# Fighting Procurement Corruption in Public Sector of Ghana Through Electronic Procurement

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## Abstract

*Most countries employ e-procurement to enhance transparency and accountability in the processes of public procurement. The basic idea of implementing e-procurement is to procure the right items at the right place, with the right quantities, right qualities, at the right time with the right price. Ghana has also adopted the e-procurement strategy to curb corruption. This current study therefore assesses the efficiency and effectiveness of e-procurement in curbing corruption in the Ghanaian public procurement processes. The target population for the study is stakeholders of public contracts in the Greater Accra Region with a sample size of 400. The study revealed that procurement policy is always being reviewed to ensure it supports the e-procurement vision and objectives. Also, e-procurement aspects of policy are being linked to policies for e-commerce and e-government. The study revealed that the current procurement system is better than before. The study discovered that the current system is doing very well in terms of performance rating as part of the procedure in large procurement projects. The study revealed a perfect negative correlation between e-procurement and corruption in the public sector of Ghana. There was also a perfect negative relationship between contract administration and supervision processes through e-procurement system and corruption. Also, all the e-procurement evaluation variables are negatively related to corruption. The model indicates that e-procurement predicts about 99.2% of the reduction variation in corruption at 99.9% confidence level. The model also indicates that when e-procurement is implemented successfully, corruption reduces by 0.394. The findings of the study suggest that in order to reduce corrupt practices in the public sector, the government has to continue to use e-procurement in all its deals. Also, for a better procurement practice, there should be an effective procurement policy that is always reviewed to ensure it supports the e-procurement vision and objectives.*

*Keywords: Corruption, E-procurement, Public Sector, ICT, Value for Money, Procurement Acts, Procurement System, Development Procurement, Electronic Procurement.*

## 1.0 INTRODUCTION

Several factors serve as the impediments to the development of many countries in the world, and the most contributing factor among them is corruption, especially in public procurement (Ali & Sassi, 2017). According to Gire (1999), corruption is the most dangerous ills of the society. He went further to state that, corruption is the deadly virus that infects the vital administrative structures thereby retarding the developmental projects in a country. Corruption affects several aspects of the economy with different intensities in countries and is severe in developing countries (Gupta, Davoodi & Alonso-Terme, 2002). The Global Financial Integrity reported in 2013 that corruption divests over 1000 billion dollars of developing economies funds every year (OECD, 2013).

Ali and Sassi (2017) categorized the causes of corruption into two arenas as economic and non-economic. According to them, the economic causal factors are income (the most common), openness to international trade, inflation, administrative structure (centralized or decentralized, more public sectors to few private sectors, low wages, etc). Most countries fight against corruption depends on their income levels. Rich countries have well-built mechanisms that control and prevent corruption. Also, when a country is more open to international trade, it reduces monopolistic operators on the market thereby reducing corruption. Also, when inflation is low, prices of food stuffs and other necessary commodities become bearable thereby dissuading the intention of people to corrupt the system in order to get additional funds to supplement their disposable income. As well, decentralization helps to reduce corruption in the sense that the channels to the operational activities will be shortened. Also, when more

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of the activities are in the hands of the private sector, it helps to reduce the monopoly thereby reducing corruption (Ali & Sassi, 2017).

Noneconomic factors include cultural, social and institutional dimensions (Ali & Sassi, 2017). As can be seen from the causal factors, the main important reason is scarcity of resources. That is the disequilibrium of demand and supply of resources. That is if supply of resources is less and demand is more, there is the possibility of more corrupt acts. The supply of these resources comes through procurement activities. The successful procurement of the right items, at the right place, with the right quantities, right qualities, at the right time with the right price do happen in a corrupt free environment. Meanwhile, most of the public procurement processes in Ghana are infested with corrupt acts that lead to lack of transparency, auditing, accountability, political control and weak professionalism.

However, corruption in public procurement allows politicians or officials in charge to purchase goods and services from the most bribing individuals or organizations thereby leaving the best company or individual that has the best combination of quality and price. The outcome of such contracts leads to replications of such projects several times since appropriate materials is not used in order to pave way for the bribing cost. It sometimes also leads to acquisition of goods and services that are not needed at that moment. For instance, according to Rose-Ackerman (1999), the cost of construction of several public projects in the nineties fell drastically after the investigations conducted by Anti-corruption agencies. For example, the cost of constructing the Milan subway in Italy fell from $227 million per kilometre in 1991 to $97 million per kilometre in 1995 (Rose-Ackerman, 1999). Also, the cost of rail per kilometre fell from $54 million to $26 million as well as a new airport terminal that fell from $3.2 billion to $1.3 billion (Rose-Ackerman, 1999).

Public procurement applies to all kinds of acquisitions of public goods and services by the state. However, corruption is more common in the purchases that require special research and development such as newly designed presidential jet, purchases of complex, special purpose projects such as dams, purchases of standard products sold in open markets such as vehicles, and purchases of customized version products or special purpose computer systems. Many governments try as much as possible to alleviate or prevent corruption in these public procurements due to its danger and negative consequences. Governments did this through many mechanisms such as anti-corruption initiatives by enforcing the laws and strengthening penalties. However, all these initiatives are not enough to curb the canker of corruption in public procurement. The police and the judiciary who are supposed to strengthen and protect the laws and the penalties are also caught up in it. However, more studies (Bertot, Jaeger & Grimes, 2010; Vibha, 2004; Ali & Sassi, 2017; Gupta, Davoodi & Alonso-Terme, 2002) have shown that Information and Communication Technology (ICT) could be used to curb corruption in public procurement hence e-procurement.

## 2.0 LITERATURE REVIEW

This section discusses literature on e-procurement and its influence on corruption in public procurement. It covers theories on corruption and e-procurement as well as the conceptual framework for the study.  The last approach sought to look at the correlation between income and corruption. Some studies have shown that officials whose incomes are low are likely to take bribes to make up what they think they are losing. Amundsen as cited in Akomah and Nani (2016) argues that there is a very great relation between low income, lower-middle income, upper-middle income and high income and procurement corruption. It is believed that the probability for people who receive higher wages or salaries to engage in corrupt practice in procurement is very low (Svensson, 2005). But this cannot be entirely true because some rich officials have the notion that they must continue to become rich irrespective of how they make their wealth. Some people become corrupt because of their interest and others are corrupt because they have weakness in them.

Others have become corrupt because of institutional culture. Corruption is part of some organizations and people who join such institutions become corrupt because of the structure of the organization. Usually, some officials become corrupt because they are not able to differentiate between their private and official roles leading to conflict of interest. Societal pressures have also made people corrupt because at a point people believe the perceptions of society. For others, corruption entered into

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their lives because they felt cheated by what was given to them as their income. Many are the people who have become corrupted because of where they work and who they associated themselves with.

### 2.1 DEVELOPMENT OF THE STUDY

The Transparency International (TI) (2010) defined corruption as the abused of entrusted power by political leaders or a bureaucracy for personal gain or specific group interest. Seldadyo and Haan (2006) also defined corruption as the use or misuse of public power or authority for individual or personal gain or interest. In other words, it is the violation of the norms, procedures and regulations of one's office for his or her personal benefit (Seldadyo & Haan, 2006). According to Morris and Blake (2009), corruption is a menace which is very comprehensive and all-round. In terms of public procurement, Shabbir and Anwar (2007) defined corruption in three main ways namely; public interest approach, public opinion approach and the formal legal approach.

The first approach argues that a person who is entrusted with power is said to have acted improperly if his or her actions go against public interest. The second approach argues that procurement corruption is what the people think. Peters and Welch as cited in Akomah and Nani (2016) also supported the second approach by saying that public procurement corruption is based on the notions of the public or when public opinion determines an action to be corrupt. The third approach also argues that procurement corruption is said to have occurred if the actions of a person with entrusted authority violate the norms of laid down procurement procedures leading to illegal exchanges of anything of value for private gain. Iyanda (2012) affirmed that an act is corrupt only when it violates some formal procurement standards or rules or civic order. It is also said to be corrupt when it negates the moral principles that guide the operations of official procurement obligations. Garoupa and Klerman (2010) gave an assumption that for persons entrusted with power to commit or not to commit an offense, it lies in their own hands.

According to De Graaf (2007), Officials become corrupt when they know their chances of being caught are slimmer than the benefits they stand to gain if they succeed. This approach does not depend on general factors but concentrates on specific situations of an agent. Officials are corrupt because they have faults in their character and as a result move from bad moral character to corrupt acts. It argues that officials are corrupt because they have defects in their human character and the cause of their actions can be rooted in human weakness such as greed. Criminological theories related to this approach have stated that the corrupt official is corrupt because of his quest to make material gains. Once an organizational culture and structures are corrupt, officials who come into contact with them will automatically become corrupt except where they choose to follow their good moral instincts. Meanwhile, corruption is said to be minimal in institutions where professionalism and high standards are upheld (Svensson, 2005).

Corruption occurs because of the failure of officials to distinguish between their public roles and private ones. Sometimes out of obligations to friends or family, officials take bribes just to ensure that an essential personal duty is carried out. Corruption surfaces as a result of societal pressures and neglect of issues of integrity. Society believes that once a person holds a certain position in an organization or institution, he or she should be able to use that position to change his financial fortunes without given any regard to the norms of that office. The last approach sought to look at the correlation between income and corruption. Some studies have shown that officials whose incomes are low are likely to take bribes to make up what they think they are losing. Amundsen as cited in Akomah and Nani (2016) argues that there is a very great relation between low income, lower-middle income, upper-middle income and high income and procurement corruption. It is believed that the probability for people who receive higher wages or salaries to engage in corrupt practice in procurement is very low (Svensson, 2005). But this cannot be entirely true because some rich officials have the notion that they must continue to become rich irrespective of how they make their wealth. Some people become corrupt because of their interest and others are corrupt because they have weakness in them. Others have become corrupt because of institutional culture.

Corruption is part of some organizations and people who join such institutions become corrupt because of the structure of the organization. Usually, some officials become corrupt because they are not able to differentiate between their private and official roles leading to conflict of interest. Societal pressures have also made people corrupt because at a point people believe the perceptions of society.

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For others, corruption entered into their lives because they felt cheated by what was given to them as their income. Many are the people who have become corrupted because of where they work and who they associated themselves with.

### 2.1.1 Incidental Corruption

Incidental corruption is common in public institutions in Ghana. According to Byrne (2007) incidental corruption is asymmetrical and does not suppress the mechanisms of control. Bryan (2012) stated that this corruption is of a limited size and normally involves low-ranking officers. It has little macro-economic cost and is very hard to control. This type of corruption takes place when a firm is persuaded by a procurement official to take an action which is in the interest of the official. Incidental corruption takes place in many procurement setups because perpetrators go unpunished (Azfar, 2007). The lack of stringent penalties and comprehensive institutional codes of ethics coupled with the lack of courage by senior officers to punish such officers have contributed to the upward trend of this type of corruption. Incidental corruption, according to Byrne (2007) weakens the confidence people have in public procurement institutions.

### 2.1.2 Systemic Corruption

This type of corruption is similar to organized crime because it is not incidental but rooted. Some institutions and departments create systems which make it easy to extort firms. Most officials with the mandate to serve their countries use their positions to create wealth for themselves (Campos & Pradhan, 2007). This act engrosses major institutions, processes and participants who act in agreement to extract and share (Azfar, 2007). According to Myint (2000), the worst scenario of corruption is when it becomes systemic. When systemic corruption grips an institution or a group of people, it becomes a way of life and it becomes difficult to conquer. In an institution where systemic corruption is well-established, honesty becomes unreasonable. It is not easy to fight systemic corruption because it is insistent and entrenched in a wider political and economic situation that helps to uphold it (Akomah & Nani, 2016). Those with the mandate to fight this type of corruption may receive their share of whatever is being extorted and so may lack the moral justification and power to crack down on such menace. Systemic corruption hinders and weakens competitive processes and public institutions and makes it possible for officials to exploit genuine business. Systemic corruption is routine and can only be controlled by punishing those whose actions contradict the ethics of the system or process (Akomah & Nani, 2016).

### 2.1.3 Systematic Corruption

It is a calculated means through which procurement officials siphon state resources for their personal benefit in the procurement process. It takes place when weaknesses in laws or regulations governing the procurement regime are being exploited by corrupt and self-seeking officials. Systematic corruption can affect a whole government department, institution or corporation. This type of corruption has significant effect on state revenue and may deflect development and affect resource allocation (Ocheje, 2001). According to Glaeser and Goldin (2006) systematic corruption is a form of behaviour or scheme which manipulates or corrupts economic systems and creates personal gain for a particular group of people. This type of corruption survives when those who set procurement criteria do so to favour certain firms. There is an urgent need for economic solution because this corruption stifles development and cripples the market (Glaeser & Goldin, 2006). According to Bryan (2012) and Rose-Ackerman & Søreide (2011), systematic corruption can only be dealt with by continuous reforms which seek to do away with the lapses in the law and also by ensuring that such reforms are strictly enforced.

### 2.1.4 Administrative Corruption

This type of corruption is aimed at varying implementation of policies. Where such corruption exists, firms get what they want even if they do not qualify (Akomah & Nani, 2016). This menace is gradually becoming an integral part of procurement setups. Firms have come to the conclusion that nothing moves until one has adequately satisfied the concerned procurement official (Akomah & Nani, 2016). Some procurement officers have now become familiar with living far above their legitimate income (Akomah & Nani, 2016) because of what they make through their unapproved administrative deals. The magnitude of

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what is given out by a firm is dependent on the influence of the officer on the said procurement (Akomah & Nani, 2016). Incidental corruption may not be everyday's practice; but has a way of ruining the hard-earned image of an institution. This unhealthy act which is usually committed by low-ranking officers has become a practice in many institutions because offenders are set free for exhibiting such negative behaviour. It is growing because many institutions lack comprehensive code of ethics and standards that regulate the behaviour of such officers.

Systemic corruption is a form of collusion by high-ranking officers, who act together in harmony to extract money from firms. It is the worse type of corruption that can grip an institution. Wherever systemic corruption is deeply rooted, being honest becomes a choice. It is gaining grounds in public procurement institutions because the highest decision-making officers who should be curbing its growth by punishing perpetrators are usually culprits. Systematic corruption can only emerge when there are weaknesses in procurement laws and regulations. Practitioners and firms only take advantage of such weaknesses for their personal gains. The fight against this type of corruption only becomes possible by continuously reforming the laws and regulations to reflect current trends and practice. Administrative corruption tries to find a way around the norm.

In a world where procurement processes have become so competitive, firms would not want to lose out on any job. They would be ever prepared to give out anything just to get what they want. The position of the officer a firm deal with, determines how much the firm has to pay to receive what it wants. Though, the various types of corruption discussed are different in nature, they have greater impact on institutions and must be given the needed attention. Punishment and continuous reforms in procurement laws were seen as the solutions to any type of procurement corruption. The literature reviewed failed to give comprehensive guidelines as to how punishments and reforms should be carried out.

### 2.1.5 Public Choice Theory

The causal chain is that of an individual making a (bounded) rational decision that leads to a predetermined outcome. Central to the public choice literature is the individual corrupt official who tries to maximize his or her utility. The individual (usually male) is portrayed as a rationally calculating person who decides to become corrupt when its expected advantages outweigh its expected disadvantages (a combination of possible penalty and the chance of being caught). This group of causal theories is made popular by Rose-Ackerman (1978), who claims that public officials are corrupt for a simple reason: they perceive that the potential benefits of corruption exceed the potential costs. Or as Klitgaard (1988: 70) states, if the benefits of corruption minus the probability of being caught times its penalties are greater than the benefits of not being caught, then an individual will rationally choose to be corrupt. Of course, the theory can be expanded when conditions that influence the cost-benefit calculations are taken into account.

For example, trust can play an important role. When the state cannot be trusted to manage private property transfers, corruption might become more appealing (Gambetta, 1993). Also, trust within close personal relationships increases the chance of getting the benefits from the delivered corrupt 'services' or reduces the chance of getting caught. In this kind of theory, actions of corrupt officials are caused by a rational, conscious and deliberate weighing process of an individual. In its purest form, autonomous agents are assumed to make more or less rational means-end calculations. In some theories, rational choice is combined with game theory and ideas that agent choice is bound by both the decision-making capacities of individual agents and a surrounding structure of political, economic and cultural rules (institutions), leading to a so-called institutional choice framework (Collier, 2002). The advantage of public choice theory is that it has relatively close focus (Schinkel, 2004: 11). Instead of looking for general determining factors, it concentrates on a specific situation of an agent (a corrupt official) who calculates pros and cons. In that sense however, it is insensitive to the larger social context (which is something public choice in general has often been criticized for). It cannot account for triggering causes within the situation. The theory starts from the moment an official calculates whether to become corrupt or not.

Public choice theories lead to a discourse on corruption control that maximizes the costs of corruption and minimizes the benefits. Since the benefits of corruption are much harder to influence, most of the focus is on the costs of corruption. These costs can be made higher by improving the chances of getting caught and imposing steeper penalties. This can easily lead to a discourse asking for a

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comprehensive system of control based on surveillance, massive information gathering, auditing, and aggressive enforcement of a wide array of criminal and administrative sanctions (Anechiarico & Jacobs, 1996).

### 2.1.6 Bad Apple Theories

Bad apple theories, like public choice theories, primarily look at the level of the individual corrupt agent for the causes of corruption. These studies seek the cause of corruption in the existence of people with faulty (moral) character, the so called 'bad apples. There is a causal chain from bad character to corrupt acts; the root cause of corruption is found in defective human character and predisposition toward criminal activity. Causes are rooted in human weaknesses such as greed. When the focus is on the faulty character of an official, morality is assumed to determine behavior (like in the forthcoming clashing moral values theories): people are assumed to act on the basis of moral values. 'Wrong' values are therefore the cause of corruption. Of course, one can question whether people act on the basis of moral values (Graaf, 2003). But the focus on individual corrupt officials and their motives can also be of a different nature.

'Bad apple' theories are less popular than they used to be. Punch (2000: 317) writes on police corruption: "In the past there was a tendency to think of corruption as a temporary, exceptional 'problem' to be removed by 'surgical' treatment, as if it was a malignant cancer, to restore an otherwise healthy agency (the 'bad apple' metaphor). Conventional wisdom has shifted recently to see corruption as near universal and as forming a permanent concern." We see the assumption of the 'bad apple' often made explicitly or implicitly in the literature, but hardly ever based on empirical claims: the assumption is most often theorized. What is clear from research using criminological theories (which are somewhat related to the bad apple theories) is that stating that the corrupt official is merely after material gain (public choice theories) is too much of a simplification. The official could also be seeking a higher social standing, excitement, work pleasure or a cure for frustration (Nelen and Nieuwendijk, 2003).

For example, Cusson (1983) distinguishes thirteen goals of perpetrators of crime. Literature shows that the agent rationalizes and legitimizes the corrupt behavior and does not regard the behavior as corrupt. In contrast to the following theories, these (criminological) theories do not lead to an emphasis on ethics management. The particular discourse on corruption controls they lead to is determined by the particular (criminological) theory that is used. Social control theory (seeing in the delinquent a person relatively free of intimate attachments, aspirations, and the moral beliefs that hold most people to a life within the law (Hirschi, 1969)), focuses on factors that should *keep* people from criminal activities. One could imagine corruption control based on such a theory. When the root cause of corruption is sought in human weaknesses, 'strong moral values' are named as an antidote (Naim, 1995: 285), but designing a policy to combat corruption with this medicine seems improbable.

### 2.1.7 Organizational Culture Theories

The underlying assumption seems to be that a causal path from a certain culture – a certain group culture – leads to a certain mental state. And that mental state leads to corrupt behavior. Failure in the "proper machinery" of government, not faulty character, leads public officials to act corruptly. Therefore, it accounts for the context corrupt acts occur in. For example, Punch (2000: 304) claims (when talking about corruption within police departments around the world): "If we scan these activities then it is plain that we are no longer dealing with *individuals* seeking solely *personal gain* but with group behavior rooted in established arrangements and/or extreme practices that have to be located within the structures and culture of police work and the police organization." Punch (2000: 317) concludes: "The implication is that in tackling corruption and other forms of police deviance, it is vital to focus on group dynamics, the escalation from minor to serious deviance, and on the negative elements in the police culture." Once again, in these theories there is a causal path from a certain culture, a certain group culture, which leads to a mental state. And that mental state leads to corrupt behavior.

Nevertheless, we could question whether this is a causal link at all, since not all people in the described organizations become corrupt. At best, we could say that these theories describe certain conditions under which corruption occurs. But that, too, is probably saying too much. It is more a matter of describing 'facilitating factors' which, in some cases (not all people in the organization become corrupt),

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strengthen a causal chain. These types of theory are not so much interested in the corrupt official, but in the contextual features that make for the setting of corruption. In that sense, these theories are not really about the causes of corruption.

Implicit in most of these theories is the contention that people in organizations act on the particular dynamics of the organization. Of course, many good arguments involving economic, natural or social forces, for instance, show that institutions (not in the sense of organizations or buildings, more in a sense of collective ways of thinking, feeling and doing) determine, in large part, the decisions and behavior of people. There are dynamics that transcend individuals. These theories state that once an organizational culture (or country) is corrupt, every person who comes in contact with it also runs a big risk of becoming corrupt. Therefore (and interestingly enough) corruption itself seems to be the 'cause' of corruption (even though the specific causal relationship is hard to define). These theories sometimes use the metaphor of the 'slippery slope' (Punch, 2000). Not becoming corrupt in certain organizational cultures means betraying the group (Jackall, 1988; Punch, 2000). These theories lead to a discourse on corruption control in which the emphasis is on influencing the culture of an organization, the so-called 'cultural instruments' by, for example, altering the organization's leadership (Trevino, Weaver et al. 1999; Trevino, Hartman et al. 2000; Huberts, Kaptein et al. 2004).

### 2.1.8 Clashing Moral Values Theories

As distinguished from the previous theories, corruption is considered on a macro level, more precisely, the level of society. Since the culture of an organization is also influenced by society at large, there is an overlap between this group and organizational culture theories. The causal chain in these theories starts with certain values and norms of society that directly influence the values and norms of individuals. These values and norms influence the behavior of individual officials, making them corrupt. In many societies, no clear distinction exists between one's private and one's public roles. Rose-Ackerman: (1999: 91): "In the private sector, gift giving is pervasive and highly valued, and it seems natural to provide jobs and contracts to one's friends and relations. No one sees any reason not to carry over such practices into the public realm. In fact, the very idea of a sharp distinction between private and public life seems alien to many people." Private appropriation of the spoils of office is not regarded as morally reprehensible or illegitimate. Here, morality has an opportunity to cause behavior and thereby cause corruption. In many of these theories, values are assumed to determine behavior.

Because of a clash of values connected to one's private and one's public role, choices have to be made. And certain values lead to corruption. Out of obligations to friends or family (which can be very important in certain cultures), officials take bribes. Thus it is not so much selfish personal gain the corrupt official is after, but rather the agent feels a need to be corrupt to fulfill important personal (moral) duties, like ensuring loyalty to friends and family. As it is said in Latin American countries, "*a los amigos todo, a los enemigos nada, al extraña la ley*– which literally means, for my friends everything, for my enemies nothing, and for strangers the law".

In this group of theories, the antagonism between two value systems is central, like in the theories of Weber (1921) and Habermas (1984). Hoffling (2002: 71) speaks of micro morality and macro morality. Micro morality has to do with connections to people in our social circles (family, friends). It is about values, norms and moral obligations in our daily personal and social lives. Even though obligations from the micro morality are based on informal norms, they are very strong – much stronger than our moral obligations towards strangers. Moral obligations in our personal lives are characterized by reciprocity: we help friends and family just as we expect them to help us. The macro morality, by contrast, emphasizes the universal. It is the product of the process, as described by Nelson (1949), of universalizing morality and claims the legitimacy of its norms on institutions of the law, a universal system of formal norms.

The macro morality is characterized by the complementarity of rights and duties as the primal modus of social ties. For its existence, it depends on societal trust in the compensating mechanisms of social institutions. A problem of the macro morality is its higher level of abstraction, which limits the chances of internalizing its norms. Conflicts in society arise when persons see themselves in two social roles with opposing moral obligations: the macro morality of public officials requires them to treat different persons equally, where the micro morality requires them to favor friends wherever possible. Especially in the vast literature on Third World countries (Williams and Theobald, 2000), a popular theme

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is patrimonialism, leading to patrimonial administration in which the private–public boundary (micro versus macro morality), central to the (Western) concept of public administration (Weber), is blurred. Corruption is often seen (ethnocentrically) as a phase developing countries have to through before reaching maturity. Despite widespread agreement in the literature (Theobald, 1999) that neopatrimonial character is the root cause of corruption in the Third World, Theobald issues a warning (1999: 473): "There is a danger that we are simply describing symptoms rather than identifying underlying causes. There is after all a certain lack of specificity in the concept in the sense that it has been employed in such a range of empirical contexts – from Brazil to Zaire, from Paraguay to the Philippines – which raises serious questions about its analytical utility."

These theories lead to a discourse on corruption control in which codes of conduct and their enforcement play an important role. 'Ethical training' also is popular. In general, attention is paid to ethics in these models (Kaptein 1998; Kaptein and Wempe 2002) rather than rules, threats, surveillance or coercion. In the Third World literature, the discourse is on the elimination of patronage and cronyism, and calls for merit-based principles in administration. Of course, when underdevelopment of a country is seen as the cause of corruption, development is the cure. However, it is clear that economic development is by no means a guarantee for eliminating corruption. In current literature, corruption is often seen as deep-rooted, common and permanent; it is in all social systems, organizations, age and gender groups (Alatas, 1990; Williams, 2000).

### 2.1.9 The Ethos of Public Administration Theories

This theory is related to that of the organizational culture, but varies in that the major concern is the culture within public management and society in general. Like the Clashing Moral Values Theories, we are mainly looking at corruption from a societal level. Like the organizational culture, the organizational level plays an important role: the macro factors (unlike the previous group) work through the level of organizations instead of the individual. In these theories, political and economic structures are studied. Officials' performance has a causal path from societal pressure through the level of organizations. This, combined with a lack of attention to integrity issues, leads to a focus of the official on 'effectiveness,' making him or her corrupt. It is feared, for example, that public sector reforms, under the influence of New Public Management (NPM), change the culture within public management (the meso level) in such a way that standards of ethical probity within public services are affected negatively, leading to more instances of corruption. Thus, the impact of NPM is on the organizational level, which influences the officials; from this point, the causal path of the organizational culture theories is followed. Economist approaches that do not address the ethical dimension of public service or support virtues like public interest, guardianship, integrity, merit, accountability, responsibility and truth, have, according to some, subverted the ethos of public organizations (e.g., by undermining public trust), thus leading to more corruption.

What Heywood (1997: 427) calls 'the structural approach' to political corruption, in which the emphasis is on the nature of state development (with administrative organization and efficiency as key variables), would also fall into this group of theories. Also, arguments are put forward those developments like NPM, deregulation and privatization (Doig and Wilson, 1997) have created significant structures for influence-peddling (Heywood, 1997: 429) and have removed agencies that provide for public accountability. Let us say that Piet Neus's constituency and political superiors stressed to him that what mattered most was achieving his policy objectives; his responsibility was to build roads and preferably at a fast pace. This led Neus to focus on result which, in turn, led to frequent consults with building contractors (over dinner, at the golf course, or even on the French Riviera) on how practical problems could be solved as quickly as possible.

This in turn led to good contacts with certain contractors and roads being built quickly, but also to Piet Neus paying less attention to personal integrity, accountability and legitimacy of his decisions. In fact, the causal chain used in Dohmen's (1996) book describing the case of Piet Neus is similar. Factors at the macro level – huge sums of money funneled from central government into Neus's province of Limburg, a feeling of 'being different' in the province, a political culture in which one political party (CDA) was always in power, small social circles – led to a culture and structure in public organizations that nurtured corrupt practices. Literature from a subgroup of this corruption theory focuses on the morality of a society that

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can be 'wrong', leading to corruption. We see this causal model most often in (older) literature on corruption in the Third World (e.g. Wraith and Simpkins, 1963). "Why does the public morality of African states not conform to that of the British? Their answer seems to boil down to one simple cause: avarice!" (Theobald, 1999: 471). In other (economic) literature on corruption in underdeveloped countries, social and political characteristics of nation states are part of the 'explanation of corruption' (Leys, 1965). Empirical research in this group seems non-existent, probably because the causal link, like in the previous group of theories, is so indirect that the claim, *as true as it may be*, is hard to support empirically. To discuss corruption in this way is of course complex and multifaceted.

Theoretically the claim is powerfully supported by many; see, for example, Frederickson (1997) and Gregory (1999). Gregory claims (1999: 63): "Especially where such reforms have been largely underpinned by the new institutional economics and public choice theory, they may tend to counter more piecemeal efforts to maintain standards of ethical integrity in the bureaucracy. These efforts may need to be reinforced by new approaches to the rebuilding of institutionalized public service, based on a fuller understanding of the important distinctions between public and corporate management." When talking about the structure of the organization and the machinery of government, we quickly refer to the discourse of Scientific Administration (Taylorism). The goals of scientific administration are 'effectiveness' and 'efficiency', but the theory also holds that administrative integrity could be achieved through administrative control.

However, scientific administration is out of fashion. Like empirical research, corruption control based on these theories is quite hard. After all, the culture of a society is difficult to influence. It is clear however, that those who argue that New Public Management leads to more corruption (Gregory, 1999) use a discourse advocating the abandonment of (some) methods and techniques of NPM. A more concrete example of success in trying to control corruption at the societal level is influencing the culture of emerging democracies. Seligson (2001) shows that a public awareness campaign in Nicaragua was a success; it helped raise concern about the negative consequences of corruption and had a measurable impact in reducing its incidence.

### 2.1.10 Corruption Assessment Variables

Rao and Marquette (2012) in collaboration with U4 Anti-Corruption Resource Centre identified six corruption indicators in assessing a country's performance in an attempt of reducing corruption for budget support. According to them, a country or an organization is adjudged of doing well in eradicating corrupt practices if it does well in the following six areas namely; Public Finance Management, Legislation & Legal Processes, Transparency & Accountability, Anti-Corruption Agencies, Perception Assessment, and Economic Crimes against the State. These indicators have been briefly discussed as follows.

### 2.1.10.1 Public Financial Management

All the six variables include indicators that address issues of Public Financial Management (PFM). These vary somewhat, but a common theme relates to the Public Expenditure and Financial Accountability (PEFA) framework. Other indicators relate to building (often electronic) systems for budgeting, procurement and auditing. Efficient use of budget support requires a good PFM system. Improvements in PFM can result in improved provision of effective services such as health, water, and education (Broadbent, 2010), and countries with better performing PFM systems are perceived to be less corrupt than those countries with a poorly performing PFM system (Dorotinsky and Pradhan, 2007). Though there may be some differences in the specific PFM indicators themselves, the use of PFM indicators in all the six corruption assessment variables suggest that this type of indicator can, in principle, be agreed upon readily by donors and partners. This may be because of widespread use of PEFA and thus a degree of familiarity for both donors and recipients.

Tools such as the PEFA framework allow both donors and partners to monitor the progress of PFM reforms. Such reforms lead to improved budgeting and expenditure processes, which help build the trust in government systems required for budget support to be supported by donors. At the same time, it is not clear whether inclusion of PFM indicators in the assessment variables have actually led to changes in the pace and quality of PFM reform and what the challenges have been to include PFM indicators in assessment variables. Furthermore, as discussed in a later section, the connection between improved

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PEFA performance and reduced incidence of corruption has not been clearly established (Rao & Marquette, 2012).

### 2.1.10.2 Legislation and legal processes

Four out of the six case study countries (Afghanistan, Mozambique, Nicaragua, and Uganda) had indicators related to legislation and legal processes in their Corruption Performance Assessment Variables (CPAVs) (Rao & Marquette, 2012). These indicators typically focus on the production of legislation to combat corruption and the progress of trials involving corruption. They also tend to include other de jure (i.e., written) provisions such as the production of monitoring reports and audits as part of their anti-corruption indicators. Strong anti-corruption legislation is essential for providing tools for the police and judiciary with which to investigate and prosecute alleged acts of corruption. However, simply measuring the creation of anti-corruption legislation is not enough. These sorts of indicators are in effect de jure measures rather than de facto measures, and there may be a great difference between legislation as it is written and as it is actually practiced. Legislative indicators such as these often fail to capture the enforcement of legislation; in other words, creation of anti-corruption legislation is relatively easy, but implementation and effective enforcement are not.

Along the same lines, monitoring the number of cases prosecuted can be an ambiguous indicator of enforcement. An increase in the number of cases prosecuted could be interpreted as progress in enforcing anti-corruption legislation but could also equally be attributed to a rise in the incidence of corruption, or even a politically motivated drive against government opponents. CPAVs, which focus on legislation and legal process, would need to monitor enforcement as well as written measures to be effective. The lack of legislation enforcement indicators in CPAVs suggests that it remains difficult to develop such indicators and this is an area that needs to be addressed. This is part of a wider challenge to develop appropriate "outcome" indicators rather than purely "output" indicators. In relation to a programme or policy, output indicators measure the quantity of goods and services produced and the efficiency of production, whereas outcome indicators measure the broader results achieved through the provision of goods and services.

It continues to be a significant challenge to produce legislative outcome indicators – indicators that monitor effective enforcement of legislation – and not just for the CPAV. Whereas countries can draw on international conventions such as the United Nations Convention against Corruption (UNCAC) and the UNCAC Legislative Guide when drafting appropriate legislation, there are no universally accepted measures to monitor enforcement. In many countries, such as Uganda, where Parliament has passed six different acts focused on corruption since 2000 (Chêne 2009), there is not an absence of anticorruption legislation by any means, just an absence of clear and effective enforcement mechanisms. It may not in fact be possible to identify a universal measure that can address all aspects of the enforcement of corruption legislation. Enforcement measures must be tailored to the specific laws passed. A potential indicator could be the production of a monitoring system that meets specific standards. Such an indicator would need to be designed in a context-specific way, informed by analysis that uncovers some of the political economy factors behind anti-corruption legislation reform, backed with increased support for de facto activities and covering a realistic timeframe.

### 2.1.10.3 Transparency and accountability

Three of the PAFs (Afghanistan, Mozambique, and Uganda) include transparency and accountability indicators (Rao & Marquette, 2012). These relate to the regular dissemination of financial statements and audits, as well as scrutiny of financial processes by parliament. Transparency can lead to lower levels of corruption, but this is contingent on other factors. Making information available will not prevent corruption if conditions for publicity as well as accountability, such as education, newspaper circulation, and free and fair elections, are weak (Lindstedt & Naurin, 2006). Where the conditions allow transparency, this can lead to stronger participation of stakeholders external to government in public spending, and countries with stronger participation of external stakeholders in public spending have lower corruption perception indexes (Dorotinsky and Pradhan, 2007). Transparency may not necessarily result in greater external participation but it allows the possibility of it. This in turn can lead to greater accountability and reduced corruption. In countries with an active media and civil society, transparency

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indicators may well be effective corruption monitoring indicators in CPAVs, as they can indicate changes in levels of accountability.

### 2.1.10.4 Anti-Corruption Agencies

Two CPAVs (Malawi and Tanzania) included indicators related to anti-corruption agencies (ACAs) (Rao & Marquette, 2012). In recent years independent ACAs have become popular as policy and institutional responses to corruption, often being given a range of responsibilities to investigate and prosecute allegations of corruption, run public awareness campaigns, and/or develop and oversee anti-corruption reform plans for the government. Ultimately, anti-corruption agencies depend on a variety of factors to be successful, and the establishment of anti-corruption agencies may not, by itself, mean progress in anti-corruption reform.

Likewise, ACA indicators, such as an increase in the number of cases handled by the commissions, are ambiguous in the same way an increase in the number of cases prosecuted in courts can be. The rise could be interpreted as progress in combating corruption, a rise in the incidence of corruption, a politically motivated drive against government opponents, or a combination of these. ACAs are ultimately only one of many institutions that help maintain effective safeguards against corruption. It may well be bad practice to only include indicators for one specific organization in a macro-level monitoring framework, such as CPAV. ACAs are only one part of an anti-corruption strategy, and it is important for CPAVs to include a wider range of indicators.

### 2.1.10.5 Perceptions

Only one country of the six – Mozambique – included a survey of perceptions of corruption (Rao & Marquette, 2012). It is unclear how this survey is carried out and by whom. Neither does the CPAV contain detailed information about the survey, nor is such information readily available. In general, for macro-level indicators such as those usually used in CPAVs, national opinion surveys may be a useful source of information, particularly if they allow for disaggregation of citizen views either by sector or institution, in order to provide more useful information on where progress is taking place and where it is not, particularly if specific institutions or processes are prioritized in the CPAV or the GBS agreement.

Transparency International's Corruption Perception Index (CPI) and the World Bank Institute's Worldwide Governance Indicators (WGI) are often used in CPAVs and similar monitoring arrangements, but are not as useful as more detailed survey data. These cross-country indices based mainly on perceptions data, though the WGI can be termed a "hybrid index" as it is based on a range of sources, which might not be categorized as perceptions. Such tools have been highly effective in terms of advocacy but are less useful for monitoring corruption within a country over time. Perceptions of corruption can be slow to change; they can be biased by high-profile events and differ markedly depending on whether those surveyed are in the area or country in question, or external to it.

In the long term, perceptions of corruption can illustrate where levels of corruption are believed to have changed. This would be more so the case if the data can be broken down by government sector or function. Including data based on experiences, in addition to corruption, along the lines of tools such as Transparency International's Global Corruption Barometer, could provide more accurate and responsive assessments of corruption. CPAV indicators that need to monitor changes in corruption levels over a relatively short period should therefore be based on experience data in addition to perception data.

However, the issue of timeframe still remains. Perception indicators can be effectively described as "lagging indicators," as they respond once the system has begun transformation. Perceptions of corruption/anti-corruption rarely change significantly in the six-month to one-year time period covered in a CPAV, and so making disbursement decisions on this basis is problematic. Instead, it may be more beneficial to identify what can be described as "leading indicators," indicators that respond before transformation in the system (e.g., PFM indicators). Due to the relatively short time period which most CPAVs monitor, "leading indicators" may be more suitable than "lagging indicators" such as perception indicators.

Another work done by Ferwerda, Deleanu and Unger (2016) structured the indicators according to the different stages of the procurement process namely; (1) the decision to contract; (2) the definition of contract characteristics; (3) the contracting process; (4) the contract award; and (5) the contract

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implementation and monitoring. They operationalized the indicators by stating them as questions, such that they could directly be used in the data collection process. All their questions were generally posed in such a way that an answer 'yes' indicated an increased chance of corruption. The various indicators have been briefly discussed as follows:

### 2.1.10.6  The decision to contract

Public authorities decide to purchase goods, works and services. It is possible at this point that the decision does not follow a policy rationale or an existing need but rather the desire to channel benefits to an individual or/and organization (OECD, 2007, p.19–20). Consequently, the red flags are:  Is there strong inertia in the composition of the evaluation team of the tender supplier? Is there any evidence for conflict of interest for members of the evaluation committee (for instance because the public official holds shares in any of the bidding companies? Svensson (2005) finds mixed evidence for the hypothesis that adding resources to governmental institutions helps deter corruption. One notable supporting case is that of Singapore, where "public officials were routinely rotated to make it harder for corrupt official to develop strong ties to certain clients" (Svensson, 2005, p.35). If funds are corruptly channeled to individuals or organizations, this is likely to be seen as an unexplained rise in the wealth of officials involved in the tendering procedure just before the tender and shortly after the award (OECD, 2007, p.57). They are also very likely to explain why officials are unlikely to seek a promotion or another job as the present one offers extra benefits that are not legally accounted for.

Conflict of interest is a clear red flag for corruption. This can be due to family, business or political ties. Another red flag is the possible impartiality of the tender provider to certain suppliers because of past or present affiliation (OLAF, 2011, pp. 68–69). This affiliation, be it direct or mediated via family members reduces the uncertainty that exists between the tender providers and the specific supplier and could therefore create the proper environment for illegal funds channeling. Persily and Lammie (2004) examine the relationship between public perception of corruption and campaign finance in the US. They argue that while reforming the law of campaign finance is not going to reduce widespread perceptions of corrupt officials, the US Courts prefer promoting the reforms, as disproving corruption in campaign finance is very difficult.

### 2.1.10.6  Definition of contract characteristics

Public authorities determine what they need and how they will go about it. The risk here is that the tender is designed in such way that it favours a special bidder instead of addressing a specific need. Consequently, the red flags are: Are there multiple contact offices/persons? Is the contact office not directly subordinated to the tender provider? Is the contact person not employed by the tender provider? Are there any elements in the terms of reference that point at a preferred supplier? Coolidge and Rose-Ackerman (1997) argue from a theoretical point of view that a corrupt government is larger than optimal, and that kleptocrats who wish to maximize the size of their rents are likely to select mixes of governmental services that are sub-optimal from a social welfare maximization point of view. Middlemen are often used by tender suppliers to intermediate the flows of money (Transparency International, 2006). The existence of multiple contact offices that are not directly subordinated to or employed by the tender provider and that provide consultation to the bidding companies could point to their position in the tender process as middlemen.

Furthermore, the tender can be constructed in such a way that it discourages the participation of non-corrupt competitive bidders (European Anti-Fraud Office & OLAF, 2011). This ranges from low attention of the tender provider when it practically nominates the favoured supplier in the text of the call, to high attention when the tender provider uses multiple evaluation criteria and small weights to stump out criteria that favour a certain supplier. As such, Søreide (2002) argues that among the known corrupt techniques in public procurement is the preferred supplier indication — i.e. the public officials "decide which enterprises to invite to the tender" (Søreide, 2002, p. 14).

### 2.1.10.7 Contracting process

When a contracting process opens, it should take place according to what method the law determines to be used to receive proposals (e.g. open bidding system) or evaluate contractors (e.g. single source).

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The risk is that the tender process does not follow the legal design in order to restrict the entrance of competitive bidders. Consequently, the red flags are:

i. Was there a shortened time span for the bidding process?
ii. Has the procedure for an accelerated tender been exercised?
iii. Is the size of the tender exceptionally/unusually large (e.g. packaged)?
iv. Is the time-to-bid allowed to the bidders not conforming to the legal provisions?
v. Are bids submitted after the admission deadline still accepted?
vi. How many offers have been received?
vii. Are there any artificial bids (e.g. bids from non-existing firms)?
viii. Are there any (formal or informal) complaints from non-winning bidders?
ix. Are there any connections between bidders that would undermine effective competition?
x. Are all bids higher than the projected overall costs?

Della Porta and Vannucci (2002, p. 63) present examples of artificially shortened bidding processes favouring certain companies involved in a public health system tender in Parma known under the pseudonym the 'summer call for bid'. Furthermore, Moody-Stuart (1997) argues that among the indicators for corruption one can count the size of the procurement contract and the speed of contracting. The first is motivated by the fact that bribes are usually calculated as a percentage of the total contract value, whereas the second is motivated by the risk that the officials being bribed lose office. Furthermore, Della Porta and Vannucci (2002) argue that sometimes the competition appears real since a large number of firms enroll for a tender, while in reality most of these companies are not real competitors. Finally, Kenny and Musatova (2011, p. 506) also test for a shorter timespan in the bidding process, for too few bids, and for artificial bids and bidders.

Once a tender process is open, the tender provider can still dissuade competitive bidders by keeping the contracting process non-transparent and by circulating private information to favour a particular clientele. From the bidder's side, the chance of bidder collusion increases when tender procedures are not transparent and predictable (Organization for Economic Cooperation and Development [OECD], 2007a, b). Therefore, the unusual composition and distribution of bids put forward in a call should be analyzed and matched with known patterns of collusive behaviour. In this sense, high prices and similar bids are expected to strongly signal collusion; bidders would be expected to also adopt more sophisticated strategies, for example in subcontracting one another so as to avoid competition.

### 2.1.10.7 Contract award

The contract process ends and a decision is made to select the winning bidder. The risk is that evaluation criteria are not clearly stated in tender documents, leaving no grounds to justify the decision of awarding the tender to a corrupt supplier. Consequently, the red flags are: Are not all bidders informed of the contract award and on the reasons for this choice? Are the contract award and the selection justification documents not all publicly available? At this point the tender provider has already made a decision over the winning supplier, and this decision has to be justified and made public (Organization for Economic Cooperation and Development [OECD] 2007a, b). Kunicova and Rose-Ackerman (2005) analyze the effect of different electoral rules and constitutional structures on constraining corruption.

For this, they look at, among others, the capacity of voters and political opponents to monitor public officials, organize for oversight and expose corrupt deeds of public officials, given the different electoral rules and constitutional structures in place. And while they are particularly interested in the incentives and ability of voters and political opponents to directly monitor public officials, they acknowledge the role of the media and of the judiciary in indicating corruption of public officials (Kunicova and Rose-Ackerman, 2005, p. 583). Bertot, Jager and Grimes (2010) argue that if effectively supported by politics, social media can effectively stimulate anti-corruption measures. Finally, based on a cross-sectional analysis, Brunetti and Weder (2003) show that free press and low corruption are significantly correlated. One should look at whether the tender formulates strict requirements for justification of the award and at whether these reasons are presented in due time to all other bidders. One should also investigate whether the contract award and the justification documents are publicly available, because — also here — a lack of transparency could indicate corruption.

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2.1.10.9 Contract implementation and monitoring

When the contract is signed with the selected bidder or contractor, the risks are that contract changes and renegotiations after the award are of a nature that changes the substance of the contract itself. Another risk is that monitoring agencies are unduly influenced to alter the contents of their reports so changes in quality, performance, equipment and characteristics go unnoticed. Moreover, contractor's claims can be false or inaccurate and can be protected by those in charge of revising them. Finally, fictitious companies can be used to relieve the procurement authorities from any accountability or to unlawfully channel funds. Consequently, the red flags are:

i.      Are there inconsistencies in reported turnover or number of staff?
ii.     Is the winning company listed in the local Chamber of Commerce?
iii.    Awarded contract includes items not previously contained in the bid specifications?
iv.     Are there substantial changes in the scope of the project or the project costs after award?
v.      Are audit certificates issued by unknown/local auditor with no credentials?
vi.     Is there any negative media coverage about the project (e.g. failing implementation)?

At the contract implementation stage, the risks of corruption are threefold. First, the procuring entity can fail to keep track records of their procurement process thereby allowing changes to the awarded contract to be made and even to go unnoticed. This would provide public authorities the freedom to ask for additional services to be provided on top of what was requested in the tender, but it would also allow the winning bidder to reduce the proposed workload, the scope of the project etc. It is therefore important to investigate any changes in the scope of the project compared to the original design, as well as changes in quoted prices as compared to the original quotations (Kenny and Musatova, 2011, p. 506). Second, the monitoring entity can be corrupt or negligent such that the poor performance of the contractor is not recorded or is diluted. It is therefore important to look at audit assessments and compare these with relevant media coverage of the tender. Third, cases in which audit companies reveal irregularities due to poor performance of the supplier should be considered to have a higher risk.

At this point, the risks of corruption are assigned to the supplier who has to fake some of the costs it has incurred such that it can recuperate the bribe and make a profit (European Anti-Fraud Office [OLAF], 2011). Finally, phantom companies can provide the best coverage for fake invoices, and therefore the real existence of the subcontracting firms and of the other team members and their persistence in the market is important. However, in order to assess the performance of the procurement practices in the eradication of corruption, the two indicators from both writers were merged for this study. This however means that the current study is using eleven (11) indicators to assess corruption.

2.2 Different Theories

A study conducted by Symons (2000) in South Africa, identified huge corruption in public procurement sector. Some of the frauds identified include the submission of fictitious and exorbitant invoices for materials and labour as well as bribes in return for work and even prompt payment. In some cases, procurement officials were found to have connived with contractors and/or consultants to indulge in unethical practices. Shakantu (2006) also reported that; proprietary information infringements and stealing other peoples' drawings during the design stage; collusive bidding during the tendering stage; cash inducements (bribery) for over-valuing work performed during the site operations stage; negligence in the form of poor quality documents during production documentation stage; fraudulent conduct such as covering up poor workmanship during site operations are some of the corrupt practices going on in the procurement process. Proceedings of the National Conference for Cleaner Public Life (2003) identified several forms of corruption which include; influencing of the law-making process; forming of cartels by bidders; bribing of the decision makers in order to win bids; conflict of interest and massaging of the processes to favour a particular bidder. Corruption also manifests itself in various forms including; bribery, embezzlement, fraud, favoritism, extortion, conflict of interest, political bargains, abuse of discretion and abuse of power (Habtermicheal, 2009).

In 2015, Anas Armeyaw Anas exposed the corrupt practices of some Ghanaian judges following a two-year investigation into the judiciary. About 32 judges were implicated for various acts of corruption,

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in a scandal that brought huge shock among Ghanaians. In the said video, some court judges and magistrates were captured taking bribes in the video. This exposé had a far-reaching effect on the nation, with most of the implicated judges being suspended whiles others were also dismissed outright. A lot had been said about the rot going on at the various passport offices in the country; however, it was Anas who finally brought out hardcore evidence to prove these allegations.

The Tiger Eye PI leader went undercover and posed as a businessman who wanted to have a passport. Upon numerous dealings with authorities at the passport offices, he discovered that some serious corruption was being perpetrated. This exposé implicated officials who were offering Ghanaian passports to non-citizens in exchange for an amount of money. This led to the introduction of the biometric system. Uncovering the rots in the Ghana Police Service was Anas' first major investigative assignment when he decided to venture into full-time journalism. Having heard stories of bribery and corruption in the Police, he decided to have a firsthand look at how the system was really working. Anas posed as a street hawker who was selling Nkatie Burger and hit the highway to sell at unauthorized places despite it being against the law. Lo and behold, it was discovered that the Police officers on the highway were taking bribes from the unlicensed traders to allow them to operate.

Anas' exposé on the corruption being perpetrated on the Ghana-Cote d'Ivoire border is one that ranks among his most intriguing pieces. This exposé is regarded as one of Anas' very best not just because of the rot he uncovered, but also due to the tactful methods he used in outsmarting the officers at the border. Anas posed as a rock stationed at the border and managed to secretly film the smuggling of cocoa beans out of the country. He was also able to spy on trucks moving to Cote d'Ivoire and how some Ghanaian officers were aiding in the smuggling of the cocoa. Posing as a policeman, Anas took his investigative skills to Ghana's Tema ports, where he uncovered the corrupt practices of some custom officers. Anas captured the untoward and crooked deals that were being perpetrated at the ports, with custom officers taking monies from people in exchange for helping them smuggle goods.

### 2.3 historical thinking
#### 2.3.1 Theories on E-procurement

Oviri (2018) defined electronic procurement or e-procurement as business to business or business to customer or business to government sale and purchase of goods and services through the internet and other electronic platforms. E-procurement uses information technology in requesting for information, proposal and quotation (Oviri, 2018). For technology to be adopted, it has to be accepted. One of the theories of Information Technology is Technology Acceptance Model.

#### 2.3.1.1 Technology Acceptance Model

Technology Acceptance Model (TAM) is an adaptation of the Reasoned Action Theory (RAT) in the field of Information System (IS). According to the Technology Acceptance Model, usefulness and perceived ease of use determine a person's intention to use a system with intention to use serving as a mediator of actual system use (Venkatesh et al., 2003). RAT and TAM are both strong behavioural elements that assume someone forms an intention to act or will be free to act without limitation. It should be noted that, constraints that may limit a person's ability, time, environment or organization, and habit to use the e-procurement platform will be the freedom to act (Graham, 2012). Another technological model related to this topic is the Unified Theory of Acceptance and Use of Technology (UTAUT).

#### 2.3.1.2 Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) is based on the comprehensive review of eight major Information System (IS) and behavioural theories available during the last decade (Yousafzai, Foxall & Pallister, 2007). UTAUT states that, actual use of an IS for a person is directly influenced by facilitating conditions and indirectly influencing factors such as performance expectancy, effort expectancy and social conditions (Yousafzai, Foxall & Pallister, 2007). UTAUT approves the positive correlation between behavioural intention and actual behaviour similar to the theory of planned behaviour, theory of reasoned actions and TAM. As the organization adapts the use of ICT, in this case, e-procurement in their operations, they anticipate to improve their service delivery and ensure that the customers or

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clients are more satisfied and that, the processes are more effective and efficient (Yousafzai, Foxall & Pallister, 2007). Another relevant theory looked at is the Actor-Network Theory (ANT).

### 2.3.1.3 Actor-Network Theory

Actor-Network Theory (ANT) is an approach to social theory and research and originates from the field of science studies, which treat objects as part of social networks (Jeferson, 2006). Despite it is best known for its controversial insistence on the capacity of nonhumans to act or participate in systems or networks or both. ANT is associated with forceful critiques of conventional and critical sociology (Jeferson, 2006). ANT posits a heterogeneous network of humans and non-humans as equal interrelated actors. It strives for impartiality in the description of human and nonhuman actors and the reintegration of the actual and social worlds. The e-procurement system also fits into the heterogeneous network of humans and non-humans as equal interrelated actors. The theory that links these two actors is the Transactional Theory (TT).

### 2.3.1.4 Transactional Theory

Transactional Theory (TT) is the initiative of a transaction with the transactional stimulus when two people communicate (Muhia & Afande, 2015). The person at whom the stimulus is directed will respond with the transactional response. A simple transactional analysis involves identifying which ego state directed the stimulus and which ego state in the other person executed the response. These two transactions is termed as complementary transaction (Muhia & Afande, 2015). In a complementary transaction, the response must go back from the receiving ego state to the sending ego state. For example, the procurement department advertises the opportunities on its website, companies or clients' bids online through the website's platform, then the system assesses online without any interference, then the best bidder wins the contract. The objective of e-procurement is to fasten the procurement process and fast decision making (Muhia & Afande, 2015).

### *2.3.2 E-procurement assessment variables*
### 2.3.2.1 Reform (Policy)

In order for a procurement system to work effectively, it must have a policy that guides its operations. The policy should be reviewed to ensure it supports the e-procurement vision and objectives. E-procurement aspects of policy should be linked to policies for e-Commerce and e-Government. Procurement guidelines must be reviewed to ensure consistency and relevance to e-procurement. Polices and guidelines applicable to e-procurement should be made available on line.

### 2.3.2.2 Management and Planning

Existing procurement process's structure, efficiency and effectiveness should be reviewed to better support the introduction of e-procurement systems. Standardized documents for the use of supplies should always be available online (e.g., supplier request/response forms, Response to Request for Tender). A procurement information database should always be established to assist government buyers to better understand the market and make future procurement decisions.

### 2.3.2.3 Legislation and Regulation

The responsibilities for the legislation and regulation relating to e-procurement should be allocated and effectively resourced. Regular monitoring and reporting of compliance by government agencies with the policy, legislation and regulatory frame work should be carried out. Regular monitoring and reporting of e-procurement performance at the national/regional level should be carried out. Regular internal monitoring and reporting of e-procurement performance at the government agency level should be carried out (i.e. agencies are accountable for their procurement performance).

### 2.3.2.4 Bid Document Preparation

There should always be presence of, or compliance with, procurement plan as well as a strong technical specification that allow for evaluation of the contractor's quality of performance. Contracts comprising similar goods or services should not be packaged together. Also, there should be no

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authorized deviation from the nation's Standard Bidding Documents. There should also be no narrow contract specifications in bidding documents that appear to favour specific product types/manufacturers. References should be performed to a more detailed description. There should also be an adequate specification that encourages later claims. There should as well be no understated quantities in Bills of Quantity (BOQ) that could lead to later claims.

### 2.3.2.5 Prequalification

There should be a clear prequalification requirement. Bids should be sufficiently advertised. There should also be adequate time given for preparing applications. Standard evaluation procedure should always be available. There should also be inclusion of experienced applicants on minor technicalities. Requirements should not be pre-registered on a government-approved roster. There should be a quick to answer requests for clarification in good time.

### 2.3.2.6 Advertising of Bids

There should always be a General Procurement Notice (GPN) is issued. There should be unrestricted advertising and/or sufficient notice given. There should be no advance release of bid documents or relevant information to one bidder. Sale of bidding documents should be at justifiably priced in order not to minimize the number of bidders.

### 2.3.2.7 Bidding

All bidders should be informed of the contract cost estimate. There should be a quick to keep accurate minutes of pre-bid meeting, including questions and answers. Clarification should be sought by bidders with answers in writing, circulated to all bidders. There should be no delay between deadline for submitting bids and opening them. Same location for receiving bids and opening them. Bids should not be submitted and accepted after the submission deadline. Bids should be opened in public. Names of attendees, names of bidders and offer prices should be recorded at bid opening. There should always be a quick to provide secure storage of, and unrestricted access to, bids received. There should be transparent procedures for handling complaints and determining remedies.

### 2.3.2.8 Bid Evaluation and Contract Award

Membership of the Bid Evaluation Committee (BEC) should not be constant across procurement packets. BEC members should have the technical expertise necessary to properly evaluate bids. Bidding process should be controlled by a large number of persons in the Project Unit. There should be no unreasonable delays in evaluating the bids and selecting the winner. There should always be fewer number of complaints about bid process and evaluation received from losing bidders. Information necessary to evaluate the procurement process should be available. Original and photocopied documents should be available for review. Correct method of procurement should be noted during review (e.g. no single-source, International Competitive Bidding (ICB)).

Evaluation criteria should not be amended after receipt of bids. There should be no same bidders repeatedly participating. There should also be no same bidder repeatedly winning. Reasonable number of local firms should be on the bidding ICB contracts. There should be no narrow variance between the estimate and the bid amounts received. There should be dissimilarities between competing bids (e.g. format of bid, unit prices, spelling, grammatical and/or arithmetic errors, photocopied documents). Bid bonds should be acquired by competing bidders from several financial institutions. Bid bonds should have different date and/or have non-sequential serial numbers. No bidder should list multiple addresses. Unit prices in competing bids should not vary inconsistently by amounts greater than 100%. Unit prices in competing bids should not be identical. Bidders should not propose identical items (e.g. the same make and model).

There should be uncommonness of ownership in the bids of competing bidders. The Bid Evaluation Report should not be revised or re-issued. The Bid Evaluation Report should not be performed in an unrealistically short time. There should be an arithmetic check of the bid(s) is performed or results in a bidder being favoured appropriately. An evaluated bidder should be disqualified based on the information submitted in their bid. The lowest bidder should not be disqualified with a weak explanation, if any. Seeking

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clarification should not be used as a cloak for financial negotiations. Vested interests should not be identified among members of bid evaluation committee. There should be no falsification of curricula vitae in consultant services proposals and no unreasonable delays in negotiating and executing the contract.

Contract should be in conformity with bid documents (e.g. specification and quantities). Contractor's name should not differ between Contract and Bid Evaluation Report. Contract amount should not be different from amount in Bid Evaluation Report. No contract should include allowances for variations which are not part of the bidding documents. Date of contract should not precede the date of the Nation's No-Objection Letter (NOL). Again, subcontracting requirements should not be imposed. There should be rigorous system for handling contract variations and evaluating claims are defined in the contract. No staff should be involved in contract award decisions become involved in contract supervision.

### 2.3.2.9 Contract Administration and Supervision

Contract specifications or scope of work should not be altered after contract awarded. Site inspection should indicate that work performed was in accordance with the technical specifications. Technical specifications of materials provided should correspond to the specifications agreed upon in the contract. Site inspection should also indicate that project completion is same as that certified or that a completed project is operational. Goods or services should be used for intended purposes. Right quantities of goods and materials should be delivered. There should be a quick delivery of goods or services in any part of the project implementation process. There should be no substitution of nominated consultant staff with less qualified and experienced personnel and no frequent changes in key staff of the Procurement Management Unit (PMU)/Procurement Investigation Unit (PIU).

There should be constancy in PIU/PMU and staff responsible for post-procurement verifications. Availability of oversight physical works is essential. Sufficient post-procurement verification of scope of work and physical inspections is key. Site diaries and meeting minutes should be maintained. Written instructions should be given to contractors. There should be a complete record in PIU/PMU – insignificant number of missing documents. There should be strict checking and certification of progress billings. There should be a complete site measurement records to justify claims for progress payments. There be a low frequency of Change Orders to the contract. There should be a quick to pay progress payments and invoices on a timely basis. There should be a moderate number of signatures required to approve progress payments. There should be an evaluation of contractors' performance recorded. Costs overruns should be adequately explained or justified. There should as well be a considerable beneficiary satisfaction with completed project facilities.

### 2.3.3 E-procurement systems in the public sector of Ghana

The Ghana Electronic Procurement System (GHANEPS) is a web-based, collaborative system, developed in accordance with the requirement laws, to facilitate public procurement processes in Ghana. It offers a secure, interactive, dynamic environment for carrying out procurement of all categories, complexity or value. The e-procurement system was passed in to the procurement sector in 2019.

### 2.3.4 Empirical Review

Muhia and Afande (2015) conducted a study to determine the role of e-procurement strategies in enhancing procurement performance in the public sector of Kenya. Their focus was on the management and activities of the staff of Kenya's Revenue Authority, Times Towers and Haile Sellasie Avenue Nairobi. The study used a stratified random sampling to select 45 staff from the various departments. The staff population of the relevant departments used was 90. They employed descriptive research design and found a positive relationship between e-procurement and improved procurement performance. Their study also revealed a reduction in the cost of activities involved in procurement processes. Although this study tried to link e-procurement to performance in the procurement sector, it failed to model the link between e-procurement and corruption.

Similarly, Balsevich, Pivovarova and Podkolzina (2011) in their study assessed information transparency in public procurement in Russian regions. Their main objective was to explore how transparency of the public procurement system in Russian regions is correlated with competition, corruption and control of key factors that influence outcomes of procurement procedures. They employed

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descriptive research design and used a sample size of 83 respondents from Russian public procurement unit. Their results revealed a significant negative correlation between transparent information and corruption in the regions and utilization of control mechanisms in Russian public procurement. Despite they tried to link transparency of information to corruption, they were not able to draw e-procurement into the equation. They could have generated a model linking e-procurement and corruption.

Nyamete and Namusonge (2018) also established the enablers of e-procurement implementation in procuring entities in Kenya. They employed descriptive research design and used 66 procurement workers from Kenya Power and Lighting Company. They employed a census technique since the population of 66 is small. Their findings revealed that employee competency, technical capacity, technological infrastructure, and security of procurement data are key success factors in the implementation of e-procurement in the procuring entities in Kenya. Although this study also establishes the benefits of e-procurement, it fails to link it with corruption.

In a study conducted by Samoei (2018), it was found that e-tendering, e-sourcing, e-ordering and e-informing all had a statistical significant positive effect on financial performance in the Ministry of Education, Science and Technology in Kenya. Samoei's (2018) main objective was to determine how e-procurement adoption affects the financial performance of the Ministry of Education, Science and Technology, Kenya. He employed descriptive research design and used the census method to collect data from 40 staff working in information technology, accounts, procurement and finance departments of the Ministry of Education, Science and Technology, Kenya. He employed a multiple regression analysis and found that e-tendering, e-sourcing, e-ordering and e-informing had a positive effect on financial performance in the Ministry of Education, Science and Technology, Kenya. However, despite linking e-procurement to financial performance, he was not able to link it with corruption.

## 3.0 RESEARCH METHODOLOGY

This chapter covers the philosophical foundation of the research, the research design, data sources, the target population, sample size and sampling technique, data collection procedure, validity and reliability test of the questionnaire, data analysis and ethical considerations. The philosophical foundation of this study is Epistemology. As defined by Venables and Ripley (2013), epistemology is a scenery of information or ideas that agree with queries as they are, the truth, or many different ways of unearthing liable remedy to issues. Lincoln and Guba (2004) also defined epistemology as a guiding philosophy that informs the researcher about the appropriate methodology to use based on his or her views of the world. This study focuses on the views of the world; therefore, it is appropriate to base its philosophical foundation on epistemology. Also, concepts, such as payback period model, being used by this study fall under epistemology because it was based on the views of the world and not on any belief.

The aspect of epistemology being used by this study is positivism. Under positivism, findings are proven scientifically as well as providing the researcher with hierarchy of methods. However, since quantitative methods will be used for this study, it falls under positivism (Venables & Ripley, 2013). It should be noted that positivism is the basis of quantitative research (Hay, 2002). In quantitative researches, the findings are objective and not subjective. Also, information provided through quantitative methods is specific and précised (Hay, 2002). Under quantitative methods, it is easy to test hypothesis or the accuracy of facts and figures using statistical data (Hay, 2002).

## 3.1 Research Design

Descriptive research design relating to quantitative methods was used for this study. Descriptive research design provides the pictorial view of problem at stake (Burns & Grove, 2003). Descriptive research design is a systematic approach that identifies a problem, gathers data on the problem, analyse the data into meaningful information in order to seek solution for the problem. This design is employed because the study assesses the project financing regime and public procurement processes and its impact on debt sustainability in the Ministry of Finance of Ghana using pay-back-period model. This is based on a cross sectional data. According to Henry, Brady and Johnston (2008), a cross sectional data is a data collected at a time, at a place on several variables with no repetition or replication. In other words, it is a one-dimensional data set. This is so because the instrument used for the data collection is a questionnaire and has been collected once.

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### 3.2 Ethical Considerations

A recommendation letter was received from the university and shown to the respondents and the various institutions that were used for the study. The respondents were assured of an outmost confidentiality. All information gathered was used purposely for this study.

### 3.3 Research Methods

#### 3.3.1 Data sources

The major source of data for this study is primary. This was gathered through the use of a structured questionnaire. The questionnaire was sent to the stakeholders, such as the Ministry of Finance and their departments in the Greater Accra Region. Secondary data sources were also used. These were contracts awarded in the Greater Accra Region from various departments/ministries in Accra, journals, newspapers and online.

#### 3.3.2 Target Population

The target population for the study as stated earlier is the staff of Ministry of Finance in the various districts in the Greater Accra Region. The Greater Accra Region was curved from the Eastern Region by the Greater Accra Region Law (PNDCL 26) as a legally separate region on 23 July 1982. It was formerly called the Accra Capital District. The region lies on the south-eastern part of the country (Ghana) along the Gulf of Guinea and has coastal savannah, a little forest area inland towards the Eastern Region in Ga districts, and miles of beautiful coastline, mostly in the rural areas of the region. The current population of the region based on the 2010 Population and Housing census is 4,010,054 with a growth rate of 2.5% annually. It can therefore be estimated that, the current population for the region as at December 2017 is 4,766,694. The male and female ratio is 1 male to 1.2 female.

Proportionally, the male population is 48.3% and that of females is 59.1%. The region has the age structure of 31.3% under 15 years, 62.5% aged between 15 and 64 years and 3.5% for those above 64 years. The region occupies a total land area of 3,245 square kilometres, making it the smallest region in Ghana. The region's population density is 1,235.8 people per square kilometre. The region is 90.5% urban with a growth rate of 3.1%. Net migration (that is 1,275,425) in the region is always positive owing to the fact that most people visit the region than the inhabitants visiting other regions. The participation of the labour force (15-64 years) is 74.7%.

The region in 2011 recorded the lowest Infant Mortality Rate (37 infant deaths per 1000 live births). The region's Total Fertility Rate is slightly lower (2.5) to that of the national (4.0). The region has 16 districts and municipalities. These municipalities and districts are Accra Metropolitan, Ada East, Ada West, Adenta Municipal, Ashiaman Municipal, Ga Central, Ga East Municipal, Ga South Municipal, Ga West Municipal, Knone Katamanso, La Dade-Kotopon Municipal, La Nkwantanang Madina Municipal, Ledzokuku-Krowor Municipal, Ningo Prampram, Shia Osudoku and Tema Metropolitan. This is shown graphically in Figure 3.1.

#### 3.3.3 Sample Size

According to Miller and Brewer (2003), if the population of the target group is known, the following formula is used to calculate the sample size. The formula is given by:

$$n = \frac{N}{1 + N(\alpha^2)}$$

Where n is the sample size, N; the total population, and α; the significance level. The population as at December 2017 for the Greater Accra Region is 4,766,694. Also, the significance level for this study is 0.05 since it falls under the social sciences. Therefore, substituting these into the formula, we have;

$$n = \frac{4766694}{1 + 4766694(0.05^2)}$$

This gives us

$$n = 399.966 \cong 400$$

Therefore, the sample size for the study is 400 stakeholders of public contracts in the Greater Accra Region.

### 3.3.4 Sampling Technique

Multistage sampling method was used for the study. The first sampling method used was disproportionate stratified random sampling. This was done by assigning 25 respondents for each of the 16 districts as shown in Table 3.1.

Table 3.1: Sample Distribution

| No. | District/Municipal/Metropolitan | Sample |
|---|---|---|
| 1 | Accra Metropolitan | 25 |
| 2 | Ada East | 25 |
| 3 | Ada West | 25 |
| 4 | Adenta Municipal | 25 |
| 5 | Ashiaman Municipal | 25 |
| 6 | Ga Central | 25 |
| 7 | Ga East Municipal | 25 |
| 8 | Ga South Municipal | 25 |
| 9 | Ga West Municipal | 25 |
| 10 | Knone Katamanso | 25 |
| 11 | La Dade-Kotopon Municipal | 25 |
| 12 | La Nkwantanang Madina Municipal | 25 |
| 13 | Ledzokuku-Krowor Municipal | 25 |
| 14 | Ningo Prampram | 25 |
| 15 | Shia Osudoku | 25 |
| 16 | Tema Metropolitan | 25 |
|  | TOTAL | 400 |

The second sampling method used was purposive or judgemental. The staff in the various departments of Ministry of Finance in the 16 districts were selected based on their experience and knowhow in the area debt sustainability, public procurement and project financing.

### 3.3.5 Data Collection Procedure

The offices of the staff in the various departments of Ministry of Finance in the 16 districts were visited to collect the data. The questionnaire was highly structured with Likert scale responses such as Strongly Disagree (1), Disagree (2), Undecided (3), Agree (4) and Strongly Agree (5). Replacement was made for respondents who were not ready to comply. This made the non-response error to be zero.

### 3.3.6 Validity and Reliability Test

After the questionnaire was designed, 20 were sent out to conduct a pilot survey. This helped to reword or reconstruct some of the questions in order to remove ambiguities, thereby, making the questionnaire more valid for the study. Cronbach's alpha was conducted to test the reliability of the questionnaire. According to Bohrnstedt (2010), a questionnaire is reliable if its Cronbach alpha coefficient is greater than or equal to 0.7.

### 3.3.7 Data Analysis

The data collected was coded, entered into SPSS (Statistical Package for Social Sciences) and run for the appropriate analysis. Another package used was Microsoft Excel. Weighted Rank Mean, Spearman's Rank Correlation and Multiple Regression Analyses were conducted. The Spearman's Rank Correlation analysis was conducted because the data for this study is non-parametric or non-metric (Dasí, Montesinos and Murgui, 2013). As stated earlier, the significance level for the study is 0.05.

### 4.0 DATA ANALYSIS

Corruption in public procurement allows politicians or officials in charge to purchase goods and services from the most bribing individuals or organizations thereby leaving the best company or individual

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that has the best combination of quality and price. The outcome of such contracts lead to replications of such projects several times since appropriate materials is not used in order to pave way for the bribing cost. Most countries employ e-procurement to enhance transparency and accountability in the processes of public procurement. The basic idea of implementing e-procurement is to procure the right items at the right place, with the right quantities, right qualities, at the right time with the right price. Ghana has also adopted the e-procurement strategy to curb corruption. This current study therefore assesses the efficiency and effectiveness of e-procurement in curbing corruption in the Ghanaian public procurement processes. The research hypothesis is: there is a negative relationship between successful e-procurement implementation and corrupt practices in the public sector of Ghana at 95% confidence level. In order to achieve this aim, the philosophical foundation was based on Epistemology.

The aspect of epistemology being used by this study is positivism, hence quantitative methods under descriptive research design. The major source of data for this study is primary. The target population for the study as stated earlier is stakeholders of public contracts in the Greater Accra Region with a sample size of 400 through the application of Miller and Brewer (2003) sample size calculation. The 400 sample was distributed among the 16 districts in the Greater Accra Region (Refer to Table 3.1). The Cronbach alpha coefficient for the questionnaire used was 0.992 (Refer to Appendix B), which is greater than 0.7. This indicates that the questionnaire used is 99.2% accurate; therefore, it is reliable and valid for the study. This chapter of the study presents the analysis and interpretations as well as the discussions of the data collected based on the objectives of the study. The subsections of the chapter have been arranged based on the objectives of the study.

## 4.1 Context of Research Sites

Table 4.1: Profile of Respondents

| Variable | Frequency | Percentage (%) |
|---|---|---|
| *Age* | | |
| 25 | 116 | 29.0 |
| 27 | 95 | 23.8 |
| 30 | 96 | 24.0 |
| 35 | 93 | 23.3 |
| Total | 400 | 100.0 |
| *Gender* | | |
| Male | 307 | 76.8 |
| Female | 93 | 23.3 |
| Total | 400 | 100.0 |
| *Education Level* | | |
| Tertiary | 400 | 100.0 |
| *Position at work* | | |
| Civil Servant | 400 | 100.0 |

Source: Field Data, 2018

Table 4.1 represents the demographics of the respondents studied. The average age of the respondents was 29 years with most (29.0%) of them being 25 years. Also, majority (76.8%) of the respondents were males. All the respondents studied were tertiary graduates and civil servants. The category of respondents studied as shown in Table 4.1 indicates that the responses were from highly educated and professional individuals, therefore response errors were minimised.

### 4.1.1 Analysis of the Questionnaires
#### 4.1.1.1 Assessment of e-procurement practices in the public sector of Ghana
Table 4.2: Assessment of e-procurement practices in the public sector of Ghana

| Factors (Overall WRM=3.77) | WRM | Interpretation |
|---|---|---|
| Reform (Policy) | 3.60 | Agree |

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| | | |
|---|---|---|
| Procurement policy was reviewed to ensure it supported the e-procurement vision and objectives | 4.00 | Agree |
| e-Procurement aspects of policy were linked to policies for e-Commerce and e-Government | 3.71 | Agree |
| Procurement guidelines were reviewed to ensure consistency and relevance to e-procurement | 3.52 | Agree |
| Polices and guidelines applicable to e-Procurement were made available on line | 3.18 | Undecided |
| Management and Planning | 4.08 | Agree |
| Existing procurement processes structure, efficiency and effectiveness were reviewed to better support the introduction of e-procurement systems | 4.00 | Agree |
| Standardized documents for the use of supplies are available online (e.g., supplier request/response forms, Response to Request for Tender) | 4.24 | Agree |
| A procurement information database was established to assist government buyers to better understand the market and make future procurement decisions | 4.00 | Agree |
| Legislation and Regulation | 3.80 | Agree |
| The responsibilities for the legislation and regulation relating to e-procurement were allocated and effectively resourced | 4.00 | Agree |
| Regular monitoring and reporting of compliance by government agencies with the policy, legislation and regulatory frame work is carried out | 3.95 | Agree |
| Regular monitoring and reporting of e-procurement performance at the national/regional level is carried out | 3.47 | Undecided |
| Regular internal monitoring and reporting of e-procurement performance at the government agency level is carried out (i.e. agencies are accountable for their procurement performance) | 3.77 | Agree |
| Bid Document Preparation | 3.62 | Agree |
| Presence of, or compliance with, procurement plan | 4.00 | Agree |
| Contracts comprising similar goods or services are not packaged together | 4.00 | Agree |
| Authorized deviation from the nation's Standard Bidding Documents | 3.00 | Undecided |
| There are no narrow contract specifications in bidding documents that appear to favour specific product types/manufacturers | 3.71 | Agree |
| Strong technical specifications that allow for evaluation of the contractor's quality of performance | 2.72 | Undecided |
| References are being performed to a more detailed description | 4.00 | Agree |
| Adequate specification that encourages later claims | 4.00 | Agree |
| No understated quantities in Bills of Quantity (BOQ) that could lead to later claims | 3.53 | Agree |
| Prequalification | 3.65 | Agree |
| Clear prequalification requirements | 3.42 | Undecided |
| Bid sufficiently advertised | 4.00 | Agree |
| Adequate time given for preparing applications | 3.95 | Agree |
| Standard evaluation procedure | 3.76 | Agree |
| Inclusion of experienced applicants on minor technicalities | 3.47 | Undecided |
| Requirement is not pre-registered on a government-approved roster | 3.25 | Undecided |
| Quick to answer requests for clarification in good time | 3.71 | Agree |
| Advertising of Bids | 3.46 | Undecided |
| General Procurement Notice (GPN) is issued | 3.95 | Agree |
| Unrestricted advertising and/or sufficient notice given | 4.24 | Agree |
| No advance release of bid documents or relevant information to one bidder | 2.24 | Disagree |
| Sale of bidding documents at justifiably priced in order not to minimize the number of bidders | 3.42 | Undecided |
| Bidding | 3.91 | Agree |
| All bidders are informed of the contract cost estimate | 4.00 | Agree |
| Quick to keep accurate minutes of pre-bid meeting, including questions and answers | 3.71 | Agree |

| | | |
|---|---|---|
| Clarification sought by bidders is answered in writing or circulated to all bidders | 3.71 | Agree |
| No delay between deadline for submitting bids and opening them | 4.00 | Agree |
| The same location for receiving bids and opening them | 3.76 | Agree |
| Bids are not submitted and accepted after the submission deadline | 4.24 | Agree |
| Bids are opened in public | 4.24 | Agree |
| Names of attendees, names of bidders and offer prices are recorded at bid opening | 3.42 | Undecided |
| Quick to provide secure storage of, and unrestricted access to, bids received | 4.00 | Agree |
| Transparent procedures for handling complaints and determining remedies | 4.00 | Agree |

Source: Estimation from field data, 2019

Tables 4.2, 4.3 and 4.4 represent the assessment of e-procurement practices in the public sector of Ghana. In the Tables, a Weighted Rank Mean (WRM) within the range of 1-1.49 is Strongly Disagree, 1.5-2.49 is Disagree, 2.5-3.49 is Undecided or Not Sure, 3.5-4.49 is Agree and finally 4.5-5 is Strongly Agree. From Table 4.2, it is obvious that e-procurement practices in the public sector of Ghana have been met (WRM of 3.77). The study revealed that procurement policy is always being reviewed to ensure it supports the e-procurement vision and objectives. Also, e-procurement aspects of policy are being linked to policies for e-commerce and e-government. In addition, procurement guidelines are being reviewed to ensure consistency and relevance to e-procurement. However, they were undecided as to whether polices and guidelines applicable to e-procurement are made available on line.

The study found that the existing procurement processes structure, efficiency and effectiveness were reviewed to better support the introduction of e-procurement systems. Also, standardized documents such as supplier request or response forms for the use of supplies are available online. There is a procurement information database established to assist government buyers to better understand the market and make future procurement decisions. This therefore indicates that management and planning is better under the e-procurement practices.

The responsibilities for the legislation and regulation relating to e-procurement were allocated and effectively resourced. Also, there is regular monitoring and reporting of compliance by government agencies with the policy, legislation and regulatory framework. Regular internal monitoring and reporting of e-procurement performance at the government agency level is also carried out. However, they were undecided as to whether there is a regular monitoring and reporting of e-procurement performance at the national or regional level. In addition, there is a presence of, or compliance with, procurement plan as well as adequate specification that encourages later claims. Also, references are being performed to a more detailed description. The study further revealed that, there is no evidence of understated quantities in Bills of Quantity (BOQ) that could lead to later claims.

Meanwhile, the respondents were undecided as to whether there is an authorized deviation from the nation's Standard Bidding Documents and a strong technical specification that allow for evaluation of the contractor's quality of performance. The study revealed that there is always sufficient advertisement of bid and adequate time given for preparing applications. There is also standard evaluation procedure and quick to answer requests for clarification in good time. However, the respondents were undecided as to whether there are clear prequalification requirements and inclusion of experienced applicants on minor technicalities. Also, it is undecided as to whether requirements are not pre-registered on a government-approved roster.

The study also revealed that there is a general procurement notice and an unrestricted advertising and/or sufficient notice given to all clients. However, there is no advance release of bid documents or relevant information to one bidder. Again, all bidders are informed of the contract cost estimate and no delay between deadline for submitting bids and opening them. Also, bids are not submitted and accepted after the submission deadline and are opened in public. The system is quick to keep accurate minutes of pre-bid meeting, including questions and answers and clarification sought by bidders is answered in writing or circulated to all bidders. The system has same location for receiving bids and opening them and is quick to provide secure storage of, and unrestricted access to, bids received. The system also provides transparent procedures for handling complaints and determining remedies.

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Table 4.1.1.1: Assessment of e-procurement practices in the public sector of Ghana cont.

| Factors | WRM | Interpretation |
|---|---|---|
| Bid Evaluation and Contract Award | 3.91 | Agree |
| Membership of the Bid Evaluation Committee (BEC) is not constant across procurement packets | 4.23 | Agree |
| BEC members have the technical expertise necessary to properly evaluate bids | 3.99 | Agree |
| Bidding process is controlled by a large number of persons in the Project Unit | 3.94 | Agree |
| No unreasonable delays in evaluating the bids and selecting the winner | 3.48 | Undecided |
| Fewer number of complaints about bid process and evaluation received from losing bidders | 3.53 | Agree |
| Information necessary to evaluate the procurement process is available | 3.53 | Agree |
| Original and photocopied documents are available for review | 3.77 | Agree |
| Correct method of procurement noted during review (e.g. no single-source, International Competitive Bidding (ICB)) | 3.48 | Undecided |
| Evaluation criteria are not amended after receipt of bids | 4.00 | Agree |
| No same bidders repeatedly participating | 4.47 | Agree |
| No same bidder repeatedly winning | 3.70 | Agree |
| Reasonable number of local firms bidding on ICB contracts | 4.47 | Agree |
| No narrow variance between the estimate and the bid amounts received | 3.76 | Agree |
| Dissimilarities between competing bids (e.g. format of bid, unit prices, spelling, grammatical and/or arithmetic errors, photocopied documents) | 3.70 | Agree |
| Bid bonds are acquired by competing bidders from several financial institution | 4.24 | Agree |
| Bid bonds have different date and/or have non-sequential serial numbers | 4.24 | Agree |
| No bidder lists multiple addresses | 4.00 | Agree |
| Unit prices in competing bids do not vary inconsistently by amounts greater than 100% | 4.00 | Agree |
| Unit prices in competing bids are not identical | 4.00 | Agree |
| Bidders do not propose identical items (e.g. the same make and model) | 4.18 | Agree |
| Uncommon ownership in the bids of competing bidders | 3.70 | Agree |
| The Bid Evaluation Report has not been revised or re-issued | 3.76 | Agree |
| The Bid Evaluation Report has not been performed in an unrealistically short time | 3.99 | Agree |
| An arithmetic check of the bid(s) is performed or results in a bidder being favoured appropriately | 4.18 | Agree |
| An evaluated bidder have been disqualified based on the information submitted in their bid | 4.19 | Agree |
| The lowest bidder is not disqualified with a weak explanation, if any | 4.00 | Agree |
| Seeking clarification is not used as a cloak for financial negotiations | 3.71 | Agree |
| Vested interests are not identified among members of bid evaluation committee | 3.94 | Agree |
| No falsification of curricula vitae in consultant services proposals | 3.70 | Agree |
| No unreasonable delays in negotiating and executing the contract | 3.18 | Undecided |
| Contract is in conformity with bid documents (e.g. specification and quantities) | 3.65 | Agree |
| Contractor's name does not differ between Contract and Bid Evaluation Report | 3.41 | Undecided |
| Contract amount is not different from amount in Bid Evaluation Report | 4.71 | Agree |
| No contract includes allowances for variations which are not part of the bidding documents | 3.65 | Agree |
| Date of contract does not precede the date of the Nation's No-Objection Letter (NOL) | 4.18 | Agree |
| Subcontracting requirements are not imposed | 3.70 | Agree |
| Rigorous system for handling contract variations and evaluating claims are defined in the contract | 4.18 | Agree |
| No staff involved in contract award decisions become involved in contract supervision | 4.18 | Agree |

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Source: Estimation from field data, 2019

The study also revealed that bid evaluation and contract award managements are better under the e-procurement system than before. This is because membership of the Bid Evaluation Committee (BEC) is not constant across procurement packets. Again, the BEC members have the technical expertise necessary to properly evaluate bids. Also, bidding process is controlled by a large number of persons in the Project Unit. Fewer number of complaints about bid process and evaluation are received from losing bidders. Information necessary to evaluate the procurement process is always available. Original and photocopied documents are always available for review. Evaluation criteria are not amended after receipt of bids. Also, no same bidders repeatedly participate or win contracts. Reasonable number of local firms also bid on ICB contracts. There is no narrow variance between the estimate and the bid amounts received.

There are dissimilarities between competing bids in terms of the format of bid, unit prices, spelling, grammatical and/or arithmetic errors, photocopied documents. Also, bid bonds are acquired by competing bidders from several financial institutions. As well, bid bonds have different date and/or have non-sequential serial numbers. There are also no situations where bidders list multiple addresses. Unit prices in competing bids do not vary inconsistently by amounts greater than 100%, and they are not identical either. Bidders do not propose identical items. There is also uncommon ownership in the bids of competing bidders. Besides, the Bid Evaluation Report has not been revised or re-issued. Bid Evaluation Reports are always performed in an unrealistically short time. There is also an arithmetic check of the bid(s) if a bidder is being favoured appropriately. An evaluated bidder is being disqualified based on the information submitted in their bid.

Also, the lowest bidder is not disqualified with a weak explanation, if any. The system also does not seek clarification as a cloak for financial negotiations. Vested interests are not identified among members of bid evaluation committee. There was no indication of falsification of curricula vitae in consultant services proposals. Additionally, contracts are in conformity with bid documents and amounts and are not different from amount in Bid Evaluation Report. Also, there were no evidence of contracts that include allowances for variations which are not part of the bidding documents. Furthermore, date of contracts does not precede the date of the Nation's No-Objection Letter (NOL). The study revealed that in the current system, subcontracting requirements are not imposed on bidding contractors. There is a rigorous system for handling contract variations and evaluating claims are defined in the contract. Also, no staff who is involved in contract award decisions become involved in contract supervision.

Table 4.1.1.2: Assessment of e-procurement practices in the public sector of Ghana cont.

| Factors | WRM | Interpretation |
|---|---|---|
| Contract Administration and Supervision | 3.91 | Agree |
| Contract specifications or scope of work are not altered after contract awarded | 3.47 | Undecided |
| Site inspection indicates that work performed was in accordance with the technical specifications | 4.47 | Agree |
| Technical specifications of materials provided do correspond to the specifications agreed upon in the contract | 3.71 | Agree |
| Site inspection indicates that project completion is same as that certified or that a completed project is operational | 3.95 | Agree |
| Goods or services are being used, or being used for purposes are consistent with intended purposes | 4.00 | Agree |
| Right quantities of goods and materials are delivered | 4.00 | Agree |
| Quick in the delivery of goods or services in any part of the project implementation process | 4.00 | Agree |
| No substitution of nominated consultant staff with less qualified and experienced personnel | 4.42 | Agree |
| No frequent changes in key staff of the Procurement Management Unit (PMU)/Procurement Investigation Unit (PIU) | 4.18 | Agree |
| Constancy in PIU/PMU and staff responsible for post-procurement verifications | 4.48 | Agree |
| Availability of oversight physical works | 4.00 | Agree |
| Sufficient post-procurement verification of scope of work and physical inspections | 3.71 | Agree |

| | | |
|---|---|---|
| Site diaries and meeting minutes are maintained | 3.71 | Agree |
| Written instructions are given to contractors | 3.71 | Agree |
| Complete records in PIU/PMU – insignificant number of missing documents | 4.23 | Agree |
| Strict checking and certification of progress billings | 4.23 | Agree |
| Complete site measurement records to justify claims for progress payments | 3.94 | Agree |
| Very low frequency of Change Orders to the contract | 3.71 | Agree |
| 'As-built' drawings are not photocopies of technical specifications in the bidding documents | 3.42 | Undecided |
| The detailed drawings, 'as-built' drawings, back-up data sheets contain no errors or repetitive entries | 3.65 | Agree |
| Quick to pay progress payments and invoices on a timely basis | 3.65 | Agree |
| Moderate number of signatures required to approve progress payments | 3.89 | Agree |
| Evaluation of contractors' performance recorded | 3.41 | Undecided |
| Costs overruns are adequately explained or justified | 3.89 | Agree |
| Considerable beneficiary satisfaction with completed project facilities | 3.90 | Agree |

Source: Estimation from field data, 2019

The study, as shown in Table 4.4, revealed that contract administration and supervision are better than it used to be under the normal procurement system. Site inspection indicates that work performed was in accordance with the technical specifications. Technical specifications of materials provided do correspond to the specifications agreed upon in the contract. Site inspection also indicates that project completion is same as that certified or that a completed project is operational. Also, goods or services are being used, or being used for purposes that are consistent with intended purposes. Additionally, right quantities of goods and materials are being delivered. The system is quick in delivery of goods or services in any part of the project implementation process. There is no substitution of nominated consultant staff with less qualified and experienced personnel. There are no frequent changes in key staff of the Procurement Management Unit (PMU)/Procurement Investigation Unit (PIU). There is constancy in PIU/PMU and staff responsible for post-procurement verifications.

There is availability of oversight physical works and sufficient post-procurement verification of scope of work and physical inspections. Site diaries and meeting minutes are maintained by the current system. There are always written instructions given to contractors. There exist strict checking and certification of progress billings and complete site measurement records to justify claims for progress payments. The system is also quick to pay progress payments and invoices on a timely basis. There is moderate number of signatures required to approve progress payments. Also, costs overruns are adequately explained or justified. This assessment indicates that the e-procurement is doing better that the traditional system. The findings of this study are in line with the study conducted by Chang and Wong (2010). Chang and Wong (2010) in their study found improvement in the performance of firms that adopt e-procurement. A study conducted by Gunasekaran and Ngai (2008) also found that companies or organizations that implement e-procurement do have adequate financial support, access to interoperability and standards with traditional communication systems, top management support and commitment, and also understands the priority of the company and do have suitable security systems.

4.1.2conclusions From Questionnaires
4.1.2.1 Benefits of the e-procurement system (Performance)
Table 4.3: Benefits of the e-procurement system

| BENEFITS OF THE E-PROCUREMENT SYSTEM (PERFORMANCE) (4.19) | WRM | Interpretation |
|---|---|---|
| Benefit to providers | 4.10 | Agree |
| Improved transparency of the process | 4.47 | Agree |
| Larger pool of suppliers, increased competition | 3.99 | Agree |
| Reduces cost to provide the procurement service | 4.23 | Agree |
| Reduced time for the procurement process | 4.23 | Agree |
| Access to better information for decision making and assessment of issues | 4.23 | Agree |
| Better consistency of process via standard process and documentation | 4.47 | Agree |

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| | | |
|---|---|---|
| Improved efficiency and effectiveness | 4.00 | Agree |
| Improved engagement/communication with suppliers | 4.24 | Agree |
| Better audit trail of the process and transactions | 3.95 | Agree |
| Guarantee quality standards in PA purchases | 3.95 | Agree |
| Reduced errors in process and documentation | 4.00 | Agree |
| Reduced use of paper | 3.71 | Agree |
| Timely announcement of procurement information | 3.94 | Agree |
| Promoting SMEs' promotion from all over the world | 4.00 | Agree |
| Benefit to users | 4.23 | Agree |
| Reduced time for the procurement process | 3.47 | Agree |
| Improved access to procurement opportunities via a single national portal | 4.47 | Agree |
| Improved transparency of the process | 3.95 | Agree |
| Reduced errors in process and documentation for buyers | 3.95 | Agree |
| Provide sophisticated market intelligence based on the past transaction history and record | 3.95 | Agree |
| Increased participation in the market | 4.71 | Agree |
| Better work integration for buyers | 4.19 | Agree |
| Promoting SMEs | 4.71 | Agree |
| It is a transparent and secure way to cut down costs and to make real savings | 4.71 | Agree |
| Access to price comparisons | 4.23 | Agree |
| Time and cost effectiveness | 4.23 | Agree |
| Facilitates products standardization by international catalogue use | 4.18 | Agree |
| Less paperwork | 4.18 | Agree |
| Process integrity and transparency (Benefit to Government) | 4.23 | Agree |
| The system has resulted in the government procurement processes being consistent from agency to agency | 3.71 | Agree |
| Government procurement is held in high regard by suppliers to government | 3.71 | Agree |
| All information to help potential suppliers plan, develop, modify and submit their bidding documents is made available online | 3.71 | Agree |
| All suppliers get exactly the same information throughout each individual procurement process | 4.19 | Agree |
| Each parcel of information provided to suppliers is made available at the one time and is date and time stamped | 4.48 | Agree |
| Suppliers are not impeded from accessing the system based on location | 4.71 | Strongly Agree |
| Suppliers are not impeded from accessing the system based on the cost of access or time it is available | 4.47 | Agree |
| Suppliers are not impeded from accessing the system based on the requirement to have specialized hardware or software | 4.47 | Agree |
| Procurement policies, process and its guidelines are publicly available on line | 4.47 | Agree |
| Procurement legislation and regulations are publicly available online | 4.47 | Agree |
| The public can access the system to see details on contracts awarded, prices and the successful suppliers | 4.18 | Agree |

Source: Estimation from field data, 2019

The study assessed the benefits that e-procurement has brought to the procurement sector in the public sector. The findings in Table 4.5 revealed that providers have benefited a lot from the current procurement system. The current e-procurement system has recorded an improved transparency of the process, larger pool of suppliers, increased competition, reduced cost to provide the procurement service, reduced time for the procurement process, access to better information for decision making and assessment of issues, better consistency of process via standard process and documentation and

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improved efficiency and effectiveness. It has also recorded improved engagement/communication with suppliers, better audit trail of the process and transactions, guarantee quality standards in PA purchases, reduced errors in process and documentation, reduced use of paper, timely announcement of procurement information and has promoted SMEs' promotion from all over the world.

Clients and users of the e-procurement system have also benefited from it a lot. The e-procurement system has recorded reduced time for Ghana the procurement process, improved access to procurement opportunities via a single national portal, improved transparency of the process and reduced errors in process and documentation for buyers. The system has also provided sophisticated market intelligence based on the past transaction history and record. It has as well increased participation in the market and has better work integration for buyers and has promoted SMEs. The system is a transparent and secure way to cut down costs and to make real savings. Accessibility to price comparisons is no more an issue. There is currently time and cost effectiveness. The system also facilitates products standardization by international catalogue use through less paperwork.

The e-procurement system has also benefited the government a lot. It has resulted in the government procurement processes being consistent from agency to agency. Government procurement is now held in high regard by suppliers to government. All information to help potential suppliers plan, develop, modify and submit their bidding documents is made available online. All suppliers get exactly the same information throughout each individual procurement process. Each parcel of information provided to suppliers is made available at the one time and is date and time stamped. Suppliers are not impeded from accessing the system based on location and are not impeded from accessing the system based on the cost of access or time it is available. Suppliers are not impeded from accessing the system based on the requirement to have specialized hardware or software. Procurement policies, process and its guidelines are publicly available on line. Procurement legislation and regulations are publicly available online. The public can now access the system to see details on contracts awarded, prices and the successful suppliers.

### 4.1.3 Analysis of the Interviews
4.1.3.1 of anti-corruption activities in the public sector of Ghana Evaluation
Table 4.4: Evaluation of anti-corruption activities before and after e-procurement

| Initiatives | WRM Before(3.86) | WRM After (3.98) |
|---|---|---|
| An independent procurement unit with professional officials is established | 3.36 | 3.42 |
| Rotation of procurement officials within a certain area is considered. | 3.12 | 3.42 |
| Performance rating is part of the procedure in large procurement projects. | 3.36 | 3.66 |
| The number of decision-making centers is reduced. Separating the evaluation of bids into a technical and a finance team is carefully considered. | 3.60 | 4.18 |
| The procurement rules are made clear and simple. | 4.19 | 3.71 |
| Time limits by which a given request must be rejected or accepted are strictly respected and allowing reasonable time for suppliers to prepare and submit the bids. | 3.71 | 3.94 |
| The state administration specifies requirements in terms of off-the-shelf items. | 3.71 | 3.94 |
| International prices are applied as benchmarks as far as possible. | 4.00 | 3.94 |
| Supplementary work is defined and specified in the contract as far as possible. | 3.71 | 4.42 |
| The procurement procedures include rules for exceptional cases, including a precise definition of the terms "emergency", "exceptional" and "immediacy". | 3.71 | 3.76 |
| When rules for exceptional cases are applied, the procurement is subsequently followed up by an evaluation team. | 4.19 | 4.47 |
| Insurance coverage and payments of deposits is requested to reduce the threat of various forms of problems that may arise after contract assignment. | 3.96 | 3.76 |

| | | |
|---|---|---|
| Access to information is a number one rule in the procurement procedures, while information still confidential is treated according to the given routines. | 3.72 | 4.00 |
| Rules and routines for communication during the bid are carefully respected. | 3.71 | 4.24 |
| The request is announced as early as possible and invitation for bid published in due time in the major media channels. | 2.95 | 3.95 |
| Unsuccessful bidders are provided with an explanation of the rejection and relevant information about the bid. | 3.19 | 4.18 |
| A board of contract appeals is appointed. | 3.42 | 3.94 |
| The objectives of each procurement project is specified as precisely as possible. | 3.76 | 3.94 |
| Addressing significant problems are by a committee, not just one official. | 4.23 | 4.23 |
| Record keeping is essential to enable inspection. | 3.65 | 4.00 |
| Codes of conduct are central in all forms of bureaucratic activity. | 3.65 | 3.95 |
| Rules of disqualification concerning public officials responsible for the acquisition are included in the procurement procedures. | 4.23 | 4.00 |
| Routines to reduce new opportunities for corruption by using the Internet are created and included in the procurement rules. | 4.24 | 4.24 |
| The use of the Internet for procurement depends on technical qualities. | 3.95 | 4.00 |
| Identification of the persons involved in a bid follows the bid documentation. Registration is requested for middlemen and agents. | 4.24 | 4.47 |
| Middlemen that have bribed, or tried to bribe, public officials are excluded from future bids. | 4.71 | 4.48 |
| Companies are encouraged to certify that they comply with all anti-bribery laws. The companies selected for contract awards are met with direct requirements of anti-corruption commitments. | 4.23 | 4.48 |
| The bid contracts include provisions making it possible for the state to hold back payments to be forfeited if bribery is detected. | 4.23 | 4.00 |
| Monitoring routines are implemented in the procurement rules. There is more concentration on product controls (concerning the attainment of the aims) than process controls (concerning the formal regularity of the acts). | 4.23 | 3.71 |
| A way to report about detected corruption is established and made known. | 4.23 | 3.18 |
| Sanctions of corrupt acts, either internal or imposed by judges, should be proportional to the price of the public contract. | 4.47 | 3.65 |

Source: Estimation from field data, 2019

This section of the study tried to evaluate the procurement system, before and after the implementation of the e-procurement system. It was therefore obvious from the study that the current procurement system is better than before. The average weighted performance rating is 3.98 as compared to 3.86 for when it was using the traditional approach. The study revealed that the current system is doing very well in terms of performance rating as part of the procedure in large procurement projects. The number of decision-making centers is reduced. The system carefully continues to consider separating the evaluation of bids into a technical and a finance team. Also, time limits by which a given request must be rejected or accepted are strictly respected and allowing reasonable time for suppliers to prepare and submit the bids. The state administration specifies requirements in terms of off-the-shelf items. Supplementary work is defined and specified in the contract as far as possible. The procurement procedures include rules for exceptional cases, including a precise definition of the term's "emergency", "exceptional" and "immediacy".

When rules for exceptional cases are applied, the procurement is subsequently followed up by an evaluation team. Access to information is a number one rule in the procurement procedures, while information is still confidentially treated according to the given routines. Rules and routines for communication during the bid are carefully respected. All requests are announced as early as possible

and invitation for bid published in due time in the major media channels. Unsuccessful bidders are provided with an explanation of the rejection and relevant information about the bid. A board of contract appeals is appointed. The objectives of each procurement project is specified as precisely as possible. Record keeping is essential to enable inspection. Codes of conduct are central in all forms of bureaucratic activity. The use of the Internet for procurement depends on technical qualities and identification of the persons involved in a bid follows the bid documentation. Registration is requested for middlemen and agents. Companies are encouraged to certify that they comply with all anti-bribery laws. The companies selected for contract awards are met with direct requirements of anti-corruption commitments. This evidence show that the e-procurement is really helping to curb corrupt activities in the procurement sector.

### 4.1.4 Conclusions From Interview
#### 4.1.4.1 Relationship between e-procurement and corruption in the public sector of Ghana
Table 4.5: Correlation between e-procurement and corruption in the public sector

| Variables | Spearman's rho | R | M | L | D | P | A | B | E | S | E-p | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reform (Policy) | Correlation Coefficient | 1 | -.296** | .692** | .282** | .495** | .495** | .489** | .825** | .489** | .489** | -.489** |
| | P-value | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Management and Planning | Correlation Coefficient | -.296** | 1 | -.462** | .811** | -.300** | -.300** | .581** | .295** | .581** | .581** | -.581** |
| | P-value | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Legislation and Regulation | Correlation Coefficient | .692** | -.462** | 1 | 0.084 | .957** | .957** | .421** | .421** | .421** | .421** | -.421** |
| | P-value | 0 | 0 | | 0.094 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bid Document Preparation | Correlation Coefficient | .282** | .811** | 0.084 | 1 | .169** | .169** | .939** | .762** | .939** | .939** | -.939** |
| | P-value | 0 | 0 | 0.094 | | 0.001 | 0.001 | 0 | 0 | 0 | 0 | 0 |
| Prequalification | Correlation Coefficient | .495** | -.300** | .957** | .169** | 1 | 1.000** | .487** | .320** | .487** | .487** | -.487** |
| | P-value | 0 | 0 | 0 | 0.001 | | | 0 | 0 | 0 | 0 | 0 |
| Advertising of Bids | Correlation Coefficient | .495** | -.300** | .957** | .169** | 1.000** | 1 | .487** | .320** | .487** | .487** | -.487** |
| | P-value | 0 | 0 | 0 | 0.001 | | | 0 | 0 | 0 | 0 | 0 |
| Bidding | Correlation Coefficient | .489** | .581** | .421** | .939** | .487** | .487** | 1 | .834** | 1.000** | 1.000** | -1.000** |
| | P-value | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| Bid Evaluation and Contract Award | Correlation Coefficient | .825** | .295** | .421** | .762** | .320** | .320** | .834** | 1 | .834** | .834** | -.834** |
| | P-value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Contract Administration and Supervision | Correlation Coefficient | .489** | .581** | .421** | .939** | .487** | .487** | 1.000** | .834** | 1 | 1.000** | -1.000** |
| | P-value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| E-procurement | Correlation Coefficient | .489** | .581** | .421** | .939** | .487** | .487** | 1.000** | .834** | 1.000** | 1 | -1.000** |
| | P-value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Corruption | Correlation Coefficient | -.489** | -.581** | -.421** | -.939** | -.487** | -.487** | -1.000** | -.834** | -1.000** | -1.000** | 1 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P-value | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | |
| N | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Estimation from field data, 2019

This section of the study unearthed the hidden relationship between e-procurement and corrupt practices in the public procurement sector. From all indications, the study revealed a perfect negative correlation (r = –1.00, p-value = 0.000) between e-procurement and corruption in the public sector of Ghana. There was also a perfect negative relationship (r = –1.00, p-value = 0.000) between contract administration and supervision processes through e-procurement system and corruption. Also, all the e-procurement evaluation variables are negatively related to corruption as shown in Table 4.7. This therefore indicates that when the e-procurement system is implemented effectively, corrupt activities will be alleviated. This result is in line with the findings of the study conducted by Balsevich, Pivovarova and Podkolzina (2011). Balsevich, Pivovarova and Podkolzina (2011) found a significant negative relationship between e-procurement (transparency of information) and corruption.
The findings by Rotchanakitumnuai (2013) also confirmed a negative relationship between a transparent e-procurement process and collusion or corruption.

Table 4.6: Model Summary

| R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|
| .996ᵃ | .992 | .992 | 1.38424 | 2.389 |
| a. Predictors: (Constant), E-procurement | | | | |
| b. Dependent Variable: Corruption | | | | |

Source: Estimation from field data, 2019

The model summary indicates that e-procurement predicts about 99.2% of the reduction variation in corruption at 99.9% confidence level.

Table 4.7: Analysis of Variance (ANOVA)

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 98401.886 | 1 | 98401.886 | 51355.040 | .000ᵇ |
| Residual | 762.612 | 398 | 1.916 | | |
| Total | 99164.498 | 399 | | | |
| a. Dependent Variable: Corruption | | | | | |
| b. Predictors: (Constant), E-procurement | | | | | |

Source: Estimation from field data, 2019
The ANOVA Table 4.9 indicates that the model is appropriate for the corruption data.

Table 4.8: Regression Analysis between e-procurement and corruption

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 218.605 | .691 | | 316.264 | .000 |
| E-procurement | –.394 | .002 | –.996 | –226.617 | .000 |
| a. Dependent Variable: Corruption | | | | | |

Source: Estimation from field data, 2019

The model for corruption is given by Corruption = 218.605 – 0.394E-procurement. This indicates that when e-procurement is implemented successfully, corruption reduces by 0.394. Figures 4.1 and 4.2 show that the data is asymptotically normal.
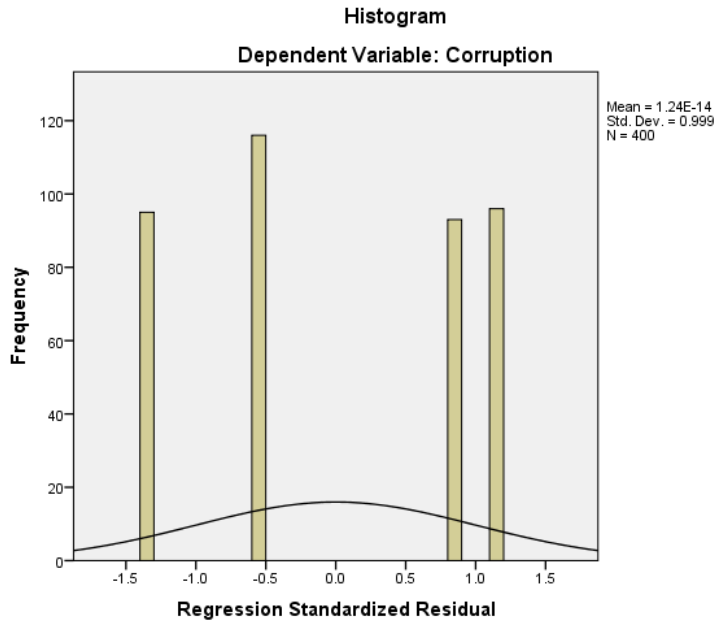
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Figure 4.1: Regression Standardized Residual
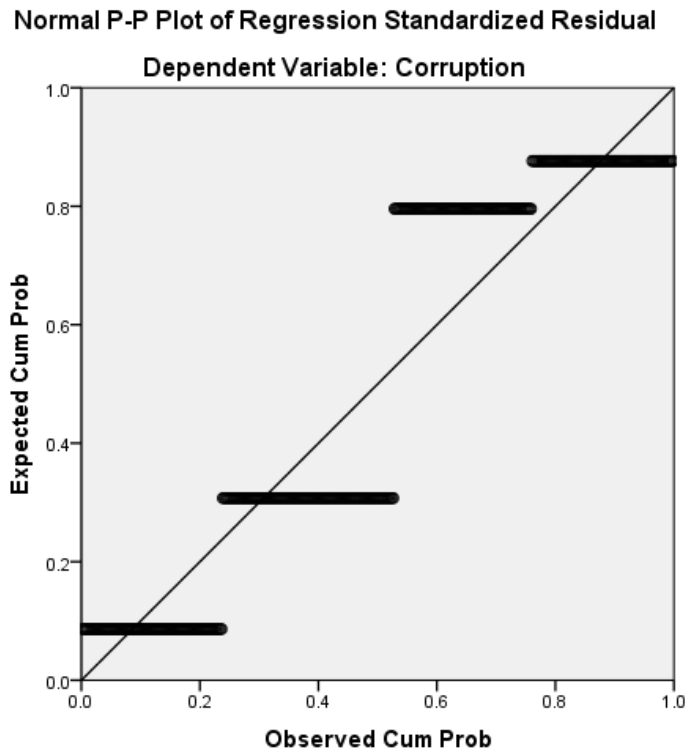


Figure 4.1: Observed Cumulative Probability

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The following model is therefore relevant in eradicating corruption in the public procurement institutions. It indicates that, when e-procurement is efficient, corruption will go down.

## E-PROCUREMENT
- Reform (Policy)
- Management and Planning
- Legislation and Regulation
- Bid Document Preparation
- Prequalification
- Advertising of Bids
- Bidding
- Bid Evaluation and Contract Award
- Contract Administration and Supervision

## CORRUPTION
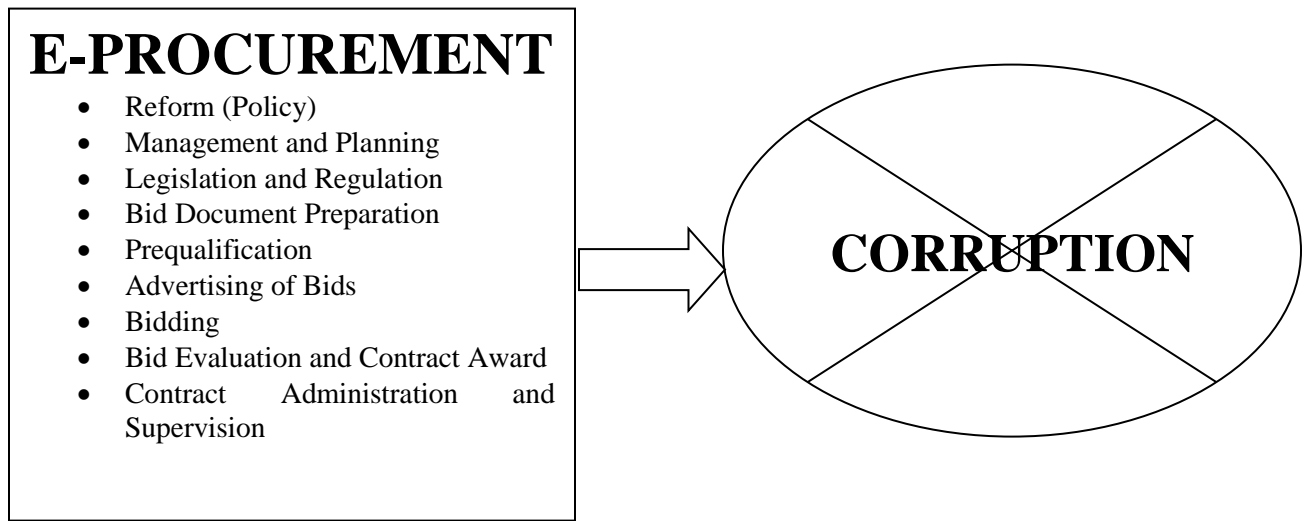
### 5.0 CONCLUSIONS

Most countries employ e-procurement to enhance transparency and accountability in the processes of public procurement. The basic idea of implementing e-procurement is to procure the right items at the right place, with the right quantities, right qualities, at the right time with the right price. Ghana has also adopted the e-procurement strategy to curb corruption. This current study therefore assesses the efficiency and effectiveness of e-procurement in curbing corruption in the Ghanaian public procurement processes. The target population for the study is stakeholders of public contracts in the Greater Accra Region with a sample size of 400. This chapter presents the conclusion and recommendations of the study.

### 5.1 Findings and Discoveries

The study revealed that procurement policy is always being reviewed to ensure it supports the e-procurement vision and objectives. Also, e-procurement aspects of policy are being linked to policies for e-commerce and e-government. In addition, procurement guidelines are being reviewed to ensure consistency and relevance to e-procurement

The study revealed that in the current system, subcontracting requirements are not imposed on bidding contractors. There is a rigorous system for handling contract variations and evaluating claims are defined in the contract. Also, no staff who is involved in contract award decisions become involved in contract supervision. The study revealed that contract administration and supervision are better than it used to be under the normal procurement system. The findings of this study are in line with the study conducted by Chang and Wong (2010) and Gunasekaran and Ngai (2008). This therefore indicates that management and planning is better under the e-procurement practices.

The study discovered that the current system is doing very well in terms of performance rating as part of the procedure in large procurement projects. The system carefully continues to consider separating the evaluation of bids into a technical and a finance team. Also, time limits by which a given request must be rejected or accepted are strictly respected and allowing reasonable time for suppliers to prepare and submit the bids. Access to information is a number one rule in the procurement procedures, while information is still confidentially treated according to the given routines.

### 5.2 Limitations

This study will serve as a guiding tool for the Ministry of Finance, the procurement ministry and policy makers. They will be aware of the positive effects of successful public procurement processes and

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project financial regime on debt sustainability in the Ministry of Finance. This study will also be an advisory book for other organizations and companies of how to effectively sustain their debts and manage their procurement activities. Findings of this study will add up to exiting literature for further researches in this area.

### 5.3 Recommendations

The findings of the study suggest that in order to reduce corrupt practices in the public sector, the government has to continue to use e-procurement in all its deals. Also, for a better procurement practice, there should be an effective procurement policy that is always reviewed to ensure it supports the e-procurement vision and objectives. Also, e-procurement aspects of policy should continue to be linked to policies for e-commerce and e-government. In addition, procurement guidelines should continue to be reviewed to ensure consistency and relevance to e-procurement. Also, standardized documents such as supplier request or response forms for the use of supplies should be always available online. There should be procurement information database established to assist government buyers to better understand the market and make future procurement decisions.

There should be a rigorous system for handling contract variations and also evaluation of claims defined in the contract. This will help in sustaining transparency in the procurement system. Also, no staff who is involved in contract award decisions should be involved in contract supervision. The system should carefully continue to consider separating the evaluation of bids into a technical and a finance team. Also, time limits by which a given request must be rejected or accepted should be strictly respected and allowed reasonable time for suppliers to prepare and submit the bids. Access to information should be a number one rule in the procurement procedures. The objectives of each procurement project should be specified as precisely as possible. Codes of conduct should be central in all forms of bureaucratic activity.

### 5.4 Further Study and Research

Further study will serve as a guiding tool for the Ministry of Finance, the procurement ministry and policy makers. Further study should be aware of the positive effects of successful public procurement processes and project financial regime on debt sustainability in the Ministry of Finance. The Further study should also be an advisory book for other organizations and companies of how to effectively sustain their debts and manage their procurement activities. Findings of this study will add up to exiting literature for further researches in this area.

### 5.5 Conclusions
#### 5.5.1 Assessment of e-procurement practices in the public sector of Ghana

The study revealed that procurement policy is always being reviewed to ensure it supports the e-procurement vision and objectives. Also, e-procurement aspects of policy are being linked to policies for e-commerce and e-government. In addition, procurement guidelines are being reviewed to ensure consistency and relevance to e-procurement. The study found that the existing procurement processes structure, efficiency and effectiveness were reviewed to better support the introduction of e-procurement systems. Also, standardized documents such as supplier request or response forms for the use of supplies are available online. There is a procurement information database established to assist government buyers to better understand the market and make future procurement decisions. The study also revealed that bid evaluation and contract award managements are better under the e-procurement system than before.

The study revealed that in the current system, subcontracting requirements are not imposed on bidding contractors. There is a rigorous system for handling contract variations and evaluating claims are defined in the contract. Also, no staff who is involved in contract award decisions become involved in contract supervision. The study revealed that contract administration and supervision are better than it used to be under the normal procurement system. The findings of this study are in line with the study conducted by Chang and Wong (2010) and Gunasekaran and Ngai (2008). This therefore indicates that management and planning is better under the e-procurement practices.

The current e-procurement system has recorded an improved transparency of the process, larger pool of suppliers, increased competition, reduced cost to provide the procurement service, reduced time

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for the procurement process, access to better information for decision making and assessment of issues, better consistency of process via standard process and documentation and improved efficiency and effectiveness. It has also recorded improved engagement/communication with suppliers, better audit trail of the process and transactions, guarantee quality standards in PA purchases, reduced errors in process and documentation, reduced use of paper, timely announcement of procurement information and has promoted SMEs' promotion from all over the world. The system is a transparent and secure way to cut down costs and to make real savings. Government procurement is now held in high regard by suppliers to government. All information to help potential suppliers plan, develop, modify and submit their bidding documents is made available online. Procurement policies, process and its guidelines are publicly available on line.

### 5.5.2 Evaluation of anti-corruption activities in the public sector of Ghana

The study revealed that the current procurement system is better than before. The study discovered that the current system is doing very well in terms of performance rating as part of the procedure in large procurement projects. The system carefully continues to consider separating the evaluation of bids into a technical and a finance team. Also, time limits by which a given request must be rejected or accepted are strictly respected and allowing reasonable time for suppliers to prepare and submit the bids. Access to information is a number one rule in the procurement procedures, while information is still confidentially treated according to the given routines. The objectives of each procurement project are specified as precisely as possible. Codes of conduct are central in all forms of bureaucratic activity. This evidence show that the e-procurement is really helping to curb corrupt activities in the procurement sector.

### 5.5.3 Relationship between e-procurement and corruption in the public sector of Ghana

The study revealed a perfect negative correlation between e-procurement and corruption in the public sector of Ghana. There was also a perfect negative relationship between contract administration and supervision processes through e-procurement system and corruption. Also, all the e-procurement evaluation variables are negatively related to corruption. This therefore indicates that when the e-procurement system is implemented effectively, corrupt activities will be alleviated. This result is in line with the findings of the study conducted by Balsevich, Pivovarova and Podkolzina (2011) and Rotchanakitumnuai (2013). The model indicates that e-procurement predicts about 99.2% of the reduction variation in corruption at 99.9% confidence level. The model also indicates that when e-procurement is implemented successfully, corruption reduces by 0.394.

REFERENCES

Adamu, I., Sidik, M. A. & Osei-Tutu, E. (2017). Adopting Design and Build (D&B) as an Alternative Construction Procurement System to the Traditional Method in Ghana, *International Journal of Construction Engineering and Management* 2017, 6(4): 148-159

Adu-Boateng, S. K. (2014). *Management of contractual claims in the road construction industry in Ghana*, Department of Building Technology, Kwame Nkrumah University of Science and Technology

Ahmed, K., Hatira, L. & Valva, P. (2014). The construction industry in Ghana, West Africa: how can the construction industry in Ghana become sustainable?, School of Engineering Blekinge Institute of Technology Karlskrona, Sweden

Al Nofal, A., Al Omaim, N. & Zairi, M. (2003). Critical factors of TQM: an update on the literature, *International Journal of Applied Quality Management*, Volume 2 Issue 2 Special Edition

Aluonzi, G., Oluka, P. N. & Nduhura, A. (2016). Contract management and performance of road maintenance projects: the case of Arua Municipality, *Universal Journal of Management* 4(10): 550-558

Ameyaw, C. (2009). *Design and build verses design-bid-build method in Ghana*. Unpublished MSc. Thesis, Department of Building Technology, KNUST – Kumasi.

Ampadu-Asiamah, A. D. & Ampadu-Asiamah, O. K. (2013). Management of government funded construction projects in Ghana: stakeholders' perspective of causes of delays in construction of public buildings. *Developing Country Studies*. Vol.3, no.12: 149-157.

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https://damaacademia.com/ajplscm/        August 2022        Pages: 19-00        Volume 4 | Issue 8

Asamoah, R. O. & Decardi-Nelson, I. (2014). Promoting trust and confidence in the construction industry in Ghana through the development and enforcement of ethics. *Information and Knowledge* Vol.3, No.4: 63-68.

Assaf, S. A. & Al-Hejji, S. (2006). Causes of delay in large construction projects. *International Journal of Project Management*. 24(4):349-357.

Aubry, M., Hobbs, B. & Thuillier, D. (2007). A new framework for understanding organizational project management through the PMO. *International Journal of Project Management*, 25(4), pp. 328-336.

Baldi, S., & Vannoni, D. (2017). The impact of centralization on pharmaceutical procurement prices: the role of institutional quality and corruption. *Regional Studies*, *51*(3), 426-438.

Balsevich, A., Pivovarova, S., & Podkolzina, E. (2011). Information transparency in public procurement: How it works in russian regions. *Series: Economics, WP BRP*, *1*, 1-32.

Banyenzaki, M. (2016). *Contract management practices and performance of the road construction projects in Wakiso District – Uganda*, School of Business Management, Uganda Technology and Management University

Bergman, B. & Klefsjo, B. (2003). *Quality from customer needs to customer satisfaction, second edition*, Studentlitteratur, Lund

Black, S. A. & Porter, L. J. (1996). *Identification of the critical factors of TQM*, European Centre for Total Quality Management, Management Centre, University of Bradford, Emrn Lane, Bradford BD9 4JL, United Kingdom

Bohrnstedt, G. W. (2010). Measurement models for survey research. *Handbook of survey research*, *2*.

Bou-Llusar, J. C., Escrig-Tena, A. B., Roca-Puig, V. & Beltran-Martin, I. (2008). An empirical assessment of the EFQM excellence model: evaluation as a TQM framework relative to the MBNQA model, *Journal of Operations Management*, p.22

Bou-Llusar, J. C., Escrig-Tena, A. B., Roca-Puig, V., & Beltrán-Martín, I. (2009). An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model. *Journal of Operations Management*, *27*(1), 1-22.

Bowen, P. (2015). *Client strategic objectives: the impact of choice of construction contract on project*, Department of Construction Economics and Management, University of Cape Town, Private Bag, Rondebosch 7700, Cape Town, South Africa

Byaruhanga, A. & Basheka, B. C. (2017). Contractor monitoring and performance of road infrastructure projects in Uganda: a management model, *Journal of Building Construction and Planning Research*, 5, 30-44

Chang, H. H., & Wong, K. H. (2010). Adoption of e-procurement and participation of e-marketplace on firm performance: Trust as a moderator. *Information & Management*, *47*(5-6), 262-270.

Chartered Institute of Builders (CIOB), (2008). *Code of practice for project management*. (3rd Edition). Blackwell Publishing.

Coles, D. (2009). Lecture notes on construction project management in practice. HAN University.

Construction Industry Board (1997). Briefing the team: a guide to better briefing for clients, Thomas Telford Publishing.

Dadzie, J., Abdul-Aziz, A. & Kwame, A. (2012). Performance of consultants on government projects in Ghana: client and contractor perspective. *International Journal of Business and Social Research*; Vol. 2: 256-267.

Dai, C.X. & Wells, W.G. (2004). An exploration of project management office features and their relationship to project performance. International Journal of Project Management, 22(7), pp. 523-532.

Darko, E. & Löwe, A. (2016). *Publication date Ghana's construction sector and youth employment*, Overseas Development Institute, 203 Blackfriars Road London SE1 8NJ

Darvas, P. & Palmer, R. (2014). *Demand and supply of skills in Ghana: how can training programs improve employment and productivity*? Washington, DC: World Bank

Dasí, R.M., Montesinos, V. & Murgui, S. (2013). Comparative analysis of governmental accounting diversity in the European Union. *Journal of Comparative Policy Analysis: Research and Practice*, *15*(3), pp.255-273.

Davison, B. & Sebastian, R. J. (2011). A detailed analysis of the relationship between contract administration problems and contract types, *Journal of Public Procurement*, Vol. 11 Issue: 1, pp.108-226

Djokoto, S., Dadzie, J. & Ohemeng-Ababio, E. (2014). Barriers to sustainable construction in the Ghanaian construction industry: consultants' perspective. *Journal of Sustainable Development*. 7 (January): 134-143.

Edum-fotwe, F., Thorpe, A. & Mccaffer, R. (2008). Exploring complexity in construction projects. *Project Management Advances, Training & Certification in the Mediterranean*, p1-6

Elbeltagi, E. (2009). *Lecture notes on construction project management*, Structural Engineering Department, Faculty of Engineering, Mansoura University

Elghamrawy, T.; Shibayama, T. (2008). Total quality management implementation in the Egyptian construction industry, *Journal of Management in Engineering* – American Society of Civil Engineers, ISSN 0742-597X, Vol. 24, No. 3, July 2008, pp. 156-161.

Frimpong, S. K. & Kwasi, O. O. (2013). Analyzing the risk of investment in the construction industry of Ghana. *European Journal of Business and Management* Vol.5, no.2: 121-130.

Ghana Government's Public Procurement Act, Act 663 (2003).

Ghana Statistical Service, (2013). *Population and housing census, 2010*, Ghana Statistical Service, Accra, Ghana

GNA (2017). Free SHS to commence September 2017 – president Akufo-Addo, *Ghana News Agency* (*GNA)*

Graham, G. (2012). E-Business Strategy in Supply Chain Collaboration: An Empirical Study of B2B E-Commerce Project in Taiwan. *International Journal of Electronic Business Management*, *10*(2).

GSS (Ghana Statistical Service) (2013) Ghana living standards survey 6 with labour force module 2012/13. Accra: *Ghana Statistical Service*.

Gunasekaran, A., & Ngai, E. W. (2008). Adoption of e-procurement in Hong Kong: an empirical research. *International Journal of Production Economics*, *113*(1), 159-175.

Gyadu-Asiedu, W., Danso, H. &  Asubonteng, J. A. (2013). Assessment of the performance of local and foreign road construction firms in Ghana, *International Journal of Construction Management,* Volume 13, 2013 – Issue 4

Hay, C. (2002). *Political analysis: a critical introduction*, Palgrave Macmillan

Henry, E. & Johnston, R. (2008). *The rolling cross section and casual distribution*, University of Michigan Press, Michigan

Hobbs, B. & Aubry, M. (2007). A multi-phase research program investigating project management offices: The results of Phase 1. *Project Management Journal*, 38(1), pp. 74-86.

Hoonakker, P., Carayon, P., Loushine, T. (2010). Barriers and benefits of quality management in the construction industry, Total Quality Management – *Routledge*, ISSN 1478-3363, Vol. 21, No. 9, September 2010, pp. 953-969.

Hurt, M. & Thomas, J.L. (2009). Building value through sustainable project management offices. *Project Management Journal*, 40(1), pp. 55-72.

Imaralu, D. (2013). Of property supply and demand in Ghana. Accessed on 15th April, 2018 at *http://www.venturesafrica.com/2013/09/going-going-ghana-property-supply-demand/*

Ionescu, L. (2016). E-Government and Social Media as Effective Tools in Controlling Corruption in Public Administration. *Economics, Management, and Financial Markets*, *11*(1), 66-72.

Jeferson, W. B. (2006). *U.S. Patent No. 9,922,382*. Washington, DC: U.S. Patent and Trademark Office.

Kanji, G. K. (2012). *Measuring business excellence*. Routledge.

Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance, *Journal of Operations Management* 21 405–435

Kerzner, H. (2003). Strategic planning for the project office. *Project Management Journal*, 34(2), pp. 13-35.

Kerzner, H. (2013). *Project management: a systems approach to planning, scheduling, and controlling, 10th edition*, The International Institute of Learning, New York, John Wiley & Sons, Inc.

Keynak, H. (2003). The relationship between total quality management practices and their effects on firm performance, *Journal of Operations Management*, 21, pg 405–435

Kikwasi, G. J. (2012). Causes and effects of delays and disruptions in construction projects in Tanzania. *Australasian Journal of Construction Economics and Building, Conference Series*. 1 (2):52-59

Kim, D. Y., Kumar, V., & Kumar, U. (2012). Relationship between quality management practices and innovation. *Journal of operations management*, *30*(4), 295-315.

Koh, T. Y. & Low, S. P. (2010). Empiricist framework for TQM implementation in construction companies, *Journal of Management in Engineering* – American Society of Civil Engineers, ISSN 0742–597X, Vol. 26, No. 3, July 2010, pp. 133–143.

Kyei, K. A. (2009). *Procurement systems and project success in Ghanaian construction industry*, Unpublished MSc. Thesis, Department of Building Technology, KNUST–Kumasi.