ASSESSING THE PREVALENCE OF CORRUPTION FORMS IN DIFFERENT STAGES OF BUILDING CONSTRUCTION PROJECTS

By

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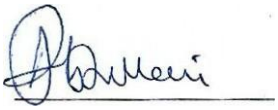
Declaration

1 declare that the work in this dissertation entitled "ASSESSING THE PREVALENCE OF CORRUPTION IN PUBLIC BUILDING CONSTRUCTION PROJECTS" has been performed by me in the Department of Building. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree or diploma at this or any other institution.

Abdullahi Taiwo ABDULRAZAQ  30-08-2021

Name of Student Signature Date

Certification

This dissertation entitled "ASSESSING THE PREVALENCE OF CORRUPTION IN PUBLIC BUILDING CONSTRUCTION PROJECTS" by Abdullahi Taiwo ABDULRAZAQ meets the regulations governing the award of the degree of Master of Science in Construction Management of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

Dr. M. Abubakar	_____	_____
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Dean, School of Postgraduate Studies	Signature	Date

Dedication

This dissertation is dedicated to Almighty Allah for his mercy and protection over me. And also to my parents Alhaji and Alhaja Abdulrazaq, for their encouragement and support in making this programme a reality.

Acknowledgement

My sincere gratitude goes to the Almighty Allah (SWT), my sustainer, for sparing my life and for helping me this far with my academics. My humblest gratitude to the holy Prophet Muhammad (Peace be upon him) whose way of life has been a continuous guidance for me.

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Abstract

The stages of public building projects are overwhelmed by a number of different corruption forms. However, little or no empirical study has been put forward to validate the extent of these corruption forms at the different stages of public building projects. As such, this study determined the prevalence of these corruption forms in five different stages of public building projects. The study adopted a quantitative research approach, with data collected using a structured questionnaire. A purposive sampling technique was used for the survey and data obtained were analysed using descriptive statistics (Mean Score and percentages). The Mann-Whitney U (MWU) test statistic was also applied to check for significant difference in the mean score of the stakeholders group. The study found Favouritism/Patronage/Nepotism, Bribery, Kickbacks and Lobbying, to be the top corruption forms that occur often within the public building projects. Stakeholders' ratings showed that the tendering and bid evaluation stage and the contract award stage were the stages of public building projects that are often associated most with corruption. The study also identified the extent of occurrence of each identified corruption forms at the different stages of public building projects, although, the Mann–Whitney test statistics shows some significant differences in the response of the stakeholder group on some questions on the extent of occurrence of each identified corruption forms at the different stages. Corruption at the tendering and bid evaluation stage was found to have the greatest influence on the overall performance of public building projects. This study concluded that the criticality of theses corruption forms varies at different stages of public building projects and recommends that supervision officials handling these various stages pay special attention to them so as to also minimise the influence of corruption forms at the different stages of public building projects.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Corruption has been a recurring issue causing millions in lost resources in almost every sector of the economy, and the construction industry is not being left out. This is the reason why Le, Shan, Chan and Hu (2014) observed that corruption in the construction industry has attracted wide focus in the past decades, not only from researchers in developed countries like the United States (Sohail & Cavill, 2008; Crist, 2009), the United Kingdom (Amaee, 2011) and Australia (Hartley, 2009), but also from those in developing countries like Pakistan (Choudhry & Iqbal, 2013), India (Tabish & Jha, 2012, 2011a, b), South Africa (Bowen, Edwards & Cattell, 2012) and Nigeria (Ameh & Odusami, 2010; Alutu & Udhawuve, 2009 and Alutu, 2007). This indicates that the construction industry is becoming infamous for corruption (Jong, Henry & Stansbury, 2009).

Considerable assertions indicates that corruption in construction has become a notable worldwide challenge confronting all countries (Le *et al*., 2014). Facts from Transparency International (2002, 2006, 2008, 2011 and 2013) have shown that the construction industry has become the most corrupt circle and the procurement sector is also stigmatized as being the sector most helpless to the frequency of corrupt practices owing to the rapid expansion of the global construction market after entering the 21st century. This is mainly ascribed to the fragmented nature of the construction industry (involving clients, designers, contractors, consultants and suppliers), which inflicts difficulties in tracking payment information (Chan & Owusu, 2017; Kenny, 2009).

However, due to the evolution of corruption over the years, various forms of corrupt acts have emerged (Chan & Owusu, 2017; Bowen *et al*., 2012), and although these may not be unfamiliar in other sectors, more money is being exhausted in these newly generated forms (Chan &

Owusu, 2017). The American Society of Civil Engineers (ASCE, 2004) claims that corruption accounts for an estimated $340 billion of worldwide construction costs each year. Transparency International estimates that at least $400 billion is lost to corruption in public procurement, adding 20–25% to costs. Other reports also indicates that corruption in Sub-Saharan Africa is appraised at around 70% of public procurement contracts and thereby increases the cost of contracts by about 20–30% (Mawenya, 2008). In the Nigerian construction industry, around (5-15)%, and at times up to 40%, were illicitly spent on bribery and corruption to high and management officials in public offices during contract award, execution and payments (Ayodele, 2010). Implicitly, this excessive spending leads to mismanagement, wastage and inequity which are disastrous for the economy of a nation (Myint, 2000) and consequently reduce the contribution of the sector to the Gross Domestic Product (GDP) (Oyewobi, Ganiyu, Oke, Ola-Awo & Shittu, 2011).

The construction and procurement process is perceived to be very much susceptible to corruption from project inception to completion and there are many examples from across the globe that corruption hampers economic development; impairs social services; off lead investments in infrastructure and social services and affects the poor disproportionately (Ameyaw, Mensah & Osei-Tutu, 2013). This situation is facilitated by high-level political connections in awarding contracts, immoderate and careless sole sourcing for public contracts and contractors' lack of dedication in tackling corruption (Ameyaw, Pärn, Chan, Owusu-Manu, Edwards & Darko, 2017). Nonetheless, there is a growing desire to eradicate corruption from the industry, as demonstrated by the legal apparatus, controls and balances being put in place to inhibit corrupt acts and risks; however, these mechanisms do not appear to be fully operative (Zou, 2006). This might be because corruption is most rife where there are other forms of institutional inadequacy, such as political volatility, bureaucratic red tape, and frail legislative

and judicial systems. The crucial point is that corruption and such institutional inadequacy are connected and also feed upon each other (Myint, 2000).

The dynamics of corruption forms in the industry is thought to vary under different construction projects and stages, for instance, fraudulent and bribery acts which make up the top two Corruption Forms (CFs) in the industry have been greatly associated with the tendering phase, which is just one example of the whole construction project process. Therefore, a detailed study needs to be conducted on projects and their various construction stages in order to practically ascertain the extent of occurrence of each corruption form in any activity that takes place in the industry (Chan & Owusu, 2017). Deng, Tian, Ding and Boase (2003) also reported that the most costly and serious corruption forms may occur after awarding the contract, during the execution stage. With an understanding among colluding parties, the attainment of a contact's performance standards and quality standards may be compromised. This may form a collusive act, i.e. there may be an elevated frequency of collusive acts at the project execution stage. All these need to be examined more at different project levels to ascertain which form is highly predominant at different levels.

1.2 Statement of the Research Problem

A vibrant and thriving construction sector could well drive a healthy and well-functioning economy, the sector contributes directly to the GDP by entering the national accounts as a component of fixed investments, and fixed investment in turn represents addition to the national capital stock (Alagidede & Odei-Mensah, 2016). It also constantly contributes to improvements in the built environments of human societies (Transparency International, 2008). The construction industry is a large enterprise such that the global construction output has been predicted to increase by over 70%, to $15 trillion per year worldwide, by 2025 (Global Construction Perspectives and Oxford Economics, 2013). However, a number of the countries where the highest growth is projected are also known as having the highest degree of corruption

(Transparency International, 2013) and this has increasingly diminished the positive social value of the industry in recent years (Transparency International, 2008). In all, corruption increases inequality, reduces efficiency and is estimated to account for more than $2.6 trillion yearly—approximately 5% of the international GDP—with more than $1 trillion expended in bribes annually (OECD, 2014).

According to TRACE International's Global Enforcement Report (2011), recent headline-grabbing cases demonstrate that organizations in the construction industry continue to face significant bribery and corruption risks. Le *et al*. (2014) also considers that corruption is a common challenge to construction industries in both advanced and less advanced countries. These corruptions may take place in any stage of a project; namely, project initiation, planning and design, bidding and construction and operation and maintenance (Tabish & Jha, 2011a). Nduka (2019) also confirmed that there is corruption in almost every aspect of construction in Nigeria, ranging from contract award stage to the implementation and maintenance stages. This can lead to projects which when accomplished are often behind schedule and considered to be unnecessary, unfit for use, overpriced and with overly complicated components (Hamzah, Wang & Yap, 2010).

Although a series of studies conducted with respect to corruption in construction have ascertained the different forms of corruption and the fact that corruption can affect any stage of a construction project (Nduka, 2019; Chan & Owusu, 2017; Brown & Loosemore, 2015; Osei-Tutu *et al*., 2014; Bowen *et al*., 2012, Ameh and Odusami, 2010a; Zou, 2006; Deng *et al*., 2003; Sohail & Cavill, 2002), the extent to which each individual type of corruption occurs within each project and the influence of corruption at each stages on the overall project performance have not been studied and this research seeks to address this gap.

1.3 Justification for the Study

The construction industry involves many role players and also plays a key role in the economic growth and development of a country. To achieve these optimal growth and benefits from the industry and ensure the smooth functioning of the industry itself, the need to evaluate corruption and unethical practices within the industry becomes very pertinent. The Evaluation of corruption is crucial for achieving progress in anticorruption war, for greater integrity, higher transparency and better accountability performance (Goel & Nelson, 2011; Foster, Horowitz, & Méndez, 2012). Sampford, Shacklock and Connors (2006) and Zou (2006) also stressed that understanding the extent of corruption will help in formulating effective anticorruption measures for implementation.

This research will help in ascertaining the vulnerability of each stage of construction to the different corruption forms and in prioritizing the corruption forms that need immediate attention. This will help to mitigate the corruption risk in the industry, reduce risk of project abandonment, capital flight and huge economic loss in the form of additional costs to a project, improve quality of completed projects and will also have a direct and significant impact on the overall economic situation of the country.

1.4 Aim and Objectives

1.4.1 Aim

The aim of the research is to investigate the prevalence of Corruption Forms in the public building projects with a view to ascertaining the predominant forms across various stages of the construction process.`

1.4.2 Objectives

The aim of the study was achieved through the following objectives;

i. To ascertain the prevalence of identified corruption forms within the public building projects

ii. To identify the project stages most associated with corruption forms in the public building projects

iii. To determine the extent of occurrence of each corruption forms in different stages of the construction process

iv. To evaluate the influence of corruption forms at each stage on the overall project performance

1.5 Hypothesis

H_0 signifies that 'there is no significant difference in the variable ranks among the two groups' (Contracting and consulting organizations).

H_a signifies that 'there is significant difference in the variable ranks among the two groups' (Contracting and consulting organizations).

H_0 will be rejected if the Mann–Whitney U value extends beyond its critical value at a significance level less than or equal to 0.05 ($p \leq 0.05$).

1.6 Scope and Limitations of the Study

1.6.1 Scope of the study

This research work is limited to investigating the perception of stakeholders in the contracting and consulting organizations who have handled public building projects on the prevalence of corruption and the extent of occurrence of every identified form of corruption in the various stages of construction of public building projects in the Nigerian construction industry. Some researchers have proposed that a more promising path in assessing corruption and ethical behaviour may involve exploring perceptions rather than actual behaviour (Jain, 2001; Ambrose & Schminke, 1999). This is because the non-public and clandestine nature of corruption and unethical behaviour suggests that accurate information about individual's behaviour may not be available therefore, while perception surveys do not constitute an actual measure of behaviour, they offer an indication of how a person may behave in the real sense, because perceptions are based on facts (Ameh & Odusami, 2010b; Jain, 2001).

The choice of public building project was necessitated by the fact that public building projects are part of very large investment projects that tend to be massive, indivisible and long-term projects, with investments taking place in waves (Miller & Lessard, 2000). World Bank (2010) claimed that a great number of investments have been made in infrastructure and urban construction projects, thus triggering an increase in corruption risks when managing these projects around the world. This corruption affects the performance and quality of these projects starting from the project preparation and it continues during its implementation with major acts of corruption (Wells, 2014). Ameyaw *et al*. (2017) also claimed that this situation is facilitated by high-level political connections in awarding contracts, and the immoderate and careless sole sourcing of public contracts. In addition to this, there is always a large amount of money involved, as well as difficulty in monitoring/tracking the processes of money being spent (Zou, 2006).

The contracting and consulting organizations were chosen because they are major direct stakeholders in a construction project and have also been criticized for lack of dedication in tackling corruption (Ameyaw *et al*., 2017). The study also considered only medium- and top-level management within these various organizations as respondents. This is because it is believed that they are the best informed when it comes to a sensitive issue like corruption during the lifecycle of the construction projects. This approach was used in similar studies by Hadiwattege, De Silva and Pathirage (2010), Adnan *et al.* (2012) and Ameyaw *et al.* (2017) to select their respondents in their respective studies on corruption.

1.6.2 Limitation

While this research explored perception and personal experiences of construction stakeholders in Nigeria, the result cannot be taken out of the context of Nigerian construction industry to reflect the situation in other construction industries of the world.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview and Concept of Corruption

Corruption is one of the key issues in public policies. It is one of the major impediments to the development of developing countries and infringes on the quality of life in developed countries (Loosemore & Lim, 2015; Tabish & Jha, 2011). The term corruption does not lend itself to a single definition, though its adverse implications are very obvious. The word emanates from the Latin word *corruptio*, meaning 'a moral decay, rottenness, objectionable or mischievous behavior' (Johnston, 1996). Different researchers and anticorruption institutions have defined corruption in different contexts, and the various forms of corruption established in the literature vary from sector to sector, although identical forms can be identified throughout varying cultures, sectors and organizations (Chan & Owusu, 2017). One of the most quoted definitions of corruption was given by Nye (1967). He gave the meaning of corruption as any practice that runs apart from the acceptable norms of the society many times with the intention of status benefit or monetary gains.

According to Transparency International (2015a), corruption is mostly divided into two classes:' petty corruption' which refers to everyday abuse of entrusted power by low- and mid-level public officials in their interactions with ordinary citizens; and 'grand corruption' which refers to acts of corruption committed by relevant institutions, such as governments and courts. A sub-class called 'political corruption' refers to the influence of policies, institutions and procedural rules in the distribution of finances or other resources committed by policy-makers. The Anti-Corruption Resource Centre (2015) categorizes corruption according to the rate of occurrence of the phenomenon: 'sporadic corruption' is linked to occasional opportunity; 'systemic corruption' is an integrated and substantive aspect of the economic, social and political structure.

2.2 Corruption and the Construction Industry

Abundant facts signals that corruption in construction has become a noticeable universal problem confronting all countries (Le *et al*., 2014). In defining corruption with respect to the construction industry, The Chartered Institute of Building (CIOB) industry-wide construction survey indicated that there was no clear and commonly agreeable meaning of corruption within the UK construction industry (CIOB, 2006). Although it is of general opinion that corruption involves inducement intended to pressure an act to be carried out outside the set rules and procedures for example contract sum prepare by the Quantity Surveyors (Kasimu & Kolawole, 2015). Also, the United Nations (UN) defined corruption as the 'offering, giving, receiving or requesting, directly or indirectly anything worthy to manipulate the action of an official in the procurement or selection process or in construction contract execution' (UN, 2006). However, this study adopted the definition of Le *et al*. (2014) which succinctly defines corruption as the abuse of assigned authority at the expense of a construction project.

The Global Infrastructure Anti-Corruption Centre (GIACC, 2008) lists 47 possible acts of corruption that may happen during the actualization of an infrastructure project, these acts are divided into three phases: pre-qualification and tender, project execution and dispute resolution. Corruption consists of three components, namely: the party that requests corruption (demand side); the party that offers it (supply side); and the condoning side, the party aware of what is happening but who remains silent or is not bothered by it (Boyd & Padilla, 2009).

According to Chan and Owusu (2017), there has been evolution of various forms of corrupt practices in the construction sector over the years. The first form of corruption established in literature was bribery, which according to Noonan (1984) was discovered in 3000BC. Currently, several forms of corruption exist not only in the construction industry but also other sectors, including banking and education. While corruption forms like bid rigging are more connected with the construction industry and the procurement sector, other corruption forms

like plagiarism, unauthorized tutoring and study misconduct are attached to the educational sector (Osipian, 2007).

2.3 Corruption Forms in Construction

Corrupt and unethical acts within the construction industry exist in many manners and include bribery (Ameyaw *et al*., 2017; Bowen *et al*., 2012; Amundsen, 2000), fraud (Tabish & Jha, 2011; Vee & Skitmore, 2003), kickbacks (Sohail & Cavill, 2008; Osei-Tutu *et al*., 2010; Alutu, 2007), collusive tendering and bid rigging (Chotibhongs & Arditi, 2012; Dore´e, 2004), embezzlement (Hartley, 2009), conflict of interest (Brown & Loosemore, 2015; Osei-Tutu *et al*., 2010; Vee & Skitmore, 2003), fronting (Le *et al*., 2014b; de Jong *et al*., 2009),etc. According to Le *et al*. (2014), twelve forms of corruption in the construction industry were identified as follows: bribery, fraud, collusion, bid rigging, embezzlement, kickback, conflict of interest, dishonesty and unfair conduct, extortion, negligence, front companies and nepotism.

Chan and Owusu (2017) reported that there have been a considerable number of publications which identified and explicated various forms of corruption and corrupt acts that take place in the construction sector. In their study to aggregate the different corruption forms in the construction industry, a total of 28 different corruption forms were captured. The most identified corruption forms in the selected papers included bribery, collusion, fraud, extortion, embezzlement and nepotism. All the forms are briefly described in subsequent sub-sections.

2.3.1 Bribery

According to the review of Chan and Owusu (2017), the first mention of a bribery case recorded in construction projects was by Stuckenbruck and Zomorrodian (1987). Bribery alludes to a corrupt practice that may involve giving, promising, soliciting, accepting or offering a benefit to lure or entice someone to act in an unethical or illegal manner. Enticements are sometimes in the form of rewards, fees, loans, gifts or any supplementary advantage such as donations,

special treatment or services (Chan & Owusu, 2017). Bribery is the most common and serious form of corruption in the construction industry, particularly in developing countries (Vee & Skitmore, 2003; Alutu, 2007; Bowen *et al*., 2007a, b, 2012; Goldie-Scot, 2008; Sohail & Cavill, 2008; Sichombo *et al*., 2009; Krishnan, 2009; Stansbury, 2009; Hartley, 2009; Jong *et al*., 2009; Ameh & Odusami, 2010; Ke, *Wang, Chan, & Cheung*, 2011; Meduri & Annamalai, 2013; Tabish & Jha, 2012). This misconduct refers to 'offering, giving, receiving or soliciting of anything of value to influence the action of an official in the procurement or selection process or in contract execution'(Hartley, 2009).

2.3.2 Kickbacks

Kickbacks are illegitimate economic bonuses used to gain a suitable decision from a person in a position of influence, e.g. in contractor selection (Alutu, 2007; Jong *et al*., 2009; Osei-Tutu *et al*., 2010; Bowen *et al*., 2012). For instance, a client's staff may receive an economic reward from a tenderer by helping them win the contract. A study in Nigeria revealed that the contractor that wins a contract usually includes a kickback into the price quotation for bidding which in turn inflates the cost of construction but rarely the quality (Alutu, 2007).

2.3.3 Solicitation

Solicitation is the act of enticing, ordering, influencing or asking another party to indulge in the act of bribery or other corrupt behaviors (TI, 2016).

2.3.4 Facilitation payments

Facilitation payments are regarded as small bribes that can serve as grease or speed payments normally made to secure or influence an action to which the briber already has authorized or other rights (Liu, Fellows, & Ng 2004; Kenny, 2012; TI, 2016). According to Chan and Owusu (2017) this form of corruption is not new to the industry.

2.3.5 Lobbying

Lobbying can be any corrupt activity done to manipulate the choices and policies of an institution to favor an outcome or course. These acts may turn out to be very misleading if there are disparities in the existence of different levels of manipulation by individuals, organizations, associations or different institutions (TI, 2016).

2.3.6 Influence peddling

Influence peddling is described as the use of one's position or influence on behalf of another person for a special vantage in return for financial gains or other benefits. For instance, during the contract award stage of a project, if a senior procurement officer tampers with the process by using his power to unjustly influence the decision to suit a contractor in return for a share of the contract sum, the act is known as influence peddling and the official involved is known as the peddler (Bowen *et al*., 2012; Stansbury, 2009).

2.3.7 Fraud

Fraud simply refers to the act of deception with the intention to cheat; this takes place when a party deceives another person with the aim of gaining an illegal or unfair advantage (contract award, financial, political); some countries consider this offence as a felonious act or violation of civil laws (Le *et al*., 2014; Meduri & Annamalai, 2013; Wang, Tiong, Ting, & Ashley, 2000; Tsai & Chi, 2009). According to the UN (2006), fraud represents a false misrepresentation or concealment of facts for commercial gain. This misconduct primarily takes the forms of misinformation (e.g. alteration of documents and deliberate intention to mislead and withhold information), deceit (e.g. making invoices and payment for materials without being received), and theft (e.g. materials and equipment) (Vee & Skitmore, 2003; Bowen *et al*., 2007, 2012; Sohail & Cavill, 2008; Jong *et al*., 2009; Tabish & Jha, 2011).

2.3.8 Ghosting

Ghosting means an entity (either an individual or a unit) made-up for the purposes of fraudulent act or deception (Bowen *et al*., 2012; Brown & Loosemore, 2015).

2.3.9 Front/shell companies

Front/shell companies refer to limited liability companies or corporations that have no bodily existence regarding jurisdiction, no commercial activities, and no real employees. They are mostly established in concealment or tax haven jurisdictions with the sole purpose of shielding the real beneficial owner from either disclosures or taxes or both (Bowen *et al*., 2012; Brown & Loosemore, 2015; TI, 2016). Although these companies are not familiar to the public, they can secure construction contracts because of the power of their owners and delegate them to other contractors or suppliers at a lower price (Hartley, 2009). The price difference exactly represents illegal income for these corruptors (Chan & Owusu, 2017).

2.3.10 Dishonesty

Dishonesty is described as an act of lying, stealing or cheating with the primary aim of acquiring, converting or disposing of either tangible or intangible belongings to gain an upper hand or a benefit. It can be defined as fraud in criminal law and can include either sham or act deceitfully to gain a favor. Dishonesty and unfair conduct mainly happens in the bidding, contract negotiation and signing and project construction phases (Vee & Skitmore, 2003; Alutu, 2007). Bowen *et al*. (2007) analyzed primary opinions on dishonesty and unfair conduct from key stakeholders in construction projects: (1) architects believe that contractors are not always honest when following contractual specifications, and that they commonly use cheap and inferior alternatives; (2) contractors believe that the tendering adjudication process is unfair, and that there exists a bias in professionals' acts when clients greatly intervene in the process; and (3) quantity surveyors believe that contractors always repeatedly over claim in the project construction phase.

2.3.11 Deception

Deception is an act of presenting illegal information with the purpose of misinforming another person regarding a situation that in itself is true (Stansbury, 2009).

2.3.12 Collusion

Collusion refers to a secret arrangement that exists among parties, either in the private or public sector or both, who meet to plot to undertake deceitful or fraudulent acts with the intention of benefiting illegal rewards such as financial gains. The participants who mainly engage in collusive acts are known as cartels (Shan *et al*., 2016). Collusion can benefit the involved parties by sacrificing the normal benefits of the project or the public (Dorée, 2004; Bowen *et al*., 2007). Zarkada-Fraser and Skitmore (2000) stated that most collusive practices are conducted by tenderers during project biddings to win contracts.

2.3.13 Money laundering

Money laundering means the act of concealing the ownership, source or endpoint of money obtained in an unlawful or dishonest manner and secretly placing it in legitimate ventures or projects to brand them as lawful (Stansbury, 2009; TI, 2016).

2.3.14 Cartel

A cartel, also considered as a form of collusive act and identical to bid rigging, occurs when two or more organizations arrange or enter into an agreement to restrict the flow of materials or fix the prices of goods they control in a particular industry (Stansbury, 2009).

2.3.15 Bid rigging

Bid rigging alludes to a collusive act in which willing participants decide on the results of a bid process beforehand. For example, in some situations, a bidder specifies a very limited time for the preparation of tender documents, with the main aim of influencing the number of prospective bidders. This gives only those with prior notice of the upcoming bid the possibility of submitting adequate tender documents (Bowen *et al*., 2012; Brown & Loosemore, 2015). Bid rigging and collusive tendering are referenced alike as a 'secret agreement between two or more parties for a fraudulent reason' (Le *et al.*, 2014b). Collusive tendering includes compensation to unsuccessful bidders, cover pricing, hidden fees and bid cutting (Chotibhongs & Arditi, 2012; Dore'e, 2004; Bowen *et al*., 2007a; Zarkada & Skitmore, 2000). Bid rigging is a major form of corruption that usually occurs between a tenderee and a tenderer (Vee &

Skitmore, 2003; Sichombo, Muya, Shakantu, & Kaliba, 2009; Krishnan, 2009; Hartley, 2009; de Jong *et al*., 2009; Bowen *et al*., 2012).

2.3.16 Price fixing

Price fixing is a collusive act analogous to bid rigging. With this act, a sect of competitors or tenderers colludes to manipulate or fix prices rather than observe an open market competition (Tabish & Jha, 2011a).

2.3.17 Favoritism

Favoritism is the act of offering unusual treatment to either an individual or a group of persons, which often takes the form of awarding a contract, honoring, hiring, benefits, among others, even if the person may not necessarily be qualified for the position or contract offered. It is regarded as an all-encompassing term because it exhibits itself in the form of cronyism, nepotism and/or patronage (Ling & Tran, 2012; Wibowo & Wilhelm, 2014).

2.3.18 Nepotism

Nepotism is corrupt conduct whereby a person may provide aid to a tenderer who has relational links, such as common race, same origins or good friendship (Hartley, 2009; Bowen *et al*., 2012; Ling & Tran, 2012). Nepotism, which is also called the 'good old boys' network' (Singh & Shoura, 1999), can have multiple negative impacts on the performance of construction projects, such as low construction productivity and low managerial efficiency (Kale & Arditi, 1998).

2.3.19 Patronage

Patronage is defined as a form of favoritism where a person is offered a job, award contract, or other benefits regardless of their entitlement or qualifications and mainly due to either the individual's connections or affiliations (Brown & Loosemore, 2015; TI, 2016).

2.3.20 Guanxi

Guanxi is a Chinese word for nepotism, though not all guanxi may be called unlawful. In some instances, it turns to favor the parties that have good connections in a local domain, but it becomes unlawful when the favor is granted to a party or group of individuals not deserving the favor (Weisheng, Liu, Hongdi, & Zhongbing, 2013; Ke *et al.*, 2011).

2.3.21 Extortion

Extortion can be the direct or indirect practice of using one's power, knowledge or status to coercively compel others in the form of demanding unmerited benefits, compensations or gains (Tabish & Jha, 2012; Sichombo *et al.*, 2009; TI, 2016). Extortion usually occurs from a party to another party involved in a project, such as (1) from client staff to contractors or material suppliers, (2) from a major contractor to their subcontractor, (3) from a potential subcontractor to a material/equipment supplier, or (4) from regulatory/permitting agencies to clients, contractors or material/equipment suppliers (de Jong *et al.*, 2009).

2.3.22 Intimidation and threats

Intimidations and threats are regarded as a form of extortion where an individual intentionally induces a sense of subjection, inferiority or fear into another person or group of persons with the purpose of frightening them to make them do what the intimidator wants (Chan & Owusu, 2017).

2.3.23 Blackmail

Blackmail is defined as a condition or act when a party compels another party to take certain actions if the latter party does not render some privileges or vantages demanded by the former party and the threats are usually in the form of punishment or a mean act as observed in the act of coercion. This was revealed by Smith (2009), but it is rarely mentioned in the industry (Chan & Owusu, 2017).

2.3.24 Coercion

Coercion is a direct or indirect act of committing harm, prejudice or threats to negatively control the actions of another person, often to favor the coercer (Sichombo *et al*., 2009).

2.3.25 Client abuse/clientelism

Client abuse/clientelism is a biased arrangement of exchanging goods, favors or resources on a manipulative affiliation between a powerful party and a weaker client (Zhang, Le, Xia, & Skitmore, 2016; TI, 2016).

2.3.26 Embezzlement

Embezzlement refers to an act where someone misappropriates traffics or uses either goods or funds of an organization or an institution entrusted in their care for personal benefits. For example, when a contractor diverts construction materials allocated for execution of a project the contractor is said to have embezzled the client's goods because the client is most often the financier of the project (Sohail & Cavill, 2008; Tsai & Chi, 2009; Bowen *et al*., 2012). In the construction industry, a typical example of embezzlement is the misappropriation of project funds (Tow & Loosemore, 2009; Ling & Hoang, 2010). Embezzlement can seriously affect the cost management of construction projects, e.g. payment for a contractor can be defaulted by the client's embezzlement of the project funds, which may delay project delivery or even result in project failure (Sohail & Cavill, 2008).

2.3.27 Professional negligence

Professional negligence is described as a corrupt conduct in the construction industry that occurs when a professional fails to provide the responsibility of care that a normal careful and prudent professional would offer given the same conditions (Ho, 2011, 2013). These responsibilities can include inadequate quality specifications, poor workmanship, insufficient safety specifications, low-quality materials and poor process supervision (Vee & Skitmore, 2003).

2.3.28 Conflict of interest

Conflict of interest in the construction industry refers to the situation where a professional of the industry is challenged with a choice of deciding between the demands and duties required by the profession and their respective personal interests (Ho, 2013; Bowen *et al*., 2012). Conflict of interest also involves a conflict between the public duty and private interests of a

public official, in which the public official has private interests, which could improperly influence the performance of their official duties and responsibilities (OECD, 2003). Conflict of interest is likely to arise when an individual finds himself in a situation where the party constructing a project, or supplying goods or services to it, is also a member of the consultant's team or a member of the procurement committee (Shakantu, 2003).

The variables for various corruption forms as collected from the literature review is presented in table 2.1

Table 2.1: Variables for corruption forms and their sources from literature

S/N	Corruption Form Variables	Sources
1.	Bribery	Stuckenbruck & Zomorrodian, 1987; Vee & Skitmore, 2003; Alutu, 2007; Bowen *et al*., 2007a, b, 2012; Goldie-Scot, 2008; Sohail & Cavill, 2008; Sichombo*et al*., 2009; Krishnan, 2009; Stansbury, 2009; Hartley, 2009; de Jong *et al*., 2009; Ameh & Odusami, 2010; Ke, *et al*., 2011; Meduri & Annamalai, 2013; Tabish & Jha, 2012; Chan & Owusu, 2017.
2.	Kickbacks	Alutu, 2007; de Jong *et al*., 2009; Osei-Tutu *et al*., 2010; Bowen *et al*., 2012; Chan & Owusu, 2017
3.	Solicitation	Bowen *et al*., 2012; TI, 2016, Chan & Owusu, 2017
4.	Facilitation payments	Kenny, 2012; TI, 2016; Chan & Owusu, 2017
5.	Lobbying	TI, 2016; Chan & Owusu, 2017
6.	Influence peddling	Stansbury, 2009; Bowen *et al*., 2012; Chan & Owusu, 2017
7.	Fraud	Vee & Skitmore, 2003; Bowen *et al*., 2007, 2012; UN, 2006; Sohail & Cavill, 2008; Tsai & Chi, 2009; de Jong *et al*., 2009; Wang et al., 2000; Tabish & Jha, 2011; Meduri & Annamalai, 2013; Le *et al*., 2014; Chan & Owusu, 2017
8.	Ghosting	Bowen *et al*., 2012; Brown & Loosemore, 2015; Chan & Owusu, 2017
9.	Front/shell companies	Hartley, 2009; Bowen *et al*., 2012; Brown & Loosemore, 2015; TI, 2016; Chan & Owusu, 2017
10.	Dishonesty	Vee & Skitmore, 2003; Alutu, 2007; Bowen *et al*., 2007; Chan & Owusu, 2017
11.	Deception	Stansbury, 2009; Chan & Owusu, 2017
12.	Collusion	Zarkada-Fraser & Skitmore, 2000; Dorée, 2004; Bowen *et al*., 2007; Shan *et al*., 2016; Chan & Owusu, 2017
13.	Money laundering	Stansbury, 2009; TI, 2016; Chan & Owusu, 2017
14.	Cartel	Stansbury, 2009; Chan & Owusu, 2017
15.	Bid rigging	Zarkada & Skitmore, 2000; Vee & Skitmore, 2003; ; Dore'e, 2004; Bowen *et al*., 2007a; Sichombo *et al*., 2009; Krishnan, 2009; Hartley, 2009; de Jong *et al*., 2009; Bowen *et al*., 2012; Chotibhongs & Arditi, 2012; Bowen *et al*., 2012; Le *et al*., 2014b; Brown & Loosemore, 2015; Chan & Owusu, 2017
16.	Price fixing	Tabish & Jha, 2011a; Chan & Owusu, 2017
17.	Favouritism	Ling & Tran, 2012; Wibowo & Wilhelm, 2014; Chan & Owusu, 2017
18.	Nepotism	Kale & Arditi, 1998; Singh & Shoura, 1999; Hartley, 2009; Bowen *et al*., 2012; Ling & Tran, 2012; Chan & Owusu, 2017
19.	Patronage	Brown & Loosemore, 2015; TI, 2016; Chan & Owusu, 2017
20.	Guanxi	Ke *et al*., 2011; Weisheng *et al*., 2013; Chan & Owusu, 2017
21.	Extortion	De Jong *et al*.,2009; Sichombo *et al*., 2009; Tabish & Jha, 2012; TI, 2016; Chan & Owusu, 2017
22.	Intimidation and threats	Chan & Owusu, 2017
23.	Blackmail	Smith, 2009; Chan & Owusu, 2017
24.	Coercion	Sichombo *et al*., 2009; Chan & Owusu, 2017
25.	Cleintelism/client abuse	Zhang *et al*., 2016; TI, 2016; Chan & Owusu, 2017
26.	Embezzelement	Sohail & Cavill, 2008; Tow & Loosemore, 2009; Tsai & Chi, 2009; Ling & Hoang, 2010; Bowen *et al*., 2012; Chan & Owusu, 2017
27.	Professional negligence	Vee & Skitmore, 2003; Ho, 2011, 2013; Chan & Owusu, 2017
28.	Conflict of interest	Shakantu, 2003; OECD, 2003; Ho, 2013; Bowen *et al*., 2012; Chan & Owusu, 2017

Source: Literature review

2.4 Classification of Corruption Forms (CFs)

After Chan and Owusu (2017) identified the corruption forms (CFs), they realized that some of the forms were identical based on the definitions and classifications done in other studies.

To have a better grasp of these forms, they classified them into models to set out the divergences that exist among them. The categorization was done based solely on two premises: (1) the relationship and the commonalities that exist among the variables (by definition) and (2) using previous studies that classified some of the variables. For instance, Powpaka (2002) identified kickbacks as a form of bribery in his studies. Similar categorizations by other studies were followed to develop the framework.

At the end of the classification, the main constructs identified were bribery acts, fraudulent acts, collusive acts, discriminatory acts, extortionary acts and unclassified acts. Some CFs could not be grouped under any construct because the categorization was purely constructed based on their definitions from the selected publications. Therefore, they were placed under the 'unclassified acts' section. These forms include professional negligence, conflict of interest and embezzlement. The categorization was also constructed with the aim of grouping identical factors with the assumption that an anticorruption measure developed for a variable within a construct can go a long way towards checking other variables within the same construct (Chan & Owusu, 2017). The subsequent sub-sections describe each construct.

2.4.1 Bribery acts

Based on the relationships that exist among the variables within the construct, bribery acts consist of bribery, kickbacks, facilitation payments, influence peddling, lobbying and solicitation (Chan & Owusu, 2017).

2.4.2 Fraudulent acts

Fraudulent acts in the construction industry consist of fraud, collusion, front/shell companies, dishonesty, ghosting, money laundering and deception (Chan & Owusu, 2017).

2.4.3 Collusive acts

Under the collusive acts construct, the factors identified were cartels, bid rigging and price fixing (Chan & Owusu, 2017).

2.4.4 Discriminatory acts

Discriminatory acts are simply defined as actions which show more concern or favors that are ethically and professionally wrong. They include nepotism, favoritism, and patronage (Chan & Owusu, 2017).

2.4.5 Extortionary acts

Extortionary acts are forceful acts that induce fear in the victim with the aim of making the victim act against his will or to benefit the oppressor, who is mostly of a higher status. They include extortion, client abuse/clientelism, intimidations and threats, coercion and blackmail (Chan & Owusu, 2017).

2.4.6 Unclassified acts

This construct is named as unclassified because no literature has classified them. Although there is a commonality among the three variables of a negative professional attitude, no literature has classified them and hence they are left unclassified. They include embezzlement, conflict of interest and professional negligence (Chan & Owusu, 2017).

2.5 Causes of Corruption in Construction

A series of efforts have been made to investigate causes of corruption in the construction industry by a number of researchers, for example, Le *et al*. (2014); Tabish & Jha (2011a); Ayodele *et al*. (2010); Osei-Tutu *et al*. (2010); Sohail & Cavill (2008); Moodley, Smith, & Preece (2008); Liu *et al*. (2004); Zarkada-Fraser & Skitmore (2000); Bologna & Del Nord (2000). The causal factors identified as of 1983 by Damit (1983), included negative role models, over-close relationships, and poor professional ethical standards. From these factors, it can be deduced that the early causes of corruption in the construction industry were attributed more to the adverse behaviors of the professionals within the industry than the systems that were put in place (Owusu *et al*., 2017). Within that same decade, causative factors developed from the negative behaviors of these professionals had weakened the systems in place, so that in 1987, Stuckenbruck and Zomorrodian (1987) recorded the absence of efficient and

responsible administrative systems and the influence of government as the causes of corruption that existed. Over time, these causes have plagued the construction industry.

A recent study by Owusu *et al*. (2017) was able to identify 44 distinct factors as causative factors of corruption in the construction industry after a comprehensive review of various publications on the subject matter. After the identification of the variables, the authors recognized certain similarities and even identical relationships among some of the variables. This led to the categorization of the variables under five newly developed constructs forming the basis for the conceptual framework for the causes of corruption in the construction industry (Owusu *et al*., 2017).

The five different categories that were developed are: Psychosocial-Specific Causes (PSSC), Organizational-Specific Causes (OSC), Regulatory or Legal-Specific Causes (RSC), Project-Specific Causes (PSC), and Statutory-Specific Causes (SSC). It should be noted that the generated categories are not independent of each other, since they can all directly or indirectly affect construction processes and projects. For instance, regulatory specific matters can apply to projects as well. Although, from the categorization, there could be an assumption that project-specific causes are only related to construction projects (Owusu *et al*., 2017).Each of the categories are discussed in subsequent sub-sections.

2.5.1 Psychosocial-Specific Causes (PSSC)

Psychosocial relates to the interconnections of social factors such as relationships and psychological attributes and their influence on the environment, workplace or process of work execution, etc (Heiser, 2001; Greitzer, Kangas, Noonan, Brown, & Ferryman *et al.*, 2013). A total of seven causal variables were classified under this category: poor professional ethical standard, over-close relationships, negative role models, personal greed and negative encouragement (Moodley *et al*., 2008; Shan *et al*., 2016a; Dore'e, 2004; Le *et al*., 2014a, b; Brown & Loosemore, 2015; Bowen *et al*., 2012; Tanzi, 1998). Other PSSC variables include a

weak impression of public interest or what may be termed as the lack of public interest in corruption issues and the influence of 'nepotism', (Sohail & Cavill, 2008; Bowen *et al.,* 2012; Zhang *et al.*, 2016)

2.5.2 Organizational-Specific Causes (OSC)

OSCs are causal factors that emanate from organizational structures or institutions. In other words, they are corrupt institutional influences from both the public and private construction sectors that negatively affect the entire industry and create room for corruption to occur (Owusu *et al*., 2017). Eleven causal variables were classified under this category; these include negative industrial and working conditions and fierce competition in the tendering process which encourages some contractors or construction firms to engage in corruption in order to be awarded the contract (Brown & Loosemore, 2015; Bowen *et al*., 2012; Zhang *et al*., 2016; Hartley, 2009). Others include inadequate sanctions, low wage levels, economic survival of institutions and the absence of efficient and responsible administrative systems (Le *et al*., 2014a; Brown & Loosemore, 2015; Bowen *et al*., 2012; Tanzi, 1998; Stansbury, 2009; Sohail & Cavill, 2008). Organizational causal factors tend to have adverse effects on the commencement and completion of a project. For instance, bidders representing their various construction institutions may be pushed to ask for a favor from the contract awarding body due to the excessive numbers of bidders who have tendered for a project (Zhang *et al*., 2016; Shan *et al*., 2016b). This in turn places the awarding body in a position to accept bribery from capable contractors and in the end rigs the entire bidding process (Owusu *et al*., 2017).The struggle for economic survival forces some construction and consulting firms to engage in corruption (Zhang *et al*., 2017; Locatelli *et al*., 2016), and delaying the payment of workers' salaries can also result in the same condition described above (Alutu, 2007). Poor documentation of records and complexities of institutional roles and functions are other problematic subjects encountered in other organizations that create the condition for corruption to thrive (Iyer & Sagheer, 2009),

as is the absence of efficient and responsible administrative systems and inadequate sanctions (Bowen *et al*., 2012).

2.5.3 Regulatory or Legal-Specific Causes (RSC)

The RSC category consists of causal factors that are skewed towards regulations, norms or principles guiding modus operandi and the activities of construction project management. The variables that create this construct are critical in all construction project management because all projects and activities within the industry are guided by contracts, regulations, principles, bonds and other rules (Owusu *et al*., 2017). The leading variables within RSC are the flawed regulation system of most public-sector construction projects (Le *et al*., 2014a; Bowen *et al*., 2012; Zhang *et al*., 2016) and deficiencies in rules and laws and multifarious licenses or permits (Zhang, 2005; Bologna & Del Nord, 2000; Tanzi, 1998). Insufficient legal punishments and penalties, weak procurement/contractual structures, the absence of effective control mechanisms, lack of legal awareness on the part of professional or construction workers, the lack of project anti-corruption systems and deregulation in public construction are other prominent causes of corruption under the RSC category that invariably tarnish the industry and the efficient delivery of construction projects, including the procurement of goods and services (Le *et al*.,2014a, b; Brown & Loosemore, 2015; Tanzi, 1998).

2.5.4 Project-Specific Causes (PSC)

PSC refers to the causal factors or instigators that lead to corrupt activities in a construction project. Although the list within this category may apply to other situations as well, they are specifically attributed to construction projects. In other words, without construction projects, some of the causes within the PSC construct would not be in existence (Owusu *et al*., 2017). The principal variables noted under this category include lack of rigorous supervision during project execution, great project or infrastructure complexity and the complex contractual structure involved in projects (Le *et al*., 2014a, b; Brown & Loosemore, 2015; Tanzi, 1998;

Shan *et al*., 2016a). Other notable variables include the lack of proactive steps by funders to limit corruption on projects and the lack of standardized execution in construction projects (Krishnan, 2009; Locatelli *et al*., 2016). This variable has been regarded not only as a causative factor of corruption in project works but also as a threat to timely execution of projects, increasing the overall intended cost and affecting quality (all of which represent the three main objectives of any construction project) (Owusu *et al*., 2017). The following three – great project complexity, complex contractual structure and the nature of infrastructure projects – are all complications that evolve as a result of the inability of key members of a construction project to appreciate the whole nature of projects and contracts (Owusu *et al*., 2017).

2.5.5 Statutory-Specific Causes (SSC)

SSC category is attributed to government or state-driven factors that propel corrupt practices in the public construction sector. The definition of corruption lends itself to public ventures as compared to that of the private sector (Chan & Owusu, 2017). Also, the public officers are often reported to be the perpetrators of any possible corrupt incident in the construction industry (Tabish & Jha, 2011). The noted causative variables under the SCC construct include inappropriate political interference and government influence in contract awards, appointment of a local representative who acts on behalf of the firm to obtain contracts, the transition of governments or economies, lack of coordination among government departments and subjecting workers to job insecurity, especially in government and public enterprises (Le *et al*., 2014a, b; Sohail & Cavill, 2008; Boyd & Padilla, 2009; Stuckenbruck & Zomorrodian, 1987; Locatelli *et al*., 2016). The variables within this construct are critical in developing countries and may even represent the leading causal initiators of corruption in the public construction sectors of some developing countries (Osei-Tutu *et al*., 2010; Tabish & Jha, 2011).

2.6 Impacts of Corruption in Construction

Corruption is regarded as a major obstacle to economic and social development (World Bank, 1997). In the construction industry, corruption may occur in any phase of a project; namely, project initiation, planning and design, bidding and construction and operation and maintenance (Tabish & Jha, 2011a).Le *et al.* (2014) identified three primary major impacts of corruption on various levels of the construction industry; namely, corruption risks in construction projects (micro), impacts on the expansion strategies of global companies (moderate) and social and economic impacts (macro).

Corruption is an extremely significant risk that greatly impacts core management tasks in construction projects, particularly in developing countries lacking mature legislative and administrative systems (Ofori, 2000; Choudhry & Iqbal, 2013; Deng *et al*., 2013; Fernandez-Dengo *et al*., 2013). Wang *et al*. (2000) identified corruption as a major risk in managing build–operate–transfer (BOT) projects and found that bribing governmental officials is a major corruption risk in Chinese BOT projects. Numerous researchers stated that public–private partnership projects in China and Turkey also face a high risk in corruption prevention (Xu *et al*., 2010; Chan *et al*., 2011; Ke *et al*., 2011). Meduri and Annamalai (2013) added that corruption risks can lead to an increase in project costs and a waste of public funds in India because of extra bribe expenditure.

Corruption can also affect the execution of expansion strategies of global companies in the international construction market (Ling & Hoang, 2010). Crosthwaite (1998) stated that, despite the great construction demand and enormous latent profits in some developing countries, the level of corruption in a country may be a key consideration for global companies deciding whether to enter the market in the country. Tang, Atkinson and Zou (2012) also stated that corruption combined with political and physical factors is critical for an overseas company to successfully enter the Chinese construction market. However, Barco (1994) pointed out that

bribery is commonly used as a strategy by global companies to gain competitive advantages in winning overseas construction contracts.

Owusu *et al.* (2017) stated that empirical studies have revealed that corruption causes economic problems and worsens current economic crises in some European countries. For instance, Jimenez (2009) noted that corruption in the construction industry had led to the speculative bubble in Spain. Romero *et al*. (2012) stated that corruption has resulted in many unsuccessful urban expansion cases in Spain. Skorupka (2008) reported that the slow development of infrastructure in Poland and Croatia is attributable to corrupt practices. Developing countries in Asia and Africa face more severe situations. For instance, many global contractors abandoned water and irrigation projects in Nigeria (Sonuga *et al.,* 2002) and road projects in Afghanistan (Unruh & Shalaby, 2012) because of serious corruption in these two countries.

2.7 Nature of Public Projects

Public projects are projects characterized by: large investment commitment, vast complexity (especially in organizational terms) and long-lasting impact on the economy, the environment and society (Brookes & Locatelli, 2015). They tend to be massive, indivisible and long-term projects with investments taking place in waves, and their effects felt over many years, especially as auxiliary and complementary additions are made (Miller & Lessard, 2000). Public projects are a particular class of megaprojects that share most of the aforementioned characteristics. Most megaprojects are often associated with poor performance, even in countries with low signals of corruption. According to Stansbury (2005), not all projects are the same: specific features characterize projects and make them more or less susceptible to corruption. These characteristics are: (1) Size: this is the most important feature because it is easier to hide bribes and inflated claims in large projects than in small projects. (2) Uniqueness: this makes budget costs difficult to compare and therefore it is easier to inflate. (3) Government involvement: public administrators can use their arbitrary power especially where there are

insufficient controls on how government officials behave. (4) Number of contractual links: each contractual link provides an opportunity for someone to pay a bribe in exchange for the contract award. (5) Project complexity: when projects are very complex, factors like mismanagement or poor design can hide bribes and inflate claims. (6) Lack of frequency of projects: winning these projects may be critical to the survival or profitability of contractors, which provides an incentive for contractors to use bribes. (7) Work is concealed: subsequent processes cover the basic components of the work. The quality of the components can be very costly or difficult to check. (8) Entrenched national interests: the government selects local and national companies, justifying the choice to favour national interests. (9) These positions have often been cemented by bribery. (10) Lack of 'due diligence': frequent lack of due diligence on participants in construction projects allows corruption to continue. (11) The cost of integrity: in several cultures bribery and deceptive practices are often accepted as the norm: not paying these bribes means not doing the project.

Public policy strongly affects the performance of public megaprojects. In fact, megaprojects' remain under political scrutiny well after the official final decision is made. Decisions made early on can have disastrous effects when abstract political ambitions crystallize in specific technical challenges' (Giezen, 2012). Despite their fundamental economic and social role, megaprojects are often implemented after a weak (or not optimal) phase of project planning, which leads such megaprojects to failure (Locateli *et al*., 2016).

2.8 Effect of Corruption on Public Projects

Corruption causes at least two major effects: market distortion and worse cost/benefit. Regarding market distortion, decision makers may prefer to situate projects in locations under the physical control of particular corrupt officials, with the aim of enforcing corruption (Kenny *et al*., 2011). Flyvbjerg and Molloy (2011) show how costs, time and benefit forecasts are deliberately and systematically over optimistic to promote a project at the expense of another.

In exchange, politicians might obtain bribes, support in their election campaigns, or both. Therefore, corruption affects project and megaproject performance, leading to the delivery of works with limited social benefit, poor economic returns and over-cost, in all, it affects the quality of the project starting from project preparation and continuing into its implementation (Wells, 2014).

Summarily, Locatelli (2016) stated that corruption negatively affects project performance because:(1) it delays delivery times and increases infrastructure costs; (2) it reduces the potential economy of infrastructure because sub-optimal projects are implemented; (3) it reduces efficiency, favouring construction firms with corrupt connections rather than the most efficient ones; (4) it reduces the quality of infrastructure services; (5) it increases the operating cost of providing a given level of infrastructure services; (6) it limits access, especially for the poor, because of the higher price of service associated with higher costs in construction, operation and maintenance; (7) it favours the creation of monopolies and market concentrations.

2.9 Stages of Construction of Public Projects and Corruption

Corruption is reported to be prevalent throughout the construction process but also occurs at all levels of stakeholder management (Owusu *et al*., 2019; Ameyaw *et al*., 2017; Krishnan, 2010).

2.9.1 The pre tendering stage

The entire construction process commences with the conception – with a conceptualization of the facility to be built (Blackburn, 2012). The concept of constructing a facility to suit a particular functional utility is established at this stage and the client or design team offer several concepts, of which one is selected to be developed (Owusu *et al*., 2019). This stage can also be referred to as the pre tendering stage, and some of the notable activities that come up at this pre tendering stage are: procurement plan, beneficiary selection, needs assessment and selection of

procurement method (Amenyaw *et al*., 2013). The project selection is also done, where all the possible projects' ideas conceived at the conception are examined and the client or the project team settles on the project with the highest advantage, score or priority. Prioritization of the numerous and diverse concepts developed at the conception which may sometimes exceed the budget of the financier will also be done (Owusu *et al*., 2019).

Some possible acts of corruption perpetrated at this stage include official planning for projects not because the society needs it, but because of personal gains such as winning more electoral votes, and planning in favour of high-valued projects which may not address immediate or long-term socioeconomic problems, leading to eventual abandonment by successive governments (Twumasi-Ampofo *et al.*, 2014). Moreover, they include over-designing and overpricing projects because of personal gains and ignoring favourable Environmental Impact Assessments and planning proposals or approvals. The perpetration of these acts eventually worsens situations, as the problems for which all the concepts and designs are developed still exist and even deteriorate further. (Owusu *et al*., 2019)

Stansbury and Stansbury (2008) record a number of corrupt practice activities which frequently occur, or can readily occur during project selection, e.g. selecting a project that is unnecessarily or overly complex for the actual intended purpose, selecting a project to favour an unsuitable contractor or predetermining a favourable contractor for a project intended to go through a competitive selection procedure. According to Ameyaw *et al*. (2017), portions of the project may be planned to favour some suppliers or contractors on the basis of relational attachments rather than necessary qualifications. Politicians can also influence the choice of contract and procurement method (Osei-Tutu *et al.*, 2014). The numerous activities carried out at this stage make it vulnerable to different corruption forms.

2.9.2 The tendering and bid evaluation stage

The major activities that are evident during tendering and bid evaluation are advertisement, sales (of a tender document), tender evaluation, prequalification, post-qualification and invitation to bid (Amenyaw *et al*., 2013). At this stage it is possible for laid-down procedures to be manipulated so as to favor unqualified persons or increase personal gains. Other fraudulent practices include kickbacks for construction and supply contracts and politicians influencing the choice of contract, the nature of contract and who the winning contractors and suppliers should be. Some of the identified corrupt practices include: (1) tender rigging; (2) price fixing; (3) obtaining a quotation only to compare price; and (4) submission of false quotations (Chan and Owusu, 2017; Le *et al.*, 2014b; Owusu *et al*., 2017). Other prominent examples include: (1) false or over-invoicing for the supply of inferior materials or less equipment; (2) inflating claim amounts, especially with regard to variation; (3) concealing defects; (4) giving a false assurance of contract payments to be made; and (5) facilitation payments and other forms or acts of bribery to overlook substandard executed works (Owusu *et al.*, 2017; Zhang *et al.*, 2016). This stage of a construction project is said to be highly susceptible to corrupt practices (Osei-Tutu *et al.*, 2014; Ameyaw *et al*., 2012).

2.9.3 The contract award stage

Notification of award and contract signing are the most noticeable activities at the contract award stage (Amenyaw *et al*., 2013).There does not seem to be many activities at this stage, but this stage is similarly prone to corrupt practices (Owusu *et al*., 2019). For instance, Olusegun, Benson, Esther, and Micheal (2011) stated that there is illegally expended in bribery and corruption to high and management officials in Government offices during contract award, execution and payments.

2.9.4 The contract execution stage

The contract execution stage is where actual construction works are undertaken, or the plans and designs that were developed at the conception/design stage are undertaken. This stage is

very vulnerable to high incidences of corrupt practices (Owusu *et al*., 2019). Some of the major activities at the contract execution stage are: preparation of certificate, vetting of certificate, payment of certificate, project implementation and monitoring (Amenyaw *et al*., 2013). A lot of administrative work and managerial activities, including supervision, are undertaken at this stage and due to the fact that humans play an active part it is also very prone to different corruption forms. According to Stansbury and Stansbury (2008), one primary form of corrupt practice identified at this stage is professional negligence. Others include conflict of interest, e.g.in-house officials taking over subcontracting works; delivery of materials and supplies that are lower in quality than what has been specified; lowering the quality standard of construction works; cutting corners and bypassing rules and agreed procedures by officials; inspection officials concealing substandard works by contractors; and payment of claims which actually cannot be accounted for (Osei-Tutu *et al*., 2014). Deng *et al*. (2003) reported that the most costly and serious CFs may occur during this contract execution stage.

2.9.5 The contract closure (final account)

The major activities at this stage are the final account and auditing and handing over (Amenyaw *et al*., 2013). This is the final stage, and is also very much susceptible to corruption. According to Amenyaw *et al*. (2013) and Robb (1996) the final account preparation stage is predisposed to manipulation and fraudulent deals. It would therefore be unwise for project stakeholders to think that once the project has been completed and handed over the issue of corruption is over (Amenyaw *et al*., 2013).

Several scholars have recorded practical strategic mechanisms to eliminate corrupt practices in construction projects using frameworks and toolkits, namely by: raising public awareness about corruption, conducting stringent contract monitoring, performing rigorous supervision and auditing and establishing a high-standard accountability mechanism, among several others (de Jong *et al*., 2009; Søreide, 2002; Tabish & Jha, 2012; Zou, 2006). Ameh and Odusami (2010)

opined that the level of corruption and unethical practices in the Nigerian construction industry is on the decline following steps by the BMPIU or the 'Due Process Office 'to block loopholes arising from reckless processes involved with contract awards and execution at the federal level. Nevertheless, from the review of several studies, there are a range of views on the prevalence of corruption forms as well the stages mostly associated with the various identified corruption forms in the industry. Indeed, the review shows that knowledge on the extent of the occurrence of each of these identified corruption forms at the different stages of public construction projects is currently limited in construction management-related literature. It is in reference to these gaps in literature that this study intends to determine the extent of occurrence of each identified corruption form at the different stages of construction projects. It intends to extend and contribute to knowledge on corruption in the construction management-related literature. The variables for stages of construction projects which was collected from the literature review is presented in table 2.2.

Table 2.2 Variables for stages of construction projects and their sources from literature

S/N	Stages of construction projects variables	Sources

1.	Pre tender stage	Stansbury & Stansbury, 2008; Blackburn, 2012; Amenyaw*et al*., 2013; Twumasi-Ampofo *et al.*, 2014; Osei-Tutu*et al.*, 2014; Ameyaw *et al*., 2017; Owusu *et al*., 2019
2.	Tendering and Bid evaluation stage	Amenyaw *et al*., 2013; Ameyaw*et al*., 2012; Osei-Tutu *et al.*, 2014; Le *et al.*, 2014b; Zhang *et al.*, 2016; Owusu *et al*., 2017; Chan & Owusu, 2017
3.	Contract/Project award stage	Ameh & Odusami, 2010; Amenyaw *et al*., 2013; Osei-Tutu *et al.*, 2014; Owusu *et al*., 2019
4.	Contract/Project execution stage	Deng *et al*., 2003; Stansbury & Stansbury, 2008; Ameh & Odusami, 2010; Amenyaw *et al*., 2013; Osei-Tutu *et al.*, 2014; Chan & Owusu, 2017; Owusu *et al*., 2019
5.	Contract closure (final account) stage	Robb, 1996; Amenyaw*et al*., 2013; Osei-Tutu *et al.*, 2014

Source: Literature review

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

This is simply the detailed plan of how the research was carried out. This research was conducted using the quantitative research approach which was based on the collections of quantitative information that can be tabulated along a continuum in numerical form. The quantitative method was chosen for this study because it informs statistically significant conclusions about a population by studying a representative sample of the population (Creswell, 2003). Also, considering the nature of the questions that the research seeks to address, which is "what and how much" and ascertain the current status of the variables. Previous studies related to the subject of this research by Amenyaw *et al*. (2017); Shah and Alotaibi (2017); Shan *et al*. (2015); Osei-Tutu *et al*. (2014); Bowen *et al*. (2012); Ameh and Odusami (2010a) have also adopted the use of quantitative method. The quantitative data were collected with the aid of structured questionnaire based on the literature reviewed and expert contributions. Only primary data was collected for the study through a self-administered questionnaire as the instrument/tool for data collection and data obtained was analysed quantitatively.

3.2 Population, Sample Size and Sampling Technique

3.2.1 Population

The population of the study includes the contracting organisation and consulting organisation that have handled public building projects in FCT Abuja. Abuja was selected as the study area because it is one of the fastest-growing cities in the country and has a very high concentration of registered construction contracting firms and construction consulting firms. This can be attributed to the large quantity of construction works in the area (Ameh & Odusami, 2010b). Although the researcher could not get a database for all contracting organisations and consulting organisations that have handled public building projects in the research area from which accurate sample size could be drawn.

3.2.2 Sample Size

The sample size for the research was then obtained from Table 3.1 developed by Louangrath (2014) which says that the minimum sample size for an unknown population for 95% confidence interval with 5% error level is approximately 34 counts. Considering the sensitive nature of the research and large number of variables contained in the data collection instrument, this study assumed a valid response rate of at least 50% of the total number of questionnaires distributed. Therefore 100% of the estimated sample size was added.

Sample size = 34 +34 = **68 counts**

Since respondents represent two groups i.e (the contracting organization and the consulting organization) the questionnaire was distributed on a 50-50 proportion basis. The table 3.1 shows the minimum sample size for non-finite population

Table 3.1: Minimum Sample Table Using Multistage Non-finite Population Method

%	1-α	$^{\sigma}N(0,1)$	E	n_1	n_2	n_3	ω_{max}	ω_{min}	N
0.80	0.840	1.00	0.05	16.80	282.24	11.52	1,153.04	11.64	23.88
0.85	1.040	1.00	0.05	20.80	432.64	14.35	1,434.99	14.49	26.65
0.90	1.280	1.00	0.05	25.60	655.36	17.74	1,774.49	17.92	29.64
0.95	**1.650**	**1.00**	**0.05**	**33.00**	**1,089.00**	**22.98**	**2,297.83**	**23.21**	**33.72**
0.96	1.750	1.00	0.05	35.00	1,225.00	24.39	2,439.26	24.64	34.75
0.97	1.880	1.00	0.05	37.60	1,413.76	26.23	2,623.13	26.50	36.03
0.98	2.050	1.00	0.05	41.00	1,681.00	28.64	2,863.56	28.92	37.65
0.99	2.320	1.00	0.05	46.40	2,152.96	32.45	3,245.43	32.78	40.08
0.995	2.550	1.00	0.05	51.00	2,601.00	35.71	3,570.71	36.07	42.04
0.999	3.000	1.00	0.05	60.00	3,600.00	42.07	4,207.14	42.50	45.63
0.9999	3.291	1.00	0.05	65.82	4,332.27	46.19	4,618.69	46.65	47.81
1.00	5.500	1.00	0.05	110.00	12,100.00	77.43	7,742.74	78.21	61.91

Louangrath (2014)

3.2.3 Sampling Technique

Purposive sampling technique was used in carrying out this research. This technique was adopted because the population size is unknown and sampling frame cannot be established which makes it difficult to use the simple random sampling technique.

3.3 Method of Data Collection

3.3.1 Data collection instrument

Since the research is quantitative in nature and a survey approach was adopted, a structured questionnaire was used to obtain primary data required from the respondents. This technique has been used widely to solicit stakeholders' views on subjects within the domain of construction management-related research (Owusu, *et al*., 2019; Fellows and Liu, 2015; and Tan, 2011). The questionnaire contained close-ended questions allowing respondents to only tick as appropriate.

3.3.2 Data collection procedure

The questionnaire was designed to gather the stakeholders' views on the prevalence of corruption forms, stages of construction projects mostly associated with corruption and the degree of occurrence of these corruption forms at the different stages of building projects, and finally to evaluate the effect of corruption at each stage of the building project on the overall project performance. The questionnaire was structured in five basic sections, A, B, C, D and E respectively. Section A contained general information, section B requested information on the most prevalent form of corruption within the industry on a five-point Likert scale, where 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always. Section C solicited data on the stages of construction projects mostly associated with corruption, and was designed on a five-point scale Likert scale as well where 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always. Section D seeks to know the extent of occurrence of the identified forms of corruption at different stages of construction projects, also on a five-point Likert scale where 1 = To a very small extent, 2 = To a small extent, 3 = To some extent, 4 = To a great extent, 5 = To a very

great extent, and section E solicited information on the effect of corruption at each stage on the overall project performance. This was also on a five-point Likert scale where 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always. The Likert scale was adopted from the work of Amenyaw *et al*. (2017) with slight modifications.

3.3.3 Pilot study

Prior to the questionnaire survey, pilot-testing of the questionnaire was carried out to determine the corruption forms that are peculiar to the context of the Nigerian construction industry from among the comprehensive lists of corruption forms gathered from literature and also to solicit for more forms that might also be peculiar to the Nigerian construction industry and were probably not mentioned in the literature. A total of 28 corruption forms were identified from the literature.

3.3.4 Validation of the data collection instrument

In order to ensure both face and content validity a validation exercise of the final questionnaire was conducted to examine the rationality, appropriateness, technicality, ambiguity, comprehensiveness, relevance and language of the questionnaire. The questionnaire was evaluated by 10 stakeholders, comprised of 4 industry practitioners, 2 senior lecturers and 4 postgraduate students of the departments of Building, Quantity Surveying and Architecture, in the Faculty of Environmental Design, Ahmadu Bello University. This process enabled the researcher to identify some structural defects in the questionnaire and also helped to improve on the clarity of the questions. All defective constructs were re-phrased and revised based on comments received from stakeholders to improve the language structure, clarity and appropriateness of questions after pilot-testing, the revised questionnaire was administered to carefully selected respondents by hand and with the assistance of colleagues who work in various firms of interest.

3.3.5 Reliability of the instrument

The scale of reliability and credibility of the instrument was tested by running internal consistency tests using SPSS. Cronbach's alpha remains the most popular and widely used method for measuring scales of reliability (Darko *et al*., 2018; Ameyaw & Chan, 2015). It determines the internal consistency or average correlation among variables in a given questionnaire to examine the reliability of the questionnaire (Owusu, *et al*., 2019). Thus Cronbach's alpha was adopted for the study.

3.4 Data Analysis Technique

The data collected through the questionnaire survey was analyzed quantitatively with the aid of Statistical Package for Social Sciences (SPSS). A data normality test was carried out to identify the distribution pattern of the data. Kim (2015) indicated that many statistical tests require data to be normally distributed. The Shapiro–Wilk test was used to show the data distribution. According to Shan *et al.* (2017b), Shapiro–Wilk test is mostly employed and recommended as an appropriate tool to determine the distribution pattern of any given dataset. Section A of the questionnaires was analysed using descriptive statistics of percentages and frequencies, Section B, C, D and E were analysed also by descriptive statisticsusing the mean score (MS). The Standard deviation (SD) was computed and presented in the tables to enable proper ranking of the prevalence of corruption forms, stages of construction projects mostly associated with corruption as well as the degree of occurrence of these corruption forms at the different stages of building projects and finally the effect of corruption at each stage of building construction project on the overall project performance where the 'mean score' values are the same.

The Mann–Whitney U test was used to determine the significant differences between the two groups (i.e. contracting and consulting organizations). The Mann–Whitney U test converts ratings provided by the respondents on individual variables to different ranks across the two groups involved (Owusu & Chan, 2018) and also reveals whether the ranks established by the

two groups possess significant differences or not (Owusu *et al.*, 2019). According to Lam *et al.* (2015), there is no requirement for prior postulation on the distribution of data during the application of this method. The Mann–Whitney U test was therefore adopted for measuring the significant difference between the two independent group responses on a similar question. In the application of Mann–Whitney U, the H_0 signifies that 'there is no significant difference in the variable ranks among the two groups.' As a result, H_0 is rejected if the Mann–Whitney U value extends beyond its critical value at a significance level less than or equal to 0.05 ($p \leq 0.05$).

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Analysis of the Pilot-tested Questionnaires

A total of 15 questionnaires were prepared and pilot-tested among stakeholders (both academics and practitioners) within the industry and all were duly filled and returned. Hills (1998) and Isaac and Michael (1995) both suggested 10-30 participants for pilots in survey research. Table 4.1 shows the background and qualification of people used in the pilot study.

Table 4.1: Demography of the pilot study respondents

Characteristics	**Classification**	**Frequency**	**%**
Working Experience of Respondents	0–5 years	3	20.0
	6–10 years	7	46.7
	11–15 years	3	20
	16–20 years	2	13.3
	Above 20 years	0	0.0
	Total	**15**	**100**
Professional Affiliation of Respondents	Architect	4	26.6
	Builder	1	6.7
	Civil Engineer	3	20.0
	Quantity Surveyor	3	20.0
	Services Engineer	1	6.7
	Academics	3	20.0
	Total	**15**	**100**
Educational Level of Respondents	PhD	3	20.0
	Msc	4	26.6
	Bsc	7	46.7
	HND	1	6.7
	Total	**15**	**100**

Source: Field survey (2019)

3 (20.0%) of the respondents for the pilot study have between 0 and 5 years, 7 (46.7%) have between 6 and 10 years of experience, 3 (20.0%) have between 11 and 15 years of experience, while 2 (13.3%) of the respondents have between 16 and 20 years of experience and 0 (0.0%) have above 20 years of experience. The table also shows the respondents' professional affiliation: 4 (26.6%) of them are Architects, 1 (6.7%) are Builders, 3 (20.0%) are Civil Engineers, 3 (20.0%) are Quantity Surveyors, 1 (6.7%) are Services Engineers and 3 (20.0%)

are affiliated to other Professions. Also from the table, 3 of the pilot study respondents which represents (20.0%) have PhD as their highest level of education, 4 (26.6%) have Master's degree, 7 (46.7%) has Bachelor's degree while only 1 (6.7%) have higher national diploma. Furthermore, the Mean Score of the corruption forms gotten from the pilot testing can be found in Table 4.2.

Table 4.2: Corruption forms peculiar to the Nigerian public building projects

S/N	Corruption Forms/Unethical Practice	Mean
A.	**Bribery Acts**	
1.	Bribery	3.6
2.	Kickbacks	3.5
3.	Facilitation Payments	3.0
4.	Influence Peddling	3.4
5.	Lobbying	3.0
6.	Solicitation	2.3
B.	**Fraudulent Acts**	
1.	Fraud	2.5
2.	Collusion	2.5
3.	Front/Shell Companies	2.5
4.	Dishonesty	2.1
5.	Ghosting	2.0
6.	Money Laundering	2.3
7.	Deception	2.4
C.	**Collusive Acts**	
1.	Cartels	2.7
2.	Bid Rigging	2.9
3.	Price Fixing	3.1
D.	**Extortionary Acts**	
1.	Extortion	2.6
2.	Client Abuse/Clientelism	2.5
3.	Intimidation/Threats	2.2
4.	Coercion	2.3
5.	Blackmail	2.3
E.	**Discriminatory Acts**	
1.	Favouritism	3.3
2.	Patronage	3
3.	Guanxi	2.3
4.	Nepotism	2.8
F.	**Unclassified Acts**	
1.	Professional Negligence	2.9
2.	Conflict of Interest	3.1
3.	Embezzlement	2.5

Source: Field survey (2019)

According to the Oxford and Burry-Stock (1995) scale of mean interpretation, mean scores within the range of 1.0–2.4 are a low score, 2.5–3.4 are a medium score and 3.5–5.0 are a high score. Based on this, the study selected those corruption forms that have a mean score of 2.5 and above, representing a medium to high score. More so, advice was given on merging some of the corruption forms, as they have similarities in meaning and usage. The final questionnaire was subsequently designed with sixteen (16) corruption forms that met the criteria for selection. Although, no new suggestions were given with regard to new corruption forms peculiar to the Nigerian construction industry.

4.2 Analysis of Administered Questionnaires

A total of 68 questionnaires were administered to the respondents on a 50 -50 proportion, 34 questionnaires to the contracting organizations and 34 questionnaires also for the consulting organizations. 65 (95.6%) were duly filled and returned and only 63 (92.7%) were found fit for analysis. This is more than the minimum sample size of 34 (50%) required for valid analysis. The response rate is presented in Table 4.1.

Table 4.3 Response Rate of Administered Questionnaires

Questionnaires	**Frequency (No)**	**Percentages (%)**
Total administered	68	100
Total recovered	65	95.6
Total analysed	63	92.7

Source: Field survey (2019)

4.3 Reliability of Respondents' Ratings

The reliability of respondents' ratings was assessed to determine the internal consistency. The value of the Cronbach's Alpha coefficient (α) ranges from 0 to 1 and can be used to describe the reliability of variables deduced from questionnaires or dichotomous and multipoint structured scales (Chan *et al*., 2017; Santos, 1999). The closer the value of α is to 1, the more

reliable the adopted measurement scale. According to Nunnally (1978), in order to justify the reliability of the scale adopted, α value should be no less than 0.7. The SPSS 23.0 statistical package was specifically employed to calculate the value of α for this dataset. The value obtained was 0.969, which indicated a very high degree of reliability. The dataset was therefore regarded as appropriate for further analysis (Owusu *et al*., 2019; Chan *et al*., 2017). Although there were a relatively low number of responses, the stakeholders were assigned to one of two groups based on their organization type (i.e. contracting and consulting organizations). The α values for both were estimated to be 0.971 and 0.967, which render the results from each organization group credible, reliable and valid for further discussions and analysis. These two categorizations were made to examine the proposition of the significant differences or disparities that exist between these two groups regarding the pervasiveness of corruption in the stages of building construction projects. Table 4.4 presents the reliability of respondents' ratings.

Table 4.4: Reliability of respondents' ratings

Cronbach's Alpha		
Overall	Contracting	Consulting
0.969	0.971	0.967

Source: Field survey (2019)

4.4 Data Normality

The Shapiro–Wilk test was done using SPSS statistics at a significance level of 0.05, following previous corruption-related studies such as Owusu *et al*. (2019), Darko and Chan (2017) and Shan *et al.* (2017b). The null hypothesis of the Shapiro–Wilk test states that 'the population was normally distributed'. Although the alpha (α) value generated was less than the actual significance level (i.e. 0.05), therefore the null hypothesis was rejected and a conclusion was

drawn that the dataset is non-normally distributed. So, it is appropriate to use a non-parametric test.

4.5 Demography of Respondents

This section presents the demography of the respondents to include; organization type, working experience and professional affiliation as presented in Table 4.5

Table 4.5: Respondents demography

Characteristics	**Classification**	**Frequency**	**%**
Organization Type	Contracting	30	47.6
	Consulting	33	52.4
	Total	**63**	**100.0**
Working Experience of Respondents	0–5 years	9	14.3
	6–10 years	18	28.6
	11–15 years	19	30.2
	16–20 years	8	12.7
	Above 20 years	9	14.2
	Total	**63**	**100.0**
Professional Affiliation of Respondents	Architect	11	17.5
	Builder	10	15.9
	Civil Engineer	14	22.2
	Quantity Surveyor	15	23.8
	Services Engineer	7	11.1
	Others	6	9.5
	Total	**63**	**100.0**
Have you Handled Public Building Projects	Yes	63	100.0
	No	0	0.0
	Total	**63**	**100.0**

Field Survey (2019)

Considering the type of respondent organization, out of the total number of 63 respondents 30 (47.6%) work with contracting firms and 29 (25.5%) work with consulting firms. 9 (14.3%) of the respondents have between 0 and 5 years, 18 (28.6%) have between 6 and 10 years of experience,19 (30.2%) have between 11 and 15 years of experience, while 8 (12.7%) of the respondents have between 16 and20 years of experience and 9 (14.3%) have above 20 years of experience. The table also shows the respondents' professional affiliation: 11 (17.5%) of them are Architects, 10 (15.9%) are Builders, 14 (22.2%) are Civil Engineers, 15 (23.8%) are Quantity Surveyors, 7 (11.1%) are Services Engineers and 9 (9.5%) are affiliated to other Professions.

4.6 Prevalence of Identified Corruption Forms within the Public Building Projects

Respondents were presented with 16 corruption forms as obtained from the pilot study and were asked to rate their prevalence within the public building projects. The mean statistic, standard deviations and the rank of the overall as well as the individual group response is presented in Table 4.6.

Table 4.6: Prevalence of identified corruption forms within the public building projects

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.57	1.201	2nd	3.60	0.932	2nd	3.33	1.384	7th
2	Kickbacks	3.52	1.014	3rd	3.60	1.003	4th	3.45	1.034	4th
3	Facilitation Payments	3.38	1.237	8th	3.60	1.003	3rd	3.18	1.402	11th
4	Influence Peddling	3.10	0.928	11th	3.07	1.048	11th	3.21	0.857	9th
5	Lobbying	3.51	1.091	4th	3.50	0.974	5th	3.52	1.202	3rd
6	Fraud	2.87	1.211	15th	3.07	1.048	11th	3.03	1.237	13th
7	Collusion/Bid Rigging	3.30	1.173	9th	3.37	1.129	7th	3.24	1.226	8th
8	Front/Shell Companies	2.95	1.224	13th	3.17	1.206	10th	2.76	1.226	15th
9	Cartels	2.89	1.033	14th	2.60	0.894	15th	3.15	1.093	12th
10	Price Fixing	3.40	1.158	5th	3.33	0.994	8th	3.45	1.301	5th
11	Extortion	3.03	1.332	12th	3.07	1.258	12th			
12	Client Abuse/Clientelism	2.52	1.229	16th	2.50	1.106	16th	2.55	1.348	16th
13	Favouritism (Patronage, Nepotism)	3.67	0.880	1st	3.83	0.913	1st	3.82	1.044	1st
14	Professional Negligence	3.24	0.928	10th	3.07	1.048	11th	3.39	0.788	6th
15	Conflict of Interest	3.40	0.925	6th	3.60	0.932	2nd	3.21	0.893	10th
16	Embezzlement	3.40	1.158	7th	3.37	1.129	7th	3.55	1.201	2nd

Field Survey (2019)

The result from the table shows that stakeholders from the two organizations strongly agree on the prevalence of corruption in the construction of public building projects, as the ratings from the two groups have very high mean scores, although they disagreed as to which form is most prevalent in the industry. This result strengthens the generally established fact that corruption is widespread in the construction industry, especially in developing countries where they may lack mature legal systems due to their societal transition, insufficient legal punishments and

penalties (Bologna & Del Nord, 2000), lack of standardized execution in construction projects, (Tabish & Jha, 2011a) and lack of positive role models in public officials (Bowen *et al.*, 2012). Considering all 16 corruption forms assessed, the top most prevalent forms having the highest mean scores were favouritism/patronage/nepotism (3.67), bribery (3.57), kickbacks (3.52), and lobbying (3.51). These top forms were the once that occur often within the public building projects. This mean that these four forms happens frequently within the public building projects The forms having the least mean score is client abuse/clientelism (2.52). This shows that client abuse/clientelism happens rarely to sometimes within the public building project.

In the view of stakeholders from the contracting organizations, the top most prevalent forms with the highest mean scores are bribery (3.83), conflict of interest (3.60), facilitation payments (3.60), kickbacks (3.60) and lobbying (3.50). from the mean score it can be deduced that these corruption forms happens often/frequently while the corruption forms having the lowest mean score is client abuse/clientelism (2.50). This indicates that client abuse/clientelism only happens rarely to sometimes within the public building project.

On the other hand, the stakeholders from the consulting organization posited that the top corruption forms with the highest mean scores are favouritism/patronage/nepotism (3.82) and embezzlement (3.55), they tend towards the often range on the Likert scale, this indicates that favouritism/patronage/nepotism happens many times. Lobbying (3.52), price fixing (3.45) and kickbacks (3.45), falls within the range of those forms that happens sometimes while the corruption forms having the lowest mean score is client abuse/clientelism (2.55). This indicates that client abuse/clientelism occurs rarely within the public building projects

Kickbacks and bribes are often used to obtain contracts or secure a professional appointment, and failure to participate in this corrupt practice results in either unemployment or difficulties in executing the job for those employed (Ameyaw *et al*., 2017). Facilitation payments and lobbying were identified not only as a result of economic setbacks such as low number of

employers (Le *et al*., 2014; Tanzi, 1998; Boyd & Padilla, 2009) or delays in the payment of workers' salaries (Alutu, 2007), which may need mediums such as corruption to enable them to survive, but also the absence of effective and responsible administrative systems. Ling and Tran (2012) and Yow and Zonggui (2004) identified over-close relationships as one of the major factors that breed nepotism, favouritism and patronage. This act is highly evident in day-to-day activities in the public sector and it is mostly described as 'Men Know Men'. Conflict of interest mostly arises when an individual who is constructing a project, or supplying goods or services to a project, is also a member of the consultant's team or a member of the procurement committee (Shakantu, 2003).

According to Amenyaw *et al*. (2017), the sequence of prevalence of these corrupt practices varies across countries; in their study carried out in Ghana, kickback is the most prevalent, followed by bribery, collusion and bid rigging, conflict of interest, fraud, fronting and embezzlement. Another survey carried out by Bowen *et al*. (2012) in South Africa found the order to be collusive tendering and bid rigging, fronting and kickbacks. In a review carried out by Chan *et al*. (2017) bribery was seen to be the most captured form of corruption in literature followed by fraud, collusion, embezzlement, nepotism, conflict of interest, bid rigging, extortion, kickback and professional negligence, while cartels are among the least captured.

Furthermore, comparing the means score from the two stakeholder group, (contracting organizations and consulting organization) The Mann–Whitney U test was carried out and it is shown in Table 4.7.

Table 4.7: Mann–Whitney U test on the most prevalent corruption forms

S/N	Test Statistics[a]	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision

1.	Bribery	403.000	964.000	-1.318	0.187	Retain the null hypothesis
2.	Kickbacks	459.500	1,020.500	-0.514	0.607	Retain the null hypothesis
3.	Facilitation Payments	415.500	974.500	-1.162	0.245	Retain the null hypothesis
4.	Influence Peddling	550.500	1,111.500	0.809	0.418	Retain the null hypothesis
5.	Lobbying	487.000	1,048.000	-0.114	0.909	Retain the null hypothesis
6.	Fraud	565.500	1,126.500	1.002	0.316	Retain the null hypothesis
7.	Collusion/Bid Rigging	487.000	1,048.000	-0.115	0.909	Retain the null hypothesis
8.	Front/Shell Companies	392.000	953.000	-1.473	0.141	Retain the null hypothesis
9.	Cartels	648.500	1,209.500	2.197	0.028[b]	Reject the null hypothesis
10.	Price Fixing	540.500	1,101.500	0.650	0.516	Retain the null hypothesis
11.	Extortion	428.000	1,043.000	-0.184	0.854	Retain the null hypothesis
12.	Client Abuse	489.500	1,050.500	-0.078	0.938	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	583.500	1,144.500	1.298	0.196	Retain the null hypothesis
14.	Professional Negligence	571.500	1,132.500	1.131	0.258	Retain the null hypothesis
15.	Conflict of Interest	389.000	950.000	-1.560	0.119	Retain the null hypothesis
16.	Embezzlement	585.500	1,146.500	1.288	0.198	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

From the Table 4.7, the results indicate that there are no significant disparities between the response of the contracting organizations and consulting organizations regarding the most prevalent corruption forms. The p-values for all the corruption forms are greater than 0.05, indicating no statistically significant differences among the ranks of the various corruption forms. Despite the development and enforcement of innovative and pragmatic measures to tackle corruption in developing countries (Owusu *et al*., 2017), the Nigerian construction industry is still ridden with a lot of corrupt activities. Although Ameh and Odusami (2010a) opined that the level of corruption and unethical practices in the Nigerian construction industry is on the decline following steps by the BMPIU or the 'Due Process Office' to block loopholes

arising from reckless processes involved with contract awards and execution at the federal level, this is in contrast to what this study has discovered.

4.7 Stages of Construction Projects most Associated with Corruption Forms

The respondents were asked to rank the stages of public building projects mostly associated with corruption forms. The Table 4.8 presents the mean statistic, standard deviations and rank of the overall and individual group response on the stages of construction projects most associated with corruption forms.

Table 4.8: Corruption forms and associated public building project stages'

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Pre tender stage	3.38	1.224	4th	3.60	0.621	4th	3.45	1.227	3rd
2	Tendering and bid evaluation stage	3.87	0.889	1st	3.83	1.236	1st	3.91	0.914	1st
3	Contract award stage	3.60	0.708	2nd	3.80	0.874	2nd	3.61	0.788	2nd
4	Contract execution stage	3.46	1.162	3rd	3.63	0.964	3rd	3.30	1.311	4th
5	Contract closure (final account) stage	3.06	1.045	5th	3.23	1.165	5th	2.91	0.914	5th

Field Survey (2019)

The two stakeholder groups uunanimously agreed that the tendering and bid evaluation stage was the most problematic, with mean = 3.87 overall, mean = 3.83 for contracting, mean = 3.91 for consulting. This can only indicate that the tendering and bid evaluation stage is the public building project stage that if often associated with various corruption form. According to Zou (2006), project tendering bid evaluation stage is a critical stage as it marks the first step in determining which construction company will be awarded the contract. Therefore, there is a high level of corruption risk at this stage. Corruption during the tendering and bid evaluation processes means that tenders are deemed nonresponsive for trivial reasons to elevate favored tenderers, tender prices are leaked in exchange for payments, government officials abuse their administrative powers to award public contracts and projects are re-tendered in the absence of due diligence (Amenyaw *et al*., 2017). It is worth noting that a lot of things happen during this

stage and evaluation panels are sometimes pressurized to disqualify the most competitive tender and rather recommend favorites of politicians or those in authority. At other times, corrupt bidders pay their way through the evaluation team, using all foul means to disqualify other bidders to their advantage (Amenyaw *et al*., 2013).

The stage that is next most likely to be susceptible to corrupt practices according to the stakeholder's response was the contract award stage, with mean = 3.60 overall, mean = 3.63 for contracting and mean = 3.61 for consulting. These mean scores also tend towards the often range on the Likert scale indicating that the contract award stage is also frequently associated with corruption forms. The selection and notification of the final/successful firm/organization can be easily manipulated due to relationships with individual tenderers or clients and sometimes because monies have exchanged hands. In some cases, people who were not even part of the tendering will be selected. The contract execution stage follows next, with an overall mean score of 3.46, 3.63 for contracting and 3.61 for consulting. The contract execution stage can be said to be sometimes or frequently associated with corruption forms from the mean score ratings. Various malpractices that occur during this stage of a public building projects may include approval of shoddy works by consultants, over-measurement of works by quantity surveyors, overpayment of contractors by corrupt officials and kickbacks (Doree, 2004; Osei-Tutu *et al*., 2010), and also collusion between on-site supervising firm and contractor (Zou, 2006). Deng *et al.* (2003) reported that the most costly and serious corruption forms may occur after awarding the contract, during the execution stage; with an agreement among colluding parties, the enforcement of quality standards and the contact performance standards may be compromised. According to Amenyaw *et al*. (2013), Project monitoring is one of the most critical phases in project execution that has been relegated by both clients and consultants alike, though both unanimously agree that the level of monitoring/supervision will determine the quality of the project delivered by the contractor. It has been argued that with the current

procurement process, which emphasizes cost, there is the tendency for contractors to undercut and if not monitored closely, they would do shoddy work in order to make up for the low markup (Amenyaw *et al*., 2013). Other stages were pre tender stage with an overall mean score of 3.38, as well as 3.30 for contracting and 3.45 for consulting. At this stage, beneficiary selection comes up, where those in authority decide where to locate which project. This is normally characterized by tribalism, nepotism, political expediency and other forms of corruption. In most cases, beneficiary communities are sometimes compelled to pay some monies as bribes to officers who have been entrusted with the responsibility of deciding where to locate various projects (Amenyaw *et al*., 2013). Unauthorized changes to the scope of the projects also happen at this stage. Lastly, the contract closure stage with the lowest overall mean score of 3.06 and 3.23 for contracting and 2.91 for consulting. This stage of public building project can also be said to be sometimes associated with corruption forms from the mean score ratings. This work generally agrees with the study of Owusu *et al*. (2019), which discovered that the project selection, tendering and prequalification stages were the most susceptible. Amenyaw *et al*. (2017) also suggested that tendering and bid evaluation and contract implementation and administration maybe the most vulnerable to corruption.

For the comparison of the mean score between the stakeholders group, the Mann-Whitney U test carried out is shown in Table 4.9.

Table 4.9: Mann–Whitney U test on the stages of public building project mostly associated with corruption forms

Test Statistics[a]	Pre tender stage	Tendering and bid evaluation stage	Contract award stage	Contract execution stage	Contract closure (final account) stage
Mann-Whitney U	537.000	528.000	488.000	422.000	435.000
Wilcoxon W	1,098.000	1,089.000	1,049.00	983.000	996.00
Z	0.594	0.480	-0.106	-1.048	-0.863
Asymp. Sig. (2-tailed)	0.553	0.632	0.916	0.295	0.388
Decision	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The Table 4.9 represents the result indicates that there are no significant differences in the ranking between the response of the contracting organizations and consulting organizations regarding the stages of public building project most associated with corruption forms. All the p-values for each stage having greater than 0.05. This shows an agreement between the two groups on the order of the stages of construction most associated with corruption forms, with tendering and bid evaluation stage taking the lead, followed by the contract award stage, contract execution stage and pre tender stage and contract closure (final account) stage. These findings confirm that these stages of construction of public building projects are highly vulnerable to various corrupt acts.

4.8 Extent of Occurrence of each Corruption Form at Different Stages of Public Building Construction Projects

Respondents were asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects. The results are presented in mean statistics, standard deviations and ranks. Some forms are highly prevalent at particular stages, while others show a very small degree of occurrence. The results of the different stages are presented and discussed below. The pictorial representations in fig. 1, 2, and 3 below shows the responses from the overall respondents, the contracting firms and the consulting firms.

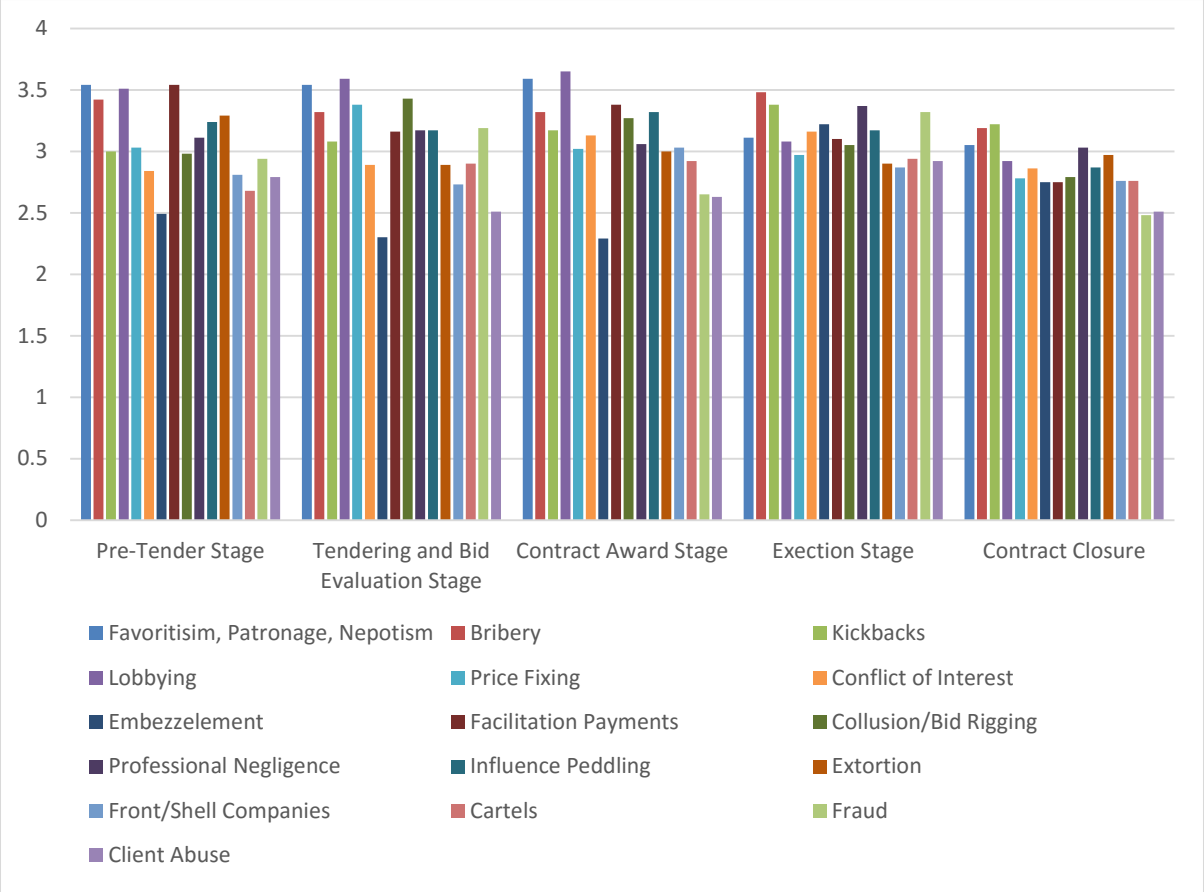

Figure. 1: Extent of occurrence of each corruption form at different stages of public building project (Overall response)

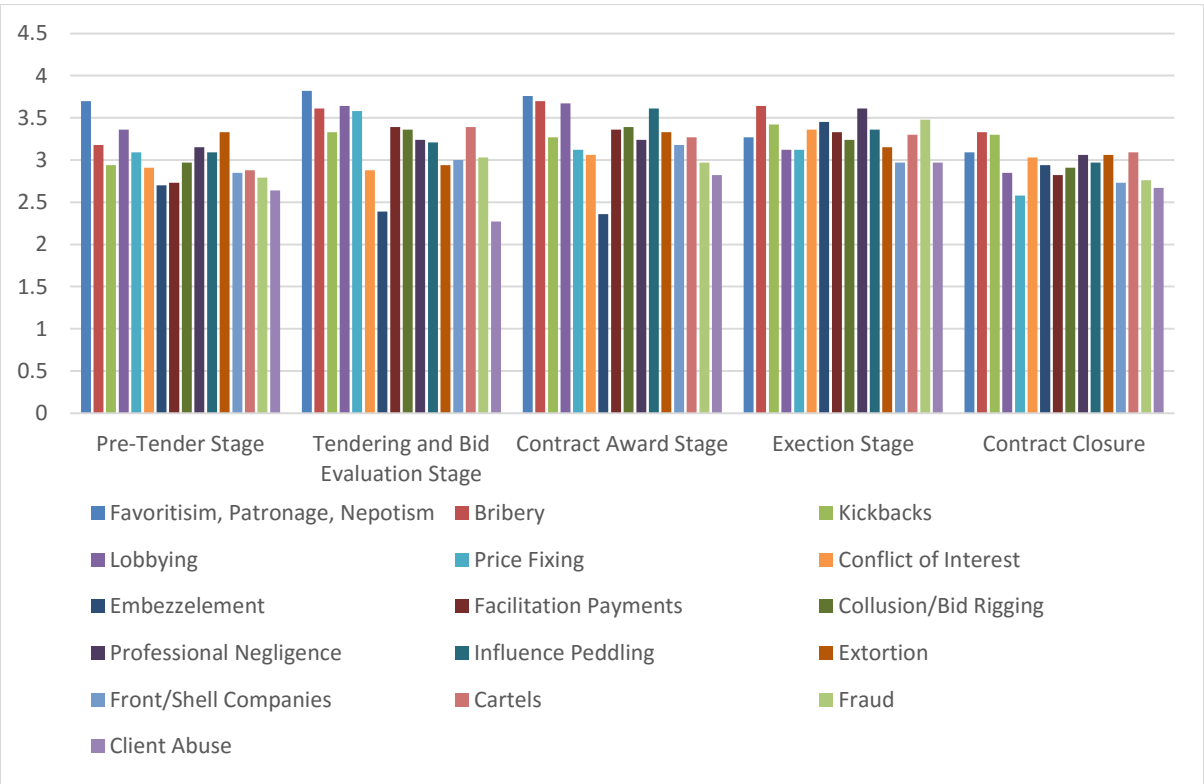

Figure. 2: Extent of occurrence of each corruption form at different stages of public building construction project (Contracting firm response)

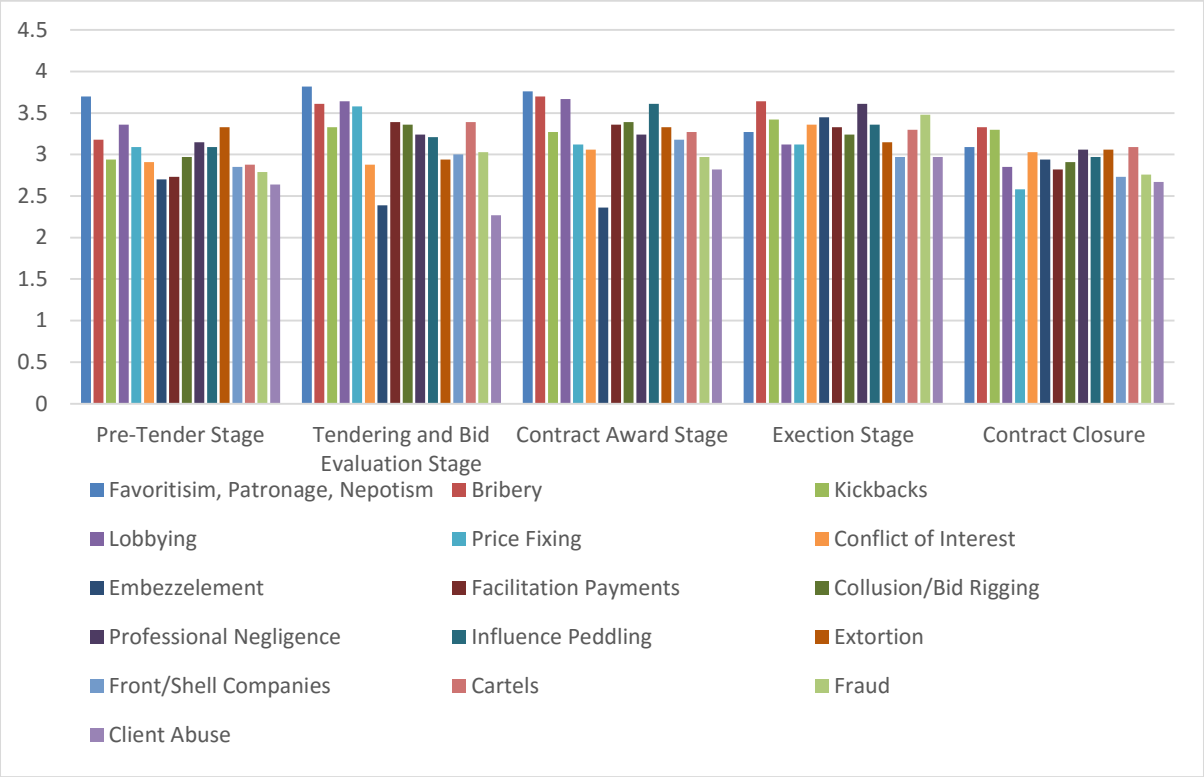

Figure. 3: Extent of occurrence of each corruption form at different stages of public building construction project (Consulting firm response)

4.8.1 Extent of occurrence of each corruption form at the pre tender stage of building construction projects

Respondents were asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, indicating the extent of occurrence of each corruption form at the pre tender stage of public building construction projects is presented in Table 4.10.

Table 4.10: Extent of occurrence of each corruption form at the pre tender stage

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.24	1.088	5th	3.30	1.022	4th	3.18	1.158	4th
2	Kickbacks	3.00	1.032	8th	3.07	1.015	8th	2.94	1.059	9th
3	Facilitation Payments	2.86	1.203	11th	2.93	0.907	12th	2.73	1.420	14th
4	Influence Peddling	3.24	1.254	4th	3.40	1.221	2nd	3.09	1.284	6th
5	Lobbying	3.51	1.458	2nd	3.67	1.348	1st	3.36	1.558	2nd
6	Fraud	2.94	1.216	10th	3.10	1.296	6th	2.79	1.139	13th
7	Collusion/Bid Rigging	2.98	1.251	9th	3.00	1.232	9th	2.97	1.287	8th
8	Front/Shell Companies	2.81	1.255	13th	2.77	1.251	14th	2.85	1.278	12th
9	Cartels	2.68	1.229	15th	2.47	1.074	15th	2.88	1.341	11th
10	Price Fixing	3.03	1.218	7th	2.97	1.245	11th	3.09	1.208	7th
11	Extortion	3.29	1.337	3rd	3.23	1.331	5th	3.33	1.362	3rd
12	Client Abuse/Clientelism	2.79	1.310	14th	2.97	1.520	10th	2.64	1.084	16th
13	Favouritism (Patronage, Nepotism)	3.54	1.435	1st	3.37	1.326	3rd	3.70	1.531	1st

14	Professional Negligence	3.11	1.233	6th	3.07	1.230	7th	3.15	1.253	5th
15	Conflict of Interest	2.84	1.221	12th	2.77	1.305	13th	2.91	1.156	10th
16	Embezzlement	2.49	1.343	16th	2.27	1.337	16th	2.70	1.334	15th

Field Survey (2019)

From the Table 4.10, favouritism/patronage/nepotism, lobbying, extortion, influence peddling and bribery make the top two most prevalent at the pre tender stage, with overall mean scores of 3.54 and 3.51 respectively. This indicates that these two form happens between sometimes and frequently from the mean score ratings. The least prevalent is embezzlement, with overall mean score of 2.49. This indicates that embezzlement happens rarely at this stage of public building project. More so, comparing the mean score from the stakeholders group, the result from the Mann–Whitney U test is presented in Table 4.11.

Table 4.11 Mann–Whitney U test on the most prevalent corruption forms at the pre tender stage of building construction stages

S/N	Test Statistics[a]	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision
			Pre Tender Stage			
1.	Bribery	458.500	1,019.500	-0.522	0.602	Retain the null hypothesis
2.	Kickbacks	430.000	991.000	-0.932	0.351	Retain the null hypothesis
3.	Facilitation Payments	462.500	1,023.500	-0.461	0.645	Retain the null hypothesis
4.	Influence Peddling	433.000	994.000	-0.876	0.381	Retain the null hypothesis
5.	Lobbying	452.000	1,013.000	-0.613	0.540	Retain the null hypothesis
6.	Fraud	412.500	973.500	-1.175	0.240	Retain the null hypothesis
7.	Collusion/Bid Rigging	495.000	1,056.500	0.007	0.994	Retain the null hypothesis
8.	Front/Shell Companies	520.000	1,081.000	0.357	0.721	Retain the null hypothesis
9.	Cartels	568.000	1,129.000	1.049	0.294	Retain the null hypothesis
10.	Price Fixing	510.000	1,071.000	0.213	0.832	Retain the null hypothesis
11.	Extortion	527.500	1,088.500	0.460	0.646	Retain the null hypothesis
12.	Client Abuse	431.00	992.000	-0.913	0.361	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	589.500	1,150.500	1.346	0.178	Retain the null hypothesis

14.	Professional Negligence	415.500	1,075.500	0.277	0.782	Retain the null hypothesis
15.	Conflict of Interest	521.500	1,082.500	0.379	0.705	Retain the null hypothesis
16.	Embezzlement	594.500	1,155.500	1.412	0.158	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The table 4.11 above presents the Mann-Whitney U test for comparing the mean score from the stakeholders group, the results indicate that there are also no significant differences in the rankings between the response of the contracting organizations and consulting organizations on the extent of occurrence of each corruption form at the pre tender stage of public building construction. All the p-values were greater than 0.05.

4.8.2 Extent of occurrence of each corruption form at the tendering and bid evaluation stage of construction projects

Respondents were asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, indicating the extent of occurrence of each corruption form at the tendering and bid evaluation stage of public building construction projects is presented in Table 4.12.

Table 4.12: Extent of occurrence of each corruption form at the tendering and bid evaluation stage

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.32	0.714	5th	3.00	0.643	8th	3.61	0.659	3rd
2	Kickbacks	3.08	1.021	10th	2.80	1.095	11th	3.33	0.890	8th
3	Facilitation Payments	3.16	0.700	9th	2.90	0.662	9th	3.39	0.659	6th
4	Influence Peddling	3.17	1.056	7th	3.13	1.196	5th	3.21	0.927	10th
5	Lobbying	3.59	0.873	1st	3.53	0.819	1st	3.64	0.929	2nd
6	Fraud	3.19	1.216	6th	3.37	1.426	3rd	3.03	0.984	11th
7	Collusion/Bid Rigging	3.43	1.304	3rd	3.50	1.480	2nd	3.36	1.141	7th
8	Front/Shell Companies	2.73	1.260	14th	2.37	1.450	15th	3.00	1.090	12th
9	Cartels	2.90	1.411	11th	2.37	1.450	15th	3.39	1.197	5th
10	Price Fixing	3.38	1.184	4th	3.17	1.289	4th	3.58	1.062	4th
11	Extortion	2.89	1.152	12th	2.83	1.117	10th	2.94	1.197	13th
12	Client Abuse/Clientelism	2.51	1.390	15th	2.77	1.591	12th	2.27	1.153	16th
13	Favouritism (Patronage, Nepotism)	3.44	1.412	2nd	3.03	1.564	7th	3.82	1.158	1st
14	Professional Negligence	3.17	1.326	8th	3.10	1.296	6th	3.24	1.370	9th
15	Conflict of Interest	2.89	1.152	13th	2.63	1.377	13th	2.88	1.111	14th
16	Embezzlement	2.30	1.278	16th	2.20	1.400	16th	2.39	1.171	15th

Field Survey (2019)

The results from the Table 4.12 shows that lobbying, tops the most prevalent corruption forms at this stage of public building project with overall mean scores of 3.59. This indicates that lobbying occurs frequently at this stage of public building project. The least prevalent

corruption form at this stage is embezzlement, with overall mean scores of 2.30. This shows that embezzlement occurs rarely at this stage of public building projects.

Comparing the mean score from the stakeholders group, the result from the Mann–Whitney U test carried out is shown in Table 4.13

Table 4.13: Mann–Whitney U test on the most prevalent corruption forms at the tendering and bid evaluation stage of building construction

S/N	Test Statistics[a]	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision
			Tendering and Bid Evaluation Stage			
1.	Bribery	717.000	1,278.000	3.351	0.001[b]	Reject the null hypothesis
2.	Kickbacks	622.500	1,183.500	1.841	0.066	Retain the null hypothesis
3.	Facilitation Payments	683.000	1,244.000	2.825	0.005	Reject the null hypothesis
4.	Influence Peddling	521.500	1,082.500	0.381	0.703	Retain the null hypothesis
5.	Lobbying	487.000	1,048.000	-0.120	0.905	Retain the null hypothesis
6.	Fraud	436.500	997.500	-0.831	0.406	Retain the null hypothesis
7.	Collusion/Bid Rigging	448.500	1,009.500	-0.657	0.511	Retain the null hypothesis
8.	Front/Shell Companies	609.000	1,170.000	1.617	0.106	Retain the null hypothesis
9.	Cartels	692.000	1,253.000	2.806	0.005[b]	Reject the null hypothesis
10.	Price Fixing	587.500	1,148.400	1.311	0.190	Retain the null hypothesis
11.	Extortion	516.500	1,077.500	0.312	0.712	Retain the null hypothesis
12.	Client Abuse	424.500	985.500	-0.999	0.318	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	632.000	1,193.000	1,941	0.052	Retain the null hypothesis
14.	Professional Negligence	528.000	1,089.000	0.465	0.642	Retain the null hypothesis
15.	Conflict of Interest	538.500	1,099.500	0.618	0.537	Retain the null hypothesis
16.	Embezzlement	582.000	1,143.000	1.276	0.202	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The results from the Table indicate that there are significant differences in the rankings between the responses of the two groups on two items: bribery with a p-value of (0.001) and cartels with

a p-value of (0.005). These p-values are less than (0.05), which shows a high significance, indicating statistically significant differences among the ranks in the response of the contracting organizations and consulting organizations on the extent of occurrence of each corruption form at the tendering and bid evaluation stage of public building construction.

4.8.3 Extent of occurrence of each corruption form at the contract award stage of construction projects

Respondents were asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, indicating the extent of occurrence of each corruption form at the contract award stage of public building construction projects is presented in Table 4.14

Table 4.14: Extent of occurrence of each corruption form at the contract award stage

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.32	1.216	5th	2.90	1.155	8th	3.70	1.159	2nd
2	Kickbacks	3.17	1.056	7th	3.07	0.980	6th	3.27	1.126	9th
3	Facilitation Payments	3.38	0.851	3rd	3.40	0.894	3rd	3.36	0.822	6th
4	Influence Peddling	3.32	0.997	4th	3.00	1.017	7th	3.61	0.899	4th
5	Lobbying	3.65	0.919	1st	3.63	0.850	1st	3.67	0.990	3rd
6	Fraud	2.65	1.050	14th	2.30	1.264	15th	2.97	0.684	14th
7	Collusion/Bid Rigging	3.27	1.194	6th	3.13	1.332	5th	3.39	1.059	5th
8	Front/Shell Companies	3.03	0.915	10th	2.87	1.106	11th	3.18	0.683	11th
9	Cartels	2.92	1.248	13th	2.53	1.306	13th	3.27	1.098	8th
10	Price Fixing	3.02	1.114	11th	2.90	1.322	9th	3.12	0.893	12th
11	Extortion	3.00	1.344	12th	2.63	1.299	12th	3.33	1.315	7th
12	Client Abuse/Clientelism	2.63	1.286	15th	2.43	1.455	14th	2.82	1.103	15th

13	Favouritism (Patronage, Nepotism)	3.59	1.444	2nd	3.40	1.522	2nd	3.76	1.370	1st
14	Professional Negligence	3.06	1.469	9th	2.87	1.756	10th	3.24	1.146	10th
15	Conflict of Interest	3.13	1.055	8th	3.20	1.215	4th	3.06	0.899	13th
16	Embezzlement	2.29	0.958	16th	2.20	1.031	16th	2.36	0.895	16th

Field Survey (2019)

The result from the table indicates that lobbying and favouritism/patronage/nepotism, were the top two most prevalent corruption forms at this stage of public building project, each has the overall mean score of 3.65 and 3.59 respectively. This indicates that these two form occurs many times at this stage. Embezzlement is the least prevalent corruption form identified at this stage of public building project. It has an overall mean score of 2.29 which indicates that it happens only rarely at this stage of public building project. Furthermore, the Mann–Whitney U test was carried out to compare the mean score from the stakeholders group and it is presented in table 4.15

Table 4.15: Mann–Whitney U test on the most prevalent corruption forms at the contract award stage of building construction

S/N	Test Statistics[a]	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision
			Contract Award Stage			
1.	Bribery	660.000	1,221.000	2.381	0.017[b]	Reject the null hypothesis
2.	Kickbacks	555.500	1,116.500	0.878	0.380	Retain the null hypothesis
3.	Facilitation Payments	478.500	1,039.000	-0.242	0.809	Retain the null hypothesis
4.	Influence Peddling	672.500	1,233.500	2.583	0.010[b]	Reject the null hypothesis
5.	Lobbying	495.500	1,056.500	0.007	0.994	Retain the null hypothesis
6.	Fraud	685.000	1,246.000	2.890	0.004[b]	Reject the null hypothesis
7.	Collusion/Bid Rigging	543.5000	1,104.500	0.688	0.492	Retain the null hypothesis
8.	Front/Shell Companies	528.000	1,089.000	0.503	0.615	Retain the null hypothesis
9.	Cartels	669.500	1,230.500	2.484	0.013[b]	Reject the null hypothesis
10.	Price Fixing	535.500	1,096.500	0.577	0.564	Retain the null hypothesis
11.	Extortion	629.000	1,190.000	1.887	0.059	Retain the null hypothesis

12.	Client Abuse	607.500	1,168.500	1.602	0.109	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	561.000	1,1220	0.947	0.343	Retain the null hypothesis
14.	Professional Negligence	569.500	1,130.500	1.048	0.294	Retain the null hypothesis
15.	Conflict of Interest	460.500	1,021.500	-0.500	0.617	Retain the null hypothesis
16.	Embezzlement	566.500	1,127.500	1.052	0.293	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The results from the Table indicates that there are significant differences in the rankings between the responses of the two groups on three items. Bribery has a p-value of 0.017, influence peddling with a p-value of 0.010 and fraud with a p-value of 0.004, which are all less than 0.05. This indicates statistically significant differences among the ranks in the response of the contracting organizations and consulting organizations on the extent of occurrence of each corruption form at the contract award stage of public building construction.

4.8.4 Extent of occurrence of each corruption form at the contract execution stage of construction projects

Respondents were also asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, indicating the extent of occurrence of each corruption form at the contract execution stage of public building construction projects is presented in Table 4.16

Table 4.16: Extent of occurrence of each corruption form at the contract execution stage

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.48	1.134	1st	3.30	1.291	2nd	3.64	0.962	1st
2	Kickbacks	3.38	1.007	2nd	3.33	1.093	1st	3.42	0.936	5th
3	Facilitation Payments	3.10	1.118	9th	2.83	1.117	12th	3.33	1.080	8th
4	Influence Peddling	3.17	1.086	6th	2.97	1.273	7th	3.36	0.859	7th
5	Lobbying	3.08	1.168	10th	3.03	1.217	5th	3.12	1.139	14th
6	Fraud	3.32	1.105	4th	3.13	1.279	3rd	3.48	0.906	3rd
7	Collusion/Bid Rigging	3.05	1.113	11th	2.83	1.315	11th	3.24	0.867	11th
8	Front/Shell Companies	2.87	1.114	16th	2.77	1.305	14th	2.97	0.918	15th
9	Cartels	2.94	1.281	13th	2.53	1.137	16th	3.30	1.311	9th
10	Price Fixing	2.97	1.047	12th	2.80	1.031	13th	3.12	1.053	13th
11	Extortion	2.90	1.043	15th	2.63	1.189	15th	3.15	0.834	12th
12	Client Abuse/Clientelism	2.92	1.067	14th	2.87	1.279	10th	2.97	0.847	16th
13	Favouritism (Patronage, Nepotism)	3.11	1.166	8th	2.93	1.143	9th	3.27	1.180	10th
14	Professional Negligence	3.37	0.989	3rd	3.10	0.885	4th	3.61	1.029	2nd
15	Conflict of Interest	3.16	1.110	7th	2.93	1.363	8th	3.36	0.783	6th
16	Embezzlement	3.22	1.156	5th	2.97	1.273	6th	3.45	1.003	4th

Field Survey (2019)

From the table above, the result indicates that bribery has the highest overall mean score of 3.48, this shows that bribe only occurs sometime at this stage of the public building projects. Front/shell companies comes as the least most prevalent identified corruption form at this stage

of public building project with overall mean scores of 2.87. This can only indicate that front/shell companies happens rarely to sometimes from the mean score ratings. More so, the Mann–Whitney U test was carried out to compare the mean score from the stakeholders group and it is presented in table 4.17

Table 4.17: Mann–Whitney U test on the most prevalent corruption forms at the contract execution stage of building construction

S/N	Test Statistics[a]	Mann-Whitney U	Wilcoxon W		Asymp. Sig. (2-tailed)	Decision
			Contract Execution Stage			
1.	Bribery	559.500	1,120.500	0.929	0.353	Retain the null hypothesis
2.	Kickbacks	534.000	1,095.000	0.559	0.576	Retain the null hypothesis
3.	Facilitation Payments	627.000	1,188.000	1.909	0.056	Retain the null hypothesis
4.	Influence Peddling	599.500	1660.500	1.490	0.136	Retain the null hypothesis
5.	Lobbying	515.000	1,076.000	0.289	0.773	Retain the null hypothesis
6.	Fraud	596.500	1,157.000	1.444	0.149	Retain the null hypothesis
7.	Collusion/Bid Rigging	599.000	1,160.000	1.487	0.137	Retain the null hypothesis
8.	Front/Shell Companies	563.000	1,124.000	0.971	0.332	Retain the null hypothesis
9.	Cartels	661.000	1,222.000	2.830	0.017[b]	Reject the null hypothesis
10.	Price Fixing	581.000	1,142.000	1.273	0.203	Retain the null hypothesis
11.	Extortion	643.500	1,204.500	2.126	0.034[b]	Reject the null hypothesis
12.	Client Abuse	531.500	1,092.000	0.525	0.600	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	583.500	1,450.500	1.278	0.201	Retain the null hypothesis
14.	Professional Negligence	625.000	1,186.000	1.872	0.061	Retain the null hypothesis
15.	Conflict of Interest	595.500	1,156.500	1.441	0.150	Retain the null hypothesis
16.	Embezzlement	608.000	1,169.000	1.612	0.107	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The result from table indicates that there are significant differences in the rankings between the responses of the two groups on two items; Cartels has a p-value of 0.017 and extortion with a

p-value of 0.034, which are both less than (0.05). This indicates statistically significant differences among the ranks in the response of the contracting and consulting organizations on the extent of occurrence of each corruption form at the contract execution stage of public building construction.

4.8.5 Extent of occurrence of each corruption form at the contract closure (final account) stage of construction projects

Respondents were also asked to rate the extent of occurrence of each corruption form at the different stages of public building construction projects, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, indicating the extent of occurrence of each corruption form at the contract closure stage of public building construction projects is presented in Table 4.18

Table 4.18: Extent of occurrence of each corruption form at the contract closure (final account) stage

S/N	Stages of Costruction	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Bribery	3.19	1.090	2nd	3.03	0.850	2nd	3.33	1.267	1st
2	Kickbacks	3.22	1.039	1st	3.13	0.973	1st	3.30	1.104	2nd
3	Facilitation Payments	2.75	0.915	13th	2.67	0.802	9th	2.82	1.014	12th
4	Influence Peddling	2.83	0.890	8th	2.67	0.922	10th	2.97	0.847	8th
5	Lobbying	2.92	0.867	6th	3.00	0.830	3rd	2.85	0.906	11th
6	Fraud	2.48	1.014	16th	2.17	1.053	16th	2.76	0.902	13th
7	Collusion/Bid Rigging	2.79	1.003	9th	2.67	1.124	11th	2.91	0.879	10th
8	Front/Shell Companies	2.76	0.817	11th	2.80	0.887	8th	2.73	0.761	14th
9	Cartels	2.76	1.201	12th	2.40	1.037	14th	3.09	1.259	4th
10	Price Fixing	2.78	0.975	10th	3.00	0.947	6th	2.58	0.969	16th
11	Extortion	2.48	1.014	16th	2.87	0.973	7th	3.06	0.933	6th
12	Client Abuse/Clientelism	2.51	1.134	15th	2.33	1.155	15th	2.67	1.109	15th
13	Favouritism (Patronage, Nepotism)	3.05	1.142	3rd	3.00	1.203	4th	3.09	1.100	3rd

14	Professional Negligence	3.03	1.135	4th	3.00	1.339	5th	3.06	0.933	5th
15	Conflict of Interest	2.86	1.030	7th	2.67	1.155	12th	3.03	0.883	7th
16	Embezzlement	2.75	1.177	14th	2.53	1.042	13th	2.94	1.273	9th

Field Survey (2019)

The top identified most prevalent form at this stage of public building project is kickbacks, bribery with overall mean score of 3.22. This shows that kickback happens sometimes at this stage of public building project. Fraud comes as the least prevalent corruption form at this stage of public building project having overall mean scores of 2.48. This indicates that fraud occurs rarely at this stage of public building project. More so, the Mann–Whitney U test was carried out to compare the mean score from the stakeholders group and it is presented in table 4.19

Table 4.19: Mann–Whitney U test on the most prevalent corruption forms at the contract closure (final account) stage of building construction

S/N	Test Statistics[a]	Mann–Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision
			Contract closure (final account) stage			
1.	Bribery	584.500	1,145.500	1.281	0.200	Retain the null hypothesis
2.	Kickbacks	644.000	1,205.000	2,140	0.032[b]	Reject the null hypothesis
3.	Facilitation Payments	536.000	1,097.000	0.595	0.552	Retain the null hypothesis
4.	Influence Peddling	566.500	1,127.000	1.072	0.284	Retain the null hypothesis
5.	Lobbying	429.500	990.500	-0.961	0.337	Retain the null hypothesis
6.	Fraud	649.000	1,210.000	2.203	0.028[b]	Reject the null hypothesis
7.	Collusion/Bid Rigging	583.000	1,144.000	1.271	0.204	Retain the null hypothesis
8.	Front/Shell Companies	394.500	955.500	-1.951	0.112	Retain the null hypothesis
9.	Cartels	649.500	1,210.500	2.235	0.025[b]	Reject the null hypothesis
10.	Price Fixing	380.000	941.000	1.687	0.092	Retain the null hypothesis
11.	Extortion	456.000	1,017.000	-0.569	0.569	Retain the null hypothesis
12.	Client Abuse	576.500	1,137.500	1.158	0.247	Retain the null hypothesis
13.	Favouritism (Patronage, Nepotism)	388.000	949.000	-1.539	0.124	Retain the null hypothesis
14.	Professional Negligence	524.500	1,085.500	0.424	0.672	Retain the null hypothesis

15.	Conflict of Interest	580.500	1,141.000	1.224	0.221	Retain the null hypothesis
16.	Embezzlement	569.000	1,130.000	1.052	0.293	Retain the null hypothesis

Source: Field Survey (2019)
[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)
[b]Results indicating significant differences (data with significant results)

The table shows the Mann–Whitney U test result on the most prevalent corruption forms at the contract closure (final account) stage of public building project; the results indicate that there are significant differences in the rankings between the responses of the two groups on three items; Kickbacks with a p-value of 0.032, fraud with a p-value of 0.028 and cartels with a p-value of 0.025. These values are less than 0.05, which indicates statistically significant differences among the ranks in the response of the contracting and consulting organizations on the extent of occurrence of each corruption form at the contract closure (final account) stage of public building construction.

4.9 Evaluating the Influence of Corruption at Each Stages on the Overall Project Performance

Respondents were also asked to evaluating the influence of corruption at each stages on the overall project performance, the mean statistic, standard deviations and rank of the overall as well as the contracting and consulting groups, is presented in Table 4.20

Table 4.20: Evaluating the influence of corruption at each stage on the overall project performance

S/N	Corruption Forms	Overall			Contracting			Consulting		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Pre tender stage	2.76	1.292	5th	2.90	1.125	5th	2.64	1.432	5th
2	Tendering and bid evaluation stage	3.71	0.771	1st	3.70	0.750	1st	3.73	0.801	1st
3	Contract award stage	3.60	0.636	2nd	3.63	0.718	2nd	3.58	0.561	3rd
4	Contract execution stage	3.59	0.816	3rd	3.60	0.724	3rd	3.58	0.902	2nd

5	Contract closure (final account) stage	3.16	0.919	4th	3.13	0.860	4th	3.18	0.983	4th

Field Survey (2019)

From the table, the result indicates that the tendering stage comes first with an overall mean score of 3.71; it can be deduced that corruption at the tendering and bid evaluation stage of public building projects often have influence on the overall performance of the project. The next stage is the contract award stage with an overall mean score of 3.60, followed by the contract execution stage with an overall mean score of 3.59. Corruption at these two stages can also be said to frequently have influence on the overall performance of public building projects based on their mean score ratings. After this is the contract closure (final account) stage, which has an overall mean score of 2.76, and last is the pre tender stage with an overall mean score of 2.76. Corruption at both the contract execution stage and the contract closure stage can be said to sometimes influence the overall performance of public building projects. More so, the result of the Mann–Whitney U test on the influence of corruption at each stage on the overall project performance is presented in Table 4.21.

Table 4.21: Mann–Whitney U test on the influence of corruption at each stage on the overall project performance

Test Statistics[a]	**Pre tender stage**	**Tendering and bid evaluation stage**	**Contract award stage**	**Contract execution stage**	**Contract closure (final account) stage**
Mann-Whitney U	431.000	510.500	473.500	515.000	524.500
Wilcoxon W	992.00	1,071.500	1,034.500	1,076.000	1,085.000
Z	-0.907	0.239	-0.330	0.310	0.435
Asymp. Sig. (2-tailed)	0.365	0.811	0.741	0.757	0.663
Decision	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis	Retain the null hypothesis

Source: Field Survey (2019)

[a]Grouping variable: contextual groups (i.e. contracting and consulting organizations)

[b]Results indicating significant differences (data with significant results)

From the table above, the results indicate that there are no statistically significant differences in the rankings between the response of the contracting and consulting organizations on the effect of corruption at each stage on the overall project performance. All the p-values are greater than 0.05.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

From the results of the survey, below is a summary of the findings of this research:

i. The research explores the most prevalent corruption forms within the public building projects and found that these four corruption forms; favouritism/patronage/nepotism (3.67), bribery (3.57), kickbacks (3.52), and lobbying (3.51) were the most prevalent corruption forms that tends to happen often within public building projects. While client abuse/clientelism (2.52) is the corruption form with the least mean score and tends to happen sometimes within the public building projects.

ii. The tendering and bid evaluation stage with mean score of (3.87) was found to be the stage of public building project that is often associated with corruption forms, this is followed by contract award stage (3.60). The contract execution stage, pre tender stage and contract closure stage are only sometimes associated with corruption forms. They have mean score of 3.46, 3.38, and 3.06 respectively.

iii. On the prevalence of corruption forms at the different stages of public building construction, some forms are highly prevalent at particular stages, while others show a

very small degree of occurrence. The Mann–Whitney U test established significant differences in the rankings between the two stakeholder groups.

iv. Favouritism/patronage/nepotism (3.54) and lobbying (3.51) are the corruption forms that tends to occur often at the pre tender stage, while embezzlement (2.49) only occur sometimes at this stage. Lobbying (3.59) tends to happen often at the tendering and bid evaluation stage while embezzlement tends to occur rarely at this stage. At the contract award stage, lobbying (3.65), favouritism/patronage/nepotism (3.59), tends to happen often/frequently while embezzlement (2.29) tends to happen rarely at this stage. Nearly all the corruption forms are found to occur sometimes at the contract execution stage of public building projects as well as the contract closure (final accounts) of public building projects.

ix. The stages of public building project that was found to often have the highest influence of corruption forms on the overall project performance are the tendering and bid evaluation stage having mean score of (3.71), followed by the contract award stage (3.60), and then the project execution stage (3.59). The contract closure (3.16) and the pre tender stage (2.76) were found to sometimes have influence on the overall performance of public building projects.

5.2 Conclusion

From the findings of this study, the following conclusions are drawn;

The most prevalent corruption forms that tends to occur often/frequently within the public building projects are; favouritism/patronage/nepotism, bribery and kickbacks. Price fixing, collusion/bid rigging, professional negligence and influence peddling tends to happen sometimes. While client abuse/clientelism tends to happen rarely.

Although the two stakeholder groups have slightly dissimilar views as to which of the corruption forms is most prevalent in the industry, but there was no statistically significant difference in their response.

The tendering and bid evaluation was also found to be the stage of public building project mostly associated with corruption, and a considerable number of existing literatures regard these stages as the most susceptible stages to corruption. The stakeholders from the two groups reported a significant level of difference on some the most prevalent forms at different stages of public building construction projects. Corruption at the tendering and bid evaluation stage is believed to have the highest influence on the performance of the project.

5.3 Recommendations

The following recommendations have been drawn from this study;

i. There should be severe punishment such as debarring culprits from undertaking any future contracts or penalties like sanctions or even criminal conviction in term of fines and/or imprisonment for person(s) involved in the act of corruption in public building projects.

ii. The role of politics in the award of public building construction projects should be clearly defined so as to minimise political interference and reduce the risk of over-close relationship that leads to favouritism in awarding contracts.

iii. There is need to allow for more environmentally fair competition among bidders to allow contracts to be won and awarded on merit, this will increase the transparency of the tendering and bid evaluation stage and consequently reduce the influence of corruption at this stage on the overall performance of public building projects.

iv. Supervision officials handling the tendering and bid evaluation process should pay special attention at the tendering and bid evaluation stage so as to also minimise the influence of corruption forms at this stage in public building projects.

5.4 Contributions to knowledge

This research assessed the prevalence of corruption forms in five stages of public building projects. The following contributions have been made to the existing body of knowledge on corruption in construction management research:

i. The study established the most prevalent corruption forms within the public building projects to be favouritism/patronage/nepotism with mean score of (3.67)
ii. The tendering and bid evaluation stage of public building projects is the stage that is often associated with various corruption forms with mean score of (3.87)
iii. Lobbying has been found to be the corruption form that happen often at the tendering/bid evaluation stage of public building projects with mean score of (3.59)

5.5 Areas for Further Research

The research work was based on perception and personal experiences of construction stakeholders; it is recommended that further research be carried out on case studies so as to get more evidence of corruption as it relates to the construction of public building projects in Nigeria.

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List of Appendix

Appendix One: Pilot Questionnaire

RE: ASSESSING THE PREVALENCE OF CORRUPTION IN DIFFERENT STAGES OF BUILDING CONSTRUCTION PROJECTS

Dear Respondents

This questionnaire is a form of pilot-testing as part of my M.sc research aimed at **'Assessing the prevalence of corruption in different stages of building construction projects'.**

Corruption in construction is defined as the abuse of assigned authority at the expense of a construction project. It can also be defined as "offering, giving, receiving or requesting, directly or indirectly anything worthy to manipulate the action of an official in the procurement or selection process or in construction contract execution".

You are kindly requested to provide the relevant information that will help in achieving the set objectives of the research. The survey will be used purely for academic purpose only and all information collected will be held in the strictest confidence.

Your participation will be highly appreciated.

Thank you

Abdulrazaq Abdullahi T.
preciousait001@gmail.com
+234(0)8035348701

Section A: Respondents Demography: This section is designed to obtain general information

1. Name of respondent (Optional)……
2. Professional background of respondent
   a. Architect [ ] b. Quantity Surveyor [ ] c. Builder [ ] d. Civil Engineer [ ] e. Service Engineer [ ] f. Contractor [ ] g. Others [ ]
3. Your position/level in the organization
   a. Top Level Management [ ] b. Middle Level Management [ ] c. First Line Management [ ]
4. Highest educational qualification
   a. PhD [ ] b. MSc [ ] c. BSc [ ] d. HND [ ]
5. Years of experience
   a. 0- 5 years [ ] b. 6-10 years [ ] c. 10-15years [ ] d. 16-20 years [ ] e. More than 20 years [ ]
6. Organization type
   a. Contracting [ ] b. Consulting [ ] c. Client [ ] d. Contracting and Consulting [ ]
7. Have you ever been involved in the construction of public building projects?
   a. Yes [ ] b. No [ ]
8. Have you had any personal experience with corruption?
   a. Yes [ ] b. No [ ]

Section B: The followings are the various corruption forms/unethical practices in construction as obtained from literature, you are kindly requested to review and confirm their existence in the Nigerian construction industry and also add any others corruption forms/unethical practices that can be found in the industry based on your experience.

S/N	Corruption Forms/Unethical Practice	Never	Rarely	Sometimes	Often	Always
A.	**Bribery Acts**					
1.	Bribery					
2.	Kickbacks					
3.	Facilitation Payments					
4.	Influence Peddling					
5.	Lobbying					
6.	Solicitation					
B.	**Fraudulent Acts**					
1.	Fraud					
2.	Collusion					
3.	Front/Shell Companies					
4.	Dishonesty					
5.	Ghosting					

6.	Money Laundering					
7.	Deception					
C.	**Collusive Acts**					
1.	Cartels					
2.	Bid Rigging					
3.	Price Fixing					
D.	**Extortionary Acts**					
1.	Extortion					
2.	Client Abuse/Clientelism					
3.	Intimidation/Threats					
4.	Coercion					
5.	Blackmail					
E.	**Discriminatory Acts**					
1.	Favouritism					
2.	Patronage					
3.	Guanxi					
4.	Nepotism					
F.	**Unclassified Acts**					
1.	Professional Negligence					
2.	Conflict of Interest					
3.	Embezzlement					

G.	**Others**					
1.						
2.						
3.						
4.						
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Appendix Two: Questionnaire Validation

P16EVBD8041

Department of Building

Faculty of Environmental Design

Ahmadu Bello University, Zaria

25th April, 2019

Dear Respondent,

REQUEST FOR VALIDATION OF DATA COLLECTION INSTRUMENT

I am conducting a research titled "Contractors perception on the prevalence of corruption in the Nigerian construction industry."

The objectives of the research are;

i. To establish the prevalence of identified corruption forms within the Nigerian construction industry

ii. To identify the stages of construction projects mostly affected by the different forms of corruption
iii. To establish the extent of occurrence of each particular corruption form in different stages of construction process
iv. To identify the industry participants most involved

You are therefore kindly requested to review and critique the items on the data collection instrument attached in terms of

i. Clarity/Lucidity
ii. Suitability of language use
iii. The usage of instructions in to be adhere to by the respondents
iv. The scale items usage
v. The understanding of the questions asked in the instrument, if it can be used to obtain significant information to achieve the research objectives

You are also required to give your view on the time that will be required to fill the questionnaire.
Kindly provide your comments on "Form A" attached

Thank You

Abdulrazaq Abdullahi Taiwo
08035348701

Form A

Name:……

…

Comments

i. Clarity/Lucidity

……

……

…….

ii. Suitability of language use

……

……

……

iii. The usage of instructions in to be adhere to by the respondents

……

…….....

.....

iv. The scale items usage

……

……

……

v. Can the questions obtain significant information that could be used to achieve the research objectives?

……

……

……

Appendix Three: Questionnaires for the Study

ASSESSING THE PREVALENCE OF CORRUPTION IN DIFFERENT STAGES OF BUILDING CONSTRUCTION PROJECTS

Dear Respondents,

This questionnaire is part of my M.sc research aimed at **'Assessing the prevalence of corruption in different stages of building construction projects'.**
Corruption in construction is defined as the abuse of assigned authority at the expense of a construction project. It can also be defined as "offering, giving, receiving or requesting, directly or indirectly anything worthy to manipulate the action of an official in the procurement or selection process or in construction contract execution".

You are kindly requested to provide the relevant information that will help in achieving the set objectives of the research. The survey will be used purely for academic purpose only and all information collected will be held in the strictest confidence.

Your participation will be highly appreciated.

Thank you

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Section A: Respondents Demography: This section is designed to obtain general information

1. Professional background of respondent
   a. Architect [ ] b. Quantity Surveyor [ ] c. Builder [ ] d. Civil Engineer [ ] e. Service Engineer [ ] f. Others [ ]
2. Years of experience
   a. 0- 5 years [ ] b. 6-10 years [ ] c. 11-15years [ ] d. 16-20 years [ ] e. More than 20 years [ ]
3. Organization type
   a. Contracting [ ] b. Consulting [ ] c. Client [ ] d. Contracting and Consulting [ ]
4. Have you ever been involved in construction of public building projects?
   a. Yes [ ] b. No [ ]

Section B: Establishing the most prevalent forms of corruption within the Nigerian construction industry.

Listed below are the identified various forms of corruption within the construction industry, please tick appropriately using the rating scale provided to indicate their level of prevalence

(Hint: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)

S/N	Corruption Forms	Prevalence Rate				
		Never	Rarely	Sometimes	Often	Always
1.	Bribery					
2.	Kickbacks					
3.	Facilitation Payments					
4.	Influence Peddling					
5.	Lobbying					
6.	Fraud					
7.	Collusion/Bid Rigging					
8.	Front/Shell Companies					
9.	Cartels					

10.	Price Fixing					
11.	Extortion					
12.	Client Abuse/Clientelism					
13.	Favouritism (Patronage, Nepotism)					
14.	Professional Negligence					
15.	Conflict of Interest					
16.	Embezzlement					

Section C: Identifying the stages of construction projects mostly associated/familiar with corruption forms in Nigerian construction industry.

Listed below are the stages of construction projects, kindly tick appropriately using the rating scale provided to indicate the stages mostly associated with corruption and corrupt practices.

(Hint: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)

S/N	Stages of Construction Projects	Association/Familiarity				
		Never	**Rarely**	**Sometimes**	**Often**	**Always**
1.	Pre tender stage					
2.	Tendering and Bid evaluation stage					
3.	Contract/Project award stage					
4.	Contract/Project execution stage					
5.	Contract closure (final account) stage					
6.	Dispute resolution stage					

Section D: To establish the extent of occurrence of the identified forms of corruption at the different stages of construction projects, please tick appropriately using the rating scale provided below

(Hint: 1 = To a very small extent, 2 = To small extent, 3 = To some extent, 4 = To a great extent, 5 = To a very great extent)

(1) = To a very small extent (May not occur in every 10 projects)

(2) = To a small extent (1 in every 10 projects)

(3) = To some extent (3 in every 10 projects)

(4) = To a great extent (5 in every 10 projects)

(5) = To a very great extent (Almost certain in every projects)

S/N	Corruption Forms	Stages of Construction/Extent of Occurrence																													
		Pre Tender Stage					Tendering and Bid Evaluation Stage					Contract Award Stage					Contract Execution Stage					Contract Closure (Final Account) Stage					Dispute Resolution Stage				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
1.	Bribery																														
2.	Kickbacks																														
3.	Facilitation Payments																														
4.	Influence Peddling																														
5.	Lobbying																														
6.	Fraud (Falsification)																														
7.	Collusion/Bid Rigging																														
8.	Front/Shell Companies																														
9.	Cartels																														
10.	Price Fixing																														
11.	Conflict of Interest																														
12.	Extortion																														
13.	Embezzelement																														
14.	Client Abuse/Clientelism																														
15.	Favoritism (Patronage, Nepotism)																														
16.	Professional Negligence																														

Section F: Evaluating the effect of corruption at each stage on the overall project performance. Please tick appropriately using the rating scale provided below
(Hint: 1 = Very Low, 2 =Low, 3 = Moderate, 4 = High, 5 = Very High)

S/N	Stages of Construction Projects	Effects of Corruption Forms				
		Very Low	**Low**	**Moderate**	**High**	**Very High**
1.	Pre tender stage					
2.	Tendering and Bid evaluation stage					
3.	Contract/Project award stage					
4.	Contract/Project execution stage					
5.	Contract closure (final account) stage					