

An Anatomy of Corruption Patterns In Building Projects Procurement in Nigeria^{1, 2}

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Abstract

Corruption in the Construction Industry is referred to the misuse of delegated responsibility by morally depraved professionals for their private gain. This research is intended to identify the most prevalent types of corruption in the construction sector with specific reference to the Nigerian building projects procurement through “Delphi Survey and Nominal Group Technique (NGT)”. Based on an extensive literature review, an initial list of ninety-one (91) corruption risk indicators in public construction projects were established. This list was adopted to serve as the basis for the development of corruption risk indicators specifically in the context of building construction projects procurement in Nigeria via two-round Delphi survey with seven (7) industrial experts and academics; two (2) Quantity Surveyors, two (2) Architects and three (3) Engineers. Similarly, (28) different types of corruption prevalent in the context of construction, engineering, and the procurement sectors were captured from a comprehensive literature review which were further refined into five different constructs was also adapted in the NGT in order to identify the most prevalent types of corruption in the context of building projects procurement in Nigeria and as well to employ in developing the conceptual framework. Collusive practices are the most manifested

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corrupt practices with 33% at needs assessment stage (NAS), 56% at project design and documentation (PPD), 70% at tendering and contract award stage (TCA), 70% at contract execution stage (CES) and 100% at defect liability and final account stage (DLFA). Collusive practices have overall chance of 68% occurrence in the procurement of building projects in Nigeria. This is followed by bribery-related corrupt practices with 17% at NAS, 33% at PPD, 10% at TCA, 10% at CES and 0% at DLFA with overall 16% likelihood to ensue in the procurement of building projects in Nigeria which mostly initiate by supply side of corruption. The study recommends that the government should integrate anti-corruption measures at all stages of building projects procurement and any contract award within the industry should follow an upright process as outlined in the public procurement Act 2007 among others.

Keywords: Corruption, Building Projects, Construction Industry, Delphi Survey, Nominal Group Technique

1.0 Introduction

Nigeria was classified as the most corrupt country out of 54 countries in a 1996 survey on corruption conducted by Transparency International (TI) and Goettrigen University, with Pakistan coming in second (Moore, 1997). Nigeria was ranked 81st out of 85 countries in a 1978 study by the Transparency International Corruption Perception Index (CPI) (Lip Set and Lenz, 2000). In 2001 Corruption Perception Index (CPI) placed Nigeria 90th out of 91 nations, occupied second position as the most corrupt nation with Bangladesh coming first. Nigeria was ranked 147th out of 179 nations in the 2007 Transparency International Corruption Perception Index (Arowolo, 2018). This is owed to the supposition that the procurement process is the most vulnerable globally, and also the construction industry responsible for executing infrastructure and other related projects is considered as the second most corrupt industry globally (Krishnan 2010; Kottasova2014).

In most developing countries, existing literature and reports reveal how corruption has plagued the public procurement processes, which are also traceable in public construction projects (Zhang, *et al.*, 2022). Olukoyede (2024), economic and financial crime commission (EFCC) chairman advanced that more than ninety percent (90%) of public corruption cases under investigations in Nigeria are tied to procurement processes and according to Ayodele *et al.* (2010) on bribery and corruption in the Nigerian construction industry, for a particular project the amount ranges from 5% to 15% and sometimes up to 40% of the contract sum is often illegally expended in bribery and other forms of corruption to officials in government offices during contract award, execution and payment processes.

Goel and Nelson (2008) see corruption as the use or abuse of public office for private gains. Oxford Advanced Learner's Dictionary (2000) define it as (a) dishonest or illegal behaviour especially of people in authority (b) the act or effect of making somebody change from moral to immoral standards of behaviour and Lash (2003) explains that corruption is immoral and dishonest or exploitation of power in economic financial and political spheres for personal gains. According to the Independent and Corrupt Practices Commission (ICPC) Act section 2; corruption includes vices like bribery, fraud and other related offences. The ICPC also see corruption as the abuse or misuse of power or position of trust for personal or group benefit (monetary, or otherwise).

Since corruptible tendencies have grown commonplace in all facets of our national economy, the implications of these tendencies in the Nigerian construction industry should cause grave alarm to everyone. In actuality, corruption is systemic since its tendencies show up in all areas of the economy, including the construction sector, where it frequently results in building collapses, project abandonment, loss of life and property among others. Oyewobi *et al.* (2011) opined that, the construction industry is perceived to be more susceptible to unethical tendencies largely due to its features engendering corruptible tendencies having obvious effect on all the stages of construction right from the planning stage, through the tender stage and finally to the completion stage.

A report issued by the Organization for Economic Co-operation and Development (OECD) (2014) revealed that corruption had been deemed as one of the primary barriers to sustainable socio-economic and political development in developed and emerging economies alike. However, because of the evolution of corruption over the years, different types of corrupt practices have emerged, and more money is being expended in these newly generated forms. The continual research on corruption over the last two decades has revealed varying types of corruption in the studies available TI (2016); Brown and Loosemore (2015); Le *et al.* (2014); Olawale and Sun (2013); Bowen *et al.* (2012), but to the authors' knowledge there is no literature to date that presents the types of corruption prevalent in the context of building projects procurement in Nigeria. Consequently, researchers emphasized that only by understanding the level of corruption and types of corruption in specific context can effective anti-corruption strategies be formulated and then implemented (Shan *et al.*, 2020; Shan *et al.*, 2017; Sampford *et al.*, 2016).

Therefore, this study aims to fill this academic gap by determining the various types of corruption present and as well to identify the most prevalent in the procurement of building projects in Nigeria. Grasping an in-depth understanding of the various types of corruption is very crucial to the development of anti-corruption measures (Shan *et al.* 2016; Le *et al.* 2014; Bowen *et al.* 2012). This can serve vital information to industry practitioners, policymakers, and anticorruption

institutions in various ways, such as the formulation of anti-corruption measures and easy detection of corrupt practices thereby leading to the reduction of these practices in the short term and hopefully eradicating their existence in the long-term run.

2.0 Methodology

2.1 Identification of Corruption Risk Indicators (*Delphi Survey*)

At the inception, an initial list of “corruption risk indicators” as captured by Xu *et al.*, (2022); Owusu, (2020); Sharma *et al.*, (2019); Shan, (2015); Ameyaw, (2014); Shabbir (2014) also found as “corruption vulnerabilities” by Le *et al.*, (2014), then label “corruption irregularities” by Tabish and Jha, (2011), and “corruption red flags” by Ferwerda, (2016); TI, (2006) in construction projects were identified from a comprehensive literature search and review. Based on thorough examination and comparison, an initial list of ninety-one (91) corruption risk indicators were established. This list of corruption risk indicators in public construction projects was adopted and explores to serve as the basis for the development of corruption risk indicators specifically in the context of building projects in Nigeria. Furthermore, the identified corruption risk indicators were refined to the Nigerian settings by a two-round Delphi survey with seven (7) industrial experts and academics. The Delphi method is a technique used to make a decision based on a consensus reached amongst group of experts on a complex problem, which has been widely adopted in Construction Industry research (e.g. Shan *et al.* 2014; Ameyaw *et al.* 2016; Hallowell and Gambatese 2009). The success of a Delphi survey depends primarily on the careful selection of panel members (Shan *et al.* 2014; Chan *et al.* 2010). Therefore, the following criteria were employed to identify eligible participants for this Delphi survey; first, having at least ten years of procurement experience in the Nigerian construction sector and secondly, sound knowledge related to procurement of building projects in the Nigerian construction industry. A purposive approach was adopted so as to select this group of experts who possessed and satisfy the aforementioned criteria as recommended by (Chan *et al.*, 2010).

In the first-round Delphi survey, experts were requested to assess the applicability of each item to the procurement of building construction projects in Nigeria, using five-point Likert scale where [(1) very inapplicable, (2) inapplicable, (3) neutral, (4) applicable, and (5) very applicable] as used by Shan *et al.* (2017). And the likely procurement stage(s) it may occur where [(1) need assessment stage, (2) project design & documentation stage, (3) tendering & award stage, (4) contract execution stage, and (5) defect liability & final account stage]. The five (5) procurement stages were adapted from Maduekeh *et al.* (2022), Smith *et al.* (2021), Shabbir (2014) and TI (2006)

works. Similarly, based on their experience, participants were encouraged to add any new corruption risk indicators that they had in mind but were not included in the Delphi survey. The mean score of distinct corruption risk indicators was calculated and then fed back to the Delphi panel. In the second-round survey, experts were asked to re-assess their assessment in the light of their preceding round findings obtained. The mean score of each item was calculated, and a threshold of 2.5 points was established as a cut off criterion as recommended by Hsueh *et al.* (2009).

2.2 Nominal Group Technique (NGT) To Determine corruption Pattern

Similarly, twenty-eight (28) different types of corruption prevalent in the context of construction industry were captured from a comprehensive literature review. It was realized that some of the types were identical based on the definitions and classifications done in other studies, hence, Owusu, *et al.* (2020) categorized them into five different constructs; bribery, collusive, discriminatory, extortionary and fraudulent corrupt practices. Subsequently, this list was adopted in the NGT in order to agree on the likely type of corruption that each corruption risk indicator advance to and as well identify the most prevalent type of corruption in the context of building projects in Nigeria. Nominal Group Technique (NGT) is a highly structured process developed by Delbecq and Van de Ven to facilitate both the elicitation of individual ideas pertaining to a problem as well as a group consensus (Delbecq, & Van de Ven, 1971). It also seeks to unravel the extent of the consensus within a group in a manner that aims to be comparably more equitable and time-efficient than other methods (Hutchings, *et al.* 2013; Harvey & Holmes, 2012).

NGT has been used extensively in health, education and organizational research but applications in other fields have been becoming more common in recent years as the method becomes more well-known. These include fields such as Built Environment; Darko *et al.*, (2019); Zou *et al.*, (2018); Ho *et al.* (2018), Environmental Management; Hugé, & Mukherjee, (2018); Maynard & Jacobson, (2017), Information Systems Design and Development (Spencer, 2010). It is considered to be most useful when an identified problem requires a group's ideas and evaluation (Zou *et al.*, 2018). The NGT entails highly structured face-to-face group interaction in small group and provides a prompt result for researchers. It empowers participants by providing an opportunity to have their voices heard and opinions considered by other members (Tully *et al.*, 2020). The classic NGT involves four key stages/sessions: silent idea generation, round robin, clarification and voting (ranking or rating) though can be modified to suit researchers' purpose (McMillan *et al.*, 2016).

3.0 Results and Discussion

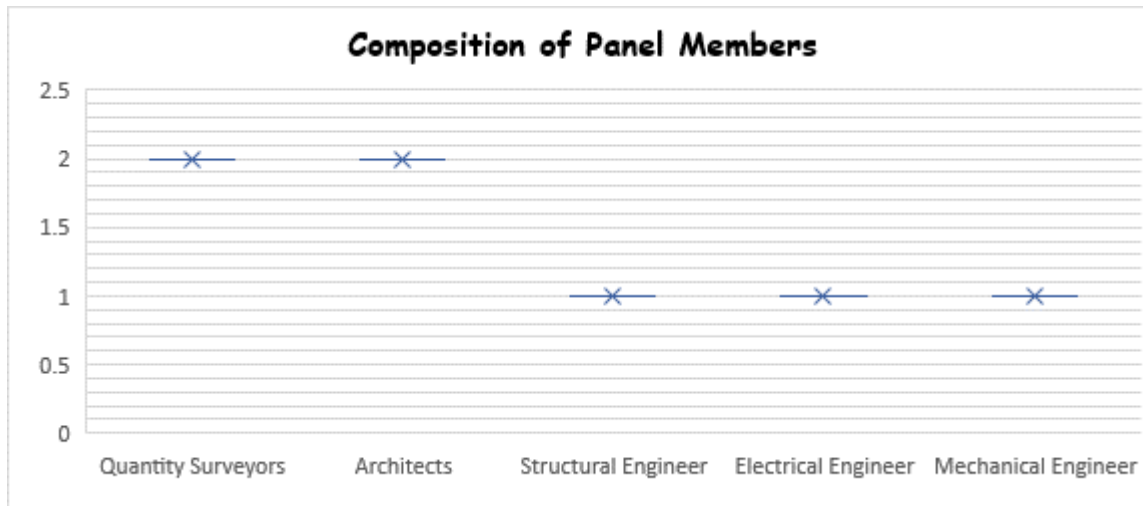


Figure1: Professional background of Delphi Panel

The figure 1 present the distribution of the panel members in the Delphi survey based on their professional background. Engineers formed the large group of the panel members with three (3) members; one (1) Structural Engineer, one (1) Electrical Engineer and one Mechanical (1) Engineer representing (42.86%) out of the total while Quantity surveyors and Architects with two (2) members representing (28.57%) each from various organizations. As opined by some researchers Ke & Wang (2011), Manoliadis et al. (2006), Chan *et al.* (2001), the success of Delphi method depends primarily on the careful selection of the panel members as well their heterogeneity in composition.

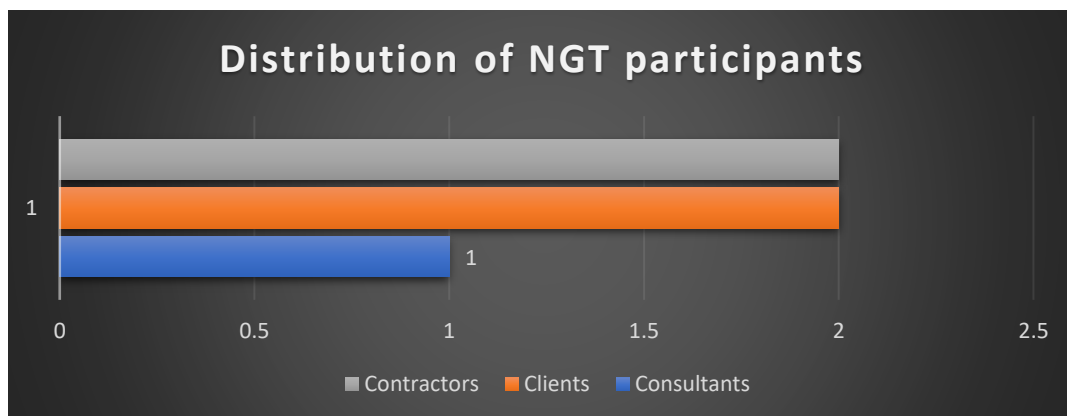


Figure 2: Distribution of NGT participants

The seven (7) panel members participated in the Delphi survey were targeted for nominal group technique. However, only five (5) professionals participated in the NGT representing a favourable response of (71%). Figure 2 presents the distribution of the NGT participants based on nature of their work in the construction industry. Consultants were the least in the participants with one (1) representative whereas both Clients and Contractors have two (2) representatives (40%) each from different organizations.

3.1 Application of Delphi Survey

According to the feedbacks from the second-round survey out of ninety-one (91) corruption risk indicators established. The mean scores of forty nine (49) risk indicators were below the threshold of 2.5 points and thus were excluded from the list revealing that the Delphi panel believes they are not relevant to the Nigerian context, left with only forty two (42) items and the additional two (2) corruption risk indicators that were not initially captured from the literature but supplemented by the participants according to their own experience, thereby suggesting their applicability in the Nigerian construction sector (Deviation from standard BPP procurement documents and a narrow variance between the consultants estimate and the bid amounts received). Therefore, a total of forty four (44) corruption risk indicators were finalized through Delphi survey. This may be due to the peculiarities of the Nigeria in terms of socio-economic and political stability as well the procurement rules and regulations enshrined in the Public Procurement Acts of 2017 stipulated by Bureau for Public Procurement (BPP). Table 1 shows the results of the two-round Delphi survey.

Table 1: Delphi Survey Results

Description	Acronyms	Corruption Vulnerabilities	Mean Score
Needs Assessment Stage	NAS 1	The project demand is induced to favour a particular company but is of little or no value to the end users	3.95
	NAS 2	Non transparent procedures for decision-making which cannot be monitored and controlled by the stakeholders	2.71
	NAS 3	Inadequate access of the stakeholders to the project decision processes information	2.60
	NAS 4	Absence of opportunity for stakeholders' discussion of processes and decision making	2.55
	NAS 5	Unclear and intentionally vague criteria for assessment of the project value	3.10
	NAS 6	The project needs are overestimated to favour a particular contractor	3.88

Projects Design and Documentation Stage	PDD 1	Deviation from standard BPP procurement documents	3.34
	PDD 2	Technical specifications are weak and do not allow for evaluation of the contractors' quality of performance	2.74
	PDD 3	Bid specifications are narrow or appear tailored	3.10
	PDD 4	Realistic technically sound estimates are not prepared	2.77
	PDD 5	Some components are repeated in more than one item	2.76
	PDD 6	The nomenclature of the items, drawings and specifications do not conform to each other	2.59
	PDD 7	Inadequate access of the stakeholders to the project design processes	3.11
	PDD 8	Subcontracting are imposed in the documentation but not necessarily needed	2.87
	PDD 9	Frequent changes in key staff of PMU/PIU	3.52
Tendering & Contract Award Stage	TCA 1	Unduly restrictive criteria stipulated, creating entry barrier for potential bidders	3.77
	TCA 2	Advance release of bid documents or relevant information to one bidder	4.10
	TCA 3	The conditions/specifications are relaxed in favour of contractor to whom the work is being awarded	3.99
	TCA 4	The offer of lowest bidder is ignored on flimsy grounds	4.12
	TCA 5	Adequate & wide publicity is not given to tender	4.22
	TCA 6	Failure to answer requests for clarification in good time	3.21
	TCA 7	Qualified bidders drop out voluntarily as the bidding process progresses such that only one firm is left in the post-qualification stage	4.11
	TCA 8	High number of complaints about bid process and evaluation received from losing bidders, especially when lower bids are declared non-responsive	3.85
	TCA 9	Evaluation criteria are amended after receipt of bids	3.33
	TCA 10	A narrow variance between the consultants estimates and the bid amounts received	4.32
Contract Execution Stage	CES 1	Contract specifications or scope of work altered after commencement	4.12
	CES 2	Rigorous system for handling contract variations and evaluating claims is not defined in the contract	3.25
	CES 3	Technical specifications of materials provided do not correspond to the specifications agreed upon in the contract	3.81

	CES 4	Site inspection indicates that project completion is less than that certified or that a completed project is not operational	3.64
	CES 5	Replacement of nominated consultants' staff by less qualified and inexperienced personnel	3.87
	CES 6	High frequency of Change Orders to the contract is witnessed	2.98
	CES 7	Failure to honour interim valuation and invoices on a timely basis	3.34
	CES 8	Excessive number of signatures required to approve progress interim valuation payments	2.66
	CES 9	Cost overruns are inadequately explained or justified	3.66
	CES 10	Client dissatisfaction with completed facilities	2.77
Defect Liability & Final Account Stage	DLFA 1	The detailed drawings, 'as-built' drawings, back-up data sheets contain errors or repetitive entries	2.61
	DLFA 2	Lack of encouragement for whistle blowers	2.53
	DLFA 3	Lack of whistle blower protection system and procedure	2.77
	DLFA 4	Lack of ample audit system, much delayed audit or inconsequential audit	2.58
	DLFA 5	Inadequate or delayed publication of the audit report	2.67
	DLFA 6	The detailed project report (DPR) is not prepared as per actual site requirement	3.12
	DLFA 7	Duplicate payment for the same activity under two different items is released	2.96
	DLFA 8	Contract is not in conformity with bid documents (e.g. specification and quantities)	3.21

3.2 Steps in Nominal Group Technique (NGT)

The steps in executing the nominal group technique were adopted from the works of Darko *et al.*, (2019); Ho *et al.*, (2018); McMillan *et al.*, (2016). At the **silent idea generation session** which last for 16 minutes, a single nominal question, “kindly rate your agreement on the likely type of corruption(s) each corruption risk indicator advance to”; where **1**=bribery, **2**=collusive, **3**=discriminatory, **4**=extortionary and **5**=fraudulent corrupt practices” was posed to the participants after providing them with the comprehensive list of the corruption risk indicators and definition of different types of corruption as deduced from the literature. Subsequently, in the **round robin session** participants were asked to present their chosen type of corruption for each corruption risk indicator which last for almost 37 minutes. Table 2 present the results after the aforementioned session.

Table 2: Results after the Round Robin Session

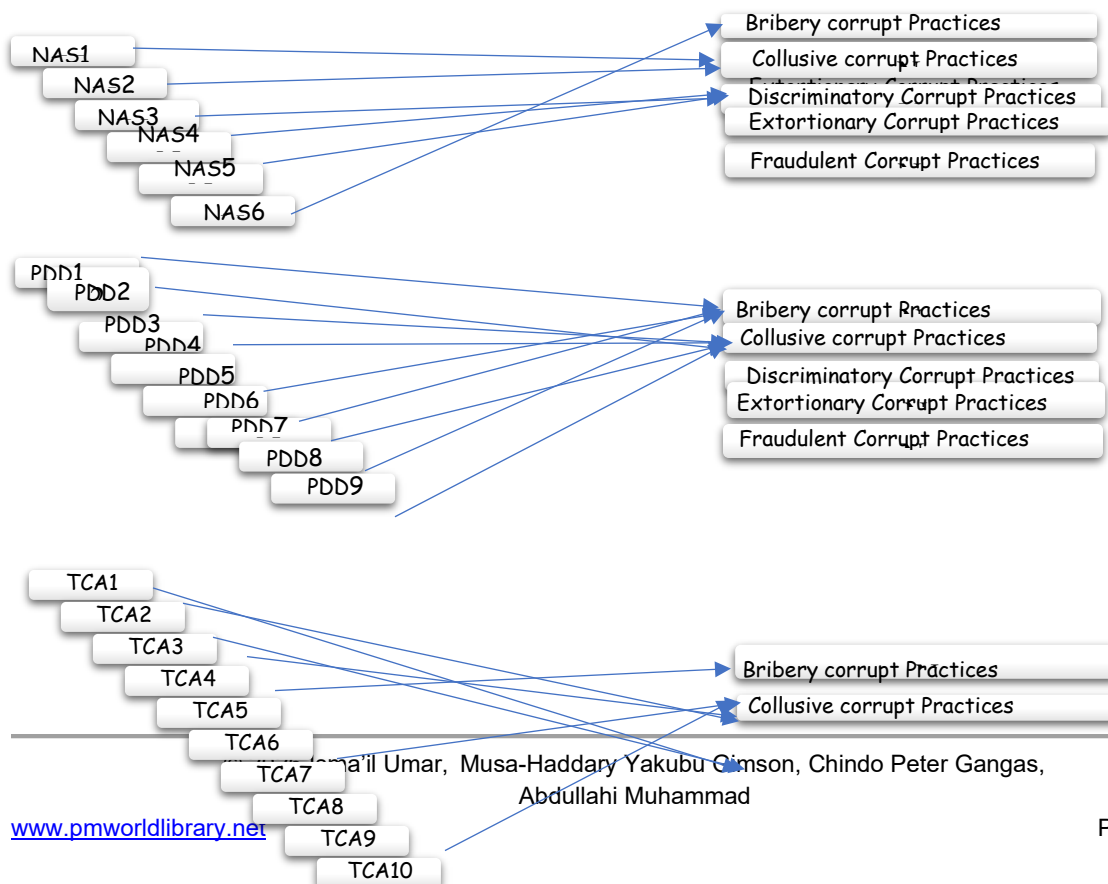
Procurement Stages	Corruption Risk Indicators	<u>PARTICIPANTS</u>				
		P1	P2	P3	P4	P5
Needs Assessment Stage (NAS)						
NAS	NAS 1	2	2	1	1	2
	NAS 2	2	1	2	2	2
	NAS 3	3	3	3	2	2
	NAS 4	1	1	3	3	3
	NAS 5	2	3	3	3	3
	NAS 6	1	2	3	3	3
Project Design & Documentation Stage (PDD)						
PDD	PDD 1	3	2	1	1	1
	PDD 2	2	2	2	2	3
	PDD 3	2	2	2	2	2
	PDD 4	1	2	2	3	2
	PDD 5	1	2	1	1	1
	PDD 6	1	1	2	2	1
	PDD 7	1	2	2	2	2
	PDD 8	1	1	2	3	1
	PDD 9	1	1	2	2	2
Tendering & Contract Award Stage (TCA)						
TCA	TCA 1	2	2	3	3	3
	TCA 2	2	2	2	1	3
	TCA 3	3	3	3	2	3
	TCA 4	2	2	1	2	2
	TCA 5	3	2	1	1	1
	TCA 6	2	2	3	3	3
	TCA 7	3	1	2	2	2

	TCA 8	4	2	2	2	2
	TCA 9	2	2	2	3	3
	TCA 10	1	2	2	2	2
Contract Execution Stage (CES)						
	CES 1	2	2	2	2	3
	CES 2	1	1	2	3	1
	CES 3	1	1	2	2	2
	CES 4	2	2	2	1	1
CES	CES 5	2	2	2	2	3
	CES 6	2	2	2	1	1
	CES 7	4	4	4	3	4
	CES 8	4	4	4	3	2
	CES 9	1	1	2	2	2
	CES 10	2	2	2	3	1
Defect Liability & Final Account Stage (DLFA)						
	DLFA 1	1	1	2	2	2
	DLFA 2	2	3	3	2	2
	DLFA 3	2	2	2	3	3
	DLFA 4	2	1	3	2	2
DLFA	DLFA 5	1	1	2	2	2
	DLFA 6	1	2	2	2	2
	DLFA 7	2	2	2	3	1
	DLFA 8	2	2	2	1	2
	DLFA 9	2	1	2	2	2

Clarification on choice and grouping of ideas was the longest session that keep going for almost 42 minutes, discussion on each chosen type of corruption (bribery, collusive, discriminatory, extortionary and fraudulent corrupt practices) was made thoroughly for the purpose of

clarification. Finally, after clarification session a **voting session** which last for 21 minutes was conducted so as to have consensus on each chosen type of corruption.

NGT ranks collusive and bribery corrupt practices as the topmost recorded types of corruption in the entire procurement stages. Collusive is the most frequently occurring corrupt practices with 33% at NAS, 56% at PPD, 70% at TCA, 70% at CES and 100% at DLFA. Collusive practice is often instigated by both demand and supply sides of corruption where parties involved in procurement made an undisclosed arrangement to commit deceitful behaviour with overall 68% chance of occurrence in the procurement of building projects in Nigeria. This is followed by bribery-related corrupt practices with 17% at NAS, 33% at PPD, 10% at TCA, 10% at CES and 0% at DLFA with overall 16% likelihood to ensue in the procurement of building projects in Nigeria which mostly initiated by supply side of corruption, where this corrupt side involve in promising or offering any benefits to entice someone to behave unethically and this findings concurred with the works of (Owusu et al., 2020; Shan et al., 2015; Li et al., 2013; Tabish & Jha 2012). In line with the analysis, discriminatory corrupt practices occur only 50% at NAS and 20% at TCA with overall chance of happening 16% in the procurement this is where mostly demand side of corruption offer preferential treatment to either an individual or group of persons involve in procurement though they may not necessarily be qualified for it. And finally, extortionary corrupt practices happen for 20% at CES only.



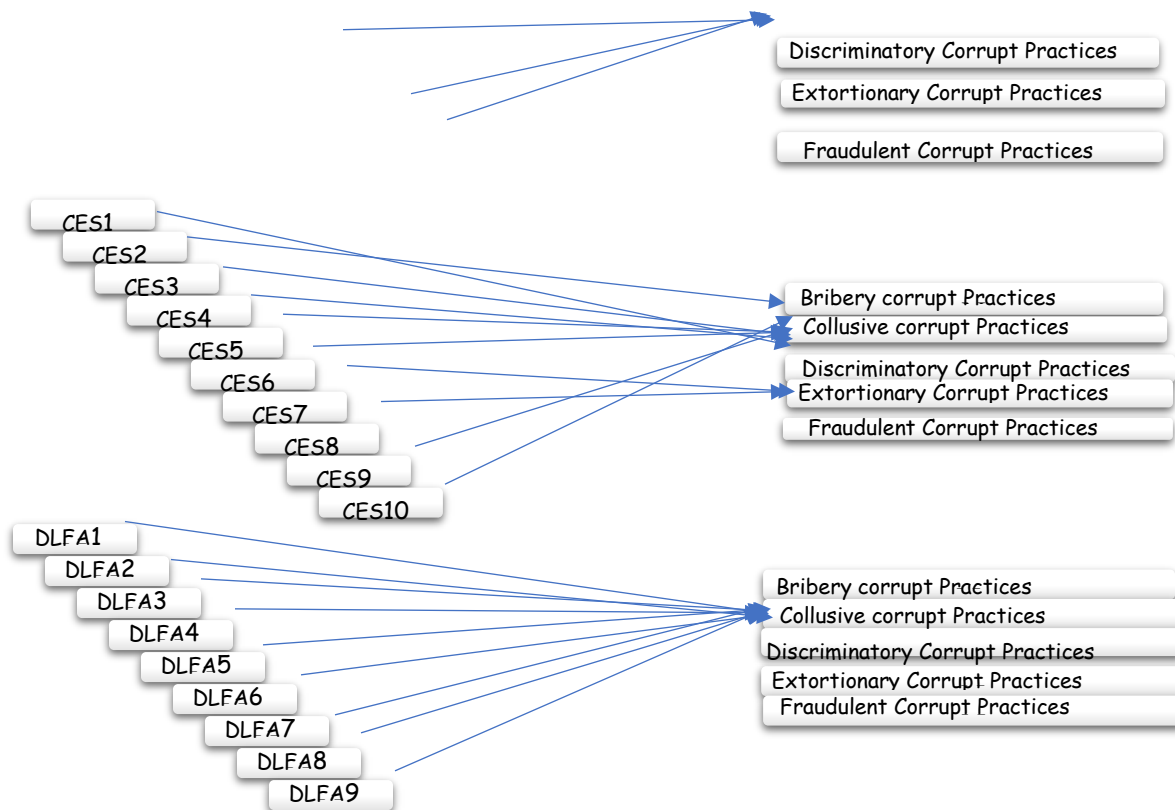


Figure 3: Conceptual Framework from Delphi and NGT Results

4.0 Conclusion

From the findings made, it can be concluded that, the entire procurement stages of building projects were revealed to possessed varying degrees of corruption and also it was discovered that, the most dominant types of corruption across the stages are mostly collusive and bribery corrupt practices in the procurement of building projects. Additionally, contract execution stage (CES) as well tendering and contract award stage (TCA) were revealed to be the most vulnerable stages to corruption in the case of building projects procurement in Nigeria though CES is the most impacted procurement stage. The Study identified 44 corruption risk indicators in the context of Nigerian building projects and the likely procurement stage each may occur and further the likely type of corruption that each corruption risk indicator advances to (bribery, collusive, discriminatory, extortionary and fraudulent corrupt practices).

5.0 Recommendations

- i. This research was only restricted to Federal Government building Projects in Nigeria, it is therefore suggested to carry out similar assessment on civil and heavy engineering projects within the industry and compares the results
- ii. Similarly, since the study covered only Nigerian construction sector, it is recommended to widen the coverage of the research to other industries of the country in order to justify the recent findings.
- iii. This study recommends that, any contract award within the industry should follow an upright process as outlined in the public procurement Act 2007.
- iv. Additionally, government should integrate anti-corruption measures at all stages of public procurement and contracting.

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