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Transaction costs and competitive tendering in public procurement: Moderating role of integrity

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While the current economic crisis clearly puts pressure on governments to cut spending and save money, and whilst the call for a more cohesive interface between the public and private sectors is currently resonating, public procurement has been marred by scandals, mismanagement, and possibly malpractices. According to the literature, corporate integrity drives transactional behaviors by acting as a hidden hand of social factors that are frequently beyond an individual's control. But scantily studied, as behavioral control mechanism in transaction costs. This paper studies the moderating effect of integrity on the relationship between transaction costs' behavioral dimensions and competitive tendering in public procurement. Following a literature review, the paper takes a conceptual framework towards developing evidence of cascaded transaction costs' behavioral dimensions, bounded rationality and opportunism. Formal research propositions amplify both concepts and its relationship with independent variable and dependent variables. The results are based on the empirical data collected from a self-administrative survey from public procurement practitioners in Tanzania. Descriptive and Hierarchical regression results reveals that public procurement practitioners' perceived transaction costs to negatively when related with competitive tendering as moderated by integrity. This means, integrity can moderate the behaviors of public procurement practitioner which, in turn, accelerates efficiency of competitive tendering by reducing transaction costs.

Key words: Transaction costs, competitive tendering, integrity, public procurement.

INTRODUCTION

Historically, public entities in most countries have been known for their poor performance and corruption, resulting from behavioral malpractices evidenced among the procurement practitioners when carrying out procurement contracts (Achua, 2011; Kutosi et al., 2015).

It was noted that present day business environment is characterized by an expanding number of scandals in public procurement when competitive tendering is applied in obtaining requirements (Schapper et al., 2006; Ntayi et al., 2013). The problems of integrity and

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competitive tendering implications' on public procurement has been identified by many as not only enormous and complex but also seriously endangered various governments to provide more services with little funds (McCrudden and Gross, 2006; Yakovlev et al., 2015). It was observed that organised and executed procurement process will make it possible for individuals to decrease opportunistic behaviour, diminish bounded rationality as well as reduce transaction costs in competitive tendering (Lingard et al., 1998; Amaral et al., 2009). Otherwise, from the long term perspective, competitive tendering process may fail significantly to promote effective public procurement outcomes (Caldwell et al., 2005; Hensher and Wallis, 2005).

Over the last few decades till recently, there has been growing interest of integrity in public procurement as many authors have been discussing an immediate effect on the public service delivery (Eyaa and Oluka, 2011; Arrowsmith et al., 2000). Starting with the behaviour and morality literature (Cox et al., 2003; Jensen, 2009; Erhard et al., 2008), a solid ground of theoretical and empirical literature has already been set for the use of integrity theories in organisation behaviour. In this way, integrity concept have more and more been adopted and applied in actual business practice.

For that fact, different integrity concepts such as moral standards and values (von Hippel, 2001), transparency (Barnard, et al., 2008), trust (Frankel, 2005), ethical compliance (Eisenbeib and Brodbeck, 2014), and honesty (Frankel, 2005) have been widely used as guidance against malpractices. In some procuring entities are even more successful with the efficiency and performance, and especially ethical compliance (Jibrin et al., 2014; Amemba et al., 2013), mostly due to their higher application of integrity. In effect, integrity is an important factor of efficiency and performance, yet its major role in efficiency and performance in competitive tendering has been largely hidden or unnoticed, or even ignored in reduction of transaction costs. Hence, integrity in competitive tendering has been unrecognized as a most actively researched field, giving public procurement an even more solid theoretical foundation. While several articles have dealt with the concept of integrity (Menzel, 2015; Ugwu, 2018) and brought it to a wider audience (Chesbrough, 2006), a holistic approach to the future disciplines of public procurement has yet to be developed by the scientific community.

Integrity is the perception that another person, group, or entity lives by his word – delivers on promises and enacts the same espoused values (Palanski and Yammarino, 2011; Childers, 2009). In fact, integrity shows perceived pattern of alignment between words and deeds in business transactions (Prottas, 2008; Palanski et al., 2011). Different empirical studies have shown powerful consequences for the integrity and performance of individuals in business practices, and also that integrity moderates the impact of practitioners'

behaviours on transactional outcomes. Only a few studies have examined antecedents, and fewer still have examined moderated antecedents of integrity in public procurement and behavioral practices. Although initial terrain has been scantily sketched out by early studies, there is much yet to learn about the workings of moderation effect of integrity on transaction costs in competitive tendering.

The debate over transaction costs on competitive tendering issue is crucial, as clarity over the challenges and objectives of the integrity in procurement process is critical to the delivery of satisfactory outcomes because competitive tendering on public procurement are estimated around 1.6% of the contract value (Musanzikwa, 2013; Jurčik, 2014). Such costs are borne by all participants in the procurement process, including suppliers and procurement regulators, in addition to public customers. According to Jurčik (2014) existence of transaction costs in public procurement is based on imperfect contracts are due to the limited rationality of individuals, and these agreements suffer from necessity of additional costs (bounded rationality) and benefits extension may be carried out by using methods that are not entirely moral, and in some cases even not legal (opportunism). Therefore, understanding the key characteristics of a transaction can help decision-makers improve the design of contracts, organizations, and other governance structures that could reduce competitive tendering and improve the gains from an exchange between buyers and sellers (Williamson, 2008).

For some cases, integrity in actual business practice has been widely recognized as a source of assurance of confidence, efficiency and performance and successfully applied on enhancing trust (Kauppi and Van Raaij, 2015), compliance, ethics and professional values (Lennick and Kiel, 2007; Arjoon, 2005). However, public entities in most countries have been known for their poor performance and corruption, resulting from non-adherence to processes and procedures, poor resource utilisation, and malpractices (Amemba et al., 2013; Naidoo, 2012). Nevertheless, researchers have established that integrity constitute an essential element of efficiency of competitive tendering and costs savings in public procurement (Kauppi and Van Raaij, 2015; Merry et al., 2012). This acknowledgement forms central role of on increasing costs such as TCs in a public procurement process results from discontent with cognitive explanations of integrity in CTP (Ntayi et al., 2013; Balogun, 2003). Thus, initiatives of stressing savings with less costs in government tends to be unattainable (Alford and Hughes, 2008; Evenett, 2002). In this way, inventiveness of providing more public services with less public spending is an ongoing challenge most of public procuring entities (Alford and Hughes, 2008; Dean, 2015). Due to insufficient explanations on increasing effect of transaction costs in competitive tendering prevailing situations require

scientific enquiry, therefore present study seeks to explore the moderation effect of integrity on transaction costs in competitive tendering.

Problem formulation

It is self-evident that the current economic crisis places a premium on governments cutting spending and increasing savings. With public procurement typically accounting for 10 to 20% of a country's GDP and 65 to 70% of public sector budgets, governments face the challenge of maximizing value while rigorously reducing government spending. On the other hand, while the call for a more cohesive interface between the public and private sectors is currently resonating, public procurement has been plagued by scandals, mismanagement, and possibly corruption (Lodhia and Burritt, 2004; Beth, 2007). As a result, competitive public procurement creates numerous opportunities for both public and private actors to divert public funds for private gain (Adusei and Awunyo-Vitor, 2015; Akaninyene and Mark, 2015).

This demonstrates a lack of integrity, as the majority of government entities' spending is vulnerable to providing fewer services with increased spending.

The present study seeks to explore the linkages between transaction costs, integrity and competitive tendering. Its primary goal is to investigate impact of behavioural dimensions of transaction costs that were scantily investigated in the field of public procurement before – opportunism and bounded rationality. Main attempt is to find a more comprehensive understanding of the relationship between these transaction costs dimensions and competitive tendering and integrity. Its secondary goal is to establish whether integrity plays a mediating role between competitive tendering and transaction costs. Consensus on the importance of affect does not preclude differences, and there is a lively debate concerning the direction of mediation on integrity between transaction costs and competitive tendering as well as the determining nature and relative influence of various individual behaviours when obtaining public requirements.

Integrity translates into the degree to which public procurement practitioners are trustworthy, as bidders and other stakeholders require assurance that they can rely on any information distributed by the procurement entity, whether formally or informally (Bovis, 2006; Hunja, 2003; Beth, 2007; Khan, 2018). Many have identified the problems associated with competitive tendering and its implications for public sector procurement as not only enormous but also complex, and there is a pressing need on the part of various government servants to improve service quality while maintaining integrity. This means that integrity is critical at all stages of the public procurement process.

Literatures have noticed that integrity in business practices acts as hidden hand of social forces often beyond individuals' behavioural control and guides transactional practices (Somera and Holt, 2015; Banks, 2004). The issues surrounding competitive tendering and its implications for public sector procurement have been identified by many as not only enormous but also complex, particularly in light of the pressing need for various government servants to provide substandard services on a shoestring budget.

Thus, in public procurement terms, integrity is critical at all levels. This study is endeavor to reach a more comprehensive understanding of the relationship between transaction costs dimensions on competitive tendering with a special focus on behavioural aspects in public sector. Its secondary goal is to establish whether integrity plays a moderating role between competitive tendering and transaction costs. Consensus on the importance of affect does not preclude differences, and there is a lively debate concerning the direction of relationships between transaction costs dimensions, integrity and competitive tendering as well as the nature and relative influence of various public procurement practitioners' behaviours when obtaining public requirements.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Effect of bounded rationality on competitive tendering

Tendering is a procurement procedure whereby potential bidders are invited to make a firm and unequivocal offer on the price and non-price terms which on acceptance shall be the basis of a subsequent contract (Lysons and Farrington, 2006; Beth, 2007). The aim of using competitive tendering is to reduce costs and improve the efficiency across multiple decisional dimensions (Ayoti, 2012; Rivasplata, 2002). The process of rational decision making in competitive tendering favours logic, objectivity, and analysis over subjectivity and insight. In public procurement, rational model of decision making assumes that individuals will make choices that maximize benefits and minimise any costs in competitive tendering (Uzonwanne, 2016; Hansson and Holmgren, 2011). Moreover, it is likely that the decision connections will never be entirely specified because humans are complex beings, as are the organisations and social systems they inhabit (Jones, 2017; Bennet and Bennet, 2008). As a consequence decisional linkages in competitive tendering process are likely to be incomplete.

In theory, public procurement process comprises of individuals who are highly organised and thorough rational-comprehensive idealists involving systematically evaluation and ranking of a wide range of alternatives before choosing the best alternatives based on decisional

criteria (Uzonwanne, 2016; Hansson and Holmgren, 2011).

Consequently, procurement processes requires sound reasoning to cater for well-informed decisions with successful strategies (Steane and Walker, 2000; Rivasplata, 2002). However in practice, decisions are often based on a much more limited range of information and analysis (Tukuta and Saruchera, 2015; Testa, et al., 2016). Thus, under bounded conditions a rational model for competitive tendering is minimal workable in complex situations when bounded by imperfect information, limited intellectual capacities, and a value problem (Gigerenzer and Selten, 2002; Lunenburg, 2010). Thus, in this study it is predicted that:

H₁: Bounded rationality will have positive effect on competitive tendering.

Effect of opportunism on competitive tendering

Opportunism is the conscious policy and practice of taking advantage of circumstances – with little regard for principles, or with what the consequences are for others. Opportunism negatively impacts relational exchange tenets in public procurement such as trust, compliance, professional values and ethics. It is manifested in behaviours such as stealing, cheating, dishonesty, and withholding information. Opportunist actions are expedient actions guided primarily by self-interested motives.

However in typical entrepreneurial action, opportunism is about taking advantage of the prevailing situation or circumstances. It involves a degree of flexibility in exploring and taking advantage of the opportunities such as tendering, that situations and circumstances provide profits and strengthen the business. Planned opportunism in real life requires sensitivity to “weak signals,” which offers to early evidence of emerging trends from which it is possible to deduce important economic opportunities. There is a need of comprehensive examination necessary in order to understand why procurement practitioners engage in acts of opportunism in competitive tendering. Appreciation on why opportunism in competitive tendering occurs will reveal how to deter it, and this remains a gap in the literature. On the basis of previous studies it is hypothesized that:

H₂: Opportunism will positively affect the competitive tendering.

Relationship between Integrity and competitive tendering

On one hand, integrity can have impact on transaction

costs, but, on the other hand, transaction costs also have influence on the type and depth of integrity. The ontological law of integrity portrays the degree that integrity is diminished; the opportunity for performance (the opportunity set) is diminished. This means performance in public procurement transactions such as competitive tendering is easily compromised by ethical dilemma, improper inducement, fear of retaliation, clientism and administrative secrecy. There seems to be evidence that a higher incidence of adverse events is associated with higher transaction costs (Lingard et al., 1998; Ho and Tsui, 2009).

However, it is agreed that, to build up integrity in competitive tendering, as an investment in transaction costs is necessary. Particularly, in a procurement cycle, interactions between transacting parties in one phase will impact or even determine the next phase of the transaction. Irrespective of the context, the list of integrity indicators that represent areas of activity in the contracting process that fail on integrity is extremely damaging in terms of the weak administrative controls (Tan, 2013), incapability of policy instruments (Georghiou et al., 2014) and improper use of official power (Gaziano, 2000).

Integrity plays two roles in transactions: firstly, through norms and sanctions, integrity may act as a substitute for the formal control system in governing transactions. Secondly, there is evidence that integrity can facilitate the formation of ongoing networks governing economic transactions. Therefore, further review of literature from this research confirm that ethical dilemma (Awuor and Muthoni, 2014), improper inducement (Williams and Quinot, 2007), fear of retaliation (Williams-Elegbe, 2015), clientism (Osei-Afoakwa, 2012) and administrative secrecy can not only deter formal control system but also formation of ongoing networks governing economic transactions in competitive tendering. Therefore, it is predicted that:

H₃: There will be a positive relationship between integrity and competitive tendering.

Linking moderation effect of integrity with opportunism in competitive tendering

Integrity is a concept of consistency of actions, values, methods, measures, principles, expectations, and outcomes (Karthikeyan, 2017). According to OECD (2009) a “negative” approach to define integrity is also useful to determine an effective strategy for preventing integrity violations’ in the field of public procurement. In ethics, integrity is regarded as the honesty and truthfulness or accuracy of one’s actions. In this paper, integrity can be defined as the condition that occurs when persons adhere to accepted standards, professional values, and practices of the public

procurement community (Udechukwu, 2007; Tukuta and Saruchera, 2015). And consistency of actions and adherence to integrity standards ensures avoidance of anomalies, fraud, and misappropriation of public funds or instances of corruption and helps prevent conflict of interest, collusion, abuse and manipulation of information, inequality, waste and abuse of public resources (Tremblay, 2017; Moorman and Grover, 2009).

Empirical evidence from the literatures exploring the relationship between integrity and performance of competitive tendering emphasizes importance of effective strategy for preventing integrity violations' in the field of public procurement. In overall, higher integrity is associated with higher level of competitive tendering performance. And this call, public procurement practitioners must display personal and professional integrity in competitive tendering (OECD, 2009; Dimitri et al., 2006). When reflecting individual level in public procurement, integrity is more than ethics, it is all about the innate characteristics of an individual (Dunn, 2009; Haack, 2007). In actual facts, integrity is a concept that displays a consistency between actions and values or principles.

The Turknnett leadership group notes that individuals of integrity will not twist facts for personal advantage; they are willing to stand up for and defend what is right; they will be careful to keep promises; and they can be counted on to tell the truth. Whereas, a professional is one who willingly "adopts" and consistently applies the public procurement knowledge, skills, and values in accordance with social standards or moral values. Thus, professional integrity thus defines the professional who consistently and willingly practices within the public procurement ethical standards.

According to Barnard, et al., (2008), there are several factors that support and strengthen the integrity: self-motivation and drive, moral courage and assertiveness, honesty, consistency, commitment, diligence, self-discipline, responsibility, trustworthiness, and fairness.

These factors acts as incentives resulting in higher competitive tendering performance and hence reduces opportunistic behaviour. Different authors produce empirical evidence that in public procurement absence of integrity enables integrity violations at a higher rate.

Competitive tendering is often considered to promote competition, provide transparency and give all bidders the opportunity to convey value for money (Ackah et al., 2014; Erridge and McIlroy, 2002). But in some cases opportunism tends to erode trust, and without trust public procurement practitioners are much less likely to continually improving savings –and continually reducing cost in competitive tendering (Ozkan-Tektas, 2014; Huo et al., 2015). Integrity in transaction represent fair and unbiased treatment but partner opportunism goes against the development of mutual trust and the cooperative spirit, accentuating the perception of risk and jeopardizing the interfirm relationship (Das and

Teng, 2001, 2004).

Specifically, integrity represent areas of activity in procurement process comprises of behavioural perspectives necessary for achieving transactional objectives (Heggstad et al., 2010; Akaninyene and Mark, 2015). Usually, decision to effect competitive tendering is a symmetrical process, where the two actors assess procurement situation through information exchange, exploration of mutual needs, definition of content, planning of implementation, and expectation and evaluation of outcomes: efficiency, satisfaction and performance (Mayavi, 2013; Reeves, 2008).

Presence of opportunism can directly affect to a quick and unexpected increase of transaction cost and curtail the competitive tendering performance because parties must engage in legal contacts as a safeguard against opportunism (Ping Ho et al., 2015; Hawkins, 2007).

Thus, opportunism in competitive tendering mainly denotes an imperfect or distorted expose of information, that it would generate mistrusts and limit competition, transparency and value for money in competitive tendering and interrupts the outcomes of exchange relationships (Tadelis and Bajari, 2006; Mantzaris, 2014). This means, participants of competitive tendering having the highest transaction cost are primarily related to absence of integrity (Erridge et al., 1999; Agerberg and Ågren, 2012). If opportunism exists in competitive tendering, the procurement transactions cannot be organized efficiently (Hobbs, 1996; Ackah et al., 2014) and one partner can take advantage of the other, so that victim's partner needs high costs to find and evaluate obtained information (Priyanath and Buthsala, 2017). Therefore, this study proposes the fourth hypothesis in a new context that:

H₄: Integrity will moderate the effect of opportunism on competitive tendering positively.

Linking moderation effect of integrity with bounded rationality and competitive tendering

The transactional approach considers competitive tendering as the unit of economic analysis and explains the evolution of relationships in competitive tendering as transactions and contracts (Moronda, 2014; Rivasplata, 2002).

Transaction costs analysis highlights the relevance of institutions in procurement markets when characterized by bounded rationality on the part of the procurement practitioners (Seeletse and Ladzani, 2012; Baltos et al., 2018).

Related to this, institutional structure of public procurement acts as a set of rules that determines the individual incentives, volume of transaction costs, and biasness in competitive tendering output (Oluka, 2013; Mwandobo, 2013).

In this manner, institutional and individual structures

can be analyzed, and one of their main function is focused on economizing transaction costs.

Whereby rational economic approach thinks individually, procurement practitioner seeks to maximise utility from limited income derived from rational choice. Rationality in the real world is a complex concept because individuals calculate optimal solutions for every decision and bounded by the lack of knowledge (Gigerenzer and Selten, 2002; Yang et al., 2015). And since the capacity of the human mind to formulate and solve complex problems is very small compared to the size of the problems, whose solution is necessary for objectively rational behaviour in the real world, rationality becomes bounded rationality (Hernández and Ortega, 2019; Valéro, 2015). Thus, according to Shannon et al. (2019) bounded rationality conceives of individuals engaging in competitive tendering as goal oriented but endowed with cognitive and emotional architectures that limit their abilities to pursue those goals rationally. From above explanations, it is understood that in the tensions that exist between institutions and individual, there is a great demand to compete based on incomplete information within the individual conscience.

Individuals in competitive tendering don't utilise ideal decision-making approaches as a result of cognitive limitations in the capacity to understand and oversee complex information as a consequence of difficulties related with impediments in information accessibility (Alam and Pacher, 2000; Mathisen and Solvoll, 2008). This means individuals in competitive tendering are faced with time constraints, restricted access to information, and with 'cognitive limitations' cannot solve problems optimally, but take short-cuts by employing public procurement rules to save on mental processing time and energy (Gelderman et al., 2006; Ngugi and Mugo, 2012).

The reasons that explain the high level of transaction costs in competitive tendering exchange and organisation are the following: firstly, in competitive tendering contracts, situations of VFM are particularly relevant in competitive tendering transactions and furthermore, the unacceptable contract delays and manipulation of contract awards increase different perspectives proffer conflicting opinions on integrity attainment; secondly, in public procurement there are numerous actors and stakeholders involved in a complex decision-making environment with more complex transaction characteristics will require integrity to make them effective over time. The problem of effective competition characterizes a wide range of competitive tendering transactions; thirdly, the ineffective competition leads to a lower efficiency and a less intense economic provider, such that the relationship between effort and effect becomes quite unclear and competition problems are augmented; and fourthly, the world of public procurement is complex, opaque and it is difficult to observe and measure the different factors of

transparency, for example the measure of objects of competitive tendering transaction is really complex and partially subjective.

In order to effectively identify participate in competitive tendering, bidders need as much information as possible (Ackah et al., 2014; Raymond, 2008). A tender that has little to no information on description of requirements can be disqualified as irresponsible, thus providing a clear advantage to the incumbent and anyone else with knowledge of the tender (Erridge and McIlroy, 2002; Cabras, 2011). The asymmetry information together with opportunistic behaviour of any participant in competitive tendering generates not only moral hazard but also adverse selection (Schieg, 2008; Bergh et al., 2019). Henceforth, there is a correlation between competitive tendering in public procurement and bounded rationality as well as broader, positive procurement outcomes (Thai, 2001; Agaba and Shipman, 2007).

For a procurement practitioner to be procedurally rational, it is necessary that procurement decisions result from an appropriate process of deliberation are free to vary according to perceived knowledge and information. In this way bounded rationality form the basis of a potential reason which makes some procurement practitioners to violate favourable integrity decisions when applying competitive tendering. However, presence of tensions between institutions and individual, to compete to compete based on incomplete information within the individual conscience exacerbate conflicting perspectives on conductance of competitive tendering. Therefore, it is proposed that:

H₅: Integrity will moderate the effect of bounded rationality on competitive tendering positively.

A hypothetical model, as exhibited in Figure 1, has been developed considering the above literature and hypotheses.

Figure 1 exhibits the integrity moderating model for linking transaction costs and competitive tendering which constitutes the conceptual framework of this study. The conceptual framework of this study includes the impact of moderating effect of integrity to bounded rationality and opportunism on competitive tendering as described earlier.

METHODOLOGY

Design and sample

This study used a non-experimental, predictive survey design. A random sample of 298 respondents working in public procurement in Dodoma was selected. Inclusion criteria incorporated respondents employed public and private sector who are involved in public procurement and specifically on competitive tendering. Of the 298 questionnaires, 174 were sent to public procurement practitioners who were identified as public officials, either through information obtained from the PPRA or by contacting and asking someone associated with the Procuring Entity (usually the

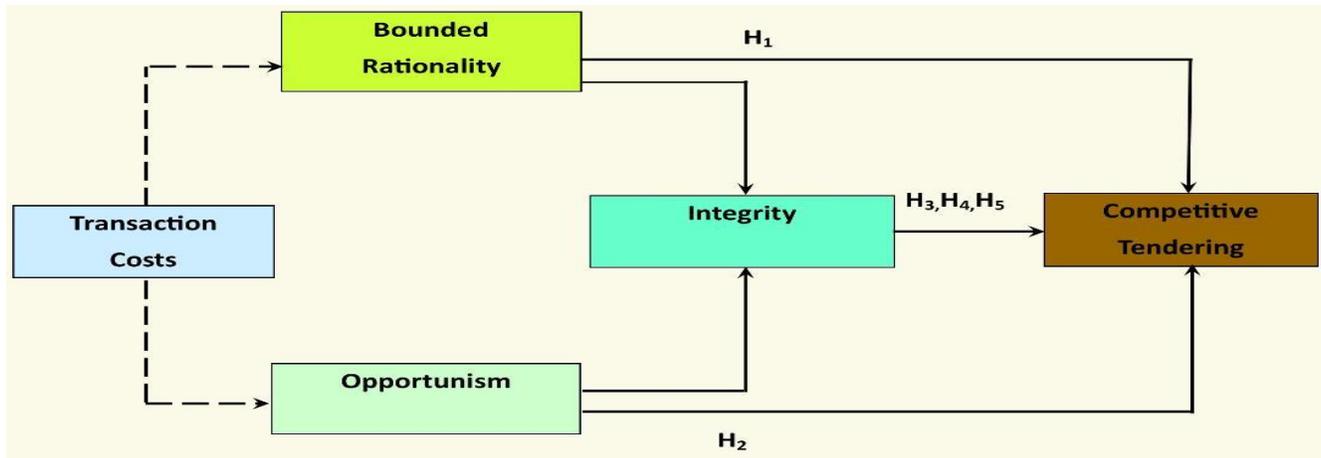


Figure 1. Moderating role of integrity on transaction costs and competitive tendering.
Source; Authors (2022)

Accounting Officer). A final sample of 220 completed and useable surveys was obtained for a 73.8% response rate. A sample size of at least 200 participants is recommended as sufficient for structural equation modeling (Hu and Bentler, 1995; Kline 2005).

Data collection methods

This kind of data analysis involves probing of data collected through semi-structured interviews. The survey focuses on the public procurement officials and private sector practitioners who are procuring goods, services and works from public sector. The variables selected in this study are integrity, transaction costs and competitive tendering. Items selected to measure these variables were adopted from previous studies. All the variables were measured using five point likert scale with level 1= strongly disagree and 5=strongly agree.

Measures

Competitive tendering

Put simply, competitive tendering is a formal process which results in an “offer” made by a supplier, contractor or consultant in response to an invitation to tender (Brook, 2016; Smith, 2017). Suppliers, contractors or consultants tendering for goods, works or services are often competing amongst themselves and are encouraged to submit most competitive tender.

Competitive tendering should adopt and observe the key values of fairness, transparency, competitive, while ensuring value for money, as well as reinforce the idea of apportionment of risk to the party best placed to assess and manage for the success of public procurement (Brook, 2016; Kang et al., 2018). In competitive tendering transactions and decisions must in all respects be transparency, competitive, and ensure value for money (Ackah et al., 2014; Erridge and McLroy, 2002). Thus, contracting entities and individuals when participating in competitive tendering are required to justify decisions made and actions taken. Measurements of competitive tendering in this study included the following indicators:

(1) Transparency in public procurement means that information on the public procurement process must be available to everyone:

contractors, suppliers, service providers and the public at large (Lynch and Angel, 2013). Transparency needs to pervade in all steps in of procurement cycle. Transparency in competitive tendering enables processes and decisions to be monitored and reviewed, helps ensure that decision-makers can be held accountable and also helps open public procurement to more competition (Wang and Rosenau, 2001; Raymond, 2008). According to Jeppesen (2010) and Thai, 2017) there is little doubt that under the right circumstances increased transparency in public procurement can lead to greater accountability, better service delivery and, ultimately, less waste of public resources. With the adoption of transparency in competitive tendering the suppliers, contractors or consultants benefits from a level playing field, predictable business environments and a reduction in risk.

(2) Value for money is the core principle underpinning public procurement. Asare and Prempeh (2016) posited that value for money refers to the optimum combination of “whole life cost” and “quality” to meet the customer or the end-users requirement of the procured goods or service under consideration and usually reflected in the price of the item procured. In most cases value for money is not about achieving the lowest price; it is about achieving the optimum combination of whole life costs and quality (World Bank, 2003). In competitive tendering, principle of value for money requires a comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle (whole-of-life costing). Basically, Manu (2005) asserted that, value for money is enhanced in public procurement by: encouraging competition by ensuring non-discrimination in procurement and using competitive procurement processes; promoting the use of resources in an efficient, effective and ethical manner; and making decisions in an accountable and transparent manner.

The Victorian Government (2019) viewed that value for money is the achievement of a desired procurement outcome at the best possible price - not necessarily the lowest price - based on a balanced judgment of financial and non-financial factors relevant to the procurement. In order to be in the best position in determining value for money when conducting a procurement process, request documentation needs to specify logical, clearly articulated, comprehensive and relevant conditions for participation and evaluation criteria which will enable the proper identification, assessment and comparison of the costs and benefits of all submissions on a fair and common basis over the whole procurement cycle that is fit for purpose and meets specification. Assessment of bids should be conducted in relation to a published

set of evaluation criteria, which must be relevant to the subject matter of the contract, and any added value that justifies a higher price must flow from these defined criteria (Office of Government, 2007).

At the heart of the concept of value for money, are three critical elements namely economy, efficiency and effectiveness. This is often described in terms of the 'three Es':

Economy: Explores whether specific inputs are acquired at the lowest cost and at the right time (doing things at a low price at the right time).

Efficiency: This refers to how productively inputs are translated into outputs. It further means that there should be maximum output with little cost (doing things the right way with reasonable effort).

Effectiveness: The extent to which outputs achieve the desired outcomes (doing the right things to meet procurement objectives).

3) Competition between bidders provides the means for ensuring that public entities, and ultimately society as a whole, obtain the benefit of the best offers in terms of price, quality and innovation of the goods and services eventually purchased (Sanchez-Graells, 2011). According to Guide on Public Procurement and Competition (2011) most procurement arrangements are set up through a mechanism that lies between the extremes of buying in an open market and negotiating a specific contract. Promoting competitive practices and adopting measures to mitigate corruption, seems to be the most plausible solution to enhance efficiency in the public procurement process of competitive tendering (Søreide, 2002; Achua, 2011; Valéro, 2015). The basic idea behind this principle is that competition leads to reasonable price, quality and is good for the economy; consequently, the public procurement process should not be manipulated to give preference to any particular firm(s) or individual(s).

Competition concerns arising from public procurement are largely at the need to tackle anticompetitive practices and avoidance of publicly-created distortions of competition as a result of the exercise of buying power by the public sector, or the creation of regulatory barriers to access public procurement markets (Graells, 2016; Broms et al., 2019).

Competitive tendering has very clear common value elements as cost of providing a particular service is very often identical or very similar for all participants (Ackah et al., 2014; Lynch and Angel, 2013). A rule of thumb is that more bidders make for more intense competition, resulting in lower prices and better quality. However, anti-competitive practices such as quoting equal prices and discounts, the rotation of lowest tenderer and contract sharing undermine competition by discouraging the participation of potential bidders and reduce cost savings through inflating tender prices (Qaqaya and Lipimile, 2008; Singh and Dhumale, 2001).

Transaction costs

Transaction costs, these are economic losses that can result from arranging market relationships on a contractual violated by different parties when they find an opportunity thus limiting the authority of contractual relationships. In this study, a transaction cost is a cost incurred in making an economic exchange of goods, works or services, or in other words the cost of participating in a procurement transaction. The level of transaction cost depends on certain institution within procurement structures and system of organising a transaction (Rajeh and Rotimi, 2013; Nikolaeva and Pletnev, 2016). Transaction costs have become a category of importance because of steadily increasing opportunistic behaviour and bounded rationality in procurement contractual arrangements (Mroczek-Dąbrowska and Gorynia, 2019; Hennart, 2010; Valéro,

2015).

Transaction cost economics seeks to explain why some bids in competitive tendering have many participants and why there are some bids dominated by just a few large suppliers, contractors or service providers (Dowall and Whittington, 2008; Hennart, 2010). Transaction cost suggests that profits and savings in competitive tendering are partly explained by the desire to reduce transaction costs from the market mechanism and concentrate productivity within a transacting firm though human behaviour (Rajeh et al., 2013; Todorova, 2016).

Most of the researchers on transaction costs have indicated how stakeholders are faced with challenges due to the costs incurred during transaction by both parties, these leads to higher cost of procurement, less economic efficiency in the procurement chain system (Yahaya et al., 2019; Jonah, 2018). Essentially, transaction cost as noted by Priyanto et al., (2014) is paid by exchange parties in a non-perfect information stated condition, which participated by opportunistic behaved actors, and providing bounded rationality. This portrays, transaction cost theory has often been used to support the idea that opportunism and bounded rationality can increase imperfection in the economic system (ibid). However, integrity has repeatedly been described as solutions to inefficiencies in the organisation of transactions in complex and uncertain settings (Cordelia, 2006; Somera and Holt, 2015).

Transaction costs scholars have long recognized that transaction costs are strongly influenced by the characteristics of a transaction such as its degree of bounded rationality and opportunism (Dorward, 2001; Rajeh et al., 2013).

According to Carr et al. (2007), Transaction costs are incurred through the processes of information searches required to make decisions, along with those of negotiating, monitoring, and enforcing agreements. The existence of bounded rationality and opportunism create confusion among suppliers, service providers and contractors as to what they are paying for, leading to increased distrust of the competitive tendering, rather than fostering greater trust and confidence (Thomassen et al., 2016; Augier, 2016; Gigerenzer and Selten, 2002). This means, in competitive tendering, transaction costs will limit potential savings from public tendering because of problems associated with bounded rationality and opportunism (Thomassen et al., 2016; Parker and Hartley, 2003).

According to the transaction costs economy (TCE) literature, the problem of economic organization entails the planning of governance structures that have the purpose and effect of economizing on bounded rationality while safeguarding transactions against the threat of opportunism. In this study, we are interested in understanding buyer behavior by drawing on the main notion of behavioral decision-making, and in particular bounded rationality (Simon, 1947) and the related concept of opportunism (Hodgson, 2004). Measures of transaction costs in this study included the following indicators:

Opportunism

Opportunism as defined by Williamson (1975) is the lack of candor or honesty in transactions, to include self-interest seeking with guile. In this study opportunistic behaviour is the use of incomplete or distorted disclosure of information especially to calculated efforts to mislead, distort, disguise, obfuscate or otherwise confuse participants of competitive tendering. The aim of opportunism is to realize the individual advantage while disregarding the interests of others (Hodgson, 2004; Furrer et al., 2013). In opportunism, the participants in competitive tendering will try to lower their trust thus failing to fulfill promises or obligations (Tyler, 2001; Merry et al., 2012).

In competitive tendering, opportunism is the practice of taking advantage of circumstances – with little regard for principles or

with what the consequences are for others (Önder and Erdil, 2017; Kauppi and Van Raaij, 2015; Valéro, 2015). Usually, opportunist actions are expedient actions guided primarily by self-interested motives. Explanations of opportunistic behavior (both for and against) typically focus on the proclivity of exchange partners to engage in deceptive and self-serving behavior (John, 1984; Hill, 1990; Williamson, 1985). Any contractual relationship in competitive tendering usually involves both cooperation between the contracting partners, so that each gets what they want from others, and competition by each party to get the best deal for themselves. So the contractual relationship is normally both self-directed towards avoidance of selfishness and self-interest.

Threat of opportunism is defined as lack of integrity that a public procurement practitioner will cause unfairness and thereby failing to fulfill procurement promises or obligations. Perceptions of unfairness in the distribution of savings and accrued benefits will increase transaction costs because procurement negotiation will shift to false promises and misrepresenting intentions (Rajeh et al., 2013; Petrovic and Milos, 2011). However, in within competitive tendering settings, many transactions involve multiple decision makers to both sides of transactions. These decision makers include both upper level management as well as lower level operational and technical personnel (Argyres and Mayer, 2007). The main challenge in competitive tendering is how to determine, negotiate, and manage an appropriate governance mode on added complexity in multi-level settings of decision makers manifested by selfishness and self-interest (Ackah et al., 2014; Steane and Walker, 2000).

Bounded rationality

Bounded rationality, in this study is a notion that portrays the limitations of rational thinking in decision making processes in competitive tendering. Boundedly rational decision making involves non-optimising procedures coupled with inability and unwillingness to follow a reasoned, unemotional and logical approach in decision making (Foss, 2003; Puranam et al., 2015). Usually, public procurement decisions are a kind of decisions and represent a conscious choice, a voluntary act, the final result of deliberation, a decision maker activities, with as object of activity public business. However, capacity of human knowledge is limited, whereby – its collection, storage, organisation and application involves costs and time – and this naturally limits the scope for perfect choices of options by individuals (Holtz, 2005; Ishak et al., 2010).

In most cases, possibility for exchange with other individuals extends the range of options available to individuals. While this increased range of options could further limit an individual's capacity to optimise (places more bounds on perfect rationality), there is also a possibility of opposite recurrence. For example, individuals in competitive tendering may specialise in knowledge-related activities and some social mechanisms, such as the price mechanism, may reduce the need for gathering of information.

Bounded rationality is the idea of making decisions that are rational, but within the limits of the information available to procurement practitioners' mental capabilities. It was noted that capacity of human beings is limited in relation to knowledge and information which naturally limits the scope for perfect choices when applying competitive tendering in public procurement. The possibility for exchange extends the range of options available to procurement practitioners in competitive tendering. While this increased range of options could further limit procurement practitioners' capacity to optimise thus greater possibility of performing opposite decisions.

For a procurement practitioner to be procedurally rational, it is necessary that procurement decisions result from an appropriate process of deliberation are free to vary according to perceived

knowledge and information. In this way bounded rationality form the basis of a potential reason which makes some procurement practitioners to violate favourable integrity decisions when applying competitive tendering. On the basis of previous studies it is hypnotized that:

Integrity

Integrity in this study can be asserted as unwavering consistency and persistence to uphold professional values and beliefs. Simply put, integrity is a concept that shows a consistency between actions and values (Rohr, 2008; Tomlinson et al., 2014). Usually, public procurement practitioners involved in the competitive tendering should, at all times, be perceived as honest, trustworthy, responsible and reliable (Kiage, 2013; Caldwell et al., 2005; Handfield, 2014).

Therefore, public practitioners must always keep the rationale of procurement requirement in mind, and strive to ensure they responsibly manage competitive tendering as mandated by the public procurement rules and regulations.

Measurement of the integrity in competitive tendering in this study includes indicators are as follows:

- 1) Trust is a belief that someone is honest and credible; trust is earned by being honest, having a positive intent, having strong competencies, and a track record of results (Kruse, 2019). In this instance, procurement practitioner must find a way to balance competitive tendering objectives and goals against their end users' needs, while also maintaining trust and credibility in the eyes of the end user.
- 2) Compliance is a complex responsibility requiring measurement and reporting against a dynamic and seemingly endless array of rules, agreements, standards, regulations, and legislation (Gebler, 2006). In general, compliance is the process of making sure procurement practitioners follow all laws, regulations, standards, and ethical practices that apply to competitive tendering.
- 3) Ethics in procurement ethics represent collection of moral principles or a set of values dealing with what is right or wrong, good or bad in business transactions (Vallario, 2007; Lager, 2009). Such sets of values are being shared within the business community as well as the society as a whole. Moral ideas are considered to be inappropriate for everyday business dealings and some actions are disregarded due to the strong desire to make profit.
- 4) Professional values are the principles that guide public procurement practitioner's decisions and actions in career (Roman, 2017; Tabish and Jha, 2011). While those with a strong values system and ethical standards of the highest degree are easily recognizable by their deeds and are intrinsically motivated to do the right thing even when no one is watching. Professional values indicate business-related beliefs or principles that guide professional behaviour (Poorchangizi et al., 2019; Tabish and Jha, 2011). Values may reflect ethics, practices, standards and other norms within a commercial environment.
- 5) Honesty may be seen as transparency and openness. Honesty in public procurement promotes openness, empowers and enables procurement practitioners to develop consistency behaviour on how to present facts when conducting competitive tendering (Wittig and Jeng, 2005; Kaspar and Puddephatt, 2012). Being honesty implies a refusal to lie, steal, or deceive in any way while adhering to a code of moral values (Kauppi and Van Raaij, 2015; Valéro, 2015). In that manner, honesty involves behaviour of straight forwardness, trustworthiness, loyal, fair, and sincere. Honesty is the literal opposite of dishonesty, and the antonyms such as lying, cheating, theft and insincerity along with criminal-specific traits.

Despite the importance of public procurement, the number of studies that investigate the role of public authorities in integrity is

still small. Conversely, this may result in gains from public procurement transactions by exploiting a client's integrity and extracting increased economic value from transactions through higher pricing. It is very important that the public procurement function is discharged honestly, trustfulness, and in a manner that secures efficiency in competitive tendering. This means, quality of the outcomes is fundamental in understanding whether integrity is providing value in the competitive tendering in the presence of opportunism and bounded rationality in public procurement.

RESULTS

Data normality assumptions

Before running the regression models and testing the study hypothesis, Kolmogorov-Smirnov test for data normality was applied. The results for the numeric variables show that the data is normal for all the variables at a significance level of 0.05. An inspection of the bi-variate coefficients for the dimensions of integrity, transaction costs and competitive tendering in the correlation matrix reveals that these are well less than unity (range 0.428-0.649) and therefore, not linearly dependent; this simple measure rules out the chances of multicollinearity (Montgomery et al., 2009). It can also be observed from Table 2 that the values of correlation coefficients of study dimensions are less than 0.85 which also provides the evidence of discriminant validity (Hoang et al., 2006; Kline, 2005) and confirm that the problem of multicollinearity does not exist amongst the study dimensions of integrity, TCs and competitive tendering (Jun et al., 2006; Sit et al., 2009). This may be mentioned here that being dimensions of the same construct, these are supposed to be correlated; accordingly the bi-variate correlations among the study dimensions are well above zero.

Confirmatory factor analysis

Prior to hypotheses testing, exploration on whether the three strategies could be distinguished empirically was performed. On that fact, confirmatory factor analyses (CFA) was conducted using the AMOS software package (Arbuckle, 2007) and the maximum likelihood method. The factor model which included each strategy as latent factors, which were indicated by specified items. The latent factors were allowed to correlate. The model suitability for both scales was assessed, and the findings revealed suitable parameters for all indicators: GFI = 0.954, AGFI = 0.932, CFI = 0.959, RMSEA = 0.627, chi-square/df = 3.891 and TLI=0.801. However, all items loaded significantly on the intended latent factors. Modification indexes showed that no cross-loadings were suggested; some correlations between the disturbances were suggested. The convergent and divergent validity of scores on both scales provided evidence in the expected direction.

In this study, confirmatory factor analysis (CFA) is

used to test the reliability of unidimensional and indicator was conducted so as to observe value of construct validity. Either, testing the significance of loading critical ratio, if the value of the critical ratio is greater than the critical value at the 0.05 level of significance (critical values = 1.96) then the indicators significantly is an indicator of construct validity formed (Ghozali, 2005). Evaluation of reliability construct uses the value of level of reliability which is 0.7 (Ferdinand, 2006). Table 1 shows the test results are constructs reliability unidimensional and show proof of reliability is good.

Table 1 displays the mean scores, standard deviations, and correlations among the study variables. As can be seen in Table 1, opportunism has a significant and positive correlation with competitive tendering (0.458, $p < 0.01$). Similarly, bounded rationality was found to be notably correlated to competitive tendering (0.702, $p < 0.01$). Integrity also shows a strong level of association with competitive tendering (0.970, $p < 0.01$). Thus it can be observed that there is initial support for all of study variables.

Hypothesis testing and hierarchical regression analysis

To test the moderation and the main effect of the study variable, the hierarchical regression analysis was used. The results achieved through the analysis are shown in Table 2. The results indicate that opportunism has a negative but significant effect on competitive tendering ($\beta = 0.037$, $p < 0.001$), therefore Hypothesis 1 is accepted. The relationship of bounded rationality with competitive tendering was found to be significant ($\beta = 0.077$, $p < 0.001$), hence hypothesis 2 is accepted. Results further indicated that integrity has a significant and positive effect on competitive tendering ($\beta = 0.904$, $p < 0.001$), therefore hypothesis 3 is accepted. The results of moderated regression analysis show that integrity moderate the relation of opportunism and competitive tendering ($\beta = 0.002$, $p < 0.001$), in consequence hypothesis 4 is accepted. The moderation outcome of integrity on the relationship of bounded rationality and competitive tendering was found to be significant ($\beta = -0.072$, $p < 0.001$) therefore hypothesis 5 is also accepted.

Hypothesis 1 predicted that bounded rationality will have positive effect on competitive tendering. Multiple regression analysis testing a main effects model yielded a significant and negative regression of bounded rationality on competitive tendering ($\beta = -0.352$, $p < 0.001$), and consequently not supported. Hypothesis 2 predicted that opportunism will positively affect the competitive tendering. As shown in Basic model 1 (Table 2), multiple regression analysis testing a main effects model shows significant and negative regression of bounded rationality on competitive tendering ($\beta = -0.521$, $p < 0.001$) and consequently not supported. Results

Table 1. Inter item correlations.

S/N	Construct	1	2	3	4	5	6	7	8	9	10	11	12
1	Trust	1.0											
2	Compliance	0.784*	1.00										
3	Ethics	0.674	0.713	1.00									
4	Professional values	0.820*	0.760	0.659	1.00								
5	Honesty	0.759*	0.753*	0.667*	0.665	1.00							
6	Transparency	0.528*	0.686*	0.832*	0.764*	0.567	1.00						
7	Value for money	0.743*	0.522*	0.713*	0.629*	0.674*	0.671*	1.00					
8	Competition	0.569*	0.735*	0.618*	0.768*	0.785*	0.697*	0.735*	1.00				
9	Bounded rationality	-0.692*	-0.567*	-0.572*	-0.658*	0.805*	-0.689*	-0.764*	-0.571*	1.00			
10	Opportunism	-0.770*	-0.764*	-0.637*	-0.394*	-0.767*	-0.815*	-0.568*	-0.687*	-0.597*	1.00		
11	Integrity	0.826*	0.867*	0.697*	0.730*	0.864*	0.764*	0.750*	0.624*	-0.698*	-0.756*	1.00	
12	Competitive tendering	0.782*	0.697*	0.783*	0.862*	0.714*	0.697*	0.806*	0.657*	-0.718*	-0.672*	0.758*	1.00

Source; Authors (2022).

Table 2. Results for main effects and hierarchical regression analyses.

Variable	Basic Model I		Basic Model II		Basic Model III	
	B	SE	B	SE	B	SE
Step I: Predictor						
BR	-0.346	0.054***	-0.062	0.394	-0.023	0.371
OP	-0.521*	0.093	0.177**	0.893	0.114*	0.922
Step II: Main effect						
CT			0.952***	0.065	0.356***	0.061
Step III: Interaction effect						
BR x CT					-0.295***	0.518
OP x CT					-0.413***	0.614
F		15.864		52.893		49.415
R ²		0.241***		0.452***		0.646***
ΔR ²		0.40***				0.043**
f ² (Effect Size)		0.514		0.678		0.852

OP = Opportunism; BR = Bounded Rationality; CT= Competitive Tendering; IT = Integrity; * $p < 0.05$; ** $p < 0.01$. *** $p < 0.001$; $n = 220$. Source; Authors (2022).

further indicated that integrity has a significant and positive effect on competitive tendering ($\beta = 0.952$, $p < 0.001$), therefore hypothesis 3 is accepted. Hypothesis 4 predicted that integrity will moderate the effect of opportunism on competitive tendering positively and, and Hypothesis 5 stated that integrity will moderate the effect of bounded rationality on competitive tendering positively. Thus, Hypotheses 4 and 5 are supported. As shown in model 3 (Table 2), a significant interaction exists between bounded rationality on competitive tendering ($\beta = -0.294$, $p < 0.001$), and the explained variance in the model is due to main effects ($\Delta R^2 = 0.04$, $p < 0.001$). Similarly, the interaction of integrity with opportunism and competitive tendering shown in model 3 (Table 2) is significant and positive ($\beta = -0.15$, $p < 0.01$), and the explained variance in the model is due to effects beyond those due to main effects ($\Delta R^2 = 0.02$, $p < 0.01$). For the measure of integrity, the results of hierarchical regression yielded a greater effect of bounded rationality variables (Step 2) [$B = -0.882$, $R^2 = 0.372$, $\Delta R^2 = 0.732$].

Entering the effects of each integrity dimension into the regression equation (Step 2) yielded a significant increase in the explained variance [$F = 11.50$, $p < 0.0001$, $\Delta R^2 = 0.33$] with a high efficiency of competitive tendering ($\beta = 0.782$, $p < 0.001$), a small contribution of BR ($\beta = 0.15$, $p = 0.053$). An identical pattern of results was obtained for opportunism and competitive tendering (Table 2). The effect of integrity variables (Step 1) were greater ($\Delta R^2 = 0.12$ on the presence of opportunism. The introduction of integrity (Step 3) yielded a significant increase in the explained variance ($\Delta R^2 = 0.649$), with a high contribution of competitive tendering and reduction of opportunism ($\beta = 0.14$, $p = 0.058$).

DISCUSSION

In this study, it was found that, the support from the previous literature from presented results that bounded rationality has a considerably negative effect on competitive tendering. This is in line with the study of Foss (2003) and Puranam et al. (2015) who observed that bounded rationality involves non-optimising procedures coupled with inability and unwillingness to follow a reasoned, unemotional and logical approach in decision making process. Similarly Holtz (2005), and Ishak et al. (2010) observed that capacity of human knowledge is limited, whereby – its collection, storage, organisation and application involves costs and time – and this naturally limits the scope for perfect choices of options by individuals. Results signified that opportunism has a significant effect on competitive tendering which is same as hypothesized. The authors found support for our findings from Rajeh et al. (2013), Petrovic and Milos (2011) study who found that perceptions of unfairness in the distribution of savings and accrued benefits will increase transaction costs because procurement

negotiation will shift to false promises and misrepresenting intentions. Studies of Ackah, et al., (2014), Steane and Walker (2000) found that the main challenge in competitive tendering is how to determine, negotiate, and manage an appropriate governance mode on added complexity in multi-level settings of decision makers manifested by selfishness and self-interest.

From the statistical data analysis it was observed that practitioner's level of integrity has significant negative effect on competitive tendering. It is also found that integrity guides practitioners to attain procurement goals and can construct immoral friendly relationship among participants in procurement process (Lynch and Angel, 2013; Darabad, 2017). In this paper, integrity is found by five factors which are trust, compliance, ethics professional values, and honesty. Poor integrity in public procurement can be a source of negative practitioner behavioral outcomes like corruption, collusion and bid rigging (Beth, 2007; OECD, 2009). From the data analysis it was found that integrity has significant effect on competitive tendering and bounded rationality. And also integrity has significant impact on association between competitive tendering and opportunism. These results were opposite of our prediction. It can be argued that existence of bounded rationality and opportunism in procurement transaction is a source of impractical behavioural to procurement practitioners. So, integrity itself may discourage practitioners to attain transparency, competition and value for money outstandingly. In a study by Ryan and Deci (2000) argued that highly integrity employees have tendency to be self-driven and they like to make their own rules to perform the tasks. Driving support from this finding is assumed that integrity may serve well independently at the same time buffer or magnify its effect on TCs and increase efficiency of competitive tendering in public procurement.

Conclusion

The purpose of this paper was to examine moderating effect of integrity on transaction costs dimensions and competitive tendering. The objective was to bridge the gap between the literatures on effects behavioural aspects of transaction costs on competitive tendering. Generally, from the study results and findings, it can be concluded that to evaluate effects of integrity in competitive tendering, there is a need to determine the nature and sources of transaction costs in procurement procedures and, in particular, to see whether the occurrence transaction costs represent under-performance or inherently non-facilitative. However, efficiency gains of competitive tendering will generate net economic benefits to society from the better use of integrity in competitive tendering after taking into consideration existence of opportunism and bounded rationality.

By moderating transaction costs in competitive tendering by using integrity the study showed that it is possible and reasonable to consider a bounded rationality and opportunism simultaneously. In the theoretical discussion, the integrity of public procurement practitioners has gained a central position on enhancing efficiency of competitive tendering. The results fully support this. From the results it was seen that dimensions of integrity have a great effect on bounded rationality and opportunism as well. For example trusts, compliance, honesty, ethics and professional values better explain occurrence of moderation effect of integrity on transaction costs dimensions and competitive tendering.

In addition, the classification of behavioural effects is based on specific individual behaviour as somewhat mentioned in the previous literature. The literature acknowledges that trusts, compliance, honesty, ethics and professional values can change individual behaviour and thus reduces transaction costs in competitive tendering. However, there is a gap in attention on how accommodate different group strategies and perceptions when working together.

Moreover, most literature on public procurement rarely considers bounded rationality and opportunism as generic, mostly infectious surroundings of competitive tendering in public procurement. Little attention is paid to size and other characteristics of the integrity as a moderating factor on bounded rationality and opportunism. The results however suggest that bounded rationality and opportunism features affect competitive tendering. Thus future literature ought not to discuss transaction costs in a too general level but to take its characteristics into account. More attention should be paid to the bounded rationality and opportunism in competitive tendering, the behavioural relationships between participants and the openness of interfaces.

IMPLICATIONS AND FUTURE DIRECTIONS

This study offers copious implications to knowledge of behavioural factors governing relational exchange in the context of integrity, transaction costs and competitive tendering in public procurement. Initially, this paper extends the familiarity on importance of behavioural relational aspects of competitive tendering in public procurement and contributes to fills the gap in existing literature through empirical evidence. Many scholars explore the effect of behavioural relational as an important tool which affects business performance minimising transaction cost. However, in the public procurement context, lack of indications reflects about the moderation effect of integrity on transaction costs in competitive tendering, particularly in developing countries. The study fills this gap by disclosing empirical evidence providing substantial contributions to empirical knowledge in the field of integrity, transaction costs and

competitive tendering.

This study undergoes numerous limitations that should be addressed in future researches. Initially, the study only identifies few dimensions to reflect integrity, transaction costs and competitive tendering. Thus, several dimensions of integrity, transaction costs and competitive tendering have been addressed and identified by various scholars in the literature. Another limitation refers to the fact that the respondents in this survey came from Dodoma which largely relies on behavioural perspectives, which makes it inappropriate to generalize these conclusions to other world places of activity at once. On the other hand, the foremost limitation is the number of participants in our sample ($n=220$), that it examines a very small subset of the total population ($N=978$). Though Dodoma is involved in connection with respondents, but there are many other areas in Tanzania where public procurement is prevalent.

Therefore, further study is needed, possibly using a longitudinal case study and qualitative approach in a number of regions, to reveal patterns and the moderation effect of integrity on transaction costs in competitive tendering over time. There is a need to find a better blend and balance of what might be called moderating effect, and knowledge on the technical aspects of competitive tendering with other public procurement principles in different interactions. A well-developed systematic methodology is in need to be addressed in imminent researches to measure moderating aspects like transparency, accountability, and competition in a broader viewpoint of not only behavioural factors but also environmental factors.

CONFLICT OF INTERESTS

The authors have not declared any conflicts of interests.

Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

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