Environment Through Effective Building Regulation And Control by Umezina, N J. & Maduekeh, C.O
	9:45 -10:00 am	Determining Factors of the Employability of Quantity Surveyors in The Built Environment by Salisu, G. D. Kabir, A. M. & Abubakar H.	A Study Of The Challenges Affecting The Performance Of Small - Medium Enterprises (SMEs) Contractors In The Nigerian Construction Industry by Umezina N.J.	The Role Of Client's In-House Professionals In Building Project Procurement And Delivery: A Case Study Of Auchu Polytechnic Physical Planning Department by Ebekezien, A.	Waste Management in Construction and The Way Forward; A Case Study of Bauchi and Gombe States. by Katun M.I.; Bhadmus, R. T. & B. Kabir.

	10:00 -10:15 am	Impact of Nigerian Institute of Quantity Surveyors (NIQS) On The Overall Development of Quantity Surveying Profession by Salisu, G. D. Kabir, A. M. &Abubakar H.	Evaluation of Factors Affecting Building Construction Project Delivery In Nigeria by Oloyede, S. Y. &Anifowose, O. M.	Assessment of The Procurement Methods Adopted by Public Procuring Entities in Ondo State, Nigeria. by Osanyinro, O. J. &Aghimien, D.O.	Procurement Management Training Of Nigerian Quantity Surveyors by Oke, A E; Ogunsemi, D.R; Aigbavboa, C. O; &Famakin, F. M
	10:15 -10:30 am	A Survey of Record Management Practice of Contractors in Bauchi State by Kolawole. A. R; Bobbo H. D &M.MRaji	Team Building: A Panacea For Effective Project Performance In The Construction Industry In South-South, Nigeria by Emmanuel, T. A. & Samuel, B. E.		Evaluating Factors Motivating Undergraduate Students to Remain in and Practice Quantity Surveying After Graduation by Abdulrazaq, M. &Tijjani, A.
	10:30 -11:00 am	Discussion	Discussion	Discussion	Discussion
	11:00 – 11.30am	Tea break			
	VENUE	STREAM 1(TWIN EXAMINATION HALL A)	STREAM 2(TWIN EXAMINATION HALL B)	STREAM 3(PETROLUM ENGINEERING LECTURE THEATRE)	STREAM 4(PHASE II)
	SUB - THEME	Ethic and Professional Issue;Alternative Dispute Resolution	Project Management	Construction Procurement and Contract Administration	Public Private Partnership/project Management
	CHAIR	Dr J. A. Akinola	Dr. Inuwa Ibrahim	Dr. U Ajator	Dr. Y.G Musa- Haddary

	11:30- 11:45 am	Use of Wireless Surveillance Cameras in The Built Environment; Panacea to Dispute Resolution. byZaharadeen, A.	A Framework For Effective Communication Among Construction Team byAkinradewo, O. F; Damilola, L &Oyefusi, O. N.	Impact of Barriers to Implementation of Public Procurement Guidelines On Procurement Stakeholder's Compliance Intention Towards Construction Project Delivery in Nigeria: The Mediating Effects of Enforcement Mechanism by Zadawa, A. N.;Shehu,A.S& Ahmed, B. A.	An Assessment Of The Relationship Between PPP And The Quality Of Housing Delivery In Nigeria by Osuji,E.O. & Adebayo,N.S.
	11:45- 12:00 am	Appraisal Of Multiskilling Dimensions On Quantity Surveyors Competency In Nigeria by Akinola, J. A.;Ogunsemi, D. R., Akinradewo, O. F. &Olatunji, S. O.	An Artificial Neural Network Model of the Cost Impact of Risks During Construction of In-Situ Concrete Framed Buildings by Oke,A.A; Ibrahim,Y; Oluwole. O. M, &Aibinu, M.A	Inevitable Consequences of Fixed Price Building Contracts in Tertiary Institutions in Nigeria by Mangvwat, J. S. &Ewuga, D. J.	The Constraint Decision in Construction Project Scheduling Using the MS Project Planner byEfole F.E
	12:00- 12:15 pm	Analysis Of The Relationship Between Organizational Culture And Innovation In Nigerian Quantity Surveying Firms by Haruna, A.F, Adogbo, K.J. &Abdulrazaq, M.	Contractors' Managerial Capability In Executing Construction Projects In Nigeria by Isah, S.M.; Dodo, A.I. & Muhammad .A.	Contractual Shift Towards Collaborative Forms Of Contract In The Nigerian Construction Industry Muhammad M., Ibrahim S. K. Abdulaziz S. A	

	12:15- 12:30 pm	Procurement Systems As Means Of Resolving Disputes In The Nigerian Construction Industry by Oluwaseun,I.A;Aligamhe,V.I &Ishola,B.O			
	12:45- 1:30 pm	Discussion	Discussion	Discussion	Discussion
	1:30 - 2:30 pm	Lunch Break			
	VENUE	STREAM 1(TWIN EXAMINATION HALL A)	STREAM 2(TWIN EXAMINATION HALL B)	STREAM 3(PETROLUM ENGINEERING LECTURE THEATRE)	STREAM 4(PHASE II)
	SUB - THEME	Asset, Property and Facility Management	Project Management	Construction Financing	Disaster Management, Health and Safety
	CHAIR	Dr K. J. Adogbo	Dr. R.A. Salawu	Dr. M. Anifowose	Dr. I Saidu
	2:30- 2:45pm	Assessment Of Students' Hostel Accommodation In Katsina State Tertiary Institutions by Ibrahim, M.L & Musa, H	Assessment Of Factors Affecting Contractors' Cash Flow In Public Projects Execution in Nigeria by Nnadi, E.O.E; Ade-Ojo,C.O. &Ogunsemi, D.R.	Effect Of Construction Project Finance On Infrastructure In Nigeria by Ebhohimen,T. E. &Oke, A E.	Trend, Practices And Role Of Corporate Social Responsibility In Managing Road Safety In Nigeria by Muhammad, A. C. &Shittu,A.O.
	2:45 - 3:00pm	Characterization of Public Polices enhancing Nigeria's Construction Sector sustainability between 2000 – 2015 by Balogun, F. J. &Ojo, A. E..	The Effect Of Leadership On The Causes Of Construction Rework In Nigerian Construction Industry by Nasir, A.M &Kasimu, M.A	Assessing The Capabilities of Contractors in Monitoring Construction Cash Flow in Nigeria by Abubakar, D.A. Abdulrazaq, M.	Health and Safety Practice in Construction Projects in Kaduna State by Anas,M., Madaki R.K. Abdu, B.A

				And Abdullahi, M.	
	3:00 - 3:15 pm	Determinants Of Urban Land Value In Funtua Town Katsina State by Iliyasu, I I	Energy Performance Contracting Potentials As Market Diversification Strategy For Nigerian Energy Service Companies by Shehu A. I.	Multi-Dimensional Effects of Projects Abandonment: A Case Study Of Ibom Science Park by Uyobong, S. E.	Implementing Emergency Response Safety Procedures By Small-Sized Construction Firms In Abuja, Nigeria by Shittu, A. A.; Ibijoku, S. E.; Issa, A.A. & Shehu, M. A.
	3:15 - 3:30 pm			Survival Strategies In A Recessive Economy By Nigerian Construction Contractors by OlowaTheophilus O.O; Ganiyu, A.Y. & Adebisi, R. T.	
	3:30-4:00 pm	Discussion	Discussion	Discussion	Discussion
		FIRST ROUND OF INTER-SCHOOL COMPETITION (TWIN EXAMINATION HALL B)			
		Chairman of Competition Session : Prof Fred Job			
	4:00 - 4:10 pm	Institution 1			
	4:10 - 4:20pm	Institution 2			
	4:20 - 4:30pm	Institution 3			
	4:30 - 4:40pm	Institution 4			
	4:40 - 4:50pm	Institution 5			
	4:50 - 5:00pm	Institution 6			
	5:00 - 5:15pm	Decision of Panel of Judges	Presentation of Gifts		
	5:15 - 5:30 pm	Close			

	OPENING SESSION (TWIN EXAMINATION HALL A)			
	DAY 3			
	WEDNESDAY			
	27/09/2017			
	Chairman of Session : Dr. P.O. Lawal			
	08:30-09:00 am			
	Introduction of the day's activities			
VENUE	STREAM 1(TWIN EXAMINATION HALL A)	STREAM 2(TWIN EXAMINATION HALL B)	STREAM 4 (PHASE II)	
SUB - THEME	Cost and Value Management	Cost and Value Management	Post Graduate	
CHAIR	DrN.Gambo	Dr . A.Y. Ganiyu	Dr K.J Adogbo	
9:00 -9:15 am	Effect Of Lack Of Accessibility To Reliable Data For Cost Estimation On Construction Projects In South-South, Nigeria by Adu,E.T &Lampsey-Puddicombe, A.D	The Factors Affecting Value Management In Nigerian Construction Industry by Leje, M.I; Kasimu,M.A; Kolawole, A.F &Jibrin, A.I	Dr(Mrs). A.D. Lampsey-Puddicambe	
9:15 -9:30 am	Assessing Value Management Practices In Construction Projects Delivery by Dahiru, A	Investigating The Factors Hindering The Adoption Of Value Management Methodologies In The Nigerian Construction	Dr. Ibrahim.I. Inuwa Dr A Y. Waziri	

			Industryby Sabiu, B.Y.	
	9:30 - 10:00 am	Discussion	Discussion	
	10:15 -10:30 am			General Question and Answer on Issues in Research
		Tea break		
	10:30- 11:00 am			
	11:00 -11:45 pm	Closing Ceremony		
	11:45 - 12:30 pm	Lunch Break		
	12.30 – 1.00pm	Distribution of Certificates/ Departure.		

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**THEME 1: BUILDING INFORMATION
MODELLING (BIM)**



BIM: A HEALTHY DISRUPTION TO A FRAGMENTED AND BROKEN PROCESS

J. O. Olorunkiya,

Project in Abuja, Nigeria *33 Esthoj Multi-Disciplinary Consulting Services*

and Remedies *56 Limited Plot 478 Gbazango Extension, Arab Road,
Kubwa Abuja, Nigeria*

ABSTRACT

Construction cost, time overrun and poor quality jobs are some of the symptoms of a fragmented and broken process in construction procurement. One of the fundamental reasons is that construction procurement decisions are made based on incomplete information, assumptions and personal experiences of construction professionals that most often operate in a compartmentalized manner rather than through an integrated procurement delivery (IPD) platform as a team. Moving towards IPD involves team integration and effective communication through the application of building information modelling (BIM) to overcome construction industry Achilles heels. This paper is based on a case study of some projects and preliminary findings from literature review from various disciplines with the objective to support the claim that BIM adoption will be a healthy disruption to changing inefficient and errors-prone construction procurement processes as part of a non-going research. In addition, the paper draws a sharp comparison in information exchange models under the traditional and BIM approaches in project procurement. The paper underscores the benefits of BIM adoption as the way to go for Nigerian construction industry and the professionals' desire to be relevant as global players. The paper concludes that a transformational change rather than incremental change championed by committed leadership is indispensable to bring about the needed positive change to the old and inefficient way of construction procurement practices in Nigeria that are errors and defects prone. Without a committed leadership and a synergy between various professional bodies involved in construction project procurement backed up with deliberate policies, strategy and institutional trainings and capacity building, BIM implementation is poised to become a mere catch phrase with no added value to the industry.

Keywords: Building information modelling Collaboration, Construction, Information and communication technology, Process, Productivity, Quality, Six-Sigma



**ADOPTION OF BUILDING INFORMATION MODELING (BIM) TO
ENHANCE AND EXPAND THE PROFESSION OF QUANTITY
SURVEYING PRACTICE IN NIGERIA**

N. J. Umezina

*Department of Quantity Surveying Federal Polytechnic Oko, Anambra
State, Nigeria*

ABSTRACT

The introduction of Building Information Modeling (BIM) provides new roles and service requirements in addition to providing a tool to enhance skills and expand on the current Quantity Surveying. Services offered to clients. Despite this, the adoption and/or deployment of this tool appears low across the QS profession in Nigeria with a lack of training and education evident within the sector. This paper was aimed at identifying opportunities for the QS profession that can be realized through education and training and ultimately the adoption of BIM.. Also, the study explored different concepts of BIM in order to identify one which seemed most appropriate for QS profession; the benefits and barriers during implementation were also examined. The data collection instrument included questionnaire for ascertaining the current level of BIM usage and awareness by Nigerian Quantity Surveyors. The data collected were analyzed using the descriptive statistics. The results of this study were compared with reports and researches from countries advanced in the adoption of BIM. The survey showed that the quarters of respondents are aware of BIM and majority intend to use BIM in a few years. Survey findings also show that majority of respondents are in agreement that BIM challenges work flows and practices, improve productivity and allows the QS to add value to services. The paper recommended that the adoption of the skill set will strengthen and enhance the professional QS practice and thus reinforcing the position of the QS amongst the construction professional disciplines.

Keywords: Adoption, BIM, Nigeria, Profession, Quantity Surveying drnwachiefumez@gmail.com



PRIORITISATION OF FACTORS AFFECTING THE ADOPTION OF BUILDING INFORMATION MODELLING IN NIGERIAN CONSTRUCTION INDUSTRY

Y. S. Abubakar¹ A. Muhammed² and M. Abdulrazaq²

¹*Federal Road safety Corp, Funtua Unit Command, Katsina State, Nigeria*

²*Quantity Surveying Department, Ahmadu Bello University, Zaria, Kaduna
State, Nigeria*

ABSTRACT

Implementation of Building Information Modelling (BIM) technology will contribute to greater construction industry efficiencies through increased collaboration between different project participants, less collisions and less corrections and adjustments. Literature has shown that the construction industries in developing economies like Nigeria are facing challenges in trying to adopt the BIM concept. This study aimed at identification and prioritization of Barriers to the implementation of BIM in Nigerian construction industry in order to form an imperative step of consolidating collective movements towards wider BIM implementation. The study adopted a structured questionnaire methodology self administered to 254 sample of building design consultancy firms within Abuja Kano and Kaduna. The questionnaire was designed to obtain information on the degree at which the barriers affect the adoption of BIM in the Nigerian construction industry. 75% response rate was achieved and used for the analysis. Factors/barriers responsible for the non implementation of BIM were extracted from existing literature and ranked based on arithmetic mean value scores. One-way analysis of variance (ANOVA) was also performed to test whether the mean values on each factor was equal for some organisational characteristics. The result shows that application of

BIM will change the traditional boundary of professionals, firms are not familiar enough with BIM use, high cost of integrated software/models for all professionals, fear of BIM making professionals redundant and lack of contractual environment (legal contract) as the key factors that affect the adoption of BIM in Nigerian construction industry. The prioritization of these factors is expected to help the major stake holders to address the issues according to their priority which will save lot of time and finances with smooth implementation of BIM in Nigerian Construction industry. Awareness programs to be initiated by professional bodies and relevant government agencies to carry all stakeholders along, and do away with the fear associated with BIM adoption, encouraging project parties to uphold BIM processes in practice and promulgating better laws, regulations, and contract systems for BIM application were recommended as part of measures to ensure successful adoption of BIM in the Nigerian construction industry.

Keywords: building information modeling, BIM, prioritization, stakeholders, industry, infrastructure.



BUILDING INFORMATION MODELLING APPLICATION IN THE NIGERIAN CONSTRUCTION INDUSTRY

Y. O. Olaleye¹, A. Garba¹ and A. B. Lawal²

¹Department of Quantity Surveying, Kaduna Polytechnic, Kaduna, Nigeria.

²Department of Quantity Surveying, NuhuBamali Polytechnic, Zaria, Kaduna State, Nigeria.

ABSTRACT

Several literatures had linked productivity with ICT in construction, and indicates Building Information Modelling (BIM) as a useful ICT tool in enhancing productivity, there is however a gap in promoting BIM as a tool for improving productivity in the Construction Industry, Nigeria inclusive. Hence the need to exploit the benefits of BIM for successful delivery of construction projects in Nigeria. This study assessed the level of BIM applications in the Nigerian Construction Industry and establish the influence of BIM applications on productivity improvement. One hundred questionnaires were administered to construction professionals in Abuja and Kaduna city, and records a valid response rate of 48%. Data obtained were analysed using Structural Equation Modelling (Smart-PLS 2.0) for descriptive and inferential analysis. Findings reveal that construction practitioners in Nigeria are aware of the BIM and its applications. Visualization, Option Analysis and building management are the applications that have the highest level of usage in Nigeria. The study supports the hypothesis Building Management, Cost Estimating, Option analysis and Phasing and 4D schedule are the applications that influence productivity. This study recommends sustained awareness campaign initiated by the professional bodies particularly the Nigerian Institute of Quantity Surveyors.

Keywords: BIM, BIM applications, construction industry, productivity improvement.

**THEME 2: HOUSING POLICY, URBAN
DEVELOPMENT AND MANAGEMENT**



**CHARACTERIZATION AND REVIEW OF PUBLIC POLICIES
ENHANCING NIGERIA'S BUILDING AND CONSTRUCTION
SECTOR SUSTAINABILITY BETWEEN 2000-2015**

A. E. Ojo¹ and F. J. Balogun²

¹Physical Planning Unit, Federal University, OyeEkiti, Ekiti State Nigeria.

²Principal Partner, Package Consultant, Kaduna, Nigeria

ABSTRACT

Public policy issues have remained a stable discussion on the national polity and are mostly addressed as bias, inconsistent and incongruous with development needs and aspirations. While these may be awesome in some sectors, but not without iota of benefit and positivism in other sectors of the economy. The paper therefore attempt to randomly examine and review such policies that have enhanced the sustenance of the building and construction sector of the Nigeria economy. Using extensive literature and elicited secondary information, the paper revealed that by inferences and integration of public policies across the economy sectors, the Nigeria construction industry has immensely benefited, impacted and sustained particularly in areas of Public procurement and finance, Education and Manpower Sector, Economy, Commerce and Trade etc. The paper concluded in positivism and recommended that construction professionals be involved in development and public governance discourse.

Keywords: Construction Industry, Economic Development, Nigeria, Public Policies, Sustainability.

**THEME 3: ICT, KNOWLEDGE
MANAGEMENT AND CONSTRUCTION
ORGANIZATION**



INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN CONSTRUCTION SUPPLY CHAIN MANAGEMENT: A REVIEW

M. Umar¹ and M. Y. Adinoyi¹

*¹Department of Quantity Surveying, Federal Polytechnic
Nasarawa, Nasarawa State, Nigeria*

ABSTRACT

Advances in information and communication technology (ICT) have impacted positively on supply chain management in various scenarios of application including the construction industry in general. Research conducted by various scholars have shown that the use of the appropriate information and communication technology (ICT) systems has the potential of integrating large number of supply chain participants in the construction industry which leads to successful accomplishment of end objectives. In the construction industry, the planning, design, procurement, construction and maintenance function in construction project life cycle (PLC) are separate disciplines that are executed at different phases. The cycle operates in an adverse environment which is characterized by small interactions between phases and disciplines which makes communication, integration and collaboration amongst project participants difficult. The industry thus remains fragmented and lacks the effort to increase productivity and practices. This paper is a review of literature on construction supply chain management and delves into the characteristics and application of ICT in construction supply chain management that have resulted in integrating and collaborating successfully in the industry's supply chain and the barriers to their implementation in project life cycle (PLC).

Keywords: Construction supply chain, Information and communication technology (ICT) systems, collaboration, integration



KNOWLEDGE MANAGEMENT PRACTICE IN NIGERIAN CONSTRUCTION INDUSTRY

K. M. Idris¹, R. T. Bhadmus¹ and B. Kabir²

¹Faculty of Built Environment, Department of Quantity Surveying, Federal Polytechnic, Bauchi

²Faculty of Built Environment, Department of Building Technology, Federal Polytechnic, Bauchi

ABSTRACT

The construction industry is rich of knowledge that is considered to be the main source of the competitive advantage. This knowledge is threatened to be lost unless it is managed using a systematic knowledge management approach. This study investigated the level of knowledge management practice within the biggest Nigeria construction companies through the perceptions of the project managers. The study adopted quantitative research method of approach. One hundred and fifty questionnaire was distributed to the project managers of a number of different construction companies in Nigeria. It is found that the practices of knowledge management processes, namely knowledge acquisition, knowledge creation, knowledge sharing, knowledge storing and knowledge reuse were modest. However, the practices of knowledge dissemination and knowledge storing were low. Thus, Nigeria construction companies have to give more attention to their knowledge and ensure a structured application of knowledge management to sustain their knowledge and competitive advantage.

Keywords: Knowledge Management, Knowledge Management Processes, Construction Industry.

¹idriskt@gmail.com

²rtbhadmus@gmail.com

³bkalmadaky@gmail.com



**THE IMPACT OF LEADERSHIP STYLES ON KNOWLEDGE
MANAGEMENT APPLICATION STRATEGIES IN
MULTINATIONAL CONSTRUCTION ORGANIZATION IN
NIGERIA**

R. A. Kolawole¹ H. D. Bobbo¹ and M. M. Raji¹

*¹Quantity Surveying Department, Federal Polytechnic, Bauchi. PMB 0231
Bauchi*

ABSTRACT

Leadership is critical to any group environment, especially in today's information age in which technology has altered the operating environment of organizational leaders. Its resultant impact on organizational information flow, presents leaders with challenges and opportunities that can essentially restructure how they achieve the tasks of organisational leadership and change, thus leaders have to switch from one leadership style to another or combine elements of different styles until the right balance between concern tasks and concern for the people is reached. Knowledge management is an integration of management and information science that has worked with the impact of technology for the competitive advantage of the organizations. The knowledge management encapsulates gaining, clarification, and communication of professional views for organizational knowledge. For this to succeed, commitment of management and leadership is needed. Lately, the relationships between leadership behaviours and knowledge management have been the centre of much consideration and as such have turned out to be groundwork of activities to advance organizational performance. However, there is the lack of attention to the impact of leadership styles on knowledge management application strategies. Addressing this research gap, this paper is to identify the leadership style of construction managers and determine their influence on knowledge management application strategies. A total of 384 questionnaires were administered to construction managers in multinational construction firms in Nigeria. A total of 240 questionnaires were returned giving a response rate of 62.5%. Using SPSS v 22, data

from survey questionnaire was subjected to reliability test descriptive analysis and regression analysis. The study established that KM application strategy is impacted by telling and selling leadership style with $R^2 = 0.713$ and 0.604 respectively, meaning that telling and selling leadership style accounts for 71.3 % and 60.4% of the variation in KM application strategy. The study recommended that for KM application strategies to be effectively implemented manager must adopt the telling leadership style.

Keywords: Leadership Styles, Knowledge Management, Strategy Application, Chief Knowledge Officer

¹rakolawole2013@gmail.com

²hadizabobbo@yahoo.com

THEME 4: CHANGE MANAGEMENT



**TOWARDS CHANGE ORDERS CAUSES AND IMPACTS ON
CONSTRUCTION PROJECTS IN
SOUTH-WESTERN NIGERIA**

A. A. Arowosegbe¹ and R. Salawu²

¹*Dept. of Quantity Surveying, School of Environmental Studies, Federal Polytechnic, Offa, Kwara state. Nigeria*

²*Dept. of Quantity Surveying, School of Environmental Studies, Yaba College of Technology, Lagos, Lagos State, Nigeria*

ABSTRACT

The most inevitable occurrence in construction projects is change orders. It is however, a common event in construction that it is almost very rare for a project not to have change orders issue. It plays a significant role in determining the closing time and cost of a project. Related literatures indicate that, change orders causes are greatly varied and this made the task of change management very difficult for most clients. Consequently, cost and time overruns among others are major effects of change orders mishandling. This study examines the causes, impacts and the party responsible for change orders occurrence in construction project. The paper further presents frequency, severity, and importance of these causes, potential impacts and party responsible for change orders. To achieve the study objectives, a questionnaire survey approach was adopted to collect data from clients, consultant, and contractors of building projects. The study concluded by identifying sixteen frequent, sixteen important and nineteen severe causes of change orders in construction projects, however, there are also nine frequent, nine important and twelve severe impacts of change orders. In addition, the study finds consultants as the most responsible party for change orders origination. The findings in this study can be adopted by construction practitioners in identifying the critical causes and impacts of change orders. Furthermore, the findings can also be finally used as a reference to checkmate consultants and clients attitude of frequent ordering of change orders on construction projects.

Keywords: Causes, Change orders, Construction, Cost overrun, Impact, Time overrun.



THE IMPACTS OF CLAIMS ON CONSTRUCTION PROJECT DELIVERY

S. I. Mohammed¹, M.A. Kasimu¹, M.U. Kabiru¹ and R.T. Adebisi²

¹*Department of Quantity Surveying, Fed. Poly. Bida, Niger State*

²*Department of Quantity Surveying, University of Ilorin, Kwara State*

ABSTRACT

Right from the inception of any project, a client always has in mind likely cost of his proposed project based on the estimate made available to him Quantity Surveyor. The primary aim of such estimate is to provide the client with a guide or forecast of financial commitment of the proposed projects. However, this objective is hardly met due to certain factors that normally arise during the course of the construction project. It is in view this that the paper aimed at establish the significant impacts of claims on construction projects delivery. To accomplish this, quantitative research approach was adopted through the uses of survey questionnaire. However, 100 numbers of questionnaire were distributed to Quantity Surveyors, Architects, Engineers, Builders, Project managers, Construction managers and other stakeholders in the construction industry. Although, only 68% of questionnaires distributed were filled correctly and returned, which represent the questionnaire used for the data analysis. The findings from the descriptive analysis shows that disputes, breach of contract, change in design, design error etc are the major factor that causes the claims in construction projects. In addition, the findings also show that claims have impacts on the following aspect of construction works such as cost and time overrun, abandonment of projects, decrease quality of projects and loss of productivity. Therefore, the paper suggests that, henceforth the impacts of claims on the construction project delivery should be taken serious by the professionals in construction industry as a challenge that hider the success of quality project delivery as outline in the findings.

Keywords: Claims, Constructionprojecs, Construction Industry, Poject success, construction cost.



APPLICATION OF CHANGE MANAGEMENT SYSTEM IN CONSTRUCTION PROJECTS IN NIGERIA

M. M. Musa,¹ M. A. Musa² and M. Yakubu¹

¹*Department of Quantity Surveying Abubakar Tafawa Balewa University
Bauchi, Bauchi State, Nigeria*

²*Department of Architecture Ahmadu Bello University Zaria, Kaduna
State, Nigeria*

ABSTRACT

Changes are common in construction projects. The effects of these changes may be detrimental on a project, leading to cost and time overrun and sometimes to project failure. Thus, effective change management is vital to the success of construction projects. However, a number of construction firms in Nigeria do not have any guidelines or procedures for managing changes in their projects. This may result in poor management of the changes during project implementations. The aim of this paper is to assess the level of change management implementation in construction projects in Nigeria. To achieve this aim, a questionnaire survey of project managers was conducted, in order to collect information on the status of change management implementations in their projects. The data collected were analysed with the aids of statistical tools which include means and percentages. The results reveal that, the extent of the implementation is very low, while the major hindrance to the implementation was found to be lack of professionals with adequate skills of change management process. The findings of this study will increase the likelihood of achieving project success in Nigeria, by minimising changes that have detrimental effects on a project.

Keywords: Change Management, Construction Professionals, Construction projects, implementation, Nigeria.

**THEME 5: ETHIC AND PROFESSIONAL
ISSUE**



EFFECT OF CODE OF ETHICS ON QUANTITY SURVEYING PRACTICES IN ONDO STATE, NIGERIA

A. E. Oke¹, D. O. Aghimien², and C. O. Aigbavboa¹

^{1&3}*Department of Construction Management and Quantity Surveying,
University of Johannesburg, South Africa*

²*Department of Quantity Surveying, Federal University of Technology,
Akure, Ondo State, Nigeria*

ABSTRACT

Nigeria today is faced with enormous economic challenges, which if not properly checked can make even the most upright construction professional act in a manner that goes against the ethics of their profession just in a bid to make ends meet. In order to avoid such occurrence, the code of ethics as related to every construction profession was established. This study therefore focused on the effect of code of ethics in regulating professional conduct of Quantity Surveyors (QS) in Nigeria. A survey design was employed through the use of structured questionnaire administered on registered QS in Ondo State. Data analyses was done through the use of statistical tools such as frequency, percentage, mean item score and Kruskal-Wallis Test. Normality test was carried out to test the distribution of the data gathered while Cronbach Alpha test was also conducted to test the reliability of the research instrument. The study revealed inadequate education of QS on the code of ethics, poor supervision and lack of exemplary leadership as the major factors affecting the implementation of code of ethics in the state. The study also revealed that implementing the code of ethics will have huge effect in terms of upholding accountability, reducing unethical practices and creating credibility among QS. Proper training of QS right from the university level as regards the code of ethics of the profession, and proper monitoring and supervision of QS to ensure compliance with code of ethics were recommended.

Keywords: Code of ethics, , Quantity Surveyor, Ethical Practices, Professional conduct

Emails: ¹emayok@gmail.com, ²aghiemiendouglas@gmail.com,
³caigbavboa@uj.ac.za



AN ASSESSMENT OF QUANTITY SURVEYORS PARTICIPATION IN THE EVOLVED ROLES OF THE PROFESSION

M. Abdulrazaq and I. G.Odeh

*Department of Quantity Surveying, Faculty of Environmental Design,
Ahmadu Bello University*

ABSTRACT

Studies have shown that the Quantity Surveying profession and skills have undergone significant changes over the past decades. This has resulted in the evolution of new roles expected of quantity surveyors. This paper assessed the participation of Quantity Surveyors in evolved roles of the profession. Eighteen (18) evolved roles were identified from literature review and were used for the study. A questionnaire survey of Quantity surveyors practicing in the Nigeria construction industry (who are also registered by the Quantity Surveyors Registration Board of Nigeria (QSRBN)) was conducted. Respondents were asked to indicate their level of involvement in practicing the evolved roles. Data analysis was carried out using SPSS 20.0 via the use of means, frequencies, percentages and Likert-type scale. The result of the analysis shows that “administering maintenance programmes”, “advice on cost limits and budgets”, “risk analysis”, and “advice on contractual disputes” are the major evolved roles being performed by Quantity Surveyors in Nigeria. While “environmental services measurement and costing”, “technical auditing” and “insolvency services” are the least evolved roles practiced by Quantity Surveyors.

Keywords: Evolved, Roles, Quantity Surveyors, Involvement, Services

Emails: musteephd@gmail.com
ikwegreg@gmail.com



EVALUATING FACTORS MOTIVATING UNDERGRADUATE STUDENTS TO REMAIN IN AND PRACTICE QUANTITY SURVEYING AFTER GRADUATION

M. Abdulrazaq and A. Tijjani

*Department of Quantity Surveying, Faculty of Environmental Design,
Ahmadu Bello University, Zaria*

ABSTRACT

Previous studies have established the low level of awareness of the Quantity Surveying profession among secondary school leavers and undergraduate students at entry level. This study examined factors affecting undergraduate students' motivation to continue studying Quantity Surveying as a degree course and picking a career in the profession after graduation. A questionnaire survey of 340 undergraduate students from Quantity Surveying Departments of three (3) Universities in Nigeria (i.e. Ahmadu Bello University Zaria, AbubakarTafawaBalewa University Bauchi, and Federal University of Technology Minna) was conducted. Data analysis was carried out with the aid of descriptive statistic; mean, percentages, and standard deviation. The study revealed that the top three reasons why students remain in Quantity Surveying include "increase in academic ability and capacity to succeed", "collaborative tendencies of the course", and "the course grooms students on managing work/life style balance". While the three topmost motivations for students to practice the profession after graduation include "Quantity Surveyors are trained to bring transparency and accountability", "there is high level of professionalism and ethics in the profession", and "jobs are readily available after graduation".

Keywords: Students, Quantity Surveying, Profession, Motivation, Career.



APPRAISAL OF SERVICE DELIVERY OF MULTISKILLED QUANTITY SURVEYORS IN NIGERIA

J. A. Akinola, D. R. Ogunsemi, O. F. Akinradewo, A. E. Oke
*Department of Quantity Surveying, Federal University of Technology,
Akure, Ondo State, Nigeria.*

ABSTRACT

The complexity and intricacies of construction projects and construction activities have led to the development of innovative disciplines in the construction industry. These new disciplines with great market opportunities have prompted professional quantity surveyors to acquire new skills different from the core discipline of Quantity Surveying and thereby becoming multiskilling. However, a number of practical challenges stand in the way majority of professionals are employed or are in-between jobs due to financial and time constraints. They can only participate in part-time training which has to be time condensed and affordable financially. Hence this paper considered the effects of multiskilling on professional service delivery and assessed the challenges to the development of multiskilling in Nigeria. The paper adopted questionnaire survey on two separate populations of multiskilled quantity surveyors and registered quantity surveying firms (principal partners) that have diversified professional services. Sampling was done by the use of snowballing technique. The questionnaire was structured on the effects of multiskilling on service delivery and challenges to development of multiskilling in Nigeria, The data collected were analysed using Mean Item Score (MIS) and one way analysis of variance. The paper revealed that multiskilling enhanced quality of service delivery and job coordination while the challenges to the development of multiskilling in Nigeria are cost implication of engaging multiskilled personnel, job/task-based requirements and pride of professional association. The paper concluded that professional services are knowledge intensive based and professionals are required to supply product (services) which are

primary source of information and knowledge to its end-users. The paper recommended that quantity surveying firms, being classified as a Small-Medium Enterprise (SME) should embrace multiskilling strategy and service diversification as a means of sustaining the business.

Keywords: Multiskilling, Nigeria, professional Quantity Surveyors, professional services, quantity surveying firms.

¹akinolaja@yahoo.com

²dejifeyi@yahoo.com



FACTORS DETERMINING THE EMPLOYABILITY OF QUANTITY SURVEYING GRADUATES IN NIGERIA'S BUILT ENVIRONMENT

S. G. Dalibi¹, A. M. Kabir² and A. Hassan³

¹*Department of Quantity Surveying, AbubakarTafawaBalewa
University (ATBU) Bauchi.*

¹*Business school of Hohai University Nanjing, Jiangsu Province of
China.*

³*Department of Building, MAUTECH Yola, Adamawa State, Nigeria.*
^{1,2,3} *Project Procurement Consultants (PPC), Gombe, Nigeria.*

ABSTRACT

The Built Environment (BE) is a physical product of inputs from various professions which Quantity Surveying (QS) plays a vital role. Graduates from the QS field were expected to have possessed the requisite skills and training leading to employment. Employability skills are very vital in today's labour market and includes basic, core / fundamental, soft and transferable skills which enables them work within the BE under their experienced colleagues. However, previous studies show that such skills were in shortage, often inadequate and do not guarantee employment which is worrisome to the stakeholders and the country atlarge. This paper identifies and assesses the impact of the various factors that determine employability of QS graduates in Nigeria. Eight factors were identified from the literature and assign a 5-point Likert scale in the questionnaire which was randomly distributed electronically and manually to various QS professionals. Percentage tables, mean item score and chi-square statistics were used to analysed the data. The result shows that QS graduates employment is seriously impacted by these factors which are: core skills, perceptions of the employers, years of experience, professional membership, reputable tertiary institutions, the construction volume and spending, class of degree and favoritism or nepotism. Cummulatively they significantly determine the employability of QS graduates in Nigeria.

Keywords: Employability, Factors, Graduates, Nigeria, Quantity Surveying, Skills.



IMPACT OF NIGERIAN INSTITUTE OF QUANTITY SURVEYORS ON THE DEVELOPMENT OF QUANTITY SURVEYING PROFESSION

S. G. Dalibi¹, A. M. Kabir², A. Hassan³ and Y. Ibrahim⁴

¹*Department of Quantity Surveying, AbubakarTafawaBalewa
University (ATBU) Bauchi.*

¹*Business school of Hohai University Nanjing, Jiangsu Province of
China.*

³*Department of Building, MAUTECH Yola, Adamawa State, Nigeria.*

^{1,2,3,4}*Project Procurement Consultants (PPC), Gombe, Nigeria.*

ABSTRACT

The true value of a professional body can in reality only ever be tested against the counterfactual statement: *what if it didn't exist?* The Nigerian Institute of Quantity Surveyors (NIQS) and The Quantity Surveyors Registration Board of Nigeria (QSRBN) work hand in hand to promote and regulate the Quantity Surveying (QS) professional practice in the Nigeria's built environment. Over the years, the QS profession is facing challenges such as in-adequate technical skills among the practitioners, lack of passion and un-employable skills among its graduates, poaching of QS services by other professions, Challenges from emerging trends and lack of I.T. usage and application in the QS practices. The aim of this paper is to assess the performance of the NIQS on the development of the QS profession. Thirteen factors were identified from the literature and assign a 5-point Likert scale in the questionnaire which was randomly distributed electronically and manually to various QS professionals. Percentage tables, mean item score and chi-square statistics were used to analysed the data. The result shows 12 areas where the NIQS has a "High Impact" and only one area with a "Moderate Impact". In conclusion; the ability of the NIQS in organizing various continuing education and professional training such as Workshops / seminars / conferences / general meetings brings together the QS practitioners from all sectors to discuss matters of mutual interest to the profession in Nigeria.

Keywords: Built environment, Challenges, Impacts, NIQS, Professional body, Quantity Surveying.



APPRAISAL OF MULTISKILLING DIVERSIFICATION ON QUANTITY SURVEYORS COMPETENCY IN NIGERIA

J. A .Akinola, D. R. Ogunsemi, O. F. Akinradewo and
S. O. Olatunji

*Department of Quantity Surveying, Federal University of Technology,
Akure, Ondo State, Nigeria.*

ABSTRACT

The increasing complexity of construction work has impacted on the way skills are formed and resulted in fragmentation of what people do, and hence in the further atomisation of skills required. Therefore, this paper assessed areas where Quantity Surveyors could have diversified and developed competence to keep abreast of job turnover or sudden development in work environment. The paper adopted questionnaire survey on two separate populations of multiskilled quantity surveyors and registered quantity surveying firms (principal partners) that have diversified professional services. Sampling was done by the use of snowballing technique. The questionnaire was structured on the skill requirements for service diversification and relationship between skill affinity and multiskilling. The data collected were analysed using Mean Item Score (MIS) and hierarchical cluster analysis. The paper identified seven hierarchical levels of skill groupings where Quantity Surveyors can acquire competency for service diversification and established the relationship between skill affinity and multiskilling. The paper concluded that the proliferation of knowledge in the construction sector coupled with the impact of technology in the workplace required service firms to maintain the currency of service delivery within the ambit of business advances and development. The paper recommended that principal partners, operation managers and human resource managers should encourage professionals to multiskill in new marketable areas of optional competency to ensure business development and sustainability.

Keywords: Competency, multiskilling, Nigeria, Quantity Surveyors, service diversification, skills.

¹akinolaja@yahoo.com, ²dejifeyi@yahoo.com,



A SURVEY OF RECORDS MANAGEMENT PRACTICE OF CONTRACTORS IN BAUCHI STATE

R. A. Kolawole. R. M. Mudashir and H. D. Bobbo

Quantity Surveying Department, Federal Polytechnic Bauch,,Nigeria

ABSTRACT

Records and documents management is the process that involves methodically creating records, dissemination, usage, preservation, retention and disposal of documented information kept as evidence in contract and business dealings. The paper aims at identifying the record and document management practice of contractors in Bauchi state and to recommend ways of improving their record and document keeping practice. The primary data were collected through the use of administered questionnaire and structured oral interview of 45 contractors within Bauchi Metropolis. Out of 45 contractors, 30 interviews were successfully conducted based on questionnaires returned. The secondary data were sought through literature on study subject in texts and journals which formed the basis of the structured questionnaire for interview. Using SPSSv.22 data collected for the study were analysed using descriptive statistics for the background information of respondents, percentages and mean scores. The survey produced new information on record management practice in medium and large firms. The result of the study, among others, indicated that firms with more formalised management structure took more structured approach to records management and records management practices appeared to be independent of company size. Chronological and subject filing systems are the two major filing systems employed and cupboard and steel cabinets are storage facilities in use. The paper recommended the use of secretarial staff and personnel training as a means to improve document and record management practice in contractor's firms.

Keywords: Record Classification, Record Filing, Records Management, Record Storage, Record Systems.

¹rakolawole2013@gmail.com, ²bigraja2009@gmail.com,
³hadizabobbo@yahoo.com



ANALYSIS OF THE RELATIONSHIP BETWEEN ORGANISATIONAL CULTURE AND INNOVATION IN NIGERIAN QUANTITY SURVEYING FIRMS

A. F. Haruna¹; K. J. Adogbo² and M. Abdulrazaq²

*¹Department of Quantity Surveying, The Federal Polytechnic Idah, Kogi
State Nigeria*

² Department of Quantity Surveying, Ahmadu Bello University, Zaria

ABSTRACT

Quantity Surveying firms in contemporary times have evolved into structurally standard organisations where there is the understanding of organisational culture as an essential management philosophy that drives innovation. This study seeks to analyse specifically, the relationship between organisational culture and innovation in quantity surveying firms. Using a quantitative research approach, the research examined the relationship between organisational culture and innovation in Quantity Surveying firms. Eighty one (81) Quantity Surveyors from Twenty Seven (27) firms completed the questionnaires used for this research. Spearman's rank correlation was used to evaluate the relationship between organisational culture and innovation types. The study revealed that Quantity Surveying firms exhibited multiple types of innovation. The study further revealed that quantity surveying firms exhibited multiple types of organisational culture. The study concluded that organisational culture has a significant relationship with innovation in quantity surveying firms. The findings from this study implied that there were need for the management of quantity surveying firms to embrace organisational culture as a strategy for improving innovation practice and they were also need for the management of quantity surveying firms to embrace innovation as a strategy for improving organizational culture.

Keywords: Innovation, Organisational Culture, Quantity Surveying

THEME 6: PROJECT MANAGEMENT



EMERGING CRITERIA FOR DETERMINING PERFORMANCE OF CONSTRUCTION PROJECTS IN NORTHERN NIGERIA

A. Muhammad¹, M. Abdulrazaq² and K. J. Adogbo²

¹*Department of Quantity Surveying, Kaduna Polytechnic, Kaduna, Kaduna State, Nigeria.*

²*Department of Quantity Surveying, Ahmadu Bello University, Zaria, Kaduna State, Nigeria.*

ABSTRACT

Studies have reported that critical set of factors/criteria as key areas of activity which favorable results are absolutely necessary for a goal to be achieved. Following that, several studies have been carried out in order to determine critical project performance criteria which were based on Traditional performance criteria (cost, time and quality) only. But researches have highly criticized the use of traditional criteria only while assessing construction projects performance due to its in-adequacy. However, existing literature have failed to determine the critical project performance measurement criteria base on the emerging/non-traditional criteria. This study evaluates the emergent criteria for determining performance of construction projects in Northern Nigeria which was achieved through the following objectives: the identification of emerging set of criteria for determining project performance, assessment of the level of criticality for the emergent project performance criteria and determination of the most critical set of project performance criteria. A total of 285 questionnaires were distributed to some construction industry stakeholders who were asked to assess the level of criticality of the set of criteria. A total of 147 valid questionnaires were retrieved representing 51.58% valid response rate and subsequently analysed using descriptive analytical tool with the aid of statistical package for social sciences (SPSS) software. The result shows that the respondents considered the following as the critical set of criteria: client satisfaction on outcome, partnership, effectiveness of communication, client satisfaction on quality among others. Critical criteria considered by respondents are client-oriented

base. Lastly, considering the critical criteria for determining construction project performance as rated in descending order of priority will help the key parties of the industry to understand which criteria will result to failure of project if not considered while determining project 'performance.

Keywords: Traditional performance criteria, Non-traditional performance criteria, Project Performance criteria, Emergent Critical Project performance criteria

¹mohammedanas2006@gmail.com,

²musteezee2005@mail.com

³kjadogbo@gmail.com



EVALUATION OF INNOVATION PRACTICES IN BUILDING INDUSTRY IN NIGERIA

A. Ebekozien^{1&2}, D. S. O. Duru³, and A. N. C. Nwaole⁴

¹*School of Housing, Building, and Planning, Universiti Sains Malaysia (USM), Penang, Malaysia.*

²*Quantity Surveying Dept., Auchi Polytechnic, Auchi, Edo State, Nigeria*

³*Quantity Surveying Dept, Federal Polytechnic, Nekede, Imo State, Nigeria.*

ABSTRACT

This paper is prompted by the apparent lack of innovation in the Nigerian construction industry. Therefore, the aim of this study is to identify types of innovation and its application, and categorised barriers hindering construction innovation with a view to suggest ways to enhance innovation practices. To achieve this, data were collected via in-depth interviews and validated via secondary sources. Epistemology type of philosophical paradigm and random purposive sampling technique was adopted. Thematic analysis was adopted for the qualitative research and 5 themes were generated. Three states (Edo, Imo and Lagos) in Nigeria were covered. The participants were key practitioners in the industry. From the findings, product, process, market, and managerial innovation respectively were identified as innovation types. Furthermore, green building, environmentally friendly materials, precast wall finishing, prefabricated buildings, digitization of site and office, and electronic transaction (tendering, procurement, purchasing), software's were areas of application of innovation. The barriers were identified and categorised into managerial, financial, technical, behavioural, government policy, and others. Ethics and Institutes training, government provision of fund accessibility and basic infrastructure, entrepreneurial spirit, investment in research and development, vision and commitment for improvement, develop capabilities and technical know-how were all identified as ways to enhance innovation practices.

Keywords: Building Industry, Innovation, Participants, Practices.

E-Mail: ebekoandy45@yahoo.com



EVALUATION OF FACTORS AFFECTING THE DELIVERY OF BUILDING CONSTRUCTION PROJECT IN ABUJA, NIGERIA

S. Y. Oloyede and M. O. Anifowose

*Department of Quantity Surveying, School of Environmental Technology,
Federal University of Technology Minna, Nigeria*

ABSTRACT

Successful building construction project delivery is of great importance to any construction industry as it enables the client to achieve value for money. However, the construction industry has been posed with various challenges which make it difficult to deliver a successful building construction project. Building construction projects often considered being successful when delivered within completion time, allocated budget and specified quality. The study adopted a quantitative research approach using questionnaires to source relevant information from respondents. 339 questionnaires were distributed to the professionals while 204 usable responses were received. Similarly, 60 out of 90 questionnaires distributed to end-users were received and used for the analysis. Delay in payment of valuation, use of substandard materials, corruption and inadequate experience are the most important factors affecting building construction project delivery. The effect of these factors on cost of construction was at 0.013 significant level and F-value of 1.626, indicating a significant effect. Also, frequent maintenance work, dampness, leakages and shortage of water supply have a significant impact on the end-users. Therefore, this research on a general note concluded from the perception of the professionals and the end-users that factors affecting the delivery of building construction project existed in multiples and that those factors have significant effect on cost of construction.

Keywords: Building construction cost, End-users, Professionals, Project delivery.

¹oloyedesaaheed21@yahoo.com, ²anifowosemo@futminna.edu.ng,
³anny4yemi2000@yahoo.com



ASSESSING THE CAPABILITY OF PROJECT MANAGEMENT PRACTICE ON INFRASTRUCTURE PROJECTS IN NIGERIA

M. R. Shuaib

Department of Quantity Surveying, Bayero University Kano, Nigeria

ABSTRACT

The increasing lack of successful completion of large infrastructure public projects in Nigeria requires the need to look at project environment with a view to confront the challenges associated with project success. The paper examined the project management (PM) philosophy as currently applied in managing infrastructure projects in Nigeria, with the intention of assessing its effectiveness in addressing issues necessary for successful project delivery. A quantitative survey using an online questionnaire was used to solicit responses from 200 professionals on 40 selected multifarious projects across three regions in the north and the federal capital territory (FCT) in Nigeria. 21 factors in a sound PM practice were identified from literature, which were later trimmed to 14 after a validity and pilot test conducted on the questionnaire. The relative presence and importance of these factors in PM practice in Nigeria was rated and analyzed using an influence index value. Spearman's rank correlation coefficient was used to examine the similarity or dissimilarity in the ranking of the factors amongst the respondents, who were categorized as clients, contractors and consultants. This study's finding shows; lack of favorable form of contract conditions", "weak stakeholders' relationship" and "poor leadership potential" as the major factors that led to unsound PM practice in Nigeria. It is clear that the existing traditional project management system is short of encompassing issues of leadership potential and relationship management as other essential knowledge areas in project management. The study recommends a new framework for PM philosophy that would reflect issues relating to project team and their cross-functional/working relationship in project delivery. The outcome of this survey will benefit the Nigerian government who is

a major construction client, the private sector and the construction industry as a whole by providing data that can be utilized to develop PM plans that will increase the number of infrastructure project delivered successfully.

Keywords: Infrastructure projects, Nigeria, Project management, Project management practice

mrshuaib.qs@buk.com,
rshuaib73@gmail.com



ASSESSMENT OF RISKS ON HIGHWAY CONSTRUCTION AND REHABILITATION PROJECTS IN NIGERIA: A FUZZY LOGIC APPROACH

R. A. Salawu¹ and A. A. Arowosegbe²

¹Department of Quantity Surveying, Yaba College of Technology, Lagos, Lagos State, Nigeria

²Department of Quantity Surveying, Federal Polytechnic, Offa, Kwara State, Nigeria

ABSTRACT

Highway construction projects are unique and complex in nature. Hence risk information on them are often derived through subjective judgment of experts. Subjective data are fuzzy and are best handled by the application of fuzzy logic. Thus, probability severity indices (PSI) of risk factors on highway construction and rehabilitation projects in Nigeria are assessed by applying principles of fuzzy set theory. Questionnaire survey of 64 construction professionals who are directly involved in the execution of the sampled eighteen Federal highway construction and rehabilitation projects in the South west of Nigeria was undertaken. Data collected were subjected to fuzzy synthetic evaluation to derive the PSI of the significant risk factors. Twenty two (22) risk factors were found to be significantly leading to time overrun on highway construction projects in Nigeria while only twelve out of the twenty two risk factors are significantly leading to time overrun on highway rehabilitation projects. Inadequate/non budgetary provisions, inaccurate quantity of measured work and delay in claim settlement have severe risk factor indices on highway construction projects. These findings suggest the need to identify and provide the appropriate risk mitigation methods for treating the identified significant risk factors before signing future highway construction and rehabilitation contracts.

Keywords: Fuzzy synthetic evaluation, Highway Construction and Rehabilitation, Risk Assessment, Risk Factors, Risk Factor indices.



A FRAMEWORK FOR EFFECTIVE COMMUNICATION AMONG CONSTRUCTION TEAM

F. O. Akinradewo, L. D. Ojo and T. S.Oladunjoye

*Department of Quantity Surveying, The Federal University of Technology,
Akure, Nigeria*

ABSTRACT

The impact of effective communication in any construction organization cannot be over-emphasized as it determines project success. The study assessed: communication tools used in the construction industry, contribution of construction team to communication at various stages of construction work and the effectiveness of communication tools on construction project performance. Survey approach was adopted for this study and 80 questionnaires were administered to major stakeholders. Percentile and mean score were used for the analysis. The result indicated that drawing, specification and valuation were the top most tools used for communication. The study also showed that client, architect, financial body and quantity surveyor communicate mostly at the brief stage while project managers, construction managers, engineers, contractors and builders communicate mostly at the technical stage. In addition, the study revealed that drawing and specification are the most effective communication tools in term of time, cost and quality delivery of project. The implication of these findings is that poor buildability, delay, cost overrun, poor quality, and low productivity occurred as a result of inefficient communication among construction team. The study recommended that the framework developed should be used to determine communication pattern among construction team at various stages of construction for effective project delivery.

Keywords: Brief stage, Technical stage, Progress stage, Communication tools and Construction team.

fakol30@yahoo.com, ojolekand@gmail.com
toluoladunjoye@gmail.com



ASSESSMENT OF FACTORS AFFECTING CONTRACTORS' CASH FLOW IN PUBLIC PROJECTS' EXECUTION IN NIGERIA

E. O. E. Nnadi, C. O. Ade-Ojo and D.R. Ogunsemi

Quantity Surveying Department, The Federal University of Technology (FUTA), Akure

ABSTRACT

Most contracting firms working on public projects in Nigerian construction industry are dotted with cash flow problems. Their firms record lowest rate of profit and the highest rate of bankruptcies. Strong cash flow is important for efficient performance and effective project delivery. It increases the contractors' profit and ensures that the clients get real value for money in terms of cost; time; performance and sustainability. Thus, availability of operating cash could mean the difference between success and bankruptcy for a construction company. This work assessed the factors affecting contractors' cash flow in public projects execution in Nigeria. This was done by assessing the effects of cash flow on the contractor's general performance and finding the factors affecting their cash flow. Questionnaire was used as the data collection instrument from a sample population of 165 identified contractors involved in various public works in Ondo State. The analysis of the collected data was carried out using descriptive and analytical scientific methods like Relative Importance Index (RII). Findings revealed that the rate of cash-in-flow during public projects execution were not regular. Regular cash flow on the performance of contractor have their significant probability less than 5% level of significant indicating that cash flow enhances prompt completion of projects, increase contractors' profit and quality project delivery. Diversion and poor accountability of project fund is the major factor affecting contractors' cash flow with an RII of 1.00 as most the cash for construction work by government are either embezzled or diverted to another project. Hence, the study recommends that contractors and clients should engage the service of construction cost experts to carry out cost planning before embarking on any construction project

so that each party will know their financial commitments before commencing project's execution.

keywords: accountability, cash flow, contractors, performance, public projects.

Emails: nadizekiel@yahoo.com
oluwabunmiade@gmail.com
dejifeyi@gmail.com



LEADERSHIP STYLES AND ITS EFFECTS ON CONSTRUCTION PERFORMANCE IN NIGERIA

A.M. Nasiru and M.A. Kasimu

Department of Quantity Surveying; Fed Poly Bida. Niger State

ABSTRACT

The Management of construction projects consists of a complex and integrated collection of decisions, actions, and communications necessary to complete projects successfully. However, the failures in this leadership responsibility resulted into poor construction performance due to the following factors such as error, omission, changes, poor communication and poor coordination and control of construction cost. Therefore, the paper aimed at establish the role of leadership styles on construction project performance. The survey questionnaire was adopted as a result of fragmentation and diversification in the construction industry. The questionnaire was designed in five (5) point Likert scale format with closed ended questions. A total of 100 numbers of questionnaires was distributed to Engineers, Quantity surveyors, Project Managers, Construction Managers, Contractors, Consultant and other stakeholders in the construction industry. The descriptive analysis was used to analyse the data obtained from the responses of the respondents. The result obtained from the descriptive analysis shows that autocratic, laissez faire, command and charismatic leadership styles are the commonest leadership styles used during the course of construction projects. The findings also show that servant, pace setting, coaching, visionary and transformative leadership styles have significant impacts on the construction projects performance, if adopted. Therefore, the paper recommended that leaders in the construction organisation should adopt one of the above mentioned leadership styles in order to achieve quality project performance.

Keywords: Construction Industry, Leadership style, project manager, project success, construction projects.

Emails: kasimualfa@gmail.com, nasirunda@gmail.com



ENERGY PERFORMANCE CONTRACTING POTENTIALS AS MARKET DIVERSIFICATION STRATEGY FOR NIGERIAN ENERGY SERVICE COMPANIES

I. Shehu¹ N. Gambo¹ and H. D. Bobbo²

*¹Department of Quantity Surveying Abubakar Tafawa Balewa University,
Bauchi, Nigeria*

²Department of Quantity Surveying Federal Polytechnic, Bauchi, Nigeria

ABSTRACT

Energy is one sustainability issue that established a major global concern. Energy sustainability in buildings largely focused on energy efficiency and utilizing renewable resources in attaining sustainable development goal. However Energy efficiency projects or adding renewable technologies require large upfront investments. This paper studies Energy Performance Contracting (EPC) mechanism potentials as an effective tool for such project delivery with a view of achieving the energy sustainability objective and also serving as market diversification strategy for energy service companies in Nigeria. The study adopts exploratory design using extensive literature review. The study findings reveals that the series of reforms in the nation's electricity industry has not yielded the required result of adequately supplying the needed power to the citizenry; hence the need for re-strategizing, Nigeria is richly endowed in renewable resources and requires only effective stakeholders' collaboration to be harnessed, and EPC mechanism enables the collaboration of building owners and energy service companies towards achieving energy sustainability while having mutual benefits. The study recommends that the parties to EPC arrangement to clearly identify, address and adhere to key issues involved when implementing EPC projects at pre-retrofit, installation and post-retrofit stages for optimal performance of the mechanism in Nigeria.

Keywords: Energy performance contracting, Energy Service Company, Building owner, Energy Efficiency, Nigeria.



MANAGERIAL CAPABILITY OF CONTRACTORS IN EXECUTING CONSTRUCTION PROJECTS IN NIGERIA

**A. I. Dodo¹, I. S. Muhammad¹, I.A. Chukwujama¹ and
A. Muhammad²**

*¹Department of Civil Engineering, Nigerian Defence Academy (NDA)
Kaduna, Kaduna State, Nigeria.*

*²Department of Quantity Surveying, Kaduna Polytechnic, Kaduna, Kaduna
State, Nigeria.*

ABSTRACT

Studies have shown decline in the performance of contractors both locally and internationally. In-furtherance, the decline in contractors' performance has led to low level performance of the construction industry. The decline has been attributed to poor managerial capability of contractors in developing countries which led to low level performance of the industry. However, there was little or no research work conducted on the assessment of managerial capability of contractors using the Project Management Phases Techniques (PMPT) while executing construction projects in the Federal Capital Territory (FCT), Abuja, Nigeria. The study assesses managerial capability of contractors in executing construction projects in Nigeria which was achieved through the following objectives: identification of Project Management Phases Techniques (PMPT) used by contractors' in executing construction projects, determination of the current level of contractors' proficiency in applying PMPT while executing construction projects in FCT, Abuja, and the determination of the suitable PMPT to improving contractors managerial capability while executing construction projects in the FCT Abuja. A total of 140 questionnaires were distributed to some construction projects professionals working in different consultancy firms. Furthermore, respondents were further asked to assess the most suitable PMPT that will improve contractors' managerial capability while executing construction projects in the FCT Abuja. A total of 86 valid questionnaires were retrieved representing 61.43% valid response

rate and subsequently analyzed using descriptive statistics with the aid of Statistical Package for Social Sciences (SPSS) software. The study found that contractors are proficient in using the following PMPT: establishing relationships with customer/clients, divide the project into tasks, creating a preliminary budget, establishing the project initiation team, closing down the project. Furthermore, the study found that contractors are not proficient in using the remaining PMPT (i.e. describing project scope, alternatives and feasibility, estimating resources and creating a resource plan, communicating the project status, maintaining the project work book among others). The study has also determined the most suitable PMPT that improve contractors managerial capability to include: establishing management procedures, establishing relationships with customer/clients, establishing the project initiation team, dividing the project into tasks, establishing the project initiation team as well as determining project standards and procedures.

Keywords: Contractors, Managerial Capability, Project Management Phases Techniques (PMPT), Construction projects.



**SMALL AND MEDIUM SCALE CONTRACTORS' PERCEPTION
ON THE ATTRIBUTES AND BARRIERS OF TEAMWORK ON
COST PERFORMANCE OF CONSTRUCTION PROJECTS IN
SOUTH-EASTERN REGION OF NIGERIA**

E. T. Adu¹ and A. D. Lamptey-puddicombe²

¹Department of Quantity Surveying, University of Uyo, Nigeria

*²Department of Civil Engineering, Niger Delta University, Wilberforce
Island*

ABSTRACT

The need for teamwork in meeting the global competitiveness and clients' expectations is becoming generally popular in most sectors of the economy. The construction industry must therefore follow the trend in order to minimize the perennial problem of poor cost performance in most projects executed in the industry. The main focus of this study was to investigate the significant attributes and severity of barriers of teamwork on cost performance of construction projects in South-Eastern Nigeria. Data were obtained through 193 structured questionnaires administered to small and medium scale contractors and analysed using mean item score and Mann-Whitney U test. The study reveals that there is no difference in the contractors' perception concerning the significance of attributes of teamwork and severity of barriers of teamwork on cost performance of construction projects. The attributes of teamwork for effective cost performance include top management support, team leadership, interpersonal dynamics of the team, clarity of expectation and objectives, level of compatibility and team composition. The barriers of teamwork include poor leadership and coordination, lack of commitment, lack of effective communication, poor rapport among team members and lack of motivation. The study concludes that cost performance among other project objectives can only be achieved with effective teamwork of project team. The study recommends that contractors should be aware of the attributes and barriers of teamwork identified in this study and take precautionary measures where necessary for effective project cost performance.

Keywords: attributes, barriers, construction projects, contractors, teamwork.

Emails: teatea4t@yahoo.com, anjibaa@yahoo.com



STRATEGIC APPLICATION OF LEAN PHILOSOPHY IN CONSTRUCTION PROJECTS

O. Olamilokun¹, J. A. Emmanuel², P. A. Balogun³

¹*Nigerian Institute of Quantity Surveyors, Gwarimpa FCT- Abuja, Nigeria*

²*Department of Quantity Surveying, Baze University, FCT - Abuja, Nigeria*

³*Department of Civil Engineering, Ahmadu Bello University, Zaria, Nigeria*

ABSTRACT

Recent ideas by construction industry practitioners and researchers have been considering the development of lean philosophy for construction projects from a strategic perspective. This has resulted in the recognition of a construction system incorporating long term processes of partnering the supply chain, product development, production of components and project implementation. It is thought that by reorganising around these core business processes whilst adopting lean principles, it will be possible to exploit the improvements in terms of quality of product and delivery mechanism. The paper reviews lean construction literatures and showing it to be both projects focused and tactical in approach. It report on some study visit to see lean construction in act. The argument is made that whilst addressing a number of problems, there is a need for a more holistic approach in order to change successfully and develop the construction industry of the future. The benefits that product focus and long term continuity bring in terms of refocusing an industry to meet the challenges of the 21st century are discussed. The construction business system and its constituent processes are described and the results of the interactive workshops that were used to test the philosophy are outlined. The result is a strategic structure, which is intended to guide practitioners when considering adopting lean philosophy in construction.

Keywords: Lean construction, lean philosophy, strategy, UK Construction Industry Task Force.



ASSESSMENT OF THE PAYMENT OPTIONS ADOPTED IN THE DELIVERY OF PUBLIC PROJECTS IN NIGERIA

**O. S. Olatunji, D. R. Ogunsemi, O.F.Akinradewo and
J. A., Akinola**

*^{1,2,3and4}Department of Quantity Surveying, Federal University of
Technology, Akure, Ondo State, Nigeria*

ABSTRACT

The role of payment in construction cannot be over emphasised in the delivery of successful construction projects. This is so as payment has been observed to have a major effect on contractors' cash flow which in turn tends to influence the success of the project either negatively or otherwise. This study therefore assessed the payment options used in the delivery of public building projects in Ekiti State, through the assessment of stakeholders' preference as regards the available payment options and the level of satisfaction derived with the payment terms in building contracts. Using a quantitative approach structured questionnaire was administered on 289 participants from the Ministry Department and Agencies (MDAs), as well as Contractors and Consultants (Architects and Quantity Surveyors) that have been engaged by Ekiti State MDAs and tertiary institutions in the State. These respondents were selected based on their participation in building projects within the identified area in the last sixteen years. Data gathered were analysed using percentage, mean score and ANOVA test. The reliability of the research instrument was also analysed using Cronbach Alpha Test. The study revealed that the most preferred payment options are 'advance payment and interim valuation', 'interim valuation' and 'stage payment', while milestone payment is less preferred. In terms of the contractors' level of satisfaction with payment terms in building contracts, the study reveals that more satisfaction is derived with 'valuation interval', 'payment method' and 'percentage of contract retained'. However less satisfaction is derived from time lag between entitlement to receive and actually receiving cash payment,

and time lag between being committed to making payment to nominated suppliers and actually paying. The study further recommends that to resolve and bridge the time lag between entitlement to receive and actual receiving cash payment there should be contractual provision of joint escrow retention account between the client and contractor as well as total and regular payment after completion.

Keywords: Building Contracts, Payment options, Payment terms, Public building projects.

solaolatunji92@yahoo.com, ²dejifeyi@yahoo.com,
³fakol30@yahoo.com, ⁴akinolaja@yahoo.com



CHALLENGES FACING THE PERFORMANCE OF CONSTRUCTION SMALL-MEDIUM ENTERPRISES (SMEs) CONTRACTORS IN THE SOUTH EASTERN NIGERIA

N. J. Umezinwa

*Department of Quantity Surveying, Federal Polytechnic, OkoAnambra State,
Nigeria*

ABSTRACT

SMEs are present in all sectors, representing a wide variety of firm sizes, technology levels, degree of formality and so forth. Each variety of SME has its own challenges impeding her survival for economic growth. This study is aimed at exploring the critical inhibiting factors affecting the performance and sustainability of construction SMEs in the South Eastern Nigeria. The main objectives were to identify the major factors which constitute challenges facing SMEs contractors; and to rank these factors in order of severity. The SME contractors, who were the target sample of the population selected via simple random sampling for the survey were all located in the five (5) states that make up the South Eastern Geo-political zone of Nigeria. 27 factors that pose serious challenges to the performance of SME contractors were identified from the literature. Well- structured questionnaire were designed and distributed to 150 contractors of which 140 responses were received, representing a response rate of 93%. Data collected were analyzed using descriptive statistics, including frequencies and Mean Item Scores (MIS). The results from the analyses established the following as the main constraints to SMEs sustainability: High lending interest regimes charged by financial institutions; Stringent conditions to access capital; Fluctuation of currency; Unavailability of credit facilities from banks; High multiple taxation, and so forth. Based on these findings, it can be concluded that the main challenges affecting the performance of SMEs contractors are economic in nature, as evidenced by the economic variables that were highly rated by the respondents. Amongst other recommendations, the paper is of the opinion that relevant government agencies should initiate policies, frameworks and programs that will enhance access to credit by the SMEs contractors.

Keywords: Challenges, Construction, Economic-growth, SMEs, and Sustainability.

Email: drnwachiefumez@gmail.com



**SMALL AND MEDIUM SCALE CONTRACTORS' PERCEPTION
ON THE ATTRIBUTES AND BARRIERS OF TEAMWORK ON
COST PERFORMANCE OF CONSTRUCTION PROJECTS IN
SOUTH-EASTERN REGION OF NIGERIA**

E. T. Adu¹ and A. D. Lamptey-puddicombe²

¹Department of Quantity Surveying, University of Uyo, Nigeria

*²Department of Civil Engineering, Niger Delta University,
Wilberforce Island*

ABSTRACT

The need for teamwork in meeting the global competitiveness and clients' expectations is becoming generally popular in most sectors of the economy. The construction industry must therefore follow the trend in order to minimize the perennial problem of poor cost performance in most projects executed in the industry. The main focus of this study was to investigate the significant attributes and barriers of teamwork on cost performance of construction projects in South-Eastern Nigeria. Data were obtained through 193 structured questionnaires administered to small and medium scale contractors and analysed using mean item score and Mann-Whitney U test. The study reveals that there is no difference in the contractors' perception concerning the significance of attributes of teamwork and severity of barriers of teamwork on cost performance of construction projects. The attributes of teamwork for effective cost performance include top management support, team leadership, interpersonal dynamics of the team, clarity of expectation and objectives, level of compatibility and team composition. The barriers of teamwork include poor leadership and coordination, lack of commitment, lack of effective communication, poor rapport among team members and lack of motivation. The study concludes that cost performance among other project objectives can only be achieved with effective teamwork of project team. The study recommends that contractors should be aware of the attributes and barriers of teamwork identified in this study and take precautionary measures where necessary for effective project cost performance.

Keywords: attributes, barriers, construction projects, contractors, teamwork.

[¹teatea4t@yahoo.com](mailto:teatea4t@yahoo.com), [²anjibaa@yahoo.com](mailto:anjibaa@yahoo.com)



LEADERSHIP STYLES AND ITS EFFECTS ON CONSTRUCTION PERFORMANCE IN NIGERIA

A.M. Nasiru and M.A. Kasimu

Department of Quantity Surveying; Fed Poly Bida. Niger State

ABSTRACT

The Management of construction projects consists of a complex and integrated collection of decisions, actions, and communications necessary to complete projects successfully. However, the failures in this leadership responsibility resulted into poor construction performance due to the following factors such as error, omission, changes, poor communication and poor coordination and control of construction cost. Therefore, the paper aimed at establish the role of leadership styles on construction project performance. The survey questionnaire was adopted as a result of fragmentation and diversification in the construction industry. The questionnaire was designed in five (5) point Likert scale format with closed ended questions. A total of 100 numbers of questionnaires was distributed to Engineers, Quantity surveyors, Project Managers, Construction Managers, Contractors, Consultant and other stakeholders in the construction industry. The descriptive analysis was used to analyse the data obtained from the responses of the respondents. The result obtained from the descriptive analysis shows that autocratic, laissez faire, command and charismatic leadership styles are the commonest leadership styles used during the course of construction projects. The findings also show that servant, pace setting, coaching, visionary and transformative leadership styles have significant impacts on the construction projects performance, if adopted. Therefore, the paper recommended that leaders in the construction organisation should adopt one of the above mentioned leadership styles in order to achieve quality project performance.

Keywords: Construction Industry, Leadership style, project manager, project success, construction projects.

Emails: kasimualfa@gmail.com, nasirunda@gmail.com



IMPACT OF RISK FACTORS; PRIME COST SUMS AND PROVISIONAL SUMS ON PROJECT COST PERFORMANCE

U. O. Ajator

*Department of Quantity Surveying, Nau, Awka,
Anambra State Nigeria*

ABSTRACT

This research carried out literature scan on the impact of risk factors, consequential costs and their management on project cost performance. It specifically evaluated the impacts of prime cost sums and provisional sums' risks on cost performance of hospital projects in Taraba State in the past fifteen years. To this end, primary data was drawn from bills of quantities and associated documents of the hospital projects implemented by the Ministry of Works and Housing in Taraba State. The obtained data was analysed using linear regression, t-statistics, F-ratio and scatter graphs. Findings from literature identified the following risk variables as having significant impact on cost performance: Project size, project location, project complexity, level of variations, prime cost sums and provisional sums, estimator bias, market conditions, level of competition, fraudulent practices, construction techniques, economic and political factors, construction accidents, health and safety factors. While findings and conclusion from the hospital projects corroborated literature and posited P.C. sums, provisional sums and builder's work as high explanatory risk variables having high negative cost performance and which must be critically reviewed and managed in projects to reduce their potential to cause high cost overruns.

Keywords: Risk factors, Consequential costs, Cost performance, Evaluation, Projects.

Email: uo.ajator@unizik.edu.ng



DISTRIBUTION OF RISK-ASSOCIATED COSTS IN NEW BUILDING AND MAINTENANCE PROJECTS IN NIGERIA

A. A. Oke², Y. Ibrahim², O. O. Morenikeji³ and M. A. Aibinu⁴

1 Dept of Quantity Surveying, Federal University of Technology Minna.

2 Dept of Quantity Surveying, AbubakarTafawaBalewa University Bauchi.

3 Dept of Urban and Regional Planning, Federal University of Technology Minna.

4 Dept of Mechatronics and Computer Engineering, Federal University of Technology Minna.

ABSTRACT

The construction industry has a track record of poor cost performance which has been attributed to the effects of risk. Yet clients expect early, firm estimates of what project will cost. The action of risk on project costs has been studied using the risk register methodology in some previous studies, but new and maintenance projects were not examined separately. The paper established the distribution of risks associated with costs of new building and building maintenance projects by focusing on the risk consequences that could be determined from the final accounts of projects only. Project Quantity Surveyors (PQS) were presented with checklists of 19 risk factors collated from the literature, and were asked to associate risk factors with changes to project costs of 69 projects that were found to be suitable for the purposes of this study. Using a 4-order polynomial trend line, it was found that the number of risk events encountered in new buildings peaked at 25% and 68% completion, as opposed to 15% and 45% in the case of maintenance projects. The study concluded that project consultants were responsible for the highest numbers of risk events (70%), and that the majority of additional project costs (81.8%) were associated with very few risks events that had large cost impacts (8.2% of all risk events). It was recommended that clients and architects need to finalize project briefs early in the project lifecycle such that changes to the brief during construction will be minimal.

Keywords: building, costs, maintenance, risk, risk register.

²abdganioke@futminna.edu.ng

²yakubuibrahim33@yahoo.com

**THEME 7: CONSTRUCTION PROCUREMENT
AND CONTRACT ADMINISTRATION**



SIGNIFICANT FACTORS INFLUENCING COST OVERRUN OF MECHANICAL AND ELECTRICAL SERVICES INSTALLATION OF BUILDING PROJECTS

G. A. Yusuf¹, L. A. Mustapha² and T. O. Salami³

1 Department of Quantity Surveying, Faculty of Environmental Sciences, University of Ilorin, Ilorin, Kwara State, Nigeria.

2 Department of Quantity Surveying, Kwara State Polytechnic Ilorin, Ilorin, Kwara State, Nigeria.

3 THOS Associates, Ilorin Kwara State, Nigeria.

ABSTRACT

Cost overrun is common in construction projects, mechanical and electrical services cannot be an exception. The emphasis on project delivery in relation to time and cost is really high, however the factors influencing cost overrun in construction has not been adequately dealt with despite the volume of research and past history of construction management. This paper aimed at identifying and examining significant factors influencing cost overrun of mechanical and electrical services of building projects. The objectives were to identify the causes of cost overrun in mechanical and electrical services, the significance and the impact on the cost overrun. Also to achieve an optimum value of client project executed within the estimated budget. A large number of potential cost overrun factors were identified through a search of relevant literature in order to identify the causes of cost overrun in mechanical and electrical services. Data were obtained from client, contractors and consultants in Lagos; mean score were employed for the analysis. The results of the study revealed that, thirteen factors are the significant factors influencing cost overrun of mechanical and electrical services of building project. Among these influential factors deficiencies in cost estimated prepared additional work, inflation, under measurement of mechanical and electrical services and imported materials has the highest effects on mechanical and electrical services installation cost overrun. These factors however, indicated that they are interrelated one often leads to another. It concludes by recommending detail

drawing of mechanical and electrical services should be made available to the estimator at tender stage of projects or bill of quantities prepared to solve problem of under estimation, provision of proper training to designer and estimator involved on the trends on mechanical and electrical services installations, and client advice on the implication of variation and on his decision to change after award of contract.

Keywords: cost overrun, causes, factors, significance, mechanical and electrical services, designers estimated budget.



TIME AND COST OVERRUNS IN INFRASTRUCTURE PROJECTS IN NIGERIA: Causes and Remedies

P. G. Usman

*Integrated Cost Associates, A3 Ahmadu Bello Way, Bakori House, Kaduna,
Nigeria.*

ABSTRACT

Despite improvements in the control techniques available for managing infrastructure projects in Nigeria, the projects still do not meet their cost and time objectives. Time and cost overruns are still prevalent even as time and cost performance remain key criteria for project success. Yet empirical studies conducted on this subject are few. Even fewer are the studies conducted on completed infrastructure projects. This paper investigates the underlying causes for time and cost overruns observed on selected infrastructure projects across major Nigerian cities. Quantitative and qualitative methods were used to generate data for the research; structured questionnaire survey was used to obtain information on the causes of time and cost overruns, and face-to-face interview with personnel actively involved on the selected projects helped to develop mitigating strategies to curb time and cost overruns. Data generated was analyzed using Mean Scores, weighted averages and Spearman correlation coefficient to arrive at the significant causes of time and cost overruns. The study found that time and cost overruns occurred in varying degrees in all the projects studied and impeded project success. The most significant causes of time and cost overruns are design/scope changes, inadequate availability of skilled resources, ineffective procurement planning, price escalations of construction materials and labour, and scope creep. The research helped in developing 14 mitigation strategies and 15 mitigation strategies for curbing time and cost overruns respectively. These strategies would help to improve time and cost performance of infrastructure projects, and industry practitioners will find them very useful at the planning phase where decisions that define the project are made and during project implementation.

Keywords: infrastructure projects, cost overrun, cost performance, time overrun, time performance, mitigation strategies, project success.



AN ASSESSMENT OF RISK FACTORS IN PROCUREMENT PROCESS OF CONSTRUCTION PROJECTS IN EDO STATE

B. S. Oso

*Department of Quantity Surveying, School of Environmental Studies,
Federal Polytechnic Auchi, Edo State, Nigeria*

ABSTRACT

Construction industry is very important in the economic development of any nation especially in an expanding economy like Nigeria. The more complex a project is, the harder it becomes to follow all necessary procurement planning procedures. The aim of this paper is to assess the risk factors associated with the procurement process of construction projects with a view to mitigating these risks for improved procurement outcomes. It identified stages involved in the procurement process and the risks associated with stages. The study adopted a survey research design with the use of a well-structured questionnaire. Random sampling technique was employed in reaching the 177 respondents on whom the questionnaires were distributed, and 133 were returned and certified fit for analysis. Descriptive statistical tool of mean item score was employed for the analysis. The findings revealed that fraud and corruption was the most frequent risks in procurement process while key personnel not available ranked least. It concluded that effective management of risks associated with the procurement process of construction projects should be taken seriously so as to achieve the desire objectives of the construction projects.

Keywords: Assessment, Construction Industry,
Procurement, Procurement Process and Risk.



EVALUATING THE ROLE OF CLIENT'S IN-HOUSE PROFESSIONALS IN BUILDING PROJECT DELIVERY IN NIGERIA

A. Ebekozen^{1&2}, D. S. O. Duru³, and A. N. C. Nwaole⁴

1. *School of Housing, Building and Planning, Universiti Sains Malaysia (USM), Penang, Malaysia.*

2. *Quantity Surveying Department, Auchu Polytechnic, Auchu, Edo State, Nigeria*

3 & 4. *Quantity Surveying Department, Federal Polytechnic, Nekede, Imo State, Nigeria*

ABSTRACT

This paper evaluates the role of client's in-house professionals with a view to cut down total construction cost in the present economic reality. To achieve this, data were collected via in-depth interviews and validated via secondary sources. Epistemology type of philosophical paradigm and random purposive sampling technique was adopted. Thematic analysis was adopted for the qualitative research and 5 themes were generated. Three states in the South-South, Nigeria were covered. The participants were key professionals in the industry. From the findings, cost management, construction economics, and planning were identified as Quantity Surveyors key role; engineering design and supervision were identified as the key role of Engineers, and architectural design and supervision were identified as the key role of Architects. The study also reveals that bribery and corruption, repressive chief executive officers in government organisation, political influence (corrupt politicians), incompetence of staff, and unethical practices were ranked highly important encumbrances faced by client's in-house professionals. Also, ethics and Institutes training, whistle blowing in government establishments, resuscitation of Servicom, maintenance of strong ethical cultures, and compliance to due process mechanism were ranked highly important new mechanisms with a view to addressing all challenges that have hampered in-house professionals from performing effectively

Keywords: Building project, Client, In-house, Participants, Professional.

E-Mail: ebekoandy45@yahoo.com



ASSESSMENT OF THE PROCUREMENT METHODS ADOPTED BY PUBLIC PROCURING ENTITIES IN ONDO STATE, NIGERIA

O. J. Osanyinro¹ and D. O. Aghimien²

¹*Murty International Limited, Suite 308, Midel Centre, Plot 14, Off Oladipo
Diya way, Sector Centre D, Gudu, Abuja, Nigeria*

²*Department of Quantity Surveying, Federal University of Technology,
Akure, Ondo State, Nigeria*

ABSTRACT

A procurement method determines the overall framework and structure of responsibilities for participants in a contract process and thus, a key factor contributing to overall project success. However, it has been observed that many procuring entities' choice of procurement method is perfunctory and based largely on familiarity with a particular procurement method rather than an informed choice based on project needs assessment. This study therefore assessed the procurement of public works by procuring entities in Ondo State, Nigeria with interest in their level of adoption of various procurement methods available and the factors influencing their choice of a procurement method. The study adopted a survey approach and purposive sampling focused on entities saddled with procurement responsibilities. Three Ministries, three Local Governments, seven Agencies and three Tertiary Institutions within the State participated in the survey. Data were gathered through the administering of questionnaire to construction professionals in targeted entities. Percentage, frequency, MIS, ANOVA and One sample t-test were adopted for data analyses. The study revealed that direct labour and traditional method are the most used procurement methods. The need for value for money and public accountability, speed, completion within stated duration and the project complexity are the major factors influencing the choice of a procurement method. The study further recommends that procurement entities should give adequate consideration to needs assessment and specific

project requirement in determining the procurement method to be employed as no single method best satisfies the requirements of every project in all situations

Keywords: Nigerian Construction Industry, Procurement Method, Procuring Entities, Project Performance, Public Projects.

¹osanyinroolufemij@yahoo.com

²aghiemiendouglas@gmail.com



EFFECTS OF ENFORCEMENT MECHANISM ON COMPLIANCE WITH PROCUREMENT GUIDELINES IN THE NIGERIAN CONSTRUCTION INDUSTRY

A. N. Zadawa¹, A. S. Shehu¹, B. A. Ahmed² & N. Gambo¹

¹Department of Quantity Surveying, Faculty of Environmental Technology, AbubakarTafawaBalewa University PMB 0248 Bauchi Nigeria.

²Department of Engineering Management, Faculty of Engineering and the Built Environment, University of Johannesburg

ABSTRACT

Public Procurement Act (PPA2007) highlighted the procurement regulatory procedural manual also known as the public procurement guidelines (PPGs) for the execution of public procurements in Nigeria. Since the enactment of the PPA 2007, compliance with the procurement guidelines among major construction procurement stakeholders has not been copiously operative. This paper examined the effects of enforcement as a mechanism on construction procurement stakeholders' compliance intention. A quantitative research approach was used in carrying out the study through questionnaire survey. The questionnaire was structured on enforcement mechanism and mediating variables in the research framework. A total of 540 structured survey questionnaires were distributed to randomly selected respondents from procurement entities of federal universities in Nigeria. Data collected were analysed with Process Macro mediation package through bias-corrected bootstrapped confidence interval method. The mediation result (indirect effects) obtained indicated the occurrence of mediation in the study framework and suggested that enforcement mechanism will mediate the effects of determinants of non-compliance with PPGs affecting stakeholders' compliance intention. The study concluded that, ensuring that enforcement measures are put in place by the procurement entities will boost the compliance intentions of the procurement stakeholders. The study recommended for compliance with the establishment of National Council of Public Procurement (NCP) in Nigeria as provided in

the PPA 2007 in order to strengthen the enforcement undertaking by the Bureau of Public Procurement (BPP).

Keywords: Compliance, enforcement, mediation, Public Procurement guidelines, stakeholders.

Emails: 1nafuzadawa@gmail.com, 2shediyel@yahoo.com,
auwalusani2000@yahoo.com, gambonuru@yahoo.com.



CONTRACTUAL SHIFT TOWARDS COLLABORATIVE FORMS OF CONTRACT IN THE NIGERIAN CONSTRUCTION INDUSTRY

M. Muktar¹, I. S. Khalil² A. S. Ahmed³

1Department of Architecture, Faculty of Earth and Environmental Sciences, Bayero University, Kano, Nigeria

2Department of Architecture, Faculty of Earth and Environmental Sciences, Bayero University, Kano, Nigeria

3School of Architecture and Built Environment, Faculty of Science and Engineering, University of Wolverhampton, United Kingdom.

ABSTRACT

The construction industry in Nigeria is highly fragmented and has been portrayed as being very adversarial. To this effect, numerous contractors and industry professionals are lamenting on the nature of Nigerian contractual dispensation, which is not designed to stimulate good management and foresighted collaboration between stakeholders. The traditional JCT contract currently employed in the Nigerian construction industry does not provide effective control of change, cost impacts of change, early warning of risks, risk apportionment, and quick dispute resolution mechanisms. Therefore, the consequent result is time and cost overruns, customer dissatisfaction, lengthy disputes and disruption of relationships among contracting parties. This situation informed the researcher's decision to check the viability for a contractual shift from non-collaborative to a collaborative Standard Form of Contract. In response to increase adversarialism in the UK construction sector, the Government recommended the use of collaborative contracts such as NEC3, JCT construction excellence and PPC2000. Of these Standard forms of contract, the NEC3 suit of contract was better designed to promote collaboration among contracting parties and consequently, provided the required value for money. Sequel to this report, the researchers proposed the NEC3 suit of contract for Nigerian projects. This led to an exploratory study to determine its suitability, acceptability and feasibility in the Nigerian Built

Environment. Thus, a quantitative approach was used to gather information on the awareness of NEC3 as a Form of contract and the inherent barriers that may hamper its adoption on Nigerian construction projects. These information's were obtained using a questionnaire tool and analysed using descriptive statistical tools in particular frequency distribution. The outcome of the analysis revealed a low level of awareness to NEC3 and major barriers to the adoption of NEC3 on Nigerian projects. In conclusion, the study gave necessary recommendations on the possibility for the implementation of NEC3 contracts.

Keywords: collaboration, contract administration, dispute resolution, joint contracts tribunal (JCT), new engineering contract (NEC3), Nigeria, standard forms of contract.



PROCUREMENT SYSTEM AS MEANS OF RESOLVING DISPUTE IN THE CONSTRUCTION INDUSTRY

A. O. Idowu, I. V. Aligamhe and O. I. Bejide

*Quantity Surveying Department, Auchi Polytechnic Auchi, Edo State,
Nigeria*

ABSTRACT

Dispute is a phenomenon which must be eradicated in the Nigerian construction industry because of its negative impacts on project delivery and disharmony among the professionals. This study assessed the effectiveness of various procurement systems in dispute resolution in the Nigerian construction industry with a view to reduce or eradicate the occurrence of dispute. The use of well-structured questionnaires was used to collect data from professionals in construction industry in Auchi, Edo state. The totals of 80 questionnaires were administered while 65 questionnaires were returned and considered fit for analyses. The questionnaires were analysed using percentages, mean score and relative important index. The result of the research revealed the various causes of construction disputes associated with traditional procurement system in the construction industry as non- adherence to architect instruction, fluctuation claim by contractor and claim for extension of time by contractor; while failure in issuance of certificate and delay in payment of interim certificate have the lowest mean. Private finance initiative, Public-private partnership and joint venture are more effective in dispute resolution. The modern procurement systems are aimed at avoiding and reducing dispute which will in turn reduce dispute and improve project performance in the construction industry.

Keywords: Procurement, Dispute resolution, Nigeria, Construction industry, Resolve.

**THEME 8: SUSTAINABILITY IN
CONSTRUCTION**



APPRAISING WASTE MANAGEMENT SYSTEMS ON CONSTRUCTION SITES IN NIGERIA

O. T. Ojuola

*Built Reliance No 4, NibiKomonibo Street, Budo Peninsula Estate, Phase II
Ajah - Lagos*

ABSTRACT

In a bid to reducing the cost of construction projects, there is a need for an optimum material control on site to be employed as the cost of building materials alone on a project accounts for between 50%-60% of the entire building cost. Construction waste which is one of the major contributors to the solid waste in Nigeria due to the rapid development of the construction industry has in-turn become a major environmental problem due to its varying components. These materials which resulted into waste during construction works contribute significantly to the polluted environment. To this end this research sought to appraise waste management systems in selected construction sites in Nigeria with Lagos State as a case study considering the number of projects undertaken being the economic hub of the country. Questions were asked to investigate the sources of waste generated on construction sites as well as the best possible means of reducing waste generated on site to the barest minimum. 320 copies of questionnaires were administered on professional firms (construction consultants and contractors) on selected sites in Lagos State. 252 responses were obtained within a period of two months (March 21st to May 20th, 2016). The data was subjected to both descriptive and inferential statistical analysis. The result of the study indicates that design changes ranked the highest with site accident rating the lowest as regards sources of waste generated on site. The study recommended that all professionals are engaged early enough to allow for everyone to work from the same plan at the outset which makes it easier to iron wrinkles before construction works commence.

Keywords: Waste Management, Systems, Construction Sites, Nigeria.

Email: Greatestsiijidi@yahoo.com



**ENVIRONMENTAL IMPACT OF CONSTRUCTION PROJECTS
DEVELOPMENT IN TERTIARY INSTITUTIONS IN ONDO STATE,
NIGERIA**

D. T. Moyanga and M. Uzoma

*Department of Quantity Surveying, Federal University of Technology,
Akure, Nigeria*

ABSTRACT

Construction projects are developed for the provision of housing facilities for humans as well as economic and social improvement of the community though the associated impact of the project development on the environment is inevitable and cannot be totally overlooked. Hence, the study assesses the environmental impact of project development by examining the regulations and policies guiding the environment in relation to construction, barriers to the implementation of Environmental Impact Assessment (EIA) and impact of project development on the environment. A case study approach was adopted for the study where primary data was obtained through the questionnaire from end users (students and staff), construction firms and physical planning unit of the Federal University of Technology Akure (FUTA). The data collected from a total of 264 questionnaires was analyzed using percentage, mean score and relative importance index. The study revealed that the level of awareness of regulations and policies guiding the environment by the contractors is high with value above the 3.0 mean score while the level of implementation is moderate. The barriers to implementing environmental impact assessment in FUTA by both contractors includes lack of technological support, lack of client's support and lack of legal enforcement. Also, the positive impact of project development include the creation of job opportunity, development/civilization of FUTA environment and so on while the negative impact are on-site material wastage, habitat destruction, air emission/pollution, interference of road traffic, noise generation and so on. The implication of the study is that enforcement officers should be put in place to continually campaign

on the regulations guiding FUTA in relation to construction activities. Furthermore, the implementation of EIA by contractors should be encouraged and monitored by physical planning unit of FUTA and the consultants to enhance adherence by construction firms and promote environment management.

Keywords: environment, FUTA, impact assessment, project development.



REDUCING THE IMPACTS OF CLIMATE CHANGE ON BUILT ENVIRONMENT THROUGH EFFECTIVE IMPLEMENTATION OF BUILDING REGULATION/ CONTROL

N. J. Umezina and C. O. Maduekeh

Department of Quantity Surveying, Federal Polytechnic, Oke, Anambra State, Nigeria

ABSTRACT

Scientific measurements have shown that the earth is getting gradually warmer. This has led to a deviation of climatic conditions ranging from predictable to sometimes unpredictable and extreme climates. Our physical environment is littered with so many man-made structures (buildings and the like) which are usually ordered by regulations and some forms of control to ensure that structures are cited with respect to a bigger plan and that such structure conform to certain regulations. It is not unusual to find “misplaced” structures like gas stations in a congested residential area or a block of shops and residential buildings under high tension power distribution cables or even on flood plains. Infact, a look around our cities and towns where building development is on-going will reveal very familiar markings like “stop work”, “submit plan” on the faces of such new structures, suggesting that something is statutorily wrong with the structure. To this end, this paper seeks among other things to establish a link between climate change and the built environment in order to identify the role of regulations in mitigating the effects of such changes on the built environment. Furthermore, efforts were also geared towards evaluating the impact of statutory authorities in ensuring compliance with statutory provisions. Data for this research was sourced from the three senatorial zones of Anambra state south east Nigeria using structured questionnaires. The data so collected were analyzed using mean scores and standard deviations while hypothesis were tested using one sample T-test and Regression model. In the end conclusions were drawn and appropriate recommendations made among them being a call on those entrusted

with the responsibility of monitoring and controlling developments to be alive to their responsibilities by ensuring compliance even when it means demolishing defaulting structures irrespective of who owns them.

Keywords: Building control, Building regulations, Building structures, Climate change, Local Authority.



WASTE MANAGEMENT IN CONSTRUCTION AND THE WAY FORWARD; A CASE STUDY OF BAUCHI AND GOMBE STATES

K. M. Idris¹, R. T. Bhadmus¹ & B. Kabir²

¹Faculty of Built Environment, Department of Quantity Surveying, The Federal Polytechnic Bauchi

²Faculty of Built Environment, Department of Building Technology., The Federal Polytechnic Bauchi

ABSTRACT

The construction activities have real and potential adverse effect to the environment. It is considered environmentally unfriendly activities because it consume large amount of natural resources and produces a great deal of pollutants which is not only affecting surrounding residents, but also health and wellbeing natural of natural life. Various researchers highlighted that the construction industry consume a large volume of waste annually worldwide, which calls for a need to understand the reason behind the scenario, thereby identifying the importance of construction waste management in the construction industry. The study adopted quantitative research method of approach. A survey questionnaire was conducted on a convenience selected one hundred and fifty project managers of a number of different construction companies in the states. Data were analysed using the descriptive statistics method. The paper highlights the types of construction solid waste generated at the construction site and look into the potential steps that will creates a better environment to the construction site by proposing the best waste management of construction solid waste.

Keywords: Construction waste, Waste management, Construction Industry, Environment.

¹idriskt@gmail.com

²rtbhadmus@gmail.com

³bkalmadaky@gmail.com



**PROFESSIONALS' PERCEPTIONS ON CONSTRUCTION
MATERIAL WASTE AND COST OVERRUNS AT THE DESIGN
STAGE OF A PROJECT IN ABUJA, NIGERIA**

**I. Saidu¹ W. M. W Shakantu² J. E. Idiake¹ and
U. Abdulkadir¹**

*¹Department of Quantity Surveying, School of Environmental
Technology, Federal University of Technology, Minna, Nigeria*

*²Department of Construction Management, Faculty of
Engineering, the Built Environment and Information Technology,
Nelson Mandela Metropolitan University, Port Elizabeth, Eastern
Cape, South Africa.*

ABSTRACT

Material wastage and cost overruns are common problems affecting construction projects. These problems occur at different stages of a project. Empirical research that link material waste issues to cost overruns at design-management stage of a project remain at the sub-optimal level in Nigeria. Hence, this paper investigates the material waste issues that relate to cost overruns at design-management stage of a building project. The study population is building construction professionals within Abuja and the sampling method was purposive/judgmental, because only building-construction professionals handling projects that are worth 1.6 billion Naira and more, were consulted. Projects of this value are likely to be handled by more experienced professionals, who might be more familiar with the issues leading to material waste and cost overruns. Semi-structured but in-depth interviews were conducted with thirty (30) construction professionals from each project, comprising 15 project managers, 9 quantity surveyors, 5 site engineers and 1 senior technical officer of a waste management department. The interview data were analysed by using the deductive approach, which involves constant comparative analysis after the interview data have been sorted and coded to generate knowledge about any common pattern

within the interviewees' evidence on material waste and cost overrun. It was found that designs must remain simple and necessary details and specifications be clear and readable to avoid assuming estimating figures, in order to minimise material waste and cost overruns. Based on these findings, it can be concluded that effective management of material waste at design stage would translate into a reduction in the level of cost overrun. The management of material waste should be revised based on the findings of this research and included as part of the pre-contract management process of a project.

Keywords: cost overruns, design management, material waste, Nigeria.



PROCUREMENT MANAGEMENT TRAINING OF NIGERIAN QUANTITY SURVEYORS

**A. E. Oke¹, D. R. Ogunsemi², C. O. Aigbavboa¹ and
F. M. Famakin²**

*¹Department of Construction Management and Quantity Surveying,
University of Johannesburg, Johannesburg, Gauteng Province,
South Africa*

*²Department of Quantity Surveying, Federal University of Technology,
Akure, Ondo state, Nigeria*

ABSTRACT

Due to changing demands of clients and complex nature of the construction industry, training areas of construction professionals have been through continuous modifications to meet current global requirement. Procurement management is still at its infancy in Nigeria and there have been calls for quantity surveyors to widen their scope of practice in this area. In view of this, training of quantity surveyors for procurement management practice was examined using course contents of academic curricula of higher institutions offering quantity surveying at undergraduate level. It was observed that quantity surveyors have the required education and training in the knowledge areas of procurement managers but some inadequacies were noted for competencies areas. Inventory management is only available in one of the institutions while marketing, supply management and teaching of Public Procurement Act context were partially available in the curricula. Policy makers concerned with the training and practice of quantity surveying in the country should therefore formulate, modify and improve current academic curriculum of the institutions to accommodate the inadequate areas of competencies. More so, training and retraining should be organised for practicing quantity surveyors to update and keep them abreast with necessary knowledge and competencies to function as procurement managers.

Keywords: competencies, education, procurement management, quantity surveying, training.

**THEME 9: ASSET, PROPERTY AND FACILITY
MANAGEMENT**



ASSESSMENT OF STUDENTS' HOSTEL ACCOMMODATION IN KATSINA STATE TERTIARY INSTITUTIONS

M. L. Ibrahim¹ and H. Musa²

¹*Federal University BirninKebbi(FUBK), BirninKebbi, Kebbi State, Nigeria*

²*Ahmadu Bello University (ABU), Zaria, Kaduna State, Nigeria*

ABSTRACT

Hostel accommodation is one of the essential key factors required in every learning environment. In Nigeria, it has become very alarming due to the ever increasing number of students that are being admitted in the various tertiary institutions without corresponding provision of sufficient number of hostels to cater for the ever increasing demand. This study was undertaken to assess students' hostel accommodations in Katsina State tertiary Institutions. 345 questionnaires were administered to students in four (4) selected tertiary institutions. 179 questionnaires which constituted 51.22% of the administered were used for conducting the analysis. The data obtained was analyzed using descriptive and inferential statistical tools: frequencies, mean scores and oneway ANOVA. The results identified poor maintenance and overcrowding as the major problems while high cost of accommodation and insecurity were the least problems affecting students in Katsina State tertiary institutions. There is demand for more hostel accommodations and the existing ones are associated with problems. The findings serve as a good baseline for reviewing the maintenance culture and checking/controlling overcrowding in the tertiary institutions; and feasibility study for potential private investors in students' accommodation. The government should allocate more funding for students' accommodations and partner private sector for its provision and management.

Keywords: Hostel accommodation, Hostel problems, Katsina State, Tertiary institutions.



USE OF WIRELESS SURVEILLANCE CAMERAS IN THE BUILT ENVIRONMENT; PANACEA TO DISPUTE RESOLUTION

Z. Abdul

*No.151 Yahaya Madaki Way/ Zamiro Concept Contracting Firm, Katsina,
Katsina State, Nigeria*

ABSTRACT

Globally the wireless technology (wifi) plays an integral role in addressing security challenges on construction site. This paper attempt to examine the barriers and readiness of construction organizations in using wireless surveillance cameras that have database as evidence to resolve dispute in built environments. The research employs a survey method in which 50 companies were randomly selected from the total of 100 companies and interviewed. Data collected with the aid of well-structured questionnaires analyzed using descriptive frequencies and percentage (%) distribution, and chi-square test on the relationship between the barriers and the type of service offered by the companies. Findings from the study revealed that wireless surveillance cameras play significant role on construction site in term of providing lasting solution to claims, crises, conflicts and resolving disputes in built environment. The paper also revealed that education and training were barriers of application of wireless surveillance camera attributed to process and technological changes. It is recommended that government should have a fair level of readiness if the built environment is to benefit from the application of the wireless technology.

Keywords: claims, conflicts, crises management, dispute resolution, and wireless surveillance.

Email: zaharadeenabdul@yahoo.com

THEME 10: CONSTRUCTION FINANCING



EFFECT OF CONSTRUCTION PROJECT FINANCE ON INFRASTRUCTURE IN ONDO AND EKITI STATE OF NIGERIA

T. E. Ebhohimen¹ and A. E. Oke²

¹University of Lagos, Lagos, Nigeria

²Federal University of Technology Akure, Akure, Nigeria

ABSTRACT

Project finance is a method of financing very large capital intensive projects with long delivery period, where the lenders rely on the assets created for the project as security and cash flow generated by the project as source of funds for paying back their dues. The rate of abandonment of public project in Nigeria today is alarming and it calls for attention, one wonders why it almost seven years to construct just a building and even after project handing over its still uncompleted. This research work focuses on effect of construction project finance on infrastructure in Nigeria. Thus the objectives of this work are to identify and assess Stakeholders involved in Project Finance, identify and assess risk involved in Project finance, identify and assess process involved in Project Finance. Data for the study were obtained through well-structured questionnaires administered to professionals in the construction industry. A total of 70 questionnaires were distributed in both Ondo and Ekiti States, 45 were suitable for analysis. The data were analyzed using descriptive statistics and presented using frequency and percentage table. The result shows that government is the most important stakeholder in project finance, currency fluctuation was identified as the major risk involved in project finance and construction stage has the highest level of awareness in the project finance process, however preliminary negotiation is the most important. Based on these findings, this research work recommends that government should have more political and technical will towards infrastructure and necessary polices should be put in place by the central bank of Nigeria to control currency fluctuation.

Keywords: Construction, Infrastructure, Project Finance, Risk, Stakeholders.



ASSESSING THE CAPABILITIES OF CONTRACTORS IN MONITORING CONSTRUCTION CASH FLOW IN NIGERIA

A. D. Abubakar, M. AbdulRazaq and M. Abdullahi
Ahmadu Bello University, Zaria, Kaduna State

ABSTRACT

The construction sector experiences the highest number of bankruptcies compared to any other sector of the economy, with many companies failing because of poor financial management, especially inadequate attention to cash flow monitoring. Public and private projects are rarely executed and delivered without cash flow management issues. The effect has become peculiar in construction sector most especially, in developing countries, including Nigeria. There is need for sound monitoring of construction cash flow to avoid low profits, financial improprieties and business failure. This study assesses the capabilities of Nigeria contractors in monitoring construction cash flow. Quantitative approach was used to administer questionnaires to 206 contractors involved in building and civil engineering works in Nigeria. A total number of 112 questionnaires were filled, returned, analysed and the results were evaluated using the Statistical Package for Social Sciences (SPSS). Essentially, the survey evaluates the extent of usage of some identified construction cash flow monitoring key practices. The analysis deals mainly on the ranking of the variables based on their mean values and determine the significant of the key practices for each of the three components, that is; knowing, doing and advising were assessed. The findings show that; the Nigerian construction sector is currently at a low capability level and usage of the key practices in construction cash flow monitoring, it was discovered that large firms have high capabilities level and usage of the key practices in construction cash flow monitoring. Medium and Small firms which are the predominant category of firms in the construction sector in Nigeria have low level and usage of the key practices in construction cash flow monitoring and in dire needs for

improvement. The research concludes that the industry's level of usage and application of the key practices in monitoring of construction cash flow are imperfect and not practiced as recommended in the literature and in dire need for improvement. Based on the findings, the research work recommends that; for an effective cash flow monitoring practice, an assessment frame work should be developed by the contractors for use in contract administration, continuous education and training of the entire staff involved and responsible for cash flow monitoring through workshops and seminars in order to improve their monitoring skills and Contractors should involve Quantity Surveyors, who are disciplined as cost managers to be responsible and accountable for construction cash flow monitoring practices.

Keywords: capabilities, contractors, monitoring construction cash flow.



EFFECTS OF PPROJECTS ABANDONMENT: A CASE OF IBOM SCIENCE PARK

U. S. Etuk¹, N. V. Raphael¹ and E. E. Usip²

1Dept. of Estate Management, Akwalbom State Polytechnic, IkotOsurua, Akwalbom State, Nig.

1Dept. of Estate Management, Akwalbom State Polytechnic, IkotOsurua, Akwalbom State, Nig.

2Dept. of Urban and Regional Planning, Akwalbom State Polytechnic, IkotOsurua, Akwalbom State.

ABSTRACT

The rate at which government's projects at the State and the Federal Government Levels are being abandoned is on the increase and highly disturbing particularly in this era of economic recession and many needs competing for the scarce resources. This study was aimed at providing the Nigerian Government and People, empirical evidence of the Effects of Projects Abandonment using Ibo Science Park as a Case in expectation that the knowledge generated from the study would serve as a veritable tool to combat it. The study made use of three Objectives and adopted a survey design A convenient sample size of 100 knowledgeable residents of the area were interviewed with the use of a questionnaire to elicit data in addition to those gathered from observation and literature. Findings revealed that political differences, Incompetence of the Contractors, Corruption, inconsistent policies and lack of good monitoring/technical team were the causes of the abandonment. The findings revealed further that the abandoned project site served as heaven for criminals. The site was found to be degrading, polluted by cattle and ravaged by erosion. The study recommends the need for continuity in government policies and programmes by successive administrations.

Keywords: abandonment,causes,effects, empirical, projects.



STRATEGIES ADOPTED BY NIGERIAN CONSTRUCTION FIRMS IN A RECESSION ECONOMY

T. O. O. Olowa, G. Y. Amuda and R. T. Adebisi

*Department of Quantity Surveying, Faculty of Environmental Sciences,
University of Ilorin, Ilorin, Kwara State, Nigeria.*

ABSTRACT

Nigerian economy is currently in recession with extreme financial pressures on all sectors of the nation's economy. The construction industry is particularly affected with significant reduction in the number of construction projects available for various categories of construction organisations in the country. As a result, a number of construction organisations are downsizing, lack capacity to tender for new jobs, folding-up due to lack of strategies to adapt to economic downturn. The purpose of this paper is to examine the survival strategies of Nigerian contractors in the period of economic recession in the construction industry with a view to formulating strategies for survival in response to economic downturn. Structured questionnaires were administered to personnel in the construction organisations using snowball sampling technique and a total of 35 questionnaires returned were analysed using simple frequency, percentages and mean score with the aid of SPSS 20.0 and Excel 2010 packages. The result shows that most contractors opt for reduced tender pricing, stringent cost control measures, stricter site management procedures, effective relationship management with clients and diversification of business interest. In order to survive the period of economic down turn, contractors should exhibit prompt response to changes caused by external factors so as to remain in construction business. The findings provide guidelines for industry contractors on essential options to consider in the period of dwindling economic activities in the construction industry.

Keywords: construction industry, contractors, recession, strategies, survival.

**THEME 11: COST AND VALUE
MANAGEMENT**



DETERMINANTS OF URBAN LAND VALUE IN FUNTUA TOWN, KATSINA STATE

I. I. Iiyasu

*Department of Urban and Regional Planning, Faculty of
Environmental Design,
Ahmadu Bello University, Zaria, Nigeria.*

ABSTRACT

Land Administration in Nigeria is regulated by the Land use Act, which Nationalized Land and its major objective to make land accessible to all applicants in Nigeria. Land for housing and urban development in Funtua Local Government is accessible through direct purchase from land Vendors, Government allocations household transaction, inheritance and traditional ruler's allocation. Despite the interplay of different factors that determine the value of land, hence there is huge variation in the price of urban land in Funtua. Therefore, this paper set to explore the critical determinants of Urban Land Value and their individual contributions in explaining the land value system in Funtua. The paper considered all the eight (8) wards that made up Funtua Town for the purpose of data collection and interpretation of results. The method adopted for the study is mixed scanning. The data collection methods used were field survey and measurements, questionnaire administration and oral interview. 300 questionnaires representing 0.09% of the total population of Funtua town, was administered using cluster and systematic random sampling techniques. Interview was also conducted with the land vendors, agents and traditional heads of the wards in terms of making land available for development in the town. Findings from the analysis indicated that, there is no uniform factor that determine urban land value in Funtua town; as huge variation do exist between determinants across areas in the town. The paper further concluded with recommendations that will guide urban planners and developers on the best way of ensuring land is put to optimum use and curtail land speculation for effective urban development in Funtua and the state of large.

Keywords: Access, Determinants, Land uses, Land value, Urban development.

E-mail: urbanist2005@gmail.com, iiiyasu@abu.edu.ng



INVESTIGATING THE BARRIERS AND BENEFITS OF VALUE MANAGEMENT PRACTICES IN CONSTRUCTION PROJECTS DELIVERY IN NIGERIA

A. Dahiru and A. M. Bashir

Department of Quantity Surveying,

Faculty of Earth & Environmental Sciences, Bayero University Kano

ABSTRACT

Value management maximizes the functional value of a project with an effective means of controlling the cost of the project. In Nigeria, its application is perceived to be less widespread due to the fact that little is known about its importance attached to infrastructure projects delivery. Therefore the study is aim at investigating the barriers and benefits of VM practice in construction projects delivery. A total of 65 questionnaires were distributed to construction professionals within Abuja, Kaduna, Kano and Lagos and 56 of these (representing 86% of the total) were successfully retrieved and analysed with the aid of descriptive and inferential statistics. The findings of the study reveals that time limitations to conduct VM studies, lack of encouragement & commitment to implement VM, lack of VM experts, organizational resistance to change, as well as lack of local VM guidelines were among the most constraint factors influencing value management practice. Improved project value for client, enhanced effectiveness & project appearance, cost savings, reduce cost and improve value, improving the project quality, reducing the difficulty of construction as well as accelerating the decision making, reducing faulty design and maintainability issue, reduced claims or disputes, and providing innovative solutions to project needs were amongst the top ranked important benefits attributable to the practice of VM. The findings can help in the implementation of VM concept capable of improving project value to the client as well as reducing the high cost of construction projects in the country. It is recommended that construction professionals should be well aware of both the concept of value management and the benefits that may arise from its use in

addressing the high cost of construction project in Nigeria. The government should provide and enforce formal procedures of value management approach especially in the preliminary design phase of project development.

Keywords: construction project delivery, design phase, value management practice.

¹adahiru.qs@buk.edu.ng

²ambashir.qs@buk.edu.ng



VALUE MANAGEMENT PRACTICES IN NIGERIA CONSTRUCTION INDUSTRY

M. I. Leje¹, M. A. Kasimu¹, A. F. Kolawole¹ and I. A. Jibrin²

¹Department of Quantity Surveying, Fed Poly Bida. Niger State

²Department of Building Tech, Fed Poly Bida. Niger State

ABSTRACT

The present challenges of high cost of construction projects in Nigeria are becoming obvious, despite the effort by the current administration and other stakeholders in the construction organisation to overcome these challenges. However, this substantial increase in the cost of construction projects has brought about loss of client's confidence in consultant's ability to deliver value and disinvestment in the construction industry. Therefore, the aim of this paper is to investigate the factors that affecting value management projects in Nigeria construction industry. The paper adopted quantitative research approach through the use of survey questionnaire. The questionnaire was designed in five (5) point Likert scale format with closed ended questions. The stratified sample technique was adopted as a result of fragmentation and diversification in the construction industry. A total of 150 numbers of questionnaires were distributed to Engineers, Quantity surveyors, Project Managers, Construction Managers, Contractors, Consultant and other stakeholders in the construction industry. Thereafter, only 129 numbers of questionnaire distributed were filled correctly and returned. The descriptive analysis was used to analyse the data obtained from the responses of the respondents. The results obtained from the analysis shows that time limitation, ambiguous specification and ambiguous drawing were the major factors affect VM practices. In addition, the VM practice benefits construction industry in the following areas: cost saving, improved profits, improved projects value for the clients, and reduce claims. Therefore, the study suggests that the practice of VM should be encourage in Nigeria construction industry, since the industry is facing the challenges of quality project delivery with stipulated time and cost.

Keywords: Value management, construction industry, project delivery, construction performance, construction cost

THEME 12: DISASTER MANAGEMENT



TRENDS, PRACTICES AND IMPLICATIONS OF CORPORATE SOCIAL RESPONSIBILITY ON ROAD SAFETY IN NIGERIA

A. O. Shittu¹ and M. A. Chiroma²

¹Department of Urban and Regional Planning, Ahmadu Bello University, Zaria, Nigeria.

²Universiti Teknologi Malaysia, Johor Bahru, Malaysia.

²Abubakar Tafawa Balewa University, Bauchi, Nigeria.

ABSTRACT

One of the negative outputs of road transport systems are road traffic crashes (RTC). Even though they are undesirable, they are to be anticipated. Consequently, transportation planners and other relevant city authorities have always done their bits to keep them within negligible range. Irrespective of these efforts, the incidence of road traffic crashes in Nigeria is still one of the highest in the world. Statistics for fatalities and injuries show that Nigeria rank among the 10th highest worldwide. What's more, dwindling government resources have created a funding gap which reduced capacity to stem the evident increasing rates of RTC. As a result, the pertinence of alternative sources of funding to manage road traffic safety (RTS); among which is corporate social responsibility (CSR) became clear. Using critical inquiry technique, trends, practices and implications of CSR to road safety improvement in Nigeria was established. The approach involved using global benchmarks to gauge the effect of complementary inputs from CSR initiatives in managing RTS in Nigeria, as a way of establishing whether improvement targets are within reach. The implications of the lacuna created by the perceptible lack of a partnership framework to streamline inputs from individual corporate organizations, with interest in road traffic safety enhancement, wherein roles of actors and institutions are clearly defined for effective coordination was also identified. CSR inputs in RTS were as well found to be one-off, with such inputs mainly coming from multinational corporations, while inputs from indigenous companies appear negligible and highly discretionary.

Key words: corporate social responsibility (CSR), road traffic safety (RTS), road traffic crash (RTC), framework, and partnership.

Email: ¹shittuabdulmajeed@yahoo.ca, ²machiroma@gmail.com



**IMPLEMENTING EMERGENCY RESPONSE SAFETY
PROCEDURES BY SMALL-SIZED CONSTRUCTION FIRMS IN
ABUJA, NIGERIA**

**A. A. Shittu¹, J. E. Idiake¹, I. S. Eyimofe¹, A. A. Issa¹ &
M. A. Shehu²**

*¹Department of Quantity Surveying, Federal University of Technology,
Minna, Niger State, Nigeria*

*²Department of Building Technology, The Federal Polytechnic, Bida, Niger
State, Nigeria*

ABSTRACT

Despite the global acknowledgement of the socio-economic importance of the construction industry, it is adjudged to be the most injury prone sector. Thus this study investigated the level of implementing emergency response safety procedures by small-sized construction firms (SSSF) in Abuja, Nigeria. Forty questionnaires were administered to construction firms registered with the Federation of Construction Industry (FOCI) in Nigeria. Data collected were analysed using mean item score and regression analysis. Findings showed that there exists a weak, positive and non-significant relationship between the level of implementing emergency response safety procedures and number of accidents recorded on site. It was observed on the other hand that there exists a strong, positive and significant relationship between the number of accidents recorded on site and amount of compensation paid to victims. It was concluded that small-sized construction firms in Abuja averagely implement the emergency response safety procedures which are requirements in conditions of contracts. It was recommended that regular check-up should be carried out on timely basis to ascertain the compliance level of workers on site. Small –sized contractors should embark on periodic on the job training of their operatives on Health and Safety (H&S) practices as well as set up a feedback mechanism to monitor their H&S performance.

Keywords: Emergency response, Implementation, Safety procedure, Small-sized firms.

**THEME 13: PUBLIC PRIVATE
PARTNERSHIP/PROJECT
MANAGEMENT/PLANNING CHALLENGES**



AN ASSESSMENT OF THE ROLE OF PPP IN THE QUALITY OF HOUSING DELIVERY IN NIGERIA

E. C. Osuji, N. S. Adebayo
Ahmadu Bello University, Zaria

ABSTRACT

The emergence of Public Private Partnership (PPP) housing schemes, seemed to be the end to housing problem, but soon enough quality became an issue. The research assessed the relationship that exists between PPP and the quality of housing delivery in Nigeria. The population for the study were public firms involved in public private partnership schemes and the private firms registered with REDAN. The data was analyzed using relative importance index (RII), mean and percentage. Recording changes ranked first with RII of 0.83 as a very significant Quality control method used by private partners, while Conformity to quality standards ranked first with RII of 0.86 as a very significant Quality control method used by the Public partners. The research therefore concludes that both the private and public partners have different perspective concerning the quality of housing delivery in Nigeria, and their perspective is determined by their respective role in the partnership scheme. The research therefore recommends that both the public and private partners should unite their stand on the quality of housing delivery, to enable them work purposefully towards achieving quality.

Keywords: Housing Delivery, Private Partners, Public partners, Partnership, Quality

Emails: Osujiemmanuel9@gmail.com,
nasiruadebayo@yahoo.com



THE CONSTRAINT DECISION IN CONSTRUCTION PROJECT SCHEDULING USING THE MS PROJECT PLANNER

F. E. Efole¹, A. A. Dakas² and Y. D. Izam²

¹*Dept. of Quantity Surveying, Faculty of Environmental Sciences,
University of Jos, Jos. Nigeria.*

²*Dept. of Building, Faculty of Environmental Sciences, University of Jos,
Jos. Nigeria.*

ABSTRACT

This paper reports a library research which investigated the way decisions of early start or late start schedules are made in the MS Project. The paper identified and clarified from literature the scenarios where options of early or late start schedules may show superior project performance. Key scheduling processes and procedures such as choice of early start schedule and late start schedule may significantly impact project performance. This literature search proposed answer to the question: How can the planner make better scheduling decisions and explore relative benefits of alternative options, early or late? It shows that project performance evaluation results provide evidence that some scheduling options influence schedule variability. And schedule variability in turn, is strongly and positively correlated to schedule performance. It is imperative for contractors to continuously monitor their scheduling practices, the choice made when the schedule is developed and relate these to project performance in order to identify particularly effective scheduling practices for use in scheduling future projects. A strong argument is developed from literature that if network scheduling methods fail to address the issue of start time constraints for various project tasks, it is likely that the schedules generated will be inaccurate.

Keywords. Decisions, Construction Scheduling, MS Project, Project Calendars, Optimism, Pessimism, Most likely.



INCLUSIVE CITY PLANNING APPROACH FOR POVERTY REDUCTION AND CITY MANAGEMENT IN DEVELOPING COUNTRY

H. B. Bwala³ and V. Istifanus²

¹Department of Urban and Regional Planning AbubakarTafawaBalewa University Bauchi, Bauchi, Nigeria

² Department of Environmental Management Technology AbubakarTafawaBalewa University Bauchi, Nigeria

ABSTRACT

Most poor are excluded in the dynamics of social, political, and economic class struggles in developing countries. The consequences are translating to social fragmentation, disparities and inequalities among citizenry and these undermines social cohesion so much needed for avoiding conflicts and other environmental problems. Thus, the study aimed at evaluating the concept and principles of inclusive city planning framework as a mechanism that can reduce inequality and social tension that is synonymous to poverty. This is done through an exploratory review of literature on the: global dimension of poverty and the Nigerian perspective, effects of defective city planning on poverty reduction, poverty reduction mechanisms and their challenges, perspective of urban planning system and its challenges, inclusive city planning approach and its operational strategies perspective, and case studies of some selected countries successes of implementing inclusive planning. The finding revealed 112 million Nigerians still lives below poverty line; 67.1% live in extreme poverty. The physical planning system largely support spatial segregation and control only. Inclusive planning framework principal strategy is democratic and equity in providing access to basic social services to the masses through participation and engagement of the poor in decision making process. It is

³[email@package.com](mailto:hbbwala@package.com) [hbbwala@yahoo.com]

²[email@university.edu.ng](mailto:vistifanus@university.edu.ng) [vistifanus@gmail.com]

therefore, recommended that inclusive planning principal strategy should be adopted in re-structuring cities plans in Nigeria to enhance effective poverty reduction and city management.

Keywords: approach, inclusive, management, planning, poverty.

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