

## Root Cause Analysis of Encumbrances Faced by Indigenous Building Contractors during Bidding in Nigeria

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This paper intends to address one problem that is yet to be systematically examined. The focus is on the causal factors underlying the encumbrances faced by indigenous building contractors during bidding in Nigeria with a view to mitigating the hindrances and resultant effect of enhancing their business. 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 2 themes were generated. Lagos State and Federal Capital Territory (FCT) were the locations covered. The participants were key practitioners (management and senior staff in procurement/estimating/tendering/bidding/contract administration department) in the contracting firms interviewed. A total of 16 firms were interviewed, eight from small and medium firms respectively. From the findings, all the participants agree that inability to bid for many projects, size of the project, location of the project, type of project, limited available personnel, the competition environment, lack of construction fund availability, and uncertainty of getting the job were identified as the major challenges facing indigenous building contractors in bidding performance. The study identified the root cause of each of the challenges and recommended that contractors should formulate right strategic plans, develop professionalism and innovative business strategies. Also, there is the need for building contractors to invest in talented staff, advanced construction technology, among others.

**Keywords:** Bidding Performance, Building Contractors, Encumbrance, Indigenous, Root Cause

### Introduction

In most developing countries in Africa, Nigeria inclusive, the building industry is a competitive commerce sector driven by the lowest cost mentality, maybe because of the level of poverty (Dulaimi & Shan, 2002). A large proportion of construction businesses in developing countries are small and medium sized, thus, one of the reasons why this paper is looking at indigenous building contractors that is within this group and emphasis will be on government projects. Mostly, these are indigenous firms and are often described as the growth engine of the construction industry (Ofori, 2007). There are two concepts of bidding in the construction industry: competitive and non-competitive bidding practice (Johnstone, Bedard, & Ettredge, 2004). Most building projects are let through competitive bidding, which requires that roles of the client and contractor be duly defined and documented. Bidding is a very complex decision requiring simultaneous assessment of large numbers of highly interrelated variables to arrive at a decision. These interrelationships are complex and intractable so that management expertise is mostly implicit and very difficult to be extracted and modelled, and because of this, contractors adopt various strategies to enhance their chances of winning projects. Competitive bidding is the route for obtaining a sizeable proportion of building project by contractors globally. Harris and McCaffer (2000) assert that bidding is said to be achieved in a fair way, set out to produce the lowest commercially viable tender price in the current market condition.

Min and Yean (2005) assert that construction bidding is the process of submitting a proposal (tender) to undertake, or manage the undertaking of a building project. However, bidding involves building contractors making strategic decisions as it concerns the financial, managerial, manpower and physical resources of the firm before considering embarking on the project (Odusote & Fellow, 1992). This process normally commences with the construction estimate prepared by the estimator of the construction firm. This is germane

to any building contractor and most noteworthy decisions that must be made by the building contractor's firm will centre on whether to bid (Egemen & Mohammed, 2007). The ability of contractors to address various bidding situations is an important ingredient for survival, particularly in today's competitive market. These different bidding situations together with the decision involved in the conversion of the estimate into a tender bid are often considered to be the most important step in the bidding process in the life of the indigenous contractor once a decision has been reached to bid. Hence, the need to evaluate the root cause of encumbrances faced by indigenous building contractors during bidding in Nigeria. This is an important dimension to these organizations on how they manage their ambitions within their complex commerce environment with a view to mitigating the encumbrances faced from the root and resultant effect of enhanced chances of indigenous building contractors' winning bid cannot be overemphasised. This research would birth useful and practicable policies and proffer solutions to the root cause of problems confronting indigenous building contractors bidding for jobs. The following objectives will assist to achieve this aim:

- i. To identify the root cause of the encumbrances faced by indigenous building contractors during bidding.
- ii. To suggest mechanisms to mitigate these encumbrances faced by indigenous building contractors during bidding.

Several research studies have looked into the subject of building contractors bid, both developed and developing economies, for example Bagies and Fortune (2006, 2009), Jensen (2011), Inuwa, Saiva, and Alkizim (2014), Ugochukwu and Onyekwena (2014), Inuwa, Wanyona, and Diang'a (2014), Inuwa, Mafimidiwo, and Iyagba (2015), Oyeyipo, Odusami, Ojelabi, and Afolabi (2016), Olatunji, Aje, and Makanjuola (2017). None of these studies have been able to identify the root cause of the challenges being faced by building contractors during bidding, both in the developed and developing countries. Only Bagies and Fortune (2009) attempted in the developed economies when they research on factors affecting the bid/no bid decision in the Saudi Arabian construction contractors yet it was impassive. Thus, they lack relevance. Hence, because of the importance of the developing economies and the uniqueness and complexities of business environments in developing economies, it is necessary to address this issue because the developing economies contribute nearly half of global wealth as reported by United Nations' World Economic Outlook (2015). Another important knowledge gap, which this study aims to bridge, is that previous studies on challenges faced by indigenous contractors often adopt questionnaire approach in data collection. Whereas Maunganidze (2013) opines that interview method of data collection allows the participants to express themselves freely without being confined in their responses during collection of data for the root cause analysis.

### **The Nigerian Indigenous Building Contractor**

The construction industry of any nation provides the driving force necessary for sustaining economic buoyancy. In Nigeria, Omole (2000) reports that the industry contributes an average of 5 percent to the annual gross domestic product and an average of about one-third of the total fixed capital investment. Many stakeholders are involved in this industry. For the purpose of this paper, indigenous contractors are Nigerian firms or companies owned by Nigerian that carry out construction works. Ugochukwu and Onyekwena (2014) assert that a contractor is a person(s) that offer their skills and services and accept the challenge of executing the works in exchange for financial reward. Inuwa, Wanyona and Diang'a (2014) gave a brief history of the concept of indigenous contractors came to limelight with the introduction of the Nigerian Enterprises Promotion decree of February 1972, and since then indigenous contractors have been playing an important role in the construction industry. An indigenous contractor in Nigeria is regarded as a person or private organization established under the Nigerian Enterprises Promotion Decree of February 1972 and has no other base or citizenship than Nigeria and its capital base and ownership is entirely Nigerian. With the level of corruption in Nigeria today, does this law still stand? Well, this is a moot point that will be addressed in another

paper. The firms of these building indigenous contractors range in size from the self-employed craftsmen known as jobbers who engage mainly in repairs and maintenance of buildings to the very large multinational or foreign-based construction company.

Standard Bidding Document (2011) states it categorically in the evaluation and qualification criteria that a bidder shall show having capital and experience adequate to meet the aggregate of the qualifying criteria for the work. Second, a bidder shall have a minimum level of financial capacity to be eligible for the performance of the works under the contract with average annual construction turnover as specified in the special instruction to tenderer (SIT). Third, a bidder shall have a construction manager with minimum years of experience as specified in the SLT and other key staff with qualification and experience as specified in the SIT. Fourth, the bidder shall own or have guaranteed through lease or hire of equipment in good working condition. The big question is “how many Nigerian indigenous building contractors can meet up with these conditions during bidding as specified in the Standard Bidding Document (SBD) (2011) during bidding in order for their bid to become successful? This is a food for thought. Sadly, the Nigerian indigenous contractor base is largely incompetent and inexperienced and these have affected them during bidding (Ogbebor, 2002). Sadly, Ogunlana (2010) opines that for this reason, the Nigerian Government still lacks confidence in its indigenous building contractors. Although this perception has since changed as some indigenous contractors now compete with their foreign counterpart both in technology and innovation.

Indigenous building contractors are generally seen as holding the greatest potential for increasing building industry capability and for general economic growth. Oyeyipo et al. (2016) surmise that the combination of the small and medium sized construction firms make up 90 percent of the total registered contractors in Nigeria. Thus, this is one of the reasons why this paper’s emphasis is on small and medium indigenous building contractors. These indigenous contractors are characterized by under-capitalization, under capacity utilization, understaffing, and are generally managerially handicapped. All these variables are some of the encumbrances faced by them as identified by Oyeyipo et al. (2016). Over the years, the poor performance of this category of contractors has been a source of concern and worry particularly when compared with their foreign counterparts in terms of encumbrances faced during bidding, judging by the record of high number of bankruptcies in this group, poor quality work, mismanagement, diversion and embezzlement of project fund. Also, the general economic depression, high bidding failure rate, the survival and growth of indigenous contractors may be difficult, particularly in view of inflationary trends, the high cost of construction materials, the high cost of borrowing capital, government policy change in favour of deregulation. Researchers have observed that the Nigerian building industry is a remarkably complex business sector (Mafimidiwo & Iyagba, 2015). Therefore, bidding within the Nigerian building industry as an indigenous contractor is extreme; risks are high, uncertainty is rife.

Oyeyipo et al. (2016) reveal that financial capability of the client; project size and several competitors are significant when an indigenous contractor is making a decision to bid. While Olatunji et al. (2017) identified nature of the project, project size, and availability of equipment, core personnel, finance and cash flow arrangement and contractors’ expectations regarding the rate of return on investment as significant factors. Mafimidiwo and Iyagba (2015) identified the problem faced by indigenous building contractors as high-interest rates from commercial banks, lack of capital equipment, lack of incentives from government to emerging contractors, lack of access to funding from commercial banks, and the inability of the company to compete with big construction contracts. Others are the inability to develop long term strategy, poor cash flow, lack of access and reliable information about the contract, bad debt, lack of confidence in business by clients, lack of management skills, poor contractor's attitude towards competitiveness, lack of experience and lack of professional advisors and consultants in the construction industry. Bahman-Bijari (2010) identified cost estimate, and mark-up uncertainties as the challenges faced by building contractors. The author asserts that the cost estimate uncertainty is because of errors in the bills of quantities, inflation, regulation changes, and

management interference. Williams and Wayne (2006) identified the problems facing bidders in construction as follows: inability to bid for many building projects, size of the projects, the location of the projects, type of projects, limited available personnel, the competitive environment, and reputation of the consultant. Others are lack of construction funding, shoddy bidding procedure, bid peddling/shopping, the uncertainty of getting the job, and lack of sound bidding strategy.

### **Methodology**

The aim of this paper is to investigate the root cause of encumbrances faced by Nigerian indigenous building contractors during bidding with a view to increasing their success rate in bidding. Thus, the expand-focus approach of the root cause analysis (RCA) was adopted, tailored to fit the topic at hand (Rein, Greaves, & Kirby, 2017). Root cause analysis is a joint term that explains wide ranges of approaches, and tools that branch out to finally expose the root cause through a systematic and well-structured methodology. The authors of this paper have gained experience with root cause analysis in some previous research where it was considered crucial to getting to the root of the problems. Based on this, it was hypothesised that similar approaches and tools would be suitable also for identifying and analysing the root causes for encumbrances faced by Nigerian indigenous building contractors. Andersen and Fagerhaug (2006) report in Table 1 the summary of main steps and tools used in RCA as adopted in this paper. For the purpose of this paper, the RCA steps were followed. First, due to the peculiarity of the subject matter, a national literature survey was performed to create an initial pool of possible causes of encumbrances faced by indigenous contractors. The literature survey yielded a total of 45 potential causes. In a parallel route, a focus group meeting was conducted on 6<sup>th</sup> June 2017. It was attended by 6 famous representatives of indigenous contracting firms in Abuja and Lagos State. Purpose sampling technique was adopted in picking the participants. The aim of the focus group meeting was a brainstorming process with a view to creating an additional pool of possible causes of challenges faced by indigenous contractors. The participants were exposed to the previous findings from the literature survey. The brainstorming focus group meeting yielded 33 new causes in addition to the previous 45 from the literature, making a total of 78 causes.

Thus, the study went further to categorised, filtered duplications, and merged similar or closely related causes in each of the two groups (literature and focus group meeting) as adopted by Rosenfeld (2014). At this stage, the process left 32 causes of the 45, and only 23 causes of the 33, making a total of 55 causes. However, this list still included some overlapping, some cases similar and hence, qualified to be called direct causes but not root causes. Then, it went through the second phase. At this stage, the root causes were extracted and refined from the combined pool of 55 causes. The process ended up with a final list of 18 independent national root causes. It should be noted that most of the 18 root causes appeared in both initial pools (literature survey) and focus group meeting. Hence, they are qualified to be called universal root causes faced by indigenous Nigerian building contractors during bidding. The final stage of the research pertained to further investigation to distinguish between the vital few significant and the remaining, not significant root causes. The ranking was done with the aid of structured interview questions among 16 firms (5 participants per firm and one participant per section: administration/management, engineering/building, construction/field engineering/operational, technical/logistics, and estimating/contract administration) within Abuja and Lagos State based on their professional experience, with a view to selecting the most frequent 5 root cause from the 18 identified in the structured interview question and suggest any other ones if any. A random purposive sampling technique was adopted because it gives a platform for identifying a population interest. A total of 80 participants were involved in the study, from June to July 2017. Rosenfeld (2014) approach of using Pareto chart to finding the vital few was adopted in this paper. It identified six conspicuous vital few root causes, in two different categories (1, 2, 3, & 4, 5, 6).

**Table 1: Root-Cause Analysis Main Steps and Tools**

Steps	Main tools	Instrumentality of the tool
Problem understanding	Flow chart	Portrays the flow of activities in a process
problem	Critical incident	Helps in understanding the most symptom of a
Brainstorming solutions	Brainstorming	Generates ideas—suitable for finding multiple
Data gathering sample	Sampling	Collects data about a large group based on a smaller
respondents	Surveys	Collects qualitative and quantitative data from
Data analysis	Histograms	Displays distributions and variations; clarifies the data
distribution	Pareto chart	Assists in finding the vital few; provides a skewed

**Source:** Andersen and Fagerhaug (2006) as modified by the authors

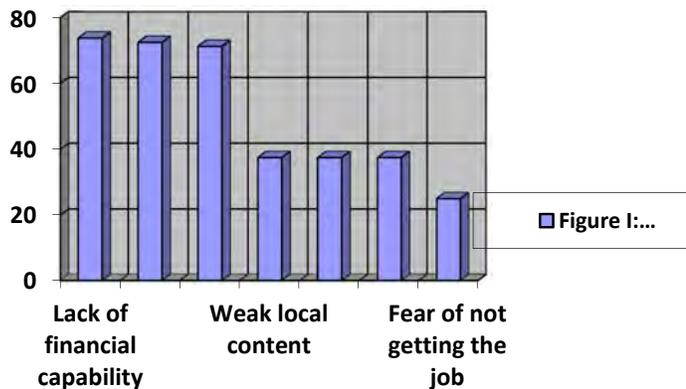
### Findings and Discussion

The findings and discussion are discussed in this section. As detailed in the methodology section, the expand-focus principle adopted in this paper led to the steady convergence from a list of 78 initial causes to merely 18 independent national root causes. Table 2 reveals these 18 root causes. Based on the fact that 18 causes are too many for effective simultaneous treatment, for easy identification in terms of significant, they were ranked as revealed in Table 2 via a cross-sectional survey interview. A total of 80 participants answered the structured interviewed questions properly because they were chosen purposively by the authors and are all authority in bidding with vast experience. Figure 1 shows a Pareto Chart of some votes (1-7) in descending order in terms of rank. The following 1<sup>st</sup> three of the 18 causes evidently stand out in the ranking, that is banks unwilling to loan working capital, insufficient equipment and non-availability of specialist equipment, and weak macroeconomic environment (high inflation and interest rates). These 1<sup>st</sup> three causes are perceived highly importance by the participants, and thus to its relative share in the encumbrances faced by Nigerian indigenous building contractors. There is need to state here that this may not be an accurate

**Table 2: The National Root Causes with the Participants' Answers**

Nos	Cause	Nos of Votes	Percentage	Rank
1	lack of financial capability (undercapitalization & one-time business setbacks)	59	73.8	1 <sup>st</sup>
2	Insufficient equipment and non-availability of specialist equipment	58	72.5	2 <sup>nd</sup>
3	Weak macroeconomic environment (high inflation and interest rates)	57	71.3	3 <sup>rd</sup>
4	Weak local content implementation (SBD- Anti-indigenous)	30	37.5	4 <sup>th</sup>
5	Lack of technical expertise because of weak currency and inability to pay	30	37.5	4 <sup>th</sup>
6	Bribery and corruption (Indiscipline, greed, and reckless spending)	30	37.5	4 <sup>th</sup>
7	Fear of not getting the job and ability to pay by the client	20	25.0	7 <sup>th</sup>
8	Fear of continuity of government	14	17.5	8 <sup>th</sup>
9	Unrealistic cost estimate/mark-up (lack of consultation with experts)	14	17.5	8 <sup>th</sup>
10	Government prefers large and foreign companies because they are reliable	14	17.5	8 <sup>th</sup>
11	Personnel job insecurity	13	16.3	11 <sup>th</sup>

12	No capacity to coordinate many jobs	12	15.0	12 <sup>th</sup>
13	Lack of systematic planning before bidding	11	13.8	13 <sup>th</sup>
14	Restriction to certain zone because of size of firm	10	12.5	14 <sup>th</sup>
15	Fear of regulation changes	9	11.3	15 <sup>th</sup>
16	Politic in the award of contract (politicians interference)	8	10.0	16 <sup>th</sup>
17	Fear of diversion of project fund	6	7.5	17 <sup>th</sup>
18	Unwilling nature to change to new mechanism of bidding a 5 construction	5	6.3	18 <sup>th</sup>



measure; however, it is still a good indicator based on the perceived assessment of the experienced participants. Serial number 4 to 6 were ranked 4<sup>th</sup> position concurrently because they had same percentage (37.5%). The fear of bribery and corruption, being ranked 6<sup>th</sup> as encumbrance faced by the indigenous contractor is an indication that corruption is probably a norm in the system. Twenty-seven of the participants agreed that a percentage is factored to their mark-up to cover for a bribe if eventual the contract is awarded to them. This again is a confirmation of President Buhari Mohamadu, (President of the Federal Republic of Nigeria) statement that says “if Nigerians refused to kill corruption, corruption will kill Nigeria”, as confirmed from news print. This is saddening and too bad for a developing country like Nigeria. It is interesting to note that no cause remained un-voted for, the fewest was 5 (unwilling nature to change to a new mechanism of bidding and construction). Findings also reveal that there is a relationship between the significant encumbrances faced by Nigerian indigenous building contractors and significant factors affecting the bid/no bid decisions by Oyeyipo et al. (2016) and Olatunji et al. (2017).

Based on these findings, there is the need for Nigerian Government as a matter of urgency put machinery in place to create a stable macroeconomic environment. Two, the Nigerian National Construction Policy should be strengthened to enhance the institutional and technological advancement of indigenous building contractors’ capacity in training and retraining of staff. Reorientation of Nigerians starting from the top-down (leaders-to-followers) is long overdue to fight this cancerous disease called “bribery and corruption”. The fear now is that the presumed present federal government that seems as “righteous” are facing series of alleged corruption issues from the top government officials, just to mention few examples: Chief of Staff to the President (contract for cutting of grasses), Executive Secretary to National Health Insurance Scheme (nepotism, workshop fees for staff, contract award), as reported in the news print, although placed on suspension and later dismissed without trial as at today 1<sup>st</sup> November 2017. This is saddened.

## Conclusion

There is need to encourage Nigerian indigenous building contractors because no one will patronise them if the government does not lead by example, after all, the multinational and foreign based companies started same way too. However, with appropriate measures implemented and adhered to, the indigenous contractor

would be better equipped and overcome major encumbrances faced during bidding. This would translate to having sufficient quantity of indigenous contractors to deliver building projects within a reasonable or pre-planned cost, time and quality, which in turn will curb project abandonment and cost and time overrun and result to job creation for the unemployed youths. Also, they (indigenous contractors) would be able to compete favourably with their foreign contractors or expatriates during bidding to achieve project success.

## References

- Andersen, B., & Fagerhaug, T. (2006). *Root cause analysis: simplified tools and techniques* (2<sup>nd</sup> ed.). Milwaukee: ASQ Press
- Bagies, A., & Fortune, C. (2006). Bid/no-bid decision modelling for construction projects, in Boyd, D. (Ed.), *22nd Annual ARCOM Conference, Association of Researchers in Construction Management*, Birmingham, 511-521.
- Bageis, A. S., & Fortune, C. (2009). Factors affecting the bid/no bid decision in the Saudi Arabian construction contractors. *Construction Management and Economics*, 27(1), 53- 71. Bahman-Bijari, H. (2010). *A competitive bidding decision-making model considering correlation*. Thesis paper 687.
- Dulaimi, M. F., & Shan, H. G. (2002). The factors influencing bid mark-up decisions of large and medium-size contractors in Singapore. *Construction Management and Economics*, 20(7): 601–610. <http://dx.doi.org/10.1080/01446190210159890>.
- Egemen, M., & Mohamed, A. N. (2007). A framework for contractors to reach strategically correct bid/no bid and mark-up size decisions. *Building and Environment*, 42(3): 1373– 1385. <http://dx.doi.org/10.1016/j.buildenv.2005.11.016>.
- Harris, F., & McCaffer, R. (2000). *Modern construction management* (5th Ed.) Oxford: Blackwell Science.
- Inuwa, I. I., Wanyona, G., & Diang'a, S. (2014). Indigenous contractors involvement and performance in construction procurement systems in Nigeria. *Global Journal of Researches in Engineering*, 14(1), 1-13.
- Inuwa, I. I., Saiva, D., & Alkizim, A. (2014). Investigating Nigeria indigenous contractors project planning in construction procurement: an explanatory approach. *International Journal of Civil and Environmental Engineering*, 14(4), 16-25.
- Jensen, P. (2011). The use of building information modeling in generating hard bid estimates. Master of Science Dissertation, School of Technology, Brigham Young University, Provo, UT.
- Oduwote, O. O., & Fellows, R.F. (1992). An examination of the importance of resource considerations when contractors make project selection decisions. *Construction Management and Economics*, 10(2): 137–151. <http://dx.doi.org/10.1080/01446199200000013>.
- Johnstone, K.M., Bedard, J.C., & Ettredge, M.L. (2004). The effect of competitive bidding on engagement planning and pricing. *Contemporary Accounting Research*, 21(1): 25–53. doi: 10.1506/47TF-WHQ1-RG39-8JX4.
- Mafimidiwo, B., & Iyagba, R. (2015). Comparative study of problems facing small building contractors in Nigeria and South Africa. *Journal of Emerging Trends in Economics and Management Sciences*, 6(2), 101-109.
- Maunganidze, F. (2013). The role of government in the establishment and development of SMEs in Zimbabwe: Virtues and vices. *Journal of Business Administration and Education*, 4(1), 1- 16.
- Min, L., & Yean, Y. L. (2005). Modelling a contractor's mark-up estimation. *Journals of Construction Engineering and Management*, 131(4), 319-393.
- Ofori, G. (2007). Construction in developing countries. *Construction Management and Economics*, 25(1), 1-6.
- Ogbebor, P. O. (2002). Enhancing Indigenous Construction Industry as a National Goal in Nigerian Development. In I. Akintunde (Ed.), *The Nigerian Construction Industry: Past, Present, Problems and Prospects* (pp.230-239). Ibadan: Ibadan University Printery.
- Ogunlana, S. (2010). *Sustaining the 20:20 vision through Construction: A Stakeholder Participatory*

- Approach*. Distinguished Guest Lecture Series. Lagos: University of Lagos.
- Olatunji, A. O., Aje, I. O., & Makanjuola, S. (2017). Bid or no-bid decision factors of indigenous contractors in Nigeria. *Engineering, Construction and Architectural Management*, 24(3), 378-392.
- Omole, A. O. (2000). Surveying Input to Engineering Projects: The Need for Professionalism. *The Quantity Surveyor*, 30, 10-18.
- Oyeyipo, O. O., Odusami, T. K., Ojelabi, A., R., & Afolabi, O. A. (2016). Factors affecting contractors' bidding decisions for construction project in Nigeria. *Journal of Construction in Developing Countries*, 21(2), 21-36.
- Rein, C., Greaves, L., & Kirby, S. (2017). Experience research social change: critical methods (3<sup>rd</sup> ed.). Toronto: University of Toronto Press. Retrieved from <https://books.google.com.my/books?isbn=1442636068>
- Rosenfeld, Y. (2014). Root-cause analysis of construction-cost overruns. *Journal of Construction, Engineering and Management*, 140(1), 1-10.
- Standard Bidding Document. (2011). *Federal Government of Nigeria Standard Bidding Document for the procurement of works*. Abuja: Bureau of Public Procurement.
- Ugochukwu, S. C., & Onyechwena, T. (2014). Participation of indigenous contractors in Nigerian public sector construction projects and their challenges in managing working capital. *International Journal of Civil Engineering, Construction and Estate Management*, 1(1), 1- 21.
- United Nations. (2015). *The World Economic outlook in 2015*, United Nations. New York: Author.
- William, Y., & Wayne, C. (2006). *Construction Bidding; Strategic pricing for profit*. New Jersey: John Wiley & Sons.