

# Evaluating the Benefits of Project Alliance Formation among Contractors in Nigerian Construction Industry

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## Abstract

Various problems interconnected with traditional procurement methods have generated more pressure to the stakeholders and end user in the construction sector to seek for new and latest operational procurement methods. Project alliance is one of the acceptable methods of procurement, this is an incentive based relationship contracts where parties agree to work together as one integrated team in a relationship. So therefore, this study aimed to quantitatively assess the benefits of project alliance among contractors in Nigerian construction industry. This study is a survey research that used questionnaires to gathered information from selected contractors. Mean Item Score (MIS) and Standard Deviation (SD) were used in analyzing data retrieved from the respondents. Results indicated that achieving synergy and competitive advantage, risk- sharing, ease entry of new environment, reduction in the threat of competition among contractors were the top benefits of a successful project alliance among construction contractors in Nigeria. The study therefore recommended that contractors in the construction industry need to be well enlightened through conferences, seminars and workshops on how to fully embrace project alliance within and outside the industry, strong contractual mechanism/legal backing should be made when entering into project alliance, the Nigerian government should develop policies that will encourage the formation of project alliances by given one main project to three or more construction firms which are ready to form an alliance. Recommendations from the study can also be applicable to other developing countries with similar way, method and style of project execution as Nigeria.

## Keywords

Project Alliance, Contractor, Firms, Construction Industry, Professional.

## 1.0 Introduction

Alliance contracting is the term used to describe an arrangement where parties enter into an agreement to work cooperatively and to share risk and reward, measured against an agreed set of performance indicators (Henneveld, 2006). Also, project alliance is defined by Jiang, Tom and Santoro (2010) as perfect

distribution of resources and capital on a certain project in order to get a certain mission/ goal agreed upon as stated on the agreement binding two or more organizations. Recently, construction projects under alliance has been successful because alliance contracts are typically used with the intent of achieving innovation and utilization of prequalified pool of knowledge among contractors from inception stage of the project to completion stage. This was achieved because these projects benefited from shared goals and vision made by contractors through alliance at the early stage of the project. That's why Van den Berg and Kamminga (2006) opined that project alliance is the best option for achieving efficiency in projects through quality, cost and time. Based on the outcome of this development, project alliancing has become more established among stakeholders in the construction industry. According to Jiang et. al (2010), project alliance can be formed in two main directions; firstly, alliance between main contractors (horizontal integration) and, alliance between main contractors and other part sub-contractors which is popularly known as vertical integration.

In Nigeria, different procurement methods have been in use for project delivery (Babatunde, Opawole, and Ujaddugbe, 2010). These procurement methods are 'Traditional method' and 'Non-Conventional Methods' (Waziri 2012). The most widely used is the traditional method, which is popularly branded as 'Design-Bid-Build method'. Moreover, other procurement methods were categorized under Non-Conventional Methods' which are Management Contracting, Labour-Only, Construction management, Joint Ventures, Design and Build, Public Private Partnership (PPP), etc. Recently in Nigerian, the most widely used traditional method of procurement has been coupled with controversies, this has generated many challenges and complexities which have affected its strength to meet client's satisfactions. As stated by Babalola et. al (2010), many problems related to traditional procurement methods have generated more pressure to the clients and end user in infrastructural sector to seek for new and latest operational procurement methods like joint venture, strategic alliance, project alliance, turnkey and so on. Based on this, most contractors and sub-contractors in Nigerian construction industry tend to adopt project alliance as one the tools their firms can exploit to deal with challenges and complexities that have affected their strength during procurement.

Relating the project alliance formation among contractors in Nigerian construction industry to SWOT analysis, the adopt has increased their strength, reduced their weakness, generate more opportunities and lowering the threats. So, it is not far from the fact that project alliance is one of the effective ways to diffuse new knowledge and technologies rapidly among construction professionals (Koppinen, and Lahdenperä, 2004). According to Elmuti and Kathawala (2001), involving in project alliances will help agreed teams or organizations to learn quickly from more experienced firms in handling multiple task during operation and also gained very easy access to new market relating to their lay down goals. So therefore, the objective of this paper is to quantitatively reveal and assess the benefits of project alliance formation among contractors in Nigerian construction industry and the recommendations from the study can be applicable to other developing countries with similar way, method and style of project execution as Nigeria.

## **2.0 Alliancing Contracting in Construction Industry**

As pointed out by Jiang et. al (2010), alliance contracting among teams in the construction industry have been generally talked about in context of global business in more than two decades ago, since the intermediate collaboration has been main component in generating great competitive advantage among them. Alliance contracting has brought forth general knowledge in explaining an arrangement which organizations/parties enter and reach an agreement to work together in order to achieve a certain goal, reward, and to share damages/risks (MacDonald, Walker and Moussa, 2017). In history of project alliance according to Love, Mistry and Davis, (2010), alliances were earlier used among the oil and gas sector which was known as pure alliance in Western Australia then. MacDonald, Walker and Moussa (2012) indicated that East Spar and the Wandoo B developments were the most notable successful Western Australia projects that fully utilized this form of procurement approach then. Now that the construction industry is flooded with competition within and outside its context, many contractors in construction firms find a way of generating project revenue outside their territories. This According to Chen, Zhang, Xie and Jin (2012)

drive various construction firms to collaboration with other firms in new territories to create alliance, so as to generate strong relationship into the venture. At the end, the success of the alliance is usually measured against the outcomes it achieved.

Furthermore, Tang, Qiang, Duffield, and Young (2008) noticed that, the alliance is the same in meaning to mutual relationships, which bring about agreements such as technical collaboration, outsourcing, and joint research projects. Grant, and Baden-Fuller (2011) opined that alliance contracting in construction industry is strengthened by intelligent layout at the inception stage, in which allocation resources, profits/losses and risk are being handled properly among contracting teams in good morals as stated in the agreement. According to Ross (2008), the recent adoption of alliance contracting in construction industry has been faced by many difficulties and challenges in designing perfect risk allocation, profit reward system which can motivate teams/organizations involve in the agreement. Table I illustrates the research areas that have attracted most attention from Researchers in both academics and practice.

Table 1: Research Areas in Project Alliance

Research areas	Authors
Project alliance features and principles, Features and definition of Project alliance concept, successful alliances, applicability of the model, relation to other relational project delivery forms	Walker (2002); Hietajärvi (2017); Hauck, Walker, Hampson and Peters (2004); Galbraith (1974); Walker and Lloyd-Walker (2016); Vilasini, Neitzert and Rotimi (2014); Kumaraswamy, Ling, Rahman and Phng 2005).
Performance management and success, Identifying critical success factors for concept, value for money in Project alliance	Dodgson, Gann, MacAulay and Davies (2015); Davis and Love (2011); Walker and Lloyd-Walker (2015); Chen and Manley (2014); Dodgson, Gann, MacAulay and Davies (2015); Chen, Zhang, Xie and Jin (2012); Lingard, Brown, Bradley, Bailey and Townsend (2011); Love, Ackermann, Carey, Parke and Morrison (2015).
Development of Project alliance practices, tools and Methods	Love, Ackermann, Teo and Morrison (2015); Love, Davis and Chevis (2011); [Laan, Voordijk and Dewulf (2017); Davis and Walker (2009); Dodgson <i>et al</i> (2015); Department of Treasury and Finance (2010); DeFillippi and Sydow (2016); Vilasini <i>et al</i> (2014); Clegg, Pitsis, Rura-Polley and Marosszeky 2002].
Governance in Project alliance practice	Galbraith (1973); Chen <i>et al</i> (2012); Clegg, Rhodes and Kornberger (2007); Cohen (2010); Cicmil and Marshall (2005); Cicmil, (2014).
Alliance team and project culture, cultural transformation, effect of culture on ambience, attitudinal change, designing alliance culture of collaboration, subcontractor integration	Dainty, Briscoe and Millet (2001); Rahman and Kumaraswamy (2004); Lloyd-Walker, Mills and Walker (2014); Lloyd-Walker and Walker (2011); Lichtig (2006); Lahdenperä (2006); Walker and Lloyd-Walker B.M (2016); Lawrence and Lorsch JW (1967); Nordqvist, Hovmark and Zika-Viktorsson (2004); Davies and Mackenzie (2014); Ireland (2002); Walker and Rahmani (2016); Walker, Peters, Hampson and Thompson (2010).
Collaboration and Relationship management in Project alliance practice	Atkinson, Crawford and Ward (2006); Lawrence and Lorsch (1967); Bekefi, Epstein and Yuthas (2008); Davies, MacAulay, DeBarro and Thurston (2014); Walker, Lloyd-Walker and Mills (2013); Walker, Harley and Mills (2015).

Strategic Management applicability of Project alliance practice to other construction projects, combining project delivery forms	Walker and Lloyd-Walker (2011); Walker, <i>et. al</i> (2013).
Project alliance Agreements	Walker, <i>et. al</i> (2013); Sakal 2005]; Boukendour and Hughes (2014); Lahdenpera (2009); Lahdenperä (2012).

Table I showed that majority of the literatures has focused on technical aspects, contractual and commercial set-ups, successful practices and performance implications of the project alliance in the construction industry. Despite numerous literatures on project alliance in general context, there has been scanty literature on project alliance formation among contractors in construction industry, especially in an Emerging Market (EM).

### 3.0 Potential Benefits of Project Alliance among Contractors in the Construction Industry

Several researchers have carried out numerous findings on the benefits of project alliance among contractors in the construction industry. According Serrat (2009), communication and proper flow of information, mutual trust which can lead to transparency in contractual situations, increase in level of knowledge and understanding in that certain project, efficient uses of project resources, better quality and high profit in service delivery are the major benefits of project alliance among contractors in the construction industry. These are some others benefits; forming alliance with other domestic contractors in the construction industry helps the firms to sometimes overcome legal, political and regulatory barriers to entry as indicated by Lee, and Cavusgil (2006) Furthermore, project alliance creates a way to enter in a market that is protected by tariff and other barriers, or dominated by other firms with a particular competitive advantage. So choosing strategic partnership is a tool to overcome obstacles like entrenched competition and hostile. In conclusion, Tang, Qiang, Duffield, and Young (2008); Das and Teng (2001); Mwai (2010); Ireland *et. al* (2002), and Walker and Hampson (2003) summarized the potential benefits of project alliance among contractors in the construction industry as following; control of uncertainty in construction market, overcoming hard entry barriers, Risk- sharing, reduce the threat of competition, market modification structure, learning of new ideas about particular project and so on.

### 4.0 Methodology

Surveying method was used in gathering information from selected contractors. To achieve this aim, information gathered via a questionnaire survey covering the benefits of project alliance formation among contractors in Nigerian construction industry was empirically tested. A well-structured questionnaire was drafted after thorough review of existing literature on the benefits of project alliance formation among contractors/professionals in construction industry. A selected number of contracting firms in the construction sector operating within southwestern part Nigeria were randomly consulted and they respond impressively to the questionnaire send to them. The respondents were randomly selected because information on the population size were not available at the time of this research. Construction professionals represented by the contractors consulted include Civil Engineers, Builders, Architects and Quantity Surveyors. Quantitative method of research was adopted in this study. Data were collected through well-constructed questionnaire survey distributed to registered contracting firms. Forty-seven (47) questionnaires were administered to contractors, while ensuring that they are registered with their respective professional bodies in Nigeria. Forty (40) valid questionnaires were retrieved back from the respondent out of possible Forty-seven (47) sent out, giving a high response rate of 85 per cent. The contractors were informed to rank each benefits of project alliance statement based on a five point Likert scale of 1 to 5. Therefore, their level of knowledge expected to provide responses was acceptable for the purpose of validity of the survey results. Table II showed details on data collection and the demographical information of the respondents

Table II: Profile of the Respondents

Background Characteristics		Frequency	Percentage (%)
<b>Profession of respondent</b>	Architect	14	35.0
	Quantity Surveyor	11	27.5
	Builder	7	17.5
	Civil Engineer	8	20.0
	<b>Total</b>	<b>40</b>	<b>100</b>
<b>Professional membership</b>	NIA	14	35.0
	NIQS	11	27.5
	NSE	8	20.0
	NIOB	7	17.5
	Others	0	0
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>Category/Grade of membership</b>	Probationer	14	35.0
	Corporate/Associate Member	24	60.0
	Fellow	1	2.5
	Others	1	2.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>Highest academic qualification of respondent</b>	OND	2	5.0
	HND	5	12.0
	B.Sc/B.Tech	26	65.5
	M.Sc/M.Tech	6	15.0
	Ph.D	1	2.5
	<b>Total</b>	<b>40</b>	<b>100</b>
<b>Project Executed</b>	1-5 years	8	20.0
	6-10 years	16	40.0
	11-15 years	10	25.0
	16-20 years	4	10.0
	Over 20 years	2	5.0
	<b>Average</b>		<b>9.1</b>

Table II established that Quantity Surveyors and Architects that responded to the questionnaire represented 35% and 27.5% respectively. 17.5% were Builders, while 20% of respondents were Civil Engineers. This showed that the respondents were from all relevant construction professionals in who are currently practicing in their respective states. The data showed that all respondents were under their professional membership. 35% were member of NIA (Nigerian Institute of Architects), while 27.5% of respondents fall under membership of NIQS (Nigerian Institute of Quantity Surveyors). It was established that 20% of respondents were under the umbrella of NSE (The Nigerian Society of Engineers). Moreover, 17.5% were under NIOB (Nigerian Institute of Building), while 1% fall under other professionals not stated. The

analysis of respondent's category/grade of membership showed that, 35%, 60%, 2.5% and 2.5% of respondents were probationers, Corporate/Associate members, fellows and others respectively. This means that the respondents were qualified to provide information on the subject of strategic alliance procurement method in the construction industry. Corporate/Associate members had the largest percentage because they are mostly active on site.

Table II showed that 5% and 12% of the respondents were polytechnic graduates which are OND and HND respectively. The highest number of the respondents were those with Bachelor Degree (B.tech & B.sc) which represented 65.5%. Moreover, 15% and 2.5% were M.sc/M.tech and PhD respectively. From the information on the academic qualifications of the respondents, it can be concluded that these professionals possessed satisfactory academic training to supply data for this study. The table II further revealed that 20% of the respondents had executed 8 projects in the last 5 years and 40% had executed 16 projects in 6 years above. The above analysis indicates that majority of the sampled respondents were educated and experienced practitioners. The respondents had handled series of projects in years back, this make them suitable to give adequate information on the project alliance in construction industry.

In analyzing the crucial information gotten from the contractors, Statistical Package for the Social Sciences (SPSS) 20 was fully used to achieve the desire outcome. SPSS statistics is a software package used for interactive, batched statistical analysis. Cronbach's  $\alpha$  model was used to carry out reliability test analysis on the data retrieved from the respondent to determine dependability of the review instrument. The Cronbach's  $\alpha$  test of the questionnaire is 0.876, this shows that there is satisfactory interior dependability and consistency of informational index. Moreover, Mean item score (MIS) and Standard Deviation (SD) were also used in analyzing data retrieved from the respondents. MIS was employed in ranking all the benefits while SD was likewise used for situations where two variables have similar MIS value.

## **5.0 Result and Discussion**

This section emphasis more on the discussion of the findings and results from the retrieved questionnaires distributed to selected number of contracting firms in the construction sector operating within southwestern part Nigeria. Construction professionals represented by the contractors consulted include Civil Engineers, Builders, Architects and Quantity Surveyors. So therefore, after thorough review of existing literature on the benefits of project alliance formation among contractors/professionals in construction industry, fifteen benefits of project alliance formation among contractors in construction industry were revealed and analyzed in the investigation territory. The mean analysis of the respondent's perceptions was presented in Table III. in examining the benefits of project alliance formation among contractors in Nigerian Construction industry.

Table III: The Benefits of Project Alliance formation among Contractors

Benefit of Project Alliance	MIS	(SD)	Ranking
Achieving synergy and competitive advantage	4.02	0.831	1
Ease entry of new environment	4.00	1.086	2
Risk- sharing	3.82	0.957	3
Reduce the threat of competition among contractors	3.80	0.790	4
Efficient use of available resources	3.80	0.992	5
Access to knowledge on certain project	3.67	0.858	6
Overcoming legal, political and regulatory barriers	3.65	0.726	7
Control on market uncertainty	3.65	0.975	8
Market modification structure	3.62	1.004	9
Better quality in construction	3.62	1.102	10
Higher profits	3.57	1.009	11
Sharing resources	3.55	0.904	12
Economies of scale	3.47	0.905	13
Modeling competition	3.37	0.837	14
Transparent contractual situations on projects	3.27	0.986	15

As indicated in table III, achieving synergy and competitive advantage was top ranked benefits of project alliance formation among contractors in the study area with mean 4.02. These findings were somehow related to Davies (2008); Das and Teng, (2001); Mwai (2010) and Love (2010). Their studies indicated that any firms/companies in alliance will definitely have mature competitive advantage which enable them to render services that the market (clients) are willing to buy. This shows that most construction contractors in Nigeria gained competitive advantage during project alliance among themselves. It is not far from the fact that most construction firms in alliance win more construction contracts than the other firms in the competitive market. Ease entry of new environment was also ranked high as one of the benefits of project alliance among contractors in the industry. Through project alliance, many construction companies outside the regional geographical area easily form alliance with the indigenous companies to execute certain project. This allow foreign construction firms (outside the regional geographical area) to gain easy entry into new environment without any difficulties. It is then followed share risk and risk transfer with the mean of 3.82, SD of 0.957 and was ranked third (3<sup>rd</sup>), it implies that best contracting approach is for the contractors to share and transfer much of the risk among themselves, this include insurance companies, designers and constructors (Cheng and Li, 2002). This means that if proper risk share and transfer is established among contractors, project alliance will be successful. Instead of one contracting firm to bear construction risk alone, project alliance brings about equal sharing of risk among many contracting firms who involve in the agreement.

## 6.0 Conclusion and Recommendations

Project alliance is one of the acceptable method of project procurement which is coupled with contractual agreement between two or more teams/organizations. This involve sharing rewards of participating in such project, monetary risks sharing, managing cooperatively on an open-book, non-adversarial. By so doing, this paper has been able to quantitatively revealed and assessed the benefits of project alliance among contractors in Nigerian construction industry. From this study, it was established that most construction professionals enjoy mature competitive advantage which enable them to render services. Moreover, ease

entry of new environment, sharing great values, reduced risk of opportunistic behavior, maintaining standard culture, increase in knowledge, and learning that increase and early contractor involvement, improve over time are recorded as the benefits of project alliance among contractors. From the results of the study, the following recommendations will be useful if totally adhere to; Contractors in the construction industry need to be well enlightened through conferences, seminars and workshops on how to fully embrace project alliance within and outside the industry. Strong contractual mechanism/legal backing should be made when entering into project alliance. Nigerian government should develop policies that will encourage the formation of project alliances by given one main project to three or more construction firms that are ready to form an alliance. These recommendations will be useful in encouraging project alliance implementation in Nigerian construction industry, and other countries in the developing world with similar approach in project execution. This research was solely limited to Nigeria, as the data provided for this study were predominantly from the country. Similar studies can also be fully extended to other developing countries. Future studies can also work more on the method of data collection for reliability and proper validation of the research area. For this study, only questionnaire survey was used in gathering information for this research.

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