

# Construction Firms' Satisfaction on Outsourced Services at Construction Phase of Building

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## ABSTRACT

**Aims:** Across the globe, outsourcing services has become more complex and sophisticated. The aim of this study is to establish the level of satisfaction of Nigerian construction firms on outsourced services at construction phase of building with a view to assisting construction firms in their decision on whether to outsource a particular work section or not.

**Study design:** Survey Research Design.

**Place and Duration of Study:** The study took place in Ogun State, Nigeria, between June 2019 and December 2019.

**Methodology:** The study focused on outsourcing and targeted at outsourcing services offered during construction phase of building. The research combined a wide-ranging literature review and questionnaire survey. A well-structured questionnaire was designed and distributed to construction firms in Ogun state. A total of 73 of the survey questionnaires were administered out of which 47 representing 64.4% were adequately filled and returned. Data obtained were analysed using frequency, percentage, mean, relative importance index and ranking.

**Results:** Findings from the study revealed that piling is the most often outsourced work during construction phase of building, followed by electrical installation, cladding and mechanical installation. The results of the study revealed major reasons for outsourcing to include specialization, technology advancement and core competences. Ability to meet changing needs, service-level contract agreement with outsourcer and excessive dependence on vendor reliability were revealed to be the major challenges that affect the ability of the Nigerian construction firms to successfully outsource services. It was also established that Nigerian construction firms have high level of satisfaction on the outsourced services during the construction phase of building.

**Conclusion:** The study suggested that Nigerian construction firms should give consideration to piling, cladding, basement and mechanical installation in outsourcing and concreting, formwork, plumbing installation and roofing in in-house.

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21 *Keywords: Building, Construction Phase, In-House Services, Nigerian Construction Firms,*  
22 *Outsourcing Services.*

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## 24 **1. INTRODUCTION**

25

26 From the beginning of time, buildings are being created to give shelter and comfort. As  
27 stated by [1], building has changed through centuries, from living in caves to high rise  
28 buildings and then to smart buildings. Building industry is an important economic sector that  
29 infuses other sectors as it converts numerous resources into economic, physical and social  
30 infrastructure essential for socio-economic development [2]. The industry account for a large  
31 part of the Gross Domestic Product of a nation and a key contributor to employment  
32 generation [3]. Fundamentally, buildings undergo three main phases namely, design,  
33 construction and operation phases which involves the inputs of teamwork of many  
34 professionals and skilled workers. According to [1], the construction phase of building project  
35 is the site production stage during which much of the principal cost is acquired.

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37 The output of the construction (building) is characterized by variety of technological and  
38 methodological inputs of varying complexity. The diversity of the technical know-how  
39 requirements of building construction projects determines exact demands which a  
40 construction firm has to be met while matching competences. And this factor leads various  
41 construction companies to engage expertise in specific types of operation. The provision of  
42 outsourcing services in the construction industry has necessitated different construction  
43 firms in reviewing the sources of their core functions or value-added and contracting out non-  
44 core functions. According to [4], the decision to outsource is extremely resulting from the fact  
45 that, it is capable to sustain jobs that can be finished quicker without compromising quality at  
46 cheaper and rational cost. [5] Stated that, project managers are progressively facing  
47 difficulties to make the right sourcing decision because the consequences or penalties can  
48 be substantial.

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50 In-house services are refers to operations or work activities conducted within a firm using its  
51 own employees and time, instead of relying on outsourcing [6]. Outsourcing services on the  
52 other hand, has been defined as “the strategic use of outside resources to perform activities  
53 traditionally handled by internal staff and resources” [7]. Outsourcing is one of the best  
54 concepts that allow several firms to pay more attention on what they do best and outsourcing  
55 what others can do better, cheaper, higher quality and faster [8]. According to [4], the  
56 important of any outsourcing attempt is to guarantee that its process will help fulfill the  
57 organisation's mission and long-term goals and objectives. The trend now is that firms  
58 balances the possible benefits of outsourcing with its possible costs so as to establish the  
59 ratio of in-house to outsourcing that will best attain the organization's objectives [9].  
60 According to [5], good outsourcing decisions brings about costs reductions, whereas poor  
61 outsourcing decisions lead to several problems like disordered service, business failure and  
62 costs escalation. [9] Further explained that, inappropriate proportion of in-house to  
63 outsourcing can lead to business failures/not achieving the client's satisfactions; hence, it is  
64 imperative that organization identify all in-house and outsource service costs and benefits in  
65 order to make a reasonable and successful judgment. According to [10], the benefits  
66 enjoyed from outsourcing are not always steady but depend on the distinctiveness of the  
67 firms and the industry in question. Apart from the benefits derived from outsourcing services,  
68 its practice can cause the following problems; too much reliance on supplier enterprises, in  
69 short or long term, development of communication problems, losing flexibility, negative effect  
70 on staff, price pressure of the suppliers, and losing control over relevant processes [11].

71

72 Across the globe, outsourcing services has become more complex and sophisticated.  
73 Outsourcing decisions are majorly strategic and tactical in nature. According to [11], costs is

74 the major reason in tactical decisions, other benefits and risks are not considered, while  
75 strategic outsourcing decisions are more detailed and include reasonable decision making  
76 process. Strategic outsourcing should be seen as a long term action stipulated to guarantee  
77 the survival and prosperity of a business [12]. This means that the major goal of strategic  
78 outsourcing is to build core skills to fortify obstacles of opening for survival of new  
79 companies. And focusing on core skills and using capable service providers to execute  
80 works that are not firm's area of specialty; the firm's risk can be reduced and shared  
81 accordingly. [5] Opined that poor outsourcing practices lead to unplanned loss of good  
82 reputation. [11] Pointed out that, the viewpoint of organisations when deciding on  
83 outsourcing should be strategic and long termed for it to be a success venture.

84  
85 Several studies have been done on outsourcing. Many researchers have done work on  
86 outsourcing in facilities management [4, 7, 9, 11, 12,]. Many others have looked at the  
87 performance of outsourcing [2, 3, 10, 13, 14, 15]. Other studies have focused on the  
88 relevance of outsourcing [8, 16]. The study of outsourcing construction activities in the  
89 construction phase of building is scarce. This paper attempts to make a significant  
90 contribution to the management of the construction phase of building project by discovering  
91 the level of satisfaction of construction firms on the issue of outsourcing non-core  
92 competences. Above all, the study addresses the following research questions: What are the  
93 motives for outsourcing non-core competences? What are the services outsourced during  
94 construction phase of building? What are the challenges that affect the ability of the  
95 construction firms to successfully outsource services? What is the frequency of use of  
96 outsource services? Thus, the aim of this study is to establish the level of satisfaction of  
97 construction firms towards outsourced services at construction phase of building in Nigeria  
98 with a view to assisting construction firms in their decision on whether to outsourced or not.  
99 Even though this study applies particularly to the construction firms of Nigeria, same  
100 approach can be used in other countries that are interested in determining the satisfaction  
101 level of construction firms regarding outsourced services at construction phase of building.

## 102 103 104 **2. LITERATURE REVIEW**

### 105 106 **2.1 The Concept of Outsourcing**

107  
108 Outsourcing is a phenomenon initiated in the 1950s [13], started in America and then the  
109 useful ideas spread across the globe [8], but was formally identified as a business strategy in  
110 1989 [5]. Since then outsourcing develop into a common practice in most countries [3].  
111 According to [17], organisations are outsourcing to influence production in order to attain  
112 cost-cutting measure. According to [14], Outsourcing is among the most essential  
113 managerial subject in the new era because it offers cost reduction opportunities.  
114 Theoretically, the outsourcing concept has been fully discussed in previous studies that  
115 provided with many definitions [5]. In simpler way, outsourcing means outside-resource-  
116 using. Outsourcing is the practice of shifting works normally done by a firm to another  
117 organization/firm [5, 6, 15, 17]. According to [7], outsourcing is an approach by which  
118 organisation contracts out most important job activities to expert service providers, who  
119 becomes valued partners. The meaning of outsourcing comprises both domestic and foreign  
120 contracting which include off-shoring which is described as an organisation taking a function  
121 out of their business and transferring it to another country [2].

122  
123 According to [6], in a globalization era, outsourcing is among the fast spreading ways of  
124 international trading and is characterized by enormous growth in terms of gripping and  
125 familiarizing new technology. [14] Opined that, outsourcing offers viable advantage and is a  
126 significant driver of economic growth and globalization across the globe. Table 1,

127 summarizes the reasons for outsourcing as reviewed by past researchers. Important issues  
 128 like selection, contract negotiation, and shifting of resources to organisation have to be  
 129 considered as soon as the decision to outsource has been made [6].

130  
 131 **Table 1. Reasons for outsourcing**

No	Outsourcing Motivations	Reviewed by Authors						
		[6]	[8]	[13]	[4]	[17]	[7]	[16]
1	Cost reduction	X	X	X	X	X	X	X
2	Administrative task	X						X
3	Core competence	X	X	X	X	X	X	X
4	Technology advancements	X		X	X	X		X
5	Specialization	X	X	X			X	X
6	Resources management	X			X		X	X
7	Risk management	X	X		X		X	X
8	Lack of internal resource	X					X	X
9	Economies of scale	X				X	X	X
10	Cooperation	X			X			X
11	Drive organizational change	X			X			X
12	Enhance capacity for innovation	X		X	X	X	X	X
13	Higher quality		X		X			X

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 134 Basically, outsourcing decisions are categorized into two, namely; (i) tactical – a short-term  
 135 solution, and (ii) strategic – a long-term partnership. Outsourcing is tactical if the motive is to  
 136 resolve a practical problem (KHK, 2015). According to [11], the main reason in tactical  
 137 decisions is cost followed by other advantages, risks are not considered. Fluctuations in  
 138 demand for services or goods can necessitate tactical outsourcing decisions. On the other  
 139 hand, strategic outsourcing decisions are highly detailed and comprise of a reasonable  
 140 decision making process [11] and it entails comparing the possible cost savings against the  
 141 cost of a loss over the service or product [6]. By using strategic outsourcing decisions,  
 142 construction firms can gain long-term benefits and reduction in overhead costs. [11] Pointed  
 143 out that, the viewpoint of organisations when deciding on outsourcing should be strategic  
 144 and long termed for it to be a success venture.  
 145  
 146 Outsourcing strategy is undergoing constant development; first, its practice for costs  
 147 reduction, secondly, as an avenue to offer external competences or skills essential for  
 148 diversity benefit and thirdly, as an avenue to generate new business models that aimed at

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149 more flexible and adaptive business [13]. However, there is still lack of confident in value  
 150 perception in many industries of developing countries towards this type of business concept  
 151 [8]. Outsourcing can take the following forms or types; service outsourcing, procurement  
 152 outsourcing, offshore outsourcing and legal process outsourcing (LPO). According to [5],  
 153 LPO is apply to law firm acquiring lawful support services from external law firm, the practice  
 154 is referred to as offshoring if the outsourced company resides in different country. [5]  
 155 Outlined four fundamental types of offshore outsourcing to include; (i) ITO – Information  
 156 Technology Outsourcing (Technology process outsourcing); (ii) BPO – Business Process  
 157 Outsourcing; (iii) Software R&D – Offshore Software Development; and (iv) KPO –  
 158 Knowledge Process Outsourcing. According to [2], these types of offshore are sometimes  
 159 known as engagement models for sourcing. The concept of outsourcing in literature has  
 160 often been mentioned as a synonym of subcontracting; though refer to other situations [5].  
 161 The difference between subcontracting and outsourcing in a business according to [2] is  
 162 that, outsourcing entails extensive reorganising of a specific activities which involve  
 163 relocating of personnel from a host organisation to a specialist firms whereas subcontracting  
 164 is engaging of contractor for a specific type of activities and thus developing long-term  
 165 relationship with such firms to balance the organisation’s capabilities.

166  
 167 Past research works have revealed that firms gain many benefits when they outsourced. It  
 168 has been revealed that, by outsourcing, organisations frequently attain cost advantages [3].  
 169 Table 2, summarizes the advantages/benefits for outsourcing as reviewed by past  
 170 researchers.

171  
 172 **Table 2. Benefits of outsourcing**

No	Benefits of Outsourcing	Reviewed by Authors						
		[8]	[6]	[13]	[3]	[17]	[5]	[11]
1	Cost Saving	X	X	X	X	X	X	X
2	Reduces administrative		X					
3	Capital exchange		X					
4	Specialization/Expertise	X	X				X	
5	Production economies		X		X			
6	Labour wage	X	X					X
7	Access to Innovation		X	X	X			
8	Fast delivery	X			X		X	
9	Risk-sharing	X					X	X
10	Access to new Technology			X		X		
11	Quality Improvement					X	X	
12	Bringing value to the end customer					X	X	

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13 Increase in Operating Cash Flow

X X

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174

175 Despite these numerous benefits, problems do immanent on the course of outsourcing.  
 176 Outsourcing reduces an organisation's control over how definite works are delivered and  
 177 may elevate the organisation's legal responsibility exposure [5]. [3] Noted that outsourcing  
 178 can result to loss on the whole business performance. When outsourcing, potential risks  
 179 such as operational risks, loss of privacy and control and strategic risks should be well  
 180 thought-out [17]. Table 3 summarizes the disadvantages/problems/challenges related to  
 181 outsourcing as reviewed by past researchers.

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**Table 3. Challenges of outsourcing**

No	Challenges of Outsourcing	Reviewed by Authors					
		[6]	[8]	[13]	[17]	[11]	[7]
1	Loss of managerial control	X		X	X	X	X
2	High exit barriers	X					
3	Conversion costs	X			X		
4	Increased executive management involvement	X					
5	Excessive dependence on vendor reliability	X				X	
6	Concerns with long-term flexibility	X				X	
7	Ability to meet changing needs	X		X			
8	service-level contract agreements with outsourcer	X					
9	Risk of exposing confidential data and technology		X	X	X		X
10	Lower quality in manufacturing		X	X	X		
11	Many Hidden costs		X	X	X	X	
12	Lack of customer focus		X				
13	Cultural issues (Mismatch between cultural values and norms)				X		
14	Loss of loyal employees				X	X	

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## 2.2 Outsourcing at Construction Phase of Building

Outsourcing was incorporated in the construction industry in the 1990s, ever since then it has turned out to be very vital factor to the general success of organisations [13]. This concept is presently used by the construction firms in Nigeria [2]. According to [2], construction firms outsource a wide range of goods, works and services during project delivery and some of these activities are not outsourced in its entirety, but a part of the whole is given out which is referred to out-tasking. The construction industry consists of many careers, professions, consultants and companies in alliance with subcontractors, contractors and clients all having a specific part to play in delivering quality projects [3]. As stated by [18] outsourcing of architectural services and civil engineering services is common and the construction industry, by nature, has many processes that are not suited for outsourcing. It seems that no literature has discussed outsourcing at construction phase of building, or better still; the study of outsourcing at construction phase of building is scarce.

Construction phase of building comprises of several activities of specialty including basement, piling, concreting, formwork, mechanical installations, electrical installations, plumbing installations, cladding, roofing, tiling, windows, doors and painting work. It is important to understand that the client satisfaction is the key determinant of success. [7] Outlined significant areas for a successful outsourcing to include (i) understanding company goals and objectives; (ii) strategic vision and plan; (iii) selecting the right and high quality supplier; (iv) properly structured, effective contract and contract monitoring; and (v) good relationship with the supplier. Outsourcing concept is gradually been adopted by companies, with most of the companies optioning to concentrate on core competencies and laying off activities that are considered non-core [5]. [10] Noted that, there is some evidence that outsourcing can increase productivity. According to [14], firms have preference to outsource works that are not very important for supporting their spirited advantage and focus on their core works. Outsourcing is known to be a reduction of costs of raw materials and labour, resulting in reduced production costs [8]. The main reasons of outsourcing in construction phase of building include but not limited to costs reduction, quality improvement, core competencies, and access to new technology, innovations and skills which are not available in-house.

Construction has become very diverse and sophisticated with new designs, technology, methodology and products being adopted in the procurement of construction works, this has invariably forced the construction firms to take the critical decision of focusing on their core responsibility and competencies where they have a lot of technical expertise and enough material and plant resource at their disposition [2]. According to [7], sourcing decision is essential because it influences costs, also defines the limits an organisation draws around its functions. Construction firms have frequently subcontracted to benefit from resources that are not within their reach, either for technology, skills, materials, people or products [16]. Organisations have frequently engaged special contractors for particular work, or to lessen their workload and have developed long-term relationship with organizations whose competences match theirs [7]. Generally, outsourcing is defined in terms of long-term relationships, whereas traditional subcontracting is within the time of a particular project [16].

233 **3. METHODOLOGY**

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235 The study focused on outsourcing and targeted at outsourcing services offered during  
236 construction phase of building in Nigeria. To achieve the aim and objectives of the study, the  
237 research combined a wide-ranging literature review and questionnaire survey. A research of  
238 construction firms' view on outsourced service satisfactory at construction phase of building  
239 in Nigeria was conducted. A well-structured questionnaire was designed and distributed to  
240 construction firms in Ogun state. The reason for the selection of the study area is because  
241 the state is one of the fast developing states in Nigeria in terms of construction activities with  
242 a considerable number of registered construction companies. The questionnaire comprised  
243 of seven sections. The first part asks questions about the background information of the  
244 participants, the second section was designed to collect characteristics of responding  
245 companies, the third section focused on motives for outsourcing, fourth section focused on  
246 challenges of outsourcing, fifth section focused on in-housed and outsourced services during  
247 construction phase, sixth section focused on the frequency of outsource services, whereas  
248 the seventh section is concerned with the level of satisfaction of the outsourced services.  
249 The survey used Snowball sampling method due to absent of list of registered construction  
250 firms in Ogun state. Snowball Sampling method is a non-probability sampling method which  
251 is helpful in meeting population that is not readily available [19, 20]. A total of seventy-three  
252 (73) of the survey questionnaires were administered out of which forty-seven (47)  
253 representing 64.4% were adequately filled and returned. The main issues addressed in the  
254 study include: benefits of outsourcing, motives for outsourcing, challenges of outsourcing,  
255 frequency and satisfaction of construction firms on outsourcing services at construction  
256 phase of building in Nigeria.

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258 **3.1 Method of Analysis**

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260 Some of the questions in the questionnaire entail measuring some variables of outsourcing  
261 on a 5-point Likert's scale. Using Cronbach's alpha test, the Likert scale questions were  
262 tested for reliability. Result obtained with the use of SPSS shows a 0.708 value, which was  
263 considered acceptable for the scale internally, and the questionnaire was accepted to be  
264 reliable. Table 4 and 5 shows 5-point Likert rating scale values assigned to different options  
265 used in the questionnaire. Data obtained were analysed using frequency, percentage, mean,  
266 relative importance index and ranking.

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268 **Table 4. Ordinal scales for data measurement (For Reasons and Challenges of**

269 **Outsourcing).**

Likert Scale	Weights
Very irrelevant	1
Irrelevant	2
Fairly relevant	3
Relevant	4
Very relevant	5

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272 **Table 5. Ordinal scales for data measurement (For Extent of use of the Outsourcing**  
 273 **services).**

Likert Scale	Weights
Never	1
Rarely	2
Sometimes	3
Often	4
Very often	5

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276 **3.2 Procedures employed in the data analysis are as follows:**

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278 **3.2.1 Computation of the Relative Importance Index (RII):**

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280 The analysis utilized Relative Importance Index, which is used in measuring and determining  
 281 the relative importance of variables considered in this study. To compute this, mean scores  
 282 for each variables were calculated by summing up the scores by the various participants.

283 The Relative Importance Index, as given by [1], was computed using equation (1).

284 Relative Importance Index (RII) is given by:

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$$\frac{\sum fx}{\sum f} \times \frac{1}{k} = \frac{\bar{x}}{k} = \text{Equation (1)}$$

288

289 Where Mean =  $\bar{X} = \frac{\sum fx}{\sum f}$

290 Where k = Highest point on the Likert's scale (in this case, k is 5)

291 x = Points on the Likert's scale (1, 2, 3, 4, 5)

292 f = Frequency of respondents' choice of each point on the scale x

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295 **4. RESULTS AND DISCUSSION**

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297 The results of the analysis of the data collected for the study are presented as follows:

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299 **4.1 Respondents' Background information**

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301 The summary of the respondents' background information are shown in Table 6. The  
 302 percentage distribution of the respondents based on age in Table 6 shows that more than  
 303 91% of the total respondents are above 30years old, which shows that most of the  
 304 respondents are mature to partake in the study. The majority (57.45%) of the respondents  
 305 were project managers, followed by site engineers (21.28%) and design and costs managers  
 306 having the same percentage (10.64%). Hence, the study concluded that the respondents are

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307 well-informed regarding outsourcing services and the management approaches of their  
 308 companies. Civil engineers constitute the highest population (36.17%) of the respondents,  
 309 followed by builders (25.53%), indicating their commitment in the construction sector of  
 310 Nigeria. Masters degree holders constitute the highest population (46.81%) of the  
 311 respondents, followed by B.Sc./B. Tech degree holders (44.68). More than 82% of the  
 312 respondents have their years of working experience above 10 years in construction works as  
 313 at the time of gathering these data. This shows that the respondents are qualified and  
 314 considered suitable for this study.

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**Table 6. Respondents' Background information**

<b>Respondents' Background Information</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age Bracket</b>		
21 – 30 years	4	8.51
31 – 40 years	13	27.66
41 – 50 years	21	44.68
51 years and above	9	19.15
Total	47	100
<b>Designation</b>		
Project Manager	27	57.45
Costs Manager	5	10.64
Site Engineer	10	21.28
Design Manager	5	10.64
Total	47	100
<b>Professional Background</b>		
Architect	7	14.89
Quantity Surveyor	9	19.15
Builder	12	25.53
Civil Engineer	17	36.17
Other	2	4.26
Total	47	100

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### Highest Academic Qualification Attained

HND	3	6.38
B.Sc./B. Tech.	21	44.68
Masters	22	46.81
PhD	1	2.13
Total	47	100

### Years of Experience in Construction

Less than 5yrs	2	4.26
5 – 10yrs	6	12.77
11 – 15yrs	15	31.91
16 – 20yrs	11	23.40
More than 20yrs	13	27.66
Total	47	100

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## 4.2 Characteristics of responding firms

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Table 7 shows that 40.43% of the responding companies are limited liability company, followed by sole proprietorship with 36.17%. More than 89% of the responding companies have been practicing in the Nigerian construction industry for more than 10 years. This is highly important given that frequently outsourced services are highly dependent on experience. As such, it could be concluded that the level of experience among the Nigerian construction stakeholders would contribute towards outsourcing non-core competences. Most of the construction companies operate a fully indigenous company (70.21%) and about 79% of the responding companies have workers ranging from 1 to 49, denoting small and medium size. Majority of the responding companies are building and civil engineering contractors (74.47%).

**Table 7. Characteristics of responding firms**

Responding Company	Frequency	Percentage (%)
<b>Ownership of Contracting Company</b>		
Sole proprietorship	17	36.17
Partnership	8	17.02
Limited liability company	19	40.43

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Public limited company	3	6.38
Total	47	100
<b>Years of Existence of Company</b>		
5 – 10yrs	5	10.64
11 – 15yrs	8	17.02
16 – 20yrs	13	27.66
More than 20yrs	21	44.68
Total	47	100
<b>Company Ownership and Management</b>		
Fully indigenous	33	70.21
Fully expatriate	5	10.64
Partly expatriate/indigenous	9	19.15
Total	47	100
<b>Company's Workforce (site/head office)</b>		
1 – 49 workers	37	78.72
50 workers and above	10	21.28
Total	47	100
<b>Company's Operation/Activity</b>		
Building	9	19.15
Civil engineering	3	6.38
Building and civil engineering	35	74.47
Total	47	100

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### **4.3 Motives for Outsourcing**

To investigate the motives or reasons why construction firms outsourced non-core competences, the mean of the motives for outsourcing were analysed using Relative Importance Index (RII) and ranked separately. The results are presented in Table 8.

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343 **Table 8. Relevance of motives/reasons for outsourcing non-core competences**

S/No	Motives/Reasons for Outsourcing	Weighting (x)/Response					Σf	$\bar{X}$	RII	Rank
		Frequency (f)								
		1	2	3	4	5				
1	Specialization	1	2	6	24	13	47	5.08	1.016	1
2	Technology advancements	1	4	8	19	15	47	3.91	0.782	2
3	Core competence	0	4	8	25	10	47	3.87	0.774	3
4	Enhance capacity for innovation	1	5	9	19	13	47	3.81	0.762	4
5	Higher quality	1	8	6	16	16	47	3.81	0.762	4
6	Resources management	0	6	9	21	11	47	3.79	0.758	6
7	Risk management	1	6	12	19	9	47	3.62	0.724	7
8	Lack of internal resource	1	6	12	21	7	47	3.57	0.714	8
9	Economies of scale	1	3	19	19	5	47	3.51	0.702	9
10	Cooperation	1	7	13	23	3	47	3.42	0.684	10
11	Drive organizational change	2	10	12	16	7	47	3.34	0.668	11
12	Administrative task	2	11	10	18	6	47	3.32	0.664	12
13	Cost reduction	10	6	8	15	8	47	3.11	0.622	13

344 1 = very irrelevant; 2 = irrelevant; 3 = fairly relevant; 4 = relevant; 5 = very relevant

345 *Source: Field Survey (June – August 2019)*

346  
 347 Table 8 shows that the level of relevance of the motives for outsourcing non-core  
 348 competences factors is “very high” for one out of the thirteen factors (RII≥0.80). It is “high”  
 349 for the remaining twelve factors. However, specialization was ranked first by the level of  
 350 relevance, with RII = 1.02. Technology advancement was ranked second with RII = 0.78 and  
 351 core competence with RII = 0.77 was ranked third. These results in Table 8 indicate that the  
 352 most reasons construction firms outsourced non-core competences during construction  
 353 phase are for specialization, technology advancement and core competence.

354  
 355  
 356 **4.4 Challenges of Outsourcing**

357  
 358 To investigate the challenges that affect the ability of the construction firms to successfully  
 359 outsource services, the mean of the challenges of outsourcing were analysed using Relative  
 360 Importance Index (RII) and ranked separately. The results are presented in Table 9.

361

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362 **Table 9. Relevance of challenges of outsourcing**

S/No	Challenges of Outsourcing	Weighting (x)/Response					Σf	$\bar{X}$	RII	Rank
		Frequency (f)								
		1	2	3	4	5				
1	Ability to meet changing needs	0	4	6	30	7	47	3.85	0.770	1
2	Service-level contract agreements with outsourcer	1	5	12	25	4	47	3.55	0.710	2
3	Excessive dependence on vendor reliability	1	6	12	24	4	47	3.51	0.702	3
4	Concerns with long-term flexibility	1	8	11	21	6	47	3.49	0.698	4
5	Increased Lead Time in supply chain	1	10	9	20	7	47	3.47	0.694	5
6	Risk of exposing confidential data and technology	2	9	11	17	8	47	3.42	0.684	6
7	Many Hidden costs	4	5	13	21	4	47	3.34	0.668	7
8	Conversion costs	3	8	12	21	3	47	3.28	0.656	8
9	Lack of customer focus	2	11	14	14	6	47	3.23	0.646	9
10	Increased executive management involvement	2	12	10	20	3	47	3.21	0.642	10
11	Loss of loyal employees	2	12	12	18	3	47	3.17	0.634	11
12	Cultural issues (Mismatch between cultural values and norms)	4	7	17	16	3	47	3.15	0.630	12
13	Lower quality in manufacturing	3	14	13	15	2	47	2.98	0.596	13
14	High exit barriers	6	17	7	14	3	47	2.81	0.562	14
15	Loss of managerial control	15	15	6	8	3	47	2.34	0.468	15

363 1 = very irrelevant; 2 = irrelevant; 3 = fairly relevant; 4 = relevant; 5 = very relevant

364 *Source: Field Survey (June – August 2019)*

365  
 366 Table 9 shows that the level of relevance of the challenges of outsourcing factors is “high”  
 367 for thirteen out of the fifteen factors (RII<0.80). It is “low” for the remaining two factors.  
 368 However, ability to meet changing needs was ranked first by the level of relevance, with RII

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369 = 0.77. Service-level contract agreement with outsourcer was ranked second position with  
 370 RII = 0.71, and excessive dependence on vender reliability was ranked third position with RII  
 371 =0.70. These results show that, the top three challenges that affect the ability of the  
 372 construction firms to successfully outsource services are: ability to meet changing needs,  
 373 service-level contract agreement with outsourcer and excessive dependence on vendor  
 374 reliability.

375  
 376

#### 377 **4.5 In-Housed and Outsourced Services during construction phase**

378

379 To determine the services outsourced during construction phase of building, the percentages  
 380 of the services (activities during construction phase) for in-housed and outsourced were  
 381 evaluated and separately ranked. The results are demonstrated in Table 10.

382

383 **Table 10. Ranks of the in-house and outsource services of the selected construction**

384 **activities**

S/No	Activities during construction phase	Total (F)	In-House			Outsource		
			F	%	Rank	F	%	Rank
1	Basement	47	16	34.0	11	31	66.0	3
2	Piling	47	8	17.0	13	39	83.0	1
3	Concreting	47	32	68.1	1	15	31.9	13
4	Formwork	47	31	66.0	2	16	34.0	12
5	Mechanical installation	47	18	38.3	10	29	61.7	4
6	Electrical installation	47	21	44.7	8	26	55.3	5
7	Plumbing installation	47	30	63.8	3	17	36.2	11
8	Cladding	47	12	25.5	12	35	74.5	2
9	Roofing	47	27	57.4	4	20	42.6	10
10	Tiling	47	25	53.2	7	22	46.8	7
11	Windows	47	26	55.3	5	21	44.7	8
12	Doors	47	21	44.7	8	26	55.3	5
13	Painting	47	26	55.3	5	21	44.7	8

385

*Source: Field Survey (June – August 2019). F = Number of respondents*

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390

391

The analysis of the percentages of in-house and outsource services in Table 10 revealed that the in-housed concreting is the highest, followed by in-housed formwork and in-housed plumbing installation while the in-housed piling is the least. Also, Table 10 revealed that the outsourced piling is the highest, followed by outsourced cladding and outsourced basement while the outsourced concreting is the least. These results show that construction firms'

392 preference for in-housed and outsourced services during construction phase of building  
 393 varies from one construction activity to another and that construction firms do not rely only  
 394 on in-house or outsource during the construction phase; rather they use their staff to execute  
 395 some construction activities and outsource non-core competences.

396  
 397

#### 398 **4.6 Frequency of Outsource Services**

399

400 To determine the level of frequency of outsourced activities during construction phase of  
 401 building, the mean of the outsourced services (activities during construction phase) were  
 402 evaluated and separately ranked. The results are demonstrated in Table 11.

403

404 **Table 11. Ranks of the level of frequency of outsourced services of the selected**

405

**construction activities**

S/No	Activities during construction phase	Weighting (x)/Response					Σf	$\bar{X}$	Rank
		Frequency (f)							
		1	2	3	4	5			
1	Piling	3	6	9	11	18	47	3.745	1
2	Electrical installation	3	7	12	13	12	47	3.511	2
3	Cladding	3	8	8	18	10	47	3.511	2
4	Mechanical installation	3	7	12	14	11	47	3.489	4
5	Plumbing installation	3	10	13	9	12	47	3.362	5
6	Roofing	2	12	10	13	10	47	3.362	5
7	Windows	6	11	5	10	15	47	3.362	5
8	Doors	5	12	6	10	14	47	3.340	8
9	Tiling	5	10	9	13	10	47	3.277	9
10	Painting	7	11	7	8	14	47	3.234	10
11	Basement	6	10	11	13	7	47	3.106	11
12	Concreting	9	11	9	9	9	47	2.957	12
13	Formwork	13	10	6	9	9	47	2.808	13

406 1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = very often. *Source: Field Survey (June –*  
 407 *August 2019)*

408



409 In Table 11, it was revealed that piling is the most often outsourced work during construction  
 410 phase of building, followed by electrical installation, cladding and mechanical installation.  
 411 This could be that most people specialized in these areas of construction works. Hence most  
 412 construction firms often outsourced such works.

413  
 414

#### 415 **4.7 Satisfaction Level of the Outsourced Services**

416

417 To determine the level of satisfaction of outsourced activities during construction phase of  
 418 building, the percentages of the level of satisfaction were evaluated and separately ranked.  
 419 The results are demonstrated in Table 12.

420

421 **Table 12. Ranks of the level of satisfaction of outsourced services**

S/No	Level of satisfaction	Frequency	Percentage	Rank
1	Very low	3	6.4	4
2	Low	3	6.4	4
3	Average	4	8.5	3
4	High	30	63.8	1
5	Very high	7	14.9	2

422

*Source: Field Survey (June – August 2019)*

423 The evaluation of the percentages of the level of satisfaction of outsourced services in Table  
 424 12 revealed that thirty out of the forty-seven survey participants representing 63.8% have  
 425 high level of satisfaction on the outsourced services during the construction phase of  
 426 building. These results indicate that construction firms have high level of satisfaction on the  
 427 outsourced services during the construction phase of building in Nigeria, thereby  
 428 encouraging the outsourcing of non-core competences.

429

430

#### 431 **5. CONCLUSION**

432

433 This paper has demonstrated that in-house and outsourcing services is a feature of the  
 434 building construction process. The study revealed that the most reasons construction firms  
 435 outsourced non-core competences during construction phase are for specialization,  
 436 technology advancement, core competence, resources management, enhance capacity for  
 437 innovation and higher quality. Despite the enormous benefits that are associated with  
 438 outsourcing services, this study shows that construction firms are being confronted with  
 439 challenges. The findings revealed top five challenges that affect the ability of the  
 440 construction firms to successfully outsource services as follows; ability to meet changing  
 441 needs, service-level contract agreement with outsourcer, excessive dependence on vendor  
 442 reliability, concerns with long-term flexibility and increased lead time in supply chain. This  
 443 study has immensely contributed to literature on the in-house and outsourcing during the  
 444 construction phase of building by revealing the activities outsourced or in-housed when they  
 445 are adopted. This study shows that construction firms' preference for in-housed and  
 446 outsourced services during construction phase of building varies from one construction  
 447 activity to another, and that construction firms do not rely only on in-house or outsource

448 during the construction phase, rather they use their staff to execute some construction  
449 activities and outsource non-core competences. The study also discovered that piling is the  
450 most often outsourced work during construction phase of building, followed by electrical  
451 installation, cladding and mechanical installation. Results from the study propose necessitate  
452 for construction firms to engage a combination of in-housed and outsourced services in  
453 construction phase of building process. In implementing this, it is recommended that  
454 construction firms should give consideration to piling, cladding, basement and mechanical  
455 installation in outsourcing and concreting, formwork, plumbing installation and roofing in in-  
456 house. Finally, it was established that construction firms have high level of satisfaction on  
457 the outsourced services during the construction phase of building in Nigeria. Hence,  
458 outsourcing is being encouraged, particularly in outsourcing non-core competences.

459  
460

### 461 **Suggestion for Further Studies**

462

463 The study could not investigate the effect of in-house and outsourcing services on the overall  
464 project success. Thus, the study recommends further studies on the influence of the in-  
465 housed and outsourced services on construction project success.

466

467

### 468 **COMPETING INTERESTS DISCLAIMER:**

469 Authors have declared that no competing interests exist. The products used for this research  
470 are commonly and predominantly use products in our area of research and country. There is  
471 absolutely no conflict of interest between the authors and producers of the products because  
472 we do not intend to use these products as an avenue for any litigation but for the  
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### 478 **REFERENCES**

479

- 480 1. Mbamali I, Okotie AJ. An Assessment of the Threats and Opportunities of  
481 Globalization on Building Practice in Nigeria. *American International Journal of*  
482 *Contemporary Research*, 2012;2(4):143-150.
- 483 2. Nzewi HN, Onwuzuligbo LT, Akaeme CI, Arachie AE. Outsourcing Strategy and  
484 Performance of Construction Firms in Nigeria. *International Journal in Management*  
485 *and Social Science*, 2016;4(6):426-440.
- 486 3. Idoro GI. Influence of In-sourcing and Outsourcing of Consultants on Construction  
487 Project Performance in Nigeria. *Australasian Journal of Construction Economics and*  
488 *Building*, 2011;11(4):45-58.
- 489 4. Amos D, Gadzekpo A. Cost of In-House Vs Outsourced Facilities Management  
490 Services in Public Polytechnics in Ghana. *Asia Pacific Journal of Advanced*  
491 *Business and Social Studies*. 2016;2(2):414-435.
- 492 5. Kalinzi C. Outsourcing (Logistics) Services and Supply Chain Efficiency - A Critical  
493 Review of Outsourcing Function. *European Journal of Logistics, Purchasing and*  
494 *Supply Chain Management*. 2016;4(3):59-86.
- 495 6. Pahirathan A. A Literature Review on Outsourcing of Services in Universities. *IOSR*  
496 *Journal of Business and Management (IOSR-JBM)*. 2017;19(12):47-56.
- 497 7. Hila CM, Dumitraşcu O. Outsourcing Within a Supply Chain Management  
498 Framework. *Proceedings of the 8th International Management Conference,*  
499 *"Management Challenges for Sustainable Development"*, November 6th-7th, 2014,

- 500 Bucharest, Romania, pp. 328-338, available at:  
501 <http://conferinta.management.ase.ro/archives/2014/pdf/31.pdf> (accessed 3 July  
502 2019).
- 503 8. Somjai S. Advantages and Disadvantages of Outsourcing. 7th International  
504 Conference on Restructuring of the Global Economy, 3-4th July 2017, University of  
505 Oxford, UK, *The Business and Management Review*. 2017;9(1):157-160. Available  
506 at:  
507 [http://www.abrmm.com/myfile/conference\\_proceedings/Con\\_Pro\\_32717/conference\\_21121.pdf](http://www.abrmm.com/myfile/conference_proceedings/Con_Pro_32717/conference_21121.pdf) (accessed 3 July 2019).
- 508 9. KHK C. Evaluating Effective Outsourcing Strategy in Facility Management. FIG  
509 Working Week 2015, From the Wisdom of the Ages to the Challenges of the Modern  
510 Sofia, Bulgaria, May 2015, pp. 17-21. Available at:  
511 [https://www.fig.net/resources/proceedings/fig\\_proceedings/fig2015/papers/TS07J/T\\_S07J\\_chan\\_7777.pdf](https://www.fig.net/resources/proceedings/fig_proceedings/fig2015/papers/TS07J/T_S07J_chan_7777.pdf) (accessed 3 July 2019).
- 512 10. Calia P, Pacei S. Outsourcing and Firm Performance: Evidence from the Italian  
513 Manufacturing Industry. *International Journal of Business and Management*.  
514 2017;12(11):87-102.
- 515 11. Baytok A, Soybalı HH, Zorlu O. Outsourcing in Thermal Hotel Enterprises: The Case  
516 of Turkey. *Business Management Dynamics*. 2013;3(5):01-14.
- 517 12. Andone II, Păvăloaia VDW. Outsourcing the Business Services. *Informatica*  
518 *Economică*. 2010;14(1):163-171.
- 519 13. Verroioopoulos A, Sfakianaki E. An Investigation to the Trends of Outsourcing and Its  
520 Impact on Procurement, Planning Procedures and Organization in Construction  
521 Companies in Greece. *International Journal of Energy Science and Engineering*.  
522 2015;1(4):148-152.
- 523 14. Dogerlioglu O. Outsourcing versus in-house: A modular organization perspective.  
524 *The Journal of International Management Studies*. 2012;7(1):22-30.
- 525 15. Kavaleff A. Successful Outsourcing through Proactive Contracting – Strategy, Risk  
526 Assessment and Implementation. Stockholm Institute for Scandinavian Law. 2010.  
527 Available at: <http://www.scandinavianlaw.se/pdf/49-11.pdf> (accessed 3 July 2019).
- 528 16. Venter JJ. The Relevance of Outsourcing in Construction Project Management  
529 Companies: A Literature Study. A Study Project presented to the Graduate School  
530 of Business of the University of Stellenbosch in partial fulfillment of the requirements  
531 for the degree of Master of Business Administration, 2000.
- 532 17. Iqbal Z, Dad AM. Outsourcing: A Review of Trends, Winners & Losers and Future  
533 Directions. *International Journal of Business and Social Science*. 2013;4(8):91-107.
- 534 18. Sattineni A. Outsourcing and Off-Shoring: Options for the US Construction Industry.  
535 *International Business & Economics Research Journal*. 2008;7(5):59-66.
- 536 19. Showkat N, Parveen H. Non-Probability and Probability Sampling. 2017. Available  
537 at: [https://www.researchgate.net/publication/319066480\\_Non-Probability\\_and\\_Probability\\_Sampling](https://www.researchgate.net/publication/319066480_Non-Probability_and_Probability_Sampling) (accessed 14 January 2019).
- 538 20. Alvi MH. A Manual for Selecting Sampling Techniques in Research. 2016. Available  
539 at: <https://mpr.ub.uni-muenchen.de/70218/> (accessed 14 January 2019).
- 540  
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