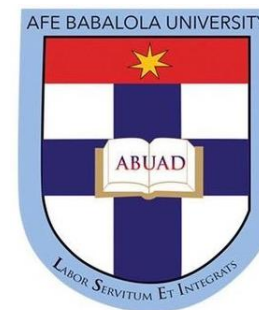




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## To Collaborate or Not to Collaborate: A Transaction Cost Economics Approach to Construction Contracts in Public-Private Partnerships

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## **TO COLLABORATE OR NOT TO COLLABORATE: A TRANSACTION COST ECONOMICS APPROACH TO CONSTRUCTION CONTRACTS IN PUBLIC-PRIVATE PARTNERSHIPS**

**Takunda Gumbu\***

### **ABSTRACT**

Public-Private Partnerships (PPPs) are often seen as a cost-effective way of providing public infrastructure. However, mega-construction projects involve many hidden costs that arise during the project life cycle. These costs are known as transaction costs. This article investigates how a construction contract under a PPP can reduce transaction costs. Using Transaction Cost Economics (TCE), the article draws on empirical studies from six countries to identify four factors that affect transaction costs in construction contracts namely: (i) Concessionaire predictability, (ii) Contractor predictability, (iii) Project Management Efficiency, and (iv) Project Environment Uncertainty. Different types of construction contracts were comparatively analysed against the aforementioned four factors. The findings indicate that collaborative contracts are more likely to favourably address these four factors by lowering transaction costs compared to non-collaborative contracts. The article concludes that using

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collaborative contracts can make infrastructure PPPs more affordable than other public procurement methods.

**Keywords:** Public-Private Partnerships; Construction Contracts; Transaction Costs; Economic Analysis; Law and Economics.

## 1. INTRODUCTION

Public-Private Partnerships (PPPs) are a way of involving private finance in public infrastructure projects, which can ease the burden on public budgets.<sup>1</sup> While PPPs reduce pressure on public budgets, they do not necessarily reduce the transaction costs that arise from the various activities and uncertainties that arise during the project lifecycle.<sup>2</sup> Transaction costs are steep and often cause project delays or failure.<sup>3</sup> Some scholars argue that when project participants collaborate; transaction costs are effectively reduced.<sup>4</sup> Collaborative construction contracts can thus decrease the overall cost of infrastructure projects compared to traditional non-collaborative construction contracts.<sup>5</sup> This view is supported by proponents of the transaction cost economics theory (TCE). They argue that transaction costs are affected by how the contract guards against opportunism in incomplete contracts.<sup>6</sup> This article thus

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<sup>1</sup> E. R. Yescombe and Edward Farquharson, *Public-Private Partnerships For Infrastructure Principles Of Policy And Finance* (2<sup>nd</sup> edn, Butterworth-Heinemann, 2018) 8.

<sup>2</sup> Jinpeng Zhao, *Transaction cost in PPPs project: exploration of influence factors for both public and private sectors in different countries with whole life cycle* (IOP Conf. Ser.: Earth Environ. Sci. 242 052043, 2019).

<sup>3</sup> *Ibid.*

<sup>4</sup> Will Hughes, Ronan Champion and John Murdoch, *Construction Contracts Law and management* (5<sup>th</sup> edn, Routledge, 2015) 82.

<sup>5</sup> *Ibid.*

<sup>6</sup> Oliver E. Williamson, 'Why Law, Economics, And Organization?' (2005) 1 *Annual Review of Law and Social Science*, 369. See also, Oliver E. Williamson,

explores the application of TCE principles in addressing whether collaborative or non-collaborative construction contracts in PPPs will decrease transaction costs in major infrastructure projects.

PPP infrastructure projects are fragmented and involve different stages and numerous parties from different sectors with different interests.<sup>7</sup> Transaction costs are thus incurred at each stage between different parties. In a typical PPP, a public entity (Contracting Authority) first develops the infrastructure concept and invites bidders from the private sector through a tendering process prescribed under a relevant law.<sup>8</sup> Afterwards, negotiations are carried out between the Contracting Authority and preferred bidders.<sup>9</sup> The Contracting Authority then enters into a concession/PPP contract with the successful bidder (Concessionaire).<sup>10</sup> The Concessionaire then concludes several different contracts with quantity surveyors, architects, construction Contractors, post-construction maintenance and operation Contractors, and funders.<sup>11</sup> The fragmented nature of contractual rights and obligations in infrastructure projects places great dependence on contract drafters to draft contracts that guard against transaction costs. If transaction costs are not taken into account in contracts, PPPs will become expensive and defeat their purpose.

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'The Logic of Economic Organization' (1998) 4 *Journal of Law, Economics, & Organization*. 65.

<sup>7</sup> Yescombe (n 1).

<sup>8</sup> Yescombe (n 1) 49.

<sup>9</sup> World Bank, *Public-Private Partnerships Reference Guide* (3<sup>rd</sup> edn, World Bank, 2017), <https://openknowledge.worldbank.org/bitstream/handle/10986/29052/122038-WP-PUBLI-PPPReferenceGuideVersion.pdf?sequence=1&isAllowed=y> accessed 10 March 2022.

<sup>10</sup> Yescombe (n 1) 55.

<sup>11</sup> *Ibid.*

Transaction costs are those costs incurred whenever an exchange occurs between two or more parties.<sup>12</sup> They form part of the actual cost of producing the infrastructure asset.<sup>13</sup> Infrastructure-related transaction costs can be divided into pre-contract costs and post-contract costs.<sup>14</sup> Pre-contract costs are those costs incurred before signing the PPP contract.<sup>15</sup> These include market research, exploring financing opportunities, environmental impact assessment, preliminary design, bidding/tender documentation, and day-to-day pre-contract management.<sup>16</sup> Post-contract costs are those incurred after signing the PPP contract and include costs of construction, day-to-day contract administration, administering claims and variations, cost of dispute resolution, and payments.<sup>17</sup>

This article compares collaborative and non-collaborative construction contracts in terms of their impact on transaction costs in Public-Private Partnerships (PPPs) for infrastructure projects. The article uses the (TCE) as a framework to analyse different contract designs and provide insights on how to reduce costs in PPPs or construction projects in general. The article fills a gap in the literature on TCE and collaborative or non-collaborative construction contracts in PPPs. The article is structured as follows. The first section introduces the research problem and the main focus areas. The second section discusses

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<sup>12</sup> Cooter R, T Ulen, *Law and Economics* (2<sup>nd</sup> edn, Addison-Wesley Educational Publishers,1998) 84.

<sup>13</sup> Huimin Li, David Arditi and Zhuofu Wang, 'Determinants of Transaction Costs In Construction Projects' (2015) 21, *Journal Of Civil Engineering And Management*, 548.

<sup>14</sup> Zhao (n 2) 2.

<sup>15</sup> Li (n 13) 549.

<sup>16</sup> Murali Sambasivan et al, 'Analysis of delays in Tanzanian construction industry: Transaction cost economics (TCE) and structural equation modeling (SEM) approach' (2017) 24, *Engineering Construction and Architectural Management*, 308.

<sup>17</sup> *Ibid* 313.

TCE in the context of PPPs and construction contracts and identifies the factors that affect transaction costs in these settings. The third section describes the characteristics of collaborative and non-collaborative construction contracts. The fourth section examines these contracts under the lens of TCE and compares their provisions with the factors that influence transaction costs in construction projects. The last section concludes with the main findings of the article.

## 2. TRANSACTION COST ECONOMICS THEORY

(TCE) is a theory of economic organisation which finds its origins in the 1937 works of Ronald Coase.<sup>18</sup> Oliver Williamson's later works in TCE bridged the gaps between microeconomics, organizational theory, and theories of contract law.<sup>19</sup> It is Williamson's expansion of TCE to microeconomics, organisational theory, and contract law that gained him the prestigious Nobel Prize in economics.<sup>20</sup> Williamson explored how the concepts of asset specificity, uncertainty, costly and asymmetric information, and bounded rationality shape economic transactions and the organizations that carry them out.<sup>21</sup> According to TCE collaborative contracts are the most efficient way to organise transactions

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<sup>18</sup> Oliver E. Williamson, 'The Logic of Economic Organization' (1998) 4 *Journal of Law, Economics, & Organization*. 65

<sup>19</sup> Investopedia, 'Oliver E. Williamson' <<https://www.investopedia.com/terms/o/oliver-e-williamson.asp>> accessed 29 August 2021.

<sup>20</sup> The Nobel Prize, 'Oliver E. Williamson' <<https://www.nobelprize.org/prizes/economic-sciences/2009/williamson/facts/>> accessed 29 August 2021.

<sup>21</sup> Investopedia (n 20).

between parties, particularly public and private parties working together.<sup>22</sup>

Most law and economics scholars base their economic analysis of law on the choice theory whereas TCE shifts from choice to the science of contract.<sup>23</sup> This is because contracts determine how parties interact with one another to achieve a particular goal. From these interactions emanate exchanges of which the costs of these exchanges are the transaction costs.<sup>24</sup> Transaction costs in construction are significantly high due to various factors shown in Figure 1 below. While standard form contracts such as the International Federation of Consulting Engineers (FIDIC) and New Engineering Contract (NEC) suites are frequently used, construction works in major infrastructure projects are often bespoke. For example, the same schematics can be used to draw up the design of a group of clinics to be erected in different areas under a single PPP contract. However, different construction contracts may be necessary as the geology of each construction site will be different and may require different designs and skills. This gives rise to complex rights accruing to the Concessionaire, Contractors, and other interested parties such as the environmental authorities.

<b>Lower Transaction Costs</b>	<b>Higher Transaction Costs</b>
Standardized good or service	Unique good or service

<sup>22</sup> Koschatzky and Knut, 'A theoretical view on public-private partnerships in research and innovation in Germany'. (2017) <<http://hdl.handle.net/10419/156478>> accessed 29 August 2022.

<sup>23</sup> Williamson (n 7).

<sup>24</sup> Cooter (n 12) 84.

Clear, simple rights	Uncertain, complex rights
Few parties	Many parties
Friendly parties	Hostile parties
Familiar parties	Unfamiliar parties
Reasonable behaviour	Unreasonable behaviour
Instantaneous exchange	Delayed exchange
Little or No contingencies	Numerous contingencies
Low costs of monitoring	High costs of monitoring
Cheap punishments	Costly punishments

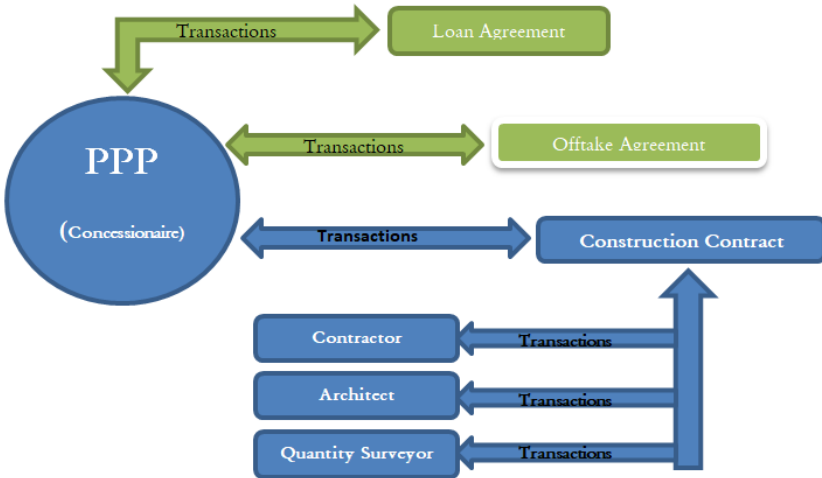
Figure 1, Adapted from, Cooter (n13) 84.

The starting point of TCE is the firm.<sup>25</sup> Its role in a society's economic system is only justified if its transaction costs are organized at a lesser cost internally, than if they were to be organized in the open market.<sup>26</sup> In the context of this article, the PPP represents the firm while procurement laws that prescribe other public procurement methods form the market. The Contracting Authority invites the Concessionaire to create a joint arrangement under a PPP contract with the hope that this will reduce the cost of providing the infrastructure asset compared to other public procurement methods. Forming a PPP reduces the investment each party would have initially made and in turn, reduces transaction costs through the transfer of risks between each party. The PPP acting through the Concessionaire then enters into a construction contract with a Contractor thereby creating transactions. Such transactions also involve many other sub-transactions which determine the transaction costs between the PPP and Contractor. Figure 2, below illustrates this phenomenon.

<sup>25</sup> Williamson (n 7) 371.

<sup>26</sup> Williamson (n 18) 65.





Transaction costs emanate from three main exchange steps which are: (i) the selection of an exchange partner; (ii) the striking of a bargain between the partners; and (iii) the enforcement of a bargain.<sup>27</sup> The transaction thus has three main principles which are: (i) conflict, (ii) mutuality, and (iii) order. This means that the PPP contract is a governance structure instead of the neo-classical view of contracts as having a mere production function. The aim of the PPP contract is not only to produce an infrastructure asset but also to reduce costs and ensure the sustainable operation of the asset upon completion of construction. It is through this governance structure that the Concessionaire and construction Contractors will be able to infuse order through the construction contract to mitigate conflict among themselves and realise mutual gains.<sup>28</sup>

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<sup>27</sup> Cooter (n 12) 84.

<sup>28</sup> Williamson (n 7)

When transaction costs are low contracting parties make complete contracts however, as transaction costs increase, gaps are left thus resulting in incomplete contracts.<sup>29</sup> Given that the contracts are incomplete they are uncertain. Consequently, the chances of conflicts arising between contracting parties increase. PPP contracts and construction contracts are incomplete contracts as Figure 1 above demonstrates. By any measure, uncertainty is an ever-present characteristic in both contracts. Although project completion deadlines are often included in construction contracts, elements such as site geology and weather can easily delay completion. Delays are costly and conflicts will arise concerning liability for delay costs. On one hand, no party can control the site geology or weather but the costs of delay need to be settled by at least one of them.

Williamson employs two heuristic behavioural assumptions to explain incomplete contracts.<sup>30</sup> Firstly, human beings are intendedly rational but only limitedly so, meaning that incomplete contracts are unavoidable.<sup>31</sup> This is known as bounded rationality. The second behavioural assumption which is opportunism makes incomplete contracts a minefield.<sup>32</sup> Opportunism is a deep condition of self-interest seeking by both or one of the parties to contract. Regardless of their integrity, humans are bound to give in or at least be tempted by opportunism. When opportunism occurs the parties no longer seek to achieve mutual gain as stipulated in the contract but seek to further their selfish interest ahead of their joint interests. This means that contractual obligations

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<sup>29</sup> Cooter R and T Ulen, *Law & Economic* (6<sup>th</sup> edn, Pearson Education Inc, 2012) 298.

<sup>30</sup> Williamson (n 18) 68-70

<sup>31</sup> Ibid.

<sup>32</sup> Williamson (n 7) 373.

under the construction contract ought to be buttressed by credible contractual commitments to ensure the rendering of full contractual performance.<sup>33</sup>

Even though PPP and construction contracts are incomplete contracts that raise transaction costs they can reduce them through optimal risk allocation among parties,<sup>34</sup> and guard against opportunism. This can be achieved through contractual measures that organize the transactions to economize on bounded rationality while simultaneously safeguarding it from opportunism.<sup>35</sup> The PPP contract guards against opportunism related to construction by making provisions on non-intricate construction standards. The contracts must contain obligations that can be performed or supported with the possibility of an appropriate sanction in the event of a default.<sup>36</sup> To guard against opportunism the contract should account for three key attributes of transactions, which are: (i) frequency; (ii) uncertainty, and (iii) asset specificity.<sup>37</sup> Frequency refers to the recurrence and uncertainty refers to the number of times and degree a specific type of exchange occurs between two or more parties.<sup>38</sup> Asset specificity is the measure of the degree to which the assets needed to produce a good or service can be redeployed to alternative uses and users without loss of productive value.<sup>39</sup> Construction projects cannot be redeployed or reused without significant investments being made. For example, wind turbines cannot be reused on a different project

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<sup>33</sup> Williamson (n 18) 68.

<sup>34</sup> Barbara Weber, Mirjam Staub-Bisang and Hans Wilhelm Alfen, *Infrastructure As An Asset Class: Investment Strategy, Sustainability, Project Finance and PPP* (2<sup>nd</sup> edn, John Wiley & Sons, 2016) XXVII.

<sup>35</sup> Williamson (n 18) 68.

<sup>36</sup> *Ibid* 69.

<sup>37</sup> *Ibid*.

<sup>38</sup> *Ibid* 70.

<sup>39</sup> *Ibid*.

as they are designed for the specific site they are to be placed. As such, the probability of ex-post opportunism is increased and requires contractual safeguards, such as price adjustment clauses, longer terms, or take-or-pay provisions.<sup>40</sup>

In exchanges involving simple standardised goods and services such as food or transport, it is not necessary to establish the identity of the parties involved. However, when there are non-trivial and durable investments involved in the exchange such as the designing of a major highway, identities are crucial.<sup>41</sup> This is because parties in incomplete contracts are interdependent which incentivises them to agree to measures that mitigate transaction costs such as those discussed above.<sup>42</sup> Take for example a price adjustment clause that may be of little to no value to an architect because their costs are unlikely to increase. Whereas the Contractor carrying out the physical works will require a contract price adjustment if certain geological findings increase the cost of doing the works. It is not simply their identity as a Contractor that matters but the Contractor's nature as well. A small-scale Contractor may need to subcontract to carry out the extra works while a well-established multinational Contractor can carry out the extra works at a lower cost.

According to Zhao, contract design flaws in the construction contract can severely increase transaction costs for the Contracting Authority in a PPP.<sup>43</sup> Zhao posits that Engineering, Procurement, and Construction (EPC) contracts can be costly for the public sector if the Contractor selects

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<sup>40</sup> Kacker K, 'Regulation and Contract Design: The Impact of Relationship Specific Investment' (2016) 64, *Journal of Industrial Economics*, 356.

<sup>41</sup> Williamson (n 7) 378.

<sup>42</sup> Ibid.

<sup>43</sup> Zhao (n 2) 7.

materials that are optimal for construction but are costly to maintain. In such cases, the EPC contract will have failed to guard against Contractor opportunism. More so, during the construction phase transaction costs increase more significantly for the Concessionaire than the Contracting Authority.<sup>44</sup> Provisions of the PPP contract thus need to guard against the Concessionaire inflating construction costs.

Li et al revealed the four determinants of transaction costs in construction projects.<sup>45</sup> Firstly, the predictability of the Concessionaire's behavior reduces uncertainty and increases the efficiency of project management. Uncertainty and inefficiency at any time of the project will increase transaction costs. The owner thus ought to endeavour for cordial relationships with all project participants, timeously pay Contractors, and ensure designs are as complete as possible to reduce the frequency of variations.<sup>46</sup> Unpredictable Concessionaires create uncertainty, which breeds an environment for opportunistic behaviour. To mitigate against the subsequent increase in transaction costs the construction contract thus needs to include penalties and mechanisms that discourage unpredictable behaviour by the Concessionaire.

The second determinant is the predictability of the Contractor which reduces transaction costs if the Contractor is well established and performs professionally and ethically.<sup>47</sup> According to Li et al, predictable Contractor behaviour is achieved by the Contractor avoiding bidding irregularities; bidding for works the Contractor is qualified to carry out; maintain a good relationship with sub-contractors; and be

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<sup>44</sup> Ibid.

<sup>45</sup> Li (n 13) 65.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid

experienced in similar works.<sup>48</sup> As a mitigation device the construction contracts often include securities, warranties and insurances against unpredictable Contractor behaviour. Clause 4.2 of the FIDIC set of contracts requires that Contractors pay a performance security to the Concessionaire. This is to ensure that the Contractor carries out his obligations under the contract.<sup>49</sup> In Egypt, Contractor behaviour contributed to the top six influencers of transaction costs in construction projects.<sup>50</sup> Similarly, in Malaysia the top three influential factors were the Contractor's improper planning, poor site management, and inadequate Contractor experience.<sup>51</sup>

As the third determinant, project management will only reduce transaction costs if it involves speedy decision making processes, efficient communication among parties, effective leadership by project managers, fair conflict resolution methods, and high technical competency.<sup>52</sup> Construction professionals interviewed by Ikuabe and Oke in Lagos Nigeria, revealed that project leadership, quality decisions making and competition between bidders were the three most influential factors on transaction costs in that area.<sup>53</sup>

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<sup>48</sup> Ibid

<sup>49</sup> William Godwin. *The 2017 FIDIC Contracts*, (Willey Blackwell, 2020) 45.

<sup>50</sup> Emad Abdel-Galil, Ahmed H. Ibrahim and Ahmed Alborkan, 'Assessment of transaction costs for construction Projects' (2020) 22, *International Journal of Construction Management*, 1624.

<sup>51</sup> Raj Kapur Shah, 'An Exploration of Causes for Delay And Cost Overruns In Construction Projects: Case Study Of Australia, Malaysia & Ghana' (2016) 2, *Journal of Advanced College of Engineering and Management* 10.

<sup>52</sup> Li (n13)66.

<sup>53</sup> Mathew Ikuabe and Ayodeji Oke, 'Construction Transaction Costs in a Developing Economy: The Nigerian Construction Perspective' In C. Aigbavboa and W. Thwala (Eds.): *CIDB 2019, The Construction Industry in the Fourth Industrial Revolution* (Springer, 2020) 59.

The last determinant is creating a greater sense of certainty in the transaction environment will reduce transaction costs. This can be achieved by the Concessionaire being ready to deal with the complexities of the project; encouraging competitive bidding by Contractors; securing the Contractor's early involvement; providing the Contractor with designs that are complete as far as possible; integrating design and construction works; and ensuring a fair allocation of risks among parties. According to Ali et al, the top 4 influencers of transaction costs for the public sector in Pakistan were inadequate investigation of appropriate construction contract during the project development stage, unclear work scope, project complexity, and incomplete designs and specifications.

### 3. CLASSIFYING CONSTRUCTION CONTRACTS

To understand how TCE can be used to mitigate transaction costs in construction projects it is necessary to first understand the contracts often used in the industry. This section describes the different classes of construction contracts generally used. Masterman, identifies three traditional classes of construction contracts. The first are the separated and co-operative contracts.<sup>54</sup> Under this contract class the responsibility for the design and construction aspects of the infrastructure asset are separate responsibilities for separate organizations. The Concessionaire thus signs different design and construction contracts with different parties. The second class is integrated construction contracts,<sup>55</sup> where design and construction

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<sup>54</sup> J.W.E.Masterman, *An Introduction To Building Procurement Systems*, (E & FN Spon, 2003) 23.

<sup>55</sup> *Ibid* 55.

become the responsibility of one organization. Under this contract class the Concessionaire enters into a single contract with a single entity instead of two separate contracts and entities. The third class is management-orientated construction contracts.<sup>56</sup> These contracts emphasise on overall management of the design and construction of the project with the latter element usually being carried out by works or package Contractors. The management Contractor thus has the status and responsibilities of a consultant.<sup>57</sup> Under this contract class the Concessionaire enters a contract with a single entity which then subcontracts the physical works to different sub-contractors. The Managing Contractor is liable to the Concessionaire for any works carried out by sub-contractors.

Collaborative construction contracts are a new class of construction contracts that is different from the traditional classes discussed above. Collaborative construction contracts set out processes and relationships through which different parties can develop, share and apply project information in a manner that improves the project design, construction and operation.<sup>58</sup> Unlike traditional construction contracts, collaborative contracts bring together project designers, Contractors, surveyors, manufacturers, operators and other parties together. Collaborative contracts involve parties working together towards achieving a common goal rather than merely fulfilling one's contractual obligations.<sup>59</sup> David Mosey, a proponent of collaborative construction contracts holds that it is paramount for a collaborative contract to fulfil two tests.<sup>60</sup>

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<sup>56</sup> Ibid 77.

<sup>57</sup> Ibid 3.

<sup>58</sup> David Mosey, *Collaborative Construction Procurement and Improved Value*, (John Wiley & Sons: 2019) 1.

<sup>59</sup> Hughes (n 4) 84.

<sup>60</sup> Mosey (n 58) 3.



First there must be integrated and transparent systems involving project parties. Secondly there must be an alignment of commercial interests among parties.<sup>61</sup> Under this class of contracts the Concessionaire works together with all other parties that are required to complete the construction works. Although their risks differ each party is treated as partner working towards each other partner realising their commercial goals under the contract. The following discussions describe in greater detail the different classes of construction contracts discussed above.

### **3.1. Separated and Co-Operative Contracts**

This contract class, dates back to the Napoleonic wars and remains the most used system worldwide.<sup>62</sup> Ojo and Gbadebo, agree with Onwusonye's definition of it as a multiplex contractual network in which an organization, usually outsourced using competitive bidding, agrees to undertake an obligation to construct an infrastructure asset as specified by the Concessionaire at an agreed price.<sup>63</sup> The use of this method means the Concessionaire appoints consultants on a fee basis, who fully design the project and prepare tender documents upon which competitive bids are submitted by bidders, usually on a lump sum basis. The successful bidder then enters into a direct lump-sum contract with the Concessionaire to carry out the works under the direct supervision of the design consultants.<sup>64</sup>

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<sup>61</sup> Ibid.

<sup>62</sup> Masterman (n 54) 24-27.

<sup>63</sup> Ademola Eyitope Ojo and Moses Ajibola Gbadebo, 'Critical Selection Criteria for Appropriate Procurement Strategy for Project Delivery in Nigeria' (2012) 3, *Journal of Emerging Trends in Economics and Management Sciences*, 422.

<sup>64</sup> Masterman (n 54) 24.

Under this contract class the Concessionaire is required to conclude separate contracts with different parties for different stages of the construction phase. According to Perry, in greenfield projects the Pre-Design stage is crucial as it has a 65% influence on the total building cost. This is because the Concessionaire will be determining its needs in terms of functionality, quality, cost, and time parameters. The design stage influences about 25%.<sup>65</sup> The tender documents prepared during these two stages include detailed designs that contain drawings, technical specifications, and a bill of quantities. Once the tender has been awarded these standards and quantities are defined in the contract and the Contractor will perform the activities as scheduled in the bill of quantities.<sup>66</sup> Masterman, holds that the inclusion of bills of quantities in the tendering process reduces the tendering costs, ensures competition and post contractual changes can be implemented at fair and reasonable costs. Moreover, this method of contracting provides a high degree of certainty that quality and functional standards will be met. Be that as it may, it is the slowest method which may lead to rising costs in unstable economies.<sup>67</sup>

### **3.2. Integrated Construction Contracts**

Often referred to as the design-build method, it involves an arrangement of single point responsibility in which a Contractor accepts total responsibilities for the design, documentation and construction of a project except financing in return for a lump sum price.<sup>68</sup> To identify the contract, three elements must be present (i) the responsibility for design and construction lies with one organization, (ii) reimbursement is

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<sup>65</sup> Masterman (n 54) 29-30.

<sup>66</sup> Lukas Klee, *International Construction Contract Law* (2<sup>nd</sup> edn, JohnWiley & Sons, 2018) 104.

<sup>67</sup> Masterman (n 54) 35-39.

<sup>68</sup> Ojo (n 63) 423

generally through a fixed-price lump sum and (iii) the project is designed and built specifically to meet the needs of the Concessionaire.

Given that the designing and building will be done by a single Contractor the contractual and functional relationship between the Concessionaire, consultants and Contractor are simplified as all communications are reduced to a single channel.<sup>69</sup> The tender documents issued by the Concessionaire will contain the requirements which specify the purpose, scope, design requirements, and/or additional technical criteria for the project. These requirements will usually identify the parts of the works to be designed by the Contractor and the criteria the design will reflect. The Contractor will then submit a proposal within their bid, based on the requirements. Unlike the separate method, a bill of quantities is usually omitted in this method and there is no re-measurement of works carried out.<sup>70</sup>

There are four main variants of the design-build method which are the following:

- (i) Package deals: the Concessionaire will purchase a total package, virtually off-the-shelf, to speedily satisfy its building needs at an economical price. The Contractor builds an adapted standard infrastructure asset. It therefore cannot be used for bespoke infrastructure projects.<sup>71</sup>
- (ii) Engineer Procure Construct/Turnkey contracts: one organisation, often the Contractor, is responsible for the total project from engineering, design and through to hand over of a fully operational infrastructure asset to the

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<sup>69</sup> Masterman (n 54) 59.

<sup>70</sup> Klee (n 66) 105.

<sup>71</sup> Masterman (n 54) 69.

Concessionaire. The responsibility of the Contractor is therefore often extended to include the installation and commissioning of the Concessionaire's process or other equipment and sometimes the identification and purchase of the site, recruitment and training of management and operatives, the arranging of funding for the project and possibly the operation of the facility for a fixed period.<sup>72</sup>

- (iii) Develop and construct: the Concessionaire's consultant is provided with a detailed brief from which they prepare conceptual drawings and a site layout. The Contractor develops this conceptual design, produces detailed drawings, chooses and specifies materials and submits these proposals with their bid.<sup>73</sup>
- (iv) Novated Design and Build Contract: the Concessionaire appoints consultants to carry out the conceptual design of a project and the preparation of design- and build tender documentation. Once the Contractor has been appointed, it then takes responsibility for the design work carried out so far, sometimes together with the original design team to carry out the detailed design as the Contractor's directly employed consultants.<sup>74</sup>

### 3.3. Management-Orientated Construction Contracts

This contract class gives birth to a contractual relationship in which the Contractor, alongside a professional team appointed by the Concessionaire, is integrated into the project design stage, to ensure early completion and quality, contribute its expertise in design and management for a fee.<sup>75</sup> There are two

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<sup>72</sup> Brian Greenhalgh, Graham Squires and Abdul-Majeed Mahamadu, *Construction Procurement: Complex Property Development* (Routledge, 2022) 179.

<sup>73</sup> *Ibid* 181.

<sup>74</sup> *Ibid* 176.

<sup>75</sup> Ojo (n 63) 424.

main forms of management-oriented contracts which are described below.

### **3.3.1. Management Contracting/Fee Contracting/Management Fee Contracting**

The management Contractor employs and manages Contractors who carry out the actual construction of the project and the management Contractor is reimbursed through a fee for their management services and payment of the actual prime cost of the construction.<sup>76</sup> This means that the Contractor is appointed on a professional basis as an equal member of the design team to provide construction expertise. Secondly, reimbursement is based on a lump sum or percentage fee for management services plus the prime cost of construction. Lastly, the actual construction is carried out by works or package Contractors who are employed, coordinated and administered by the management Contractor.<sup>77</sup> The Concessionaire, however, employs the design team and, therefore, bears the risk of the design team delaying construction for reasons other than negligence.<sup>78</sup> According to Morledge and Smith this is a “fast track” procurement method as the design works will not be complete when construction commences.<sup>79</sup> It consists of three phases. The first is the pre-appointment of the managing Contractor phase, where the Concessionaire will appoint consultants to carry out conventional pre-contract stage activities such as a feasibility study and preparation for the tender for management

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<sup>76</sup> Greenhalgh (n 72) 138.

<sup>77</sup> Ibid.

<sup>78</sup> Roy Morledge and Adrian Smith, *Building Procurement* (2<sup>nd</sup> edn, Wiley-Blackwell, 2013) 137.

<sup>79</sup> Denise Bower D (ed), *Management of Procurement* (Construction Management Series, Thomas Telford 2003) 104.

Contractors. Upon the successful bidding and selection, the Contractor will enter a direct contract with the Concessionaire.<sup>80</sup>

The second phase is the pre-construction period, of which during this period the Contractor will have been appointed already. It will then assist the Concessionaire's design team with various preliminary activities such as the preparation of project programmes and documents. It is at this stage that the managing Contractor agrees with the design team on the buildability of the design, the construction method and the tender documents for sub-Contractors.<sup>81</sup> The third phase is the construction phase where the managing Contractor sets out, manages, organises and supervises the implementation and completion of the project using the services of the works sub-Contractors.<sup>82</sup>

### **3.3.2. Construction Management**

The Concessionaire does not allocate risk and responsibility to a single main Contractor. Instead, it employs the design team and a construction manager is engaged as a fee-earning professional to manage, programme and co-ordinate the design and construction activities. Additionally, the construction manager facilitates collaboration to improve the buildability of the design.<sup>83</sup> Under this method all physical work contracts are directly entered into between the Concessionaire and individual Contractors. The main Contractor is a contract coordinator and not contractually liable to the individual Contractors as is under management contracting. The construction manager is therefore reimbursed through a lump

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<sup>80</sup> Greenhalgh (n 72) 140.

<sup>81</sup> Greenhalgh (n 72) 141.

<sup>82</sup> Ibid 143.

<sup>83</sup> Morledge (n 78) 135.

sum or percentage fee for management services.<sup>84</sup> The percentage fee is often calculated as a surcharge to the cost of the individual Contractors.<sup>85</sup>

This method is often used for very large and complex projects meaning that the construction manager is appointed early on and on equal footing with the design team.<sup>86</sup> There are five phases which the parties must complete, with the first being the concept phase. Under this phase the designer and construction manager are appointed of which they will prepare an initial project brief, sketch designs and a feasibility study, jointly.<sup>87</sup> The second phase is the detailed feasibility phase, where designer develops the sketch designs and, together with the Concessionaire and construction manager, enlarges and firms up the project brief, the cost plan and how the project will be managed and controlled to determine finally whether or not the project is still viable.<sup>88</sup> Under the scheme design phase the construction manager will primarily be involved in the preparation of the project cost plan and with forecasting the client's cash-flow requirements. They will also be defining the works packages, preparing tender documents, selecting potential works Contractors, establishing the project programme, compiling construction method statements and health and safety documents and finalising management procedures.<sup>89</sup>

Under the design and completion phase, which is the fourth phase, the construction manager begins to implement the

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<sup>84</sup> Greenhalgh (n 72)149.

<sup>85</sup> Klee (n 66) 131.

<sup>86</sup> Greenhalgh (n 72) 149.

<sup>87</sup> Ibid 151.

<sup>88</sup> Ibid 153.

<sup>89</sup> Greenhalgh (n 72) 154

tendering procedures by obtaining, reviewing, and evaluating bids from individual Contractors and, together with the designer, making recommendations to the Concessionaire for acceptance of tenders. During the construction period, the main tasks of the construction manager are controlling the cost of the project against the agreed budget, estimating the cost of design and construction proposals, using value engineering techniques to review design proposals, monitoring tender costs and adjusting the content of future works packages to ensure adherence to the approved estimate of the cost of the work.<sup>90</sup> The final phase is the completion phase where the construction manager is responsible for the ensuring the completion and handover of the individual works completed by the individual Contractors.<sup>91</sup>

#### 4. COLLABORATIVE CONTRACTS

Partnering and alliancing methods are relatively new methods which emphasise on collaboration between project stakeholders.

##### 4.1. Partnering

This method is born out of the total quality management concept employed in the manufacturing and services sector. The concept focuses on process improvement, customer and supplier involvement, teamwork, and training and education to achieve customer satisfaction, cost-effectiveness and defect-free work.<sup>92</sup> No single agreed definition of partnering exists however, it can be defined as a long term commitment between two or more organisations to achieve specific business

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<sup>90</sup> Ibid.

<sup>91</sup> Ibid 155.

<sup>92</sup> Bower (n 79) 97.



objectives by maximizing the effectiveness of each of the participants. Partnering can be identified with the presence of four elements which are (i) mutually agreed upon objectives and goals; (ii) inter- organisational trust; (iii) mechanism for problem resolution; and (iv) continuous improvement related to benchmarking process.<sup>93</sup>

When procuring infrastructure through partnering, the contract will likely be awarded based on the bid quality and not the commercial implications only. This is often done through a two-stage process which begins with the submission of expressions of interest from a select few Contractors, designers, consultants, and other stakeholders identified by the Concessionaire, which must show their suitability to the project. From the parties that submit expressions of interest a shortlist is then made with those parties later interviewed by a panel selected by the Concessionaire. These interviews are often referred to as clarification meetings. The panel will then score each interviewee and award the contract to the highest scoring interviewee.<sup>94</sup> The process of partnering then commences during the pre-design phase where all stakeholders including the Contractor, design team, consultants and Concessionaire meet in sessions to agree on and understand the objectives, form, and operation of the partnering arrangement.<sup>95</sup>

The partnering agreement signed by all parties selected for the project overarches all other contracts,<sup>96</sup> and will improve project quality by replacing the potential adversarial

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<sup>93</sup> Greenhalgh (n72) 191.

<sup>94</sup> Jason Challender, Peter Farrell and Peter McDermott, *Building Collaborative Trust in Construction Procurement Strategies*, (John Wiley & Sons, 2019) 78.

<sup>95</sup> Bower (n79) 101.

<sup>96</sup> Greenhalgh (n72) 202.

atmosphere of a traditional Concessionaire–Contractor–consultant relationship with an atmosphere that will foster a team approach to achieve a set of common goals.<sup>97</sup> It is important to note however, that the partnering agreement does not automatically create a legal partnership under common law but merely creates a binding collaborative arrangement.<sup>98</sup>

#### 4.2. Alliancing

Although similar to partnering, alliancing can be defined as a long-term arrangement which offers opportunities for benefits to be gained by coordinated action and cost-sharing over several projects or an on-going programme. It consists of a collaborative and integrated team brought together from across the supply chain that shares a set of common goals aligned with the project goals and work under common incentives.<sup>99</sup> Greenhalgh et al, add that the project team contractually agrees to share project risk and reward, measured against the performance indicators.<sup>100</sup>

According to Mosey, there is not set procurement process for alliancing, however it can be procured through a competitive one stage or two stage tendering process similar to partnering. In some instances, through direct negotiation between the parties.<sup>101</sup> The Concessionaire and the Contractors will then work as a single integrated team to deliver a specific project under a contractual framework where their interests are aligned with actual project objectives.<sup>102</sup> Three forms of alliancing can be borne from this contractual framework with the first being a

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<sup>97</sup> Bower (n79) 103.

<sup>98</sup> Ibid 202.

<sup>99</sup> Mosey (n58)26.

<sup>100</sup> Greenhalgh (n72) 203.

<sup>101</sup> Mosey (n58) 104-106.

<sup>102</sup> Greenhalgh (n72) 203.

project alliance contract where a team is brought together to deliver a single project. Secondly, a framework alliance contract where a long-term relationship is linked to the award of contracts for several projects, so that a team can use lessons learned on one project to improve the delivery of other projects. Lastly, a term alliance contract where a long-term relationship is linked to orders placed for agreed tasks so that a team can use lessons learned on earlier tasks to improve the delivery of later tasks.<sup>103</sup>

## 5. TCE AND CONSTRUCTION CONTRACTS

This section examines the above construction contract classes against TCE principles by focusing on the factors that affect transaction costs in construction projects, as provided by Li et al.<sup>104</sup>

### 5.1. Predictability of the Concessionaire's Behaviour

When applied to construction projects TCE principles reveal that the predictability of the Concessionaire/owner's behaviour reduces transaction costs by reducing uncertainty and increasing the efficiency of project management. This is achieved by the Concessionaire endeavouring for cordial relationships with all project participants, timeously paying Contractors, and ensuring designs are as complete as possible. The preceding discussions show that separated and co-opted construction contracts are unlikely to create a cordial relationship between the Concessionaire and project participants. This is may be attributed to the arm's length relationship between the Concessionaire and Contractor. A professional contract administrator who is often referred to as

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<sup>103</sup> Mosey (n58) 27.

<sup>104</sup> Li (n13)7.

the Engineer, is appointed to be an intermediary between the Concessionaire and Contractor.<sup>105</sup> The role of the engineer is to act as an independent representative of the Concessionaire. Meaning that the Employer will not interact with project participants. Take for example clause 3.5 of the FIDIC Red Book reads that: The Engineer may issue to the Contractor (at any time) instructions which may be necessary for the execution of the Works, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer...<sup>106</sup> Thus the Concessionaire cannot have a direct and cordial relationship with the Contractor. The engineer interacts with the Contractor frequently concerning the works which may not be redeployed, and the outcome of such interactions may lead to a disputed outcome or otherwise.<sup>107</sup> Thus the Concessionaire has a limited opportunity to guard against the Contractor's opportunistic behaviour. Consequently, there is a greater chance of transaction costs rising. Nonetheless, and subject to their contracts a Concessionaire may have a direct and cordial relationship when engaging other parties such as the architect, quantity surveyor and structural engineer. Overall project transaction costs may be mitigated under these contracts by creating a direct relationship between these parties.

In the other three contract classes the Concessionaire can create a direct and cordial relationship with the Contractor which may lead to a reduction in transaction costs. However, there are gaps in how each contract class guards against opportunism. Firstly, integrated construction contracts provide the Contractor with wide powers. Turnkey contracts are the most

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<sup>105</sup> Klee (n66) 105.

<sup>106</sup> FIDIC Conditions of Contract for Construction For Building And Engineering Works Designed By The Employer (2017)

<sup>107</sup> Ibid clause 20.

used form of construction contract in the major construction projects.<sup>108</sup> These contracts can be problematic as the Concessionaire has little to no say over design matters and construction, the Contractor simply delivers the infrastructure asset as though it was a motor vehicle. Clear and simple rights such as these lower transaction costs as shown in figure 1 above. However, given the expense of an infrastructure project and difficulties in redeploying the infrastructure asset, this type of contract increases uncertainty. The Concessionaire under this type of contract must therefore be willing to engage the Contractor more frequently to minimise uncertainty.

Management oriented contracts can be problematic for the Concessionaire because there are many Contractors involved. Creating cordial relationships with many parties increases the frequency of transactions in the project which increases the chances of opportunism by the parties. Nonetheless, the chances of asset redeployment are increased as the amount of works is decreased by dividing them amongst many Contractors. Where Management Fee Contracting is adopted as a contract design, it is difficult for cordial relationship to exist between the Concessionaire and the sub-Contractors who carry out the works. This increases uncertainty and inefficiency thereby increasing transaction costs. Collaborative contracts on the other hand are centred on creating cordiality between the Concessionaire and all other parties. While this may support the notion that they would automatically reduce transaction costs per Li et al's findings, a Concessionaire needs to pay attention to the character of the parties it engages.

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<sup>108</sup> John Dewar (ed), *International Project Finance: Law and Practice*, (OUP, 2011), 118.

Concerning timeous payment of the Contractor, Separated and Co-opted contracts require payment to be paid either monthly<sup>109</sup> or based on works completed.<sup>110</sup> To guard against opportunism contracts often require a certification process to be completed before the Concessionaire effects payment to the Contractor.<sup>111</sup> For integrated construction contracts engaging the Contractor in the design stage will likely decrease the final contract price compared to other contract classes.<sup>112</sup> More so, payments are usually made in two batches, an advance payment and payment on completion<sup>113</sup> there by decreasing the frequency of the transaction of which money can be easily redeployed if delivery is not carried out to standard. A fixed price makes the Concessionaire and Contractor both certain on the value of the works to be done thereby collectively decreasing transaction costs. Transaction costs in management-oriented contracts depend on the nature of the contract selected. Management Fee Contracting can increase transaction costs because the contract manager acts as an intermediary between the Concessionaire and the manager's sub-Contractor. Whereas if Construction Management is selected payments are made directly to sub-Contractors thereby ensuring payments are done on time at lower transaction costs. Subject to the terms of each contract the frequency of payments may increase transaction costs.

Parties under collaborative contracts are paid by the Concessionaire on either lump-sum or target cost basis.<sup>114</sup>

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<sup>109</sup> Thomas J. Kelleher, Jr, John M. Mastin, Jr, and Ronald G. Robey (eds), Smith, Currie & Hancock's Common Sense Construction Law: A Practical Guide for The Construction Professional (Wiley, 2015) 29.

<sup>110</sup> Hughes (n4) 31.

<sup>111</sup> FIDIC (n106) Clause 14.

<sup>112</sup> Klee (n66) 106.

<sup>113</sup> FIDIC Conditions of Contract for EPC/Turnkey Projects (2017).

<sup>114</sup> Hughes (n4) 90.

However, since collaborative contracts require parties to work together for the benefit of all, parties can agree for payments to be made when there are enough funds to make specific payments. Collaborative partners can be certain that payment will be paid upon the occurrence of a particular event as each party is working for the benefit of all. More so, parties can mutually agree on altering the frequency, asset specificity and uncertainty of payment provisions at any time. Shah found out that a failure by Concessionaires to pay Contractors on time was a popular cause for an increase in transaction costs in developing countries and that in Ghana it was the number one cause.<sup>115</sup> In traditional contracts once a payment certificate has been issued, the payment becomes due and payable to the Contractor and interest will be charged if there is a delay in payment. Collaborative contracts would reduce transaction costs in developing countries such as Ghana since parties agree to share in profits from the infrastructure asset. Since the terms of the contract require parties to work towards a collective goal, payment terms in collaborative contracts are more likely to be friendly unlike in traditional contracts. Interest rates are likely to be very low and payments only become payable once funds are available to the Concessionaire. As such, were the project is financed using the project financing method, contraction payments may be deferred to when the project becomes operational and generates revenue.

All designs under separated and co-opted construction contracts are completed before the signing of the construction contract meaning that the Contractor is at the mercy of the Concessionaire. Studies by Chan and Kumaraswamy in Hong Kong, Saudi Arabia and Nigeria found out that Concessionaires tended to increase transaction costs by making

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<sup>115</sup> Shah (n51) 9

several ex-post design variations.<sup>116</sup> Nevertheless, Contractors can be protected. For example, the FIDIC Red Book protects the Contractor from opportunism by the Concessionaire as it mandates works to be completed according to the designs provided by the Concessionaire.<sup>117</sup> Where variations are made the Contractor may be entitled to an increase in contract price or completion time.<sup>118</sup> The early involvement of Contractors in the project design process under integrated, management-oriented and collaborative contracts significantly reduces transaction costs. This is because Contractors are involved in the design process meaning that they get to understand the mind of the Concessionaire and can make adequate provision for likely changes based on the Concessionaire's behaviour during design proceedings. If the Contractor plays a larger role in the designing of the infrastructure asset and gains the Concessionaire's trust, there is a greater chance it would be able to convince the Concessionaire to either abandon variations or opt for cheaper variations. Collaborative contracts create the best environment to achieve such influence on the Concessionaire ex-post since the relationship between requires them to work together to their collective interests.

## **5.2. Predictability of Contractor's Behaviour**

Factors relating to the predictability of the Contractor's behaviour are mostly addressed during the procurement process and not under contract. These factors are: (i) Contractor avoiding bidding irregularities; (ii) bidding for works the Contractor is qualified to carry out; (iii) maintain a good relationship with subContractors; and (iv) be experienced

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<sup>116</sup> Daniel WM Chan and Mohan M Kumaraswamy, 'A comparative study of causes of time overruns in Hong Kong construction projects' (1997) 15, *International Journal of Project Management* 55.

<sup>117</sup> FIDIC (n 106) Clause 9.

<sup>118</sup> *Ibid* Clause 13.



in similar works.<sup>119</sup> Nonetheless Abdel-Galil et al found out that Contractor action contributed the most to an increase in transaction costs in Egyptian construction projects.<sup>120</sup> The highest ranked influential Contractor behaviour was Contractor financial and cash flow difficulties, which caused delays and cost overruns. While Concessionaires in Nigeria frequented design variations, Contractors in Egypt frequented claims which led to conflict and delays.<sup>121</sup> Material substitutions by the Contractor also led to increased transaction costs in Egypt. This appears to have been closely related to the fact that a Contractor's experience on similar projects influenced transaction costs. The more experienced the Contractor the less likely they contributed to an increase in transaction costs.<sup>122</sup> There is a minute chance that an experienced Contractor will substitute good materials for unsuitable materials which cost the Concessionaire. Traditional contracts have anti-opportunism mechanism such as payment bonds, securities, and insurances but collaborative contracts allow the Concessionaire to have a more intimate understanding of the Contractor. For example, in an alliancing contract if the Contractor faces cash flow issues and fails to pay suppliers the cost for supplies can be shared with the Concessionaire.

### **5.3. Efficient Project Management**

Project management will reduce transaction costs if it involves speedy decision making processes, efficient communication among parties, effective leadership by project managers, fair conflict resolution methods, and high technical competency. According to Ikuabe and Okae leadership and quality decision

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<sup>119</sup> Li (n14).

<sup>120</sup> Abdel-Galil (50) 1624.

<sup>121</sup> Ibid.

<sup>122</sup> Ibid.

making contributed the most to transaction cost increase in Lagos Nigeria.<sup>123</sup> The above discussions show that decision making, communication between the parties, project management and dispute resolution in separated and co-opted construction contracts involve the Engineer. The Concessionaire cannot give effect to a decision directly it must be done through the Engineer. For example, payment under the FIDIC Red Book is only effected after the Engineer has taken time to consider the Contractor's application for interim payment and provided the Concessionaire with an approval to pay.<sup>124</sup> While the Engineer is welcome as a contract administrator the position increases transaction costs as decisions take long to take as everything goes through it and not directly to the parties. Furthermore, communication between the parties is not efficient as messages need to be conveyed through the Engineer. It is particularly difficult for things to be done swiftly and efficiently because the Engineer is an independent agent who needs to consult with a principal first before making a decision.

In sharp contrast to separated and co-opted contracts, decision making and project management in integrated construction contracts mainly lies with Contractor, especially in turnkey contracts.<sup>125</sup> This is primarily due to the responsibility of design, construction and commission of the infrastructure asset lying with the Contractor. This allows for swift decisions to be made as the Contractor does not need to consult any party as long as it does not deviate from the specifications set in the PPP and construction contracts. Consequently, transaction costs are lowered. The same applies to management-oriented contracts

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<sup>123</sup> Ikuabe (n53).

<sup>124</sup> FIDIC (n 106) Clause 13

<sup>125</sup> FIDIC (n 113)

since the Engineer is missing in this contract as well. Collaborative contracts can however be problematic in this area. While the contracts are drafted to optimise party interests the number of parties involved will likely cause delays in decision making as all parties are involved. Nonetheless, the nature of collaborative contracts requires parties to create integrated and effective procedures which optimise the entire construction project. This means that whatever decision making process available ought to be the most cost effective process.

Parties in any class of contracts can select alternative dispute resolution methods (ADR) which are cheaper than litigation. ADR procedures such as mediation, conciliation, expert determination, adjudication and arbitration are prominently used in construction disputes.<sup>126</sup> Dispute Avoidance/Adjudication Boards commonly used in the FIDIC suite lower transaction cost by keeping dispute resolution internal.<sup>127</sup>

#### **5.4. Uncertainty of Transaction Environment**

Reducing uncertainty in the transaction environment requires the Concessionaire to be ready to deal with project complexities; encourage competitive bidding; secure Contractor's early involvement; provide designs that are complete as far as possible; integrate design and construction works; and ensure a fair allocation of risks among parties.

Generally, once a PPP gets to construction procurement the Concessionaire would be ready to deal with the complexities of

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<sup>126</sup> Takunda Gumbu, 'Multi-Tier Dispute Resolution Clauses In Construction Contracts' (2022) *Indian Journal Of Projects, Infrastructure and energy Law*, <<https://ijpiel.com/index.php/2022/12/28/multi-tiered-dispute-resolution-clauses-in-construction-contracts/>> accessed 20 February 2023.

<sup>127</sup> Ibid.

the project. Each of the contract classes requires the Concessionaire to be fully ready to implement the project. Most importantly each contract can be procured through competitive process. Albeit Concessionaires can opt for non-competitive procurement processes like direct negotiation. All classes of contract except separated and co-opted contracts secure the Contractors early involvement in the design. This certainly lowers transaction cost by bringing a great level of certainty on what exactly is required of the Contractor. It would appear that collaborative contracts go further in lowering transaction costs because the Contractor in a collaborative contract advises in the design under the belief that it will benefit from them too. There is however a chance that the Contractor will advise costly designs to increase its revenue. Notably, this would be contrary to the spirit of collaborative contracting. Risk allocation is generally done through standard form contracts such as the FIDIC and NEC suites, which are fair and efficient.<sup>128</sup> Risk allocation in all classes follows three primary principles which are: (i) allocate risks to the party best able to manage them; (ii) allocate the risk in alignment with project goals; and (iii) share risk when appropriate to accomplish the project goals.<sup>129</sup>

## 6. CONCLUSION

Collaboration among project participants can lower transaction costs in infrastructure PPPs. Transaction costs depend on how well the construction contract protects against opportunistic behaviour in incomplete contracts. Empirical studies in Australia, Egypt, Ghana, Malaysia, Nigeria, and Saudi Arabia show that there are four factors that influence transaction costs:

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<sup>128</sup> Klee (n 66) 35.

<sup>129</sup> Klee (n 66) 104.

- i. Concessionaire predictability,
- ii. Contractor predictability,
- iii. project management efficiency, and
- iv. project environment uncertainty.

The article shows that these factors are more likely to be favourably addressed by construction contracts that foster cooperation among the parties. The article compares different classes of construction contracts based on their level of collaboration and finds that separated and co-opted contracts increase or maintain transaction costs, while management-oriented and integrated contracts reduce them. The article also posits that collaborative contracts such as partnering and alliancing are the most effective in reducing transaction costs and aligning with the spirit of PPPs, which is to partner for the public and private benefit.