

# Contract Awards Disparity among Multinational and Indigenous Construction Companies

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**Abstract:** The key players in the construction industry are the construction companies. However, the level of contract awards among multinational and indigenous construction companies in most developing countries is poorly understood. This research aim at determining the level of contract awards among multinational and indigenous construction companies. The research employed a quantitative approach using both primary and secondary method of data collection to achieve the stated objective. Purposive sample techniques were used for collecting both the primary and secondary data. Structured questionnaires were administered to 70 construction professionals and contractors to determine the factors responsible for low indigenous contractor's participation and award of contracts. Primary and secondary data were collected, and the findings reveal that 65% of the contract awards between 2002 and 2012 were won by the multinational construction companies. While the lack of requisite skill and technical know-how with a percentage severity index (SI) score of 97% was responsible for low indigenous construction companies awards. This result indicates that the multinational construction companies are dominating the construction industry.

**Keywords:** Contract award, indigenous construction companies, multinational construction companies.

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## 1. Introduction

Construction is an integral part of human existence and need. Consequently, construction activities and companies are growing at a fast pace in most developing countries and the world over in line with the ever-increasing human population. The need to develop residential buildings, commercial, and recreational facilities as well as heavy and complex infrastructural projects like roads, bridges, rail tracks, refineries, et cetera., makes these nations ripe for infrastructural investment as they are aggressively seeking to improve and develop modern infrastructure in their pursuit of vision 2020. Consequently, they are actively inviting foreign investment (contractors) and considering the favourable conditions, many developed countries are encouraging their companies to take advantage of the many opportunities offered by the developing countries. And for this reason, foreign companies are indeed waking up to the investment opportunities that lie within the developing countries

construction industry. According to Idoro and Akande-subar (2008), the scope of operation and participation in public development projects and contracts, amongst contractors, are categorised as either indigenous or expatriate (i.e. multinationals). Other researchers like Edmonds (1979), Ogunpola (1984), Olateju (1991), Samuel (1999), and Mayaki (2003) also submitted likewise. While 70% of the construction contract is the public sector (government) driven and 30% are private sector driven in Nigeria. This trend is contrary to what is obtainable and applicable in the construction industries elsewhere in the world, where it is private-sector driven (Ogunbiyi, 2004; Alfred, 2008). Nevertheless, the level of contract awards among multinational and indigenous construction companies in most developing countries is still unclear. The aim of this paper is to examine the level of awards of public contract amongst indigenous and multinational companies/contractors. The objectives set to achieve the aim are as follows: (1) to determine the level of award of public contract amongst indigenous and

multinational construction companies/contractors; (2) to determine the types of projects predominantly awarded to the indigenous and multinational construction companies/contractors; (3) to examine the factors associated with indigenous contractor's participation in public projects contract awards.

## 2. Classification of Construction Companies

Construction companies are usually categorised by several criteria. In Nigeria, the scope of operation is a common criterion. Researchers use this criterion to categorise contractors into either indigenous (i.e. local contractors) or expatriate (i.e. multinational or foreign contractors) (Edmonds, 1979; Ogunpola, 1984; Olateju, 1991; Samuel, 1999; Mayaki, 2003). In this research, they are abbreviated as indigenous construction companies (ICCs) and the multinational construction companies (MCCs) respectively. Furthermore, the construction sector in Nigeria can be broadly divided into formal and informal sub-sectors. The large and more organized MCCs dominates the formal sub sector while the ICCs hold sway in the informal sub sector (Saka and Ajayi, 2010).

### 2.1. Indigenous Construction Contractors (ICCs)

Idoro (2007) describes indigenous contractors as those contractors that are fully owned and managed by Nigerians. He further describes MCCs as expatriate contractors who are jointly owned and managed by Nigerians and foreigners, or by foreigners. While with the emergence of the Nigerian Enterprises Promotion Decrees, otherwise known as the indigenisation decrees, 1972 – 1977. Ofili (2004) submitted that Nigerians can have majority shares in the ownership and control of construction companies and businesses in the country. Fagbayibo and Oguamanam (2009) submitted that there are numerous but open-ended criteria for identifying indigenes. These include cultural distinctiveness, the extent to which their culture and way of life are under threat, dependency on the immediate natural environment, a history of suffering from colonization, discrimination, domination and exploitation, self-identification, and political and social marginalisation. From these definitions, in Nigeria, the indigenesness of a construction company is perceived mainly from the perspective of the utilization of indigenous capacity in management formation and the extent of ownership by Nigerians. Saka and Ajayi (2010) described the ICCs as most small and medium scale enterprises (SMEs) whose ownership and management are constituted by Nigerians. They are also characterised as follows: (1) they are owned and managed by sole traders; (2) they are entrepreneurs with little knowledge and skill of the workings of the Nigerian construction industry; (3) they operate largely in the informal sector of the economy and are usually small, unregistered, labour intensive and their workers are unprotected; and (4) they often don't have premises, equipment or permanent workforce. Chukwuemeka (2011) submitted that they are given preference or consideration in the award of contracts in the public sector where they meet stipulated requirements in Nigeria. The Public Procurement Act 2007 stipulates that a procuring entity may grant a margin of preference to ICCs in the evaluation of tenders when comparing tenders from domestic bidders with those from foreign bidders. These policies offer diminishing effects on the tendering risk profiles of the ICCs. Irrespective of these favourable policies, ICCs in Nigeria are still bedevilled by poor managerial competence, poor reputation as constructors of

inferior quality products and issues bordering on integrity (Chukwuemeka, 2011).

### 2.2. Multinational Construction Companies (MCCs)

MCCs are those firms concerned with planning, consulting, design, construction, or any combination of these activities on an international level. Idoro and Akandesubar (2008) also described multinational contractors as expatriate contractors who are mainly private firms that are jointly owned by Nigerians and foreigners but solely managed by expatriates. Moreover, Chukwuemeka (2011) stated that the MCCs are usually Multinational Enterprises (MNEs) or their affiliate private firms jointly owned by Nigerians and foreigners, but are mostly or fully managed by foreigners. They depend largely on their competitive advantages for survival in the Nigerian business environment. Ogunpola (1998) observes that they constitute only about 7% of the total number of contractors in Nigeria. Whereas they are carrying out over 90% of the total value of construction contracts in Nigeria most especially in Public infrastructural projects. (Anyanwu et al., 1997; Idoro, 2010). MCCs in Nigeria are normally characterized by structured management, huge capital base, the wider area of network and cut across various sectors of the economy including construction (Amao, 2008; Inuwa et al., 2014; Patrick, 2017). The researcher was also of the view that one of the basic features of MCCs is that, they have well managed human capital bases that are responsible for carrying out the various activities of their corporations. Similarly, Moavenzadeh and Rossow (1976) submitted that multinational firms generally engage with projects and activities that are beyond the ability of the indigenous ones, and as a result, there is no possible "export of jobs" by this industry, a frequent complaint against "multi-national corporations," since by working abroad multi-national construction firms actually generate jobs for people in their home (own) countries. Furthermore the nature and kind of constructions that multinationals are often preoccupied with infrastructural projects and utilities. Whereas the professional services rendered by the multinationals include; feasibility studies, planning, design, supervision and management of construction works, economic development planning. In addition, Moavenzadeh and Rossow (1976) also posited that large industrial and public works often require highly sophisticated technology for their planning, design and construction and only the multinationals have the requisite skills and expertise. Secondly, even in projects which do not require sophisticated technology, there is still a need for a professional and managerial skill which is often lacking in indigenous entrepreneurs. Finally, such a project requires huge capital which is often not locally feasible and realistic, and as a result, international source is inevitably considered. Be that as it may, chance factor, for example, those set up in the Nigerian business condition represents' a boundary to the MCCs' survival in the nearby market. Such hazard factors have their inceptions from three principal sources recognized by Hill (1997) as legitimate, monetary and political components. In Nigeria, explicit hazard issues to the survival of these classifications of contractors incorporate the neighbourhood substance and indigenization strategies, the financial area discomforts, weakness/social distress, nonattendances of sufficient/enduring force supply, debasement, open strategy insecurity and so on.

### 3. Justification for Engaging MCC in Developing Countries

The justification for the use of MCCs in developing nations incorporate the watched high caliber of their items which ICCs regularly cannot accomplish, their trustworthiness and genuineness (Idoro, 2010), and the journey to ace, adjust and further build up the procured plan and development advancements and the executives methods (Simkoko, 1992). Anyanwu et al. (1997) suggested that while MCCs overwhelm the treatment of open development extends, the impact of ICCs is felt more in private division development ventures. Idoro (2010) found that the nature of the execution of the MCCs is superior to anything that of the ICCs in view of three criteria, to be specific, workmanship, level of maintenance charge gathered for undertakings finished and the nature of materials utilized in ventures finished. Idoro (2007) additionally uncovered that MCCs have better mindfulness and consistency with health and safety (H&S) guidelines and complete preferred H&S the executives over ICCs.

### 4. Factors Responsible for Poor Performance/ Low Rate of ICCs Participation in Construction Projects Awards.

Writing from the Nigerian construction industry uncovers numerous issues which contrarily influence the intensity of development firms. These issues are for the most part as low quality of developed offices, delays, cost invades, low customer fulfilment expanded revise and low efficiency (Tunji-olayeni and Omuh, 2018). The issues of indigenous companies spin around the official limit and minimum amount with specialized and budgetary fortitude. For the most part, most neighbourhood organizations are little, divided and unequipped for bundling or pulling in advances. Maybe a couple of them can convey turnkey ventures without falling back on some type of association assertion for gear, skill or specialized help. The execution of ventures overseen by Nigerian ICCs are professed to be better and they likewise asserted they can be endowed with huge and exceptionally specialized undertakings, though most examinations report that their activities execution is packed with: venture surrender, cost and time invades, poor workmanship, poor administration capacity, budgetary challenges, lack of foresight, poor motorization, and high recurrence of prosecution (Adams, 1997). An analyst has ascribed ICC's poor execution to inadequacy, freshness, poor advancement and dynamism, and the selection of customary administration (Adams, 1997). There are a few difficulties or issues with the present models of prequalification of temporary workers for open improvement fills in as given by Olatunji (2008), these incorporate: (1) introduction problems, (2) the weakness of paper-based prequalification, (3) assurance of specialized limits on certifications of contractual worker's staff finance, (4) bank money related and credit balance records, (5) prequalification and the development of business, (6) the unwieldiness of prequalification criteria, and (7) the dimension of the substance of polished skill a providing firm has is as yet confounded.

### 5. Research Methodology

The research employed a quantitative approach using both primary and secondary method of data collection to achieve the stated objective. Purposive sample techniques were used for collecting both the primary and secondary

data. Structured questionnaires were administered to seventy construction professionals and contractors to determine the factors responsible for low indigenous contractor's participation and award of contracts. The secondary sets of data were obtained from contract records of public projects in Abuja between the study period of 2002 to 2012. Descriptive data analysis was employed to analyse contract awards, while the relative important index (RII) and severity index (SI) were used to analysed prequalification for the award of public contract and factors responsible for low indigenous participation respectively.

**Table 1.** Contract awarded/ executed between 2002 and 2012

S/N	Year	Number of contract awarded	Number & category of successful bidder/contractor	
			Multinational	Indigenous
1	2002	5	4	1
2	2003	4	3	1
3	2004	3	2	1
4	2005	3	1	2
5	2006	5	3	2
6	2007	4	2	2
7	2008	3	2	1
8	2009	4	3	1
9	2010	4	2	2
10	2011	3	2	1
11	2012	2	2	-
Total		40	26	14

Result from Table 2 demonstrates that sixty-five percent (65%) of the activities were granted to MCCs while thirty five percent (35%) went to the ICCs. Besides, the examination of the kind of award t uncovered that the MCCs were awarded 73%, 86%, and 14% of building works, civil works, and alteration of structures individually. While ICCs were awarded 27%, 14%, and 86% of awards for building works, civil works, and Alteration of structures individually. The researcher further broke down and ordered the multinational and indigenous contractors dependent on the nature and sort of open undertakings executed or on-going somewhere in the range of 2002 and 2012, the outcome uncovered that, MCCs are dominating in building and common civil works with 73.08% and 85.71% separately. Nonetheless, it is a different ball game with alteration and rehabilitation works where the indigenous contractors holds influence with 85.71%. The researcher further investigated and ordered the multinational and indigenous contractors dependent on the nature and kind of open activities executed or on-going somewhere in the range of 2002 and 2012. Multinational contractors are overwhelming in building and civil works with 73.08% and 85.71% individually. Be that as it may, it is a different ball game with alteration and rehabilitation works as the indigenous contractors holds influence with 85.71%.

Table 3 revealed that the most severe problems or factors, responsible for low indigenous participation in public projects, lack of requisite skill and technical know-how with a percentage S.I score of 97%, Followed by weak or poor educational framework geared towards research and development scoring of 88%. weak financial strength was ranked third with 74% scores. Poor financial

support from banks and governments, together with political factors or interferences and corruption were both ranked fourth.

**Table 2.** Total projects awarded between 2002 and 2012

Project type	Frequency			
	Indigenous	Multinational	Indigenous %	Multinational %
Building Works	7	19	26.92	73.08
Civil Works	1	6	14.29	85.71
Alteration (Bldg)	6	1	-	-
Rehab (Civil)	-	-	85.71	14.29
Grand Total	14	26	-	-
Grand Total (%)	35%	65%	-	-

**6. Discussion of Result and Findings**

In the bid to determine the level of contract awards amongst the MCCs and ICCs, Table 1 and 2 above, illustrating the total number of public contract awarded between the year 2002 and 2012, in the federal capital territory Abuja, reveals on a general note that, the MCCs are still dominating most public contract awards in the country, with a percentage score of 65%. While the ICCs, were found below the average of 35. These findings are in consonance with the research work carried-out by Aniekwu and Okpala (1988), which maintained that,

93.04% of the total contract awarded by the federal and state government between, 1974 and 1984 went in favour of the MCCs. Similarly, finding according to Patience and Ignatius (2011) revealed that, a total of 235.51 and 68.22 billion naira volumes of completed projects under the federal ministry of works, housing and urban development at the first quarter of 2009, were awarded between the MCCs and ICCs respectively. This implies that the MCCs dominated with 77.54% while the ICCs falls far below average of 22.46% of the total projects awarded during the study period. Whereas, for the types of projects, MCCs were awarded most of the new building and civil works with 73%, and 86% respectively. But the ICCs secured most of the alteration of building works with 86% of the total projects. The prevailing factors that have contributed to low or poor patronage and participation of the ICCs in public project development have been identified; Lack of requisite skill and technical know-how, have been found to be the number one (1st) problem with Indigenous Contractors, weak or poor educational framework followed suit, ranking Second (2nd) on the list, meaning that the educational system of the country needs to give urgent and important consideration the ICCs. Weak or poor financial strength of ICCs was ranked Third (3rd), though a problem, but not as severe as; the lack of requisite skills and technical know-how because, governments or clients at the end, still provides the “funding” for executing and the proposed projects. If the required skill and technicality is not in place, no amount of finance provided or invested would make any difference.

**Table 3.** Severity indices of factors responsible for low indigenous contractor’s participation and win of contracts

Factors/ problems	0-20 %	20-40 %	40-60 %	60-80 %	80-100 %	SI	%	Rank
Low/ weak capital/ financial strength	0	1	29	16	14	0.74	74%	3 <sup>rd</sup>
Weak/ poor educational framework/ structure	0	1	5	23	31	0.88	88%	2 <sup>nd</sup>
Political factors/ or interference and corruption	0	8	30	16	6	0.67	67%	4 <sup>th</sup>
Lack of requisite skill and technical know-how	0	0	2	6	52	0.97	97%	1 <sup>st</sup>
Weak/ poor collaboration amongst contractors	12	31	12	3	2	0.44	44%	6 <sup>th</sup>
Poor/ insufficient financial support from banks & govt.	0	7	33	13	7	0.67	67%	4 <sup>th</sup>
Poor quality delivery	15	32	10	3	0	0.40	40%	7 <sup>th</sup>
Weak/ improper managerial & organizational set up	4	34	20	2	0	0.47	47%	5 <sup>th</sup>

**7. Conclusions**

Based on the research findings, the following conclusions were reached; that multinational contractors dominated the awards for the construction of building and civil works in most of the projects executed between 2002 and 2012 in view of the data studied. While the Indigenous contractors executed most of the alteration in building works during

the study period. The prevailing factors that contributed to the low patronage and participation of the indigenous contractors in public project development were ranked first, second, and third as Lack of requisite skill and technical know-how, weak or poor educational framework, and weak financial strength respectively. These factors brings to the fore the bene of indigenous contractors in

Nigeria and in developing countries. These research findings is indicative of capital flight from developing countries moving to the developed nations. Furthermore, the implication of this outcome to the industry is low income generation and redistribution by indigenous contractors which leads to insignificant value addition to construction and local industries.

This study suggested the following realistic and workable recommendations: (1) A legal framework should be set up, that will bind multinational construction companies with indigenous contractors to work hand in hand with each other. Thus, ensuring skills and technology transfer. (2) Similarly, legal regulatory framework should be put in place to ensure strict adherence and proper monitoring of contractual processes to give indigenous contractors first consideration and advantage over the multinational construction companies. (3) Strong collaboration and cooperation amongst indigenous contractors to create the right skills and to boost their financial strength is recommended.

### References

- Adams, O. (1997). Contractor development in Nigeria: Perceptions of Contractors and Professionals. *Proceedings of a Journal of Construction Management and Economics*, 15(1), 95-108.
- Alfred, O. O. (2008). Building a Broad Procurement of Construction and Reconstruction Projects in the International Context, 385-396.
- Amao O. O. (2008). Corporate Social Responsibility in Multinational Corporation and Law in Nigeria: Controlling Multinationals in Host State. *Journal of African Law*, 52(1), 89-113.
- Aniekwu, A. N. and Okpala, D. C. (1988). Contractual Arrangements and the Performance of the Nigerian Construction Industry (The structural components). *Journal of construction management economics*, 6(1), 3-11.
- Anyanwu, J. C., Oyefusi, A., Oaikhenan, H., and Dimowo, F. A. (1997). *The Structure Of The Nigerian Economy (1960-1997)*. *Proceedings of the Nigerian Journal*, 14(8) Joanee Educational Publishers Ltd: Onitsha
- Ogbu, C. P. (2011). Risk management practices of multinational and indigenous construction companies in Nigeria: A comparative analysis. *Journal of Research in National Development*, 9(2), 315-324.
- Edmond G. A. (1979). Macro Firms: Construction Firms for the Computer Age. *Journal of Construction Engineering and Management*, 109(1), 13-24.
- Fagbayibo B. and Oguamanam C. (2009). Nigeria: Constitutional legislative and Administrative Provision Concerning Indigenous People. *Proceeding of an International Labour Organization and Africa Convention on Human and People Right*, Geneva.
- Hill, C. (1997). *International Business, Competing In The Global Market Place*. UK: Irwin/McGraw-Hill.
- Idoro G. I. (2007). *A Comparative Study of Direct Labour and Design Tender Construct Procurement Systems in Nigeria*. Ph.D Thesis, Department of Building, University of Lagos, Lagos, Nigeria.
- Idoro, G. I. (2010). Influence of Quality Performance of Indigenous and Expatriate Construction Contractors In Nigeria. Retrieved from <http://www.Thefreelibrary.com/influence> on 19th August 2012.
- Idoro G. I. and Akande-Subar L. O. (2008). Clients' Assessment of the Quality Performance of indigenous and Expatriate Construction Contractors in Nigeria. *Proceeding of the Construction and Building Research Conference of the Royal Institute of Chartered Surveyors*, Institute of Technology Dublin. Available at <http://www.rics.org/cobra>, accessed on July 28th 2012.
- Inuwa, I. I., Githae, W. and Diang, S. (2014). Indigenous Contractors Involvement and Performance in Construction Procurement Systems in Nigeria. *Global Journal of Researches in Engineering: General Engineering*, 14(1), 13.
- Mayaki S. S. (2003). The Place of Nigeria's Building Industry in a Globalised World. *Proceeding of an International Conference on Globalization and Capacity Building in the Construction Sector*, Lagos Nigeria, 18-29.
- Moavenzadeh F. and Rossow J. A. (1976). The Construction Industry in Developing Countries. *Proceedings of a Technology Adaptation Program at Massachusetts Institute of Technology*, United State, 163-169.
- Tunji-olayeni, P. and Omuh, I. (2018). Competitive Strategies of Indigenous. *International Journal of Civil Engineering and Technology*, 8(10), 350-362.
- Ofilu U. M. (2004). *Compensation System in Nigeria Construction Firm: Piccolo-Brunelli Engineering Ltd*. Ph.D thesis, St. Clement University, 43-50.
- Ogunbiyi M. A. (2004). The Nigerian Construction Industry : Prospects of the Labour Force the Building View. *Proceedings of Journal of The Professional Builders* (5). Retrieved on <http://www.j.nig.inst.build> on the 22nd July 2012.
- Ogunpola, A. (1984). The Structure of Building Costs and Implication for Economic Development. In I.G. Idoro. and O.L. Akande-subar. Clients' Assessment of the Quality Performance of Indigenous and Expatriate Construction Contractors in Nigeria. Available at <http://www.rics.org/cobra> accessed on the 28th July 2012.
- Olateju, B. (1991). Enhancing the Contract Management Capabilities of the Indigenous Contractor. In I.G. Idoro. and O.L. Akande-subar. Clients' Assessment of the Quality Performance of Indigenous and Expatriate Construction Contractors in Nigeria. Available at <http://www.rics.org/cobra> accessed on the 28th July 2012.
- Olatunji O. A. (2007). Evaluating the Efficiency of Pre-Qualification as an Imperative Tool in Competitive Equation in Construction in Developing Countries. *Proceeding of 2007 Quantity Surveyors' International Convention*, Kuala Lumpur, Malaysia, 132-141.
- Olatunji O. A. (2008). Due Process and Contractor Selection for Public Works in Nigeria. *Proceedings of an International Convention on Procurement of Construction and Reconstruction Projects in the International Context*, University of Newcastle, United Kingdom. Available at <http://www.buildingabroad.newcastle.edu.au> Accessed on 18th July 2012.
- Olatunji, O. A. (2008). The Building Code and the Procurement Planning Process. *NIQS 2-Day Workshop and Technical Sessions on Quantity Surveying and Procurement Cost Management of Capital Projects*, Muson Centre, Onikan, Lagos.

- Patience F. T. and Ignatius O. O. (2011). *Strategies for Improving Indigenous Contractors Participation in R&D in Nigeria*. Department of Building Technology, School of Environmental Science, Covenant University Ota Ogun State.
- Patrick O. C. (2017). Marketing strategies and performance of indigenous construction firms in Nigeria. *Journal of Construction in Developing Countries*, 22(1), 1-16. Available at: [http://web.usm.my/jcdc/vol22\\_1\\_2017/JCDC\\_22\(1\)\\_Art\\_1\\_early view.pdf](http://web.usm.my/jcdc/vol22_1_2017/JCDC_22(1)_Art_1_early_view.pdf)
- Public Procurement Act (2007). *Due Federal Republic of Nigeria Official Gazette*. Lagos: The Federal Government Printers, A210- A225.
- Saka N. and Ajayi O. M. (2010). A Comparative Assessment of Incentive Scheme Between Indigenous and Multinational Construction Contractors in Nigeria. *Proceedings of the 26th Annual ARCOM Conference 6-8 September 2010*, Leeds UK Association of Researchers in Construction Management.
- Samuel M. O. (1999). *The Causes of Foreign Dominance of the Nigerian Construction Industry and the Prospects for the Indigenous Firms*. Unpublished M.Sc. Construction Management Thesis, University Of Lagos 21-22.
- Simkoko, E. E. (1992). Managing International Construction Projects For Competence Development Within Local Firms. *International Journal of Project Management*, 10(1), 12-22.



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