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THEME: "SUSTAINABLE PROCUREMENT AND SUPPLY CHAIN PRACTICES FOR MODERN ECONOMY"

Topic: Strategic role played by procurement and supply chain functions to deliver sustainable development.

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Abstract

Tanzania in the recent past has joined other African countries on the endeavor to promote sustainable development. In that course, there have been implementation of various development projects with massive funding pulling finances from internal and beyond borders in form of loan

or grants. The foreign source originates from the bilateral and multilateral arrangement of the Government and foreign institutions or Governments.

Ensuring sustainable development goals are realized, Tanzania has opted to invest in major economic infrastructures so as to provide a foundation for other sustainable development activities. Some investment avenues considered as strategic in Tanzania includes projects o power production, transportation network, rural electrification, health provision improvement, improved water supply and new cities outlay just to mention a few.

Much as sustainable development is desired, the successful management of the process and projects towards that end remains an issue of concern when looking at history which portray delays or failures of most major projects that meant similar objectives not only in Tanzania but also other places. Looking at these failures and project frustrations, it is a grand question as to what role do procurement and supply chain professionals play in execution of such projects?

This paper explores the strategic fit of the procurement and supply chain professionals into the entire process of executing major projects. It clarifies the supply chain concept, supply chain management, supply chain activities as key ingredients that flows upstream and downstream amongst supply chain actors. Further, the paper looks at the role that supply chain activities play in ensuring success of projects and the challenges thereon.

The focus of the paper is anchored on key supply chain activities for project execution including sourcing ideas, project design, coordination and flow of information, flow of finances, warehousing and transportation, people's participation as customers and other intermediaries, security, distribution and insurance in mitigating perceived risks.

Key words: Supply Chain, Supply Chain Management, Supply Chain Activities, Strategic Development Projects and Procurement and Supply Chain Professionals

1.0 Introduction

A strategic project is a vehicles for social and economic change, they provides means of mobilizing resources and allocating them to production of new economic goods and social

services. Strategic projects have been undertaken in Tanzania in the recent past making it among Countries with similar focus of improving social and economic wellbeing of the people.

The major strategic development projects undertaken are characterized by longevity of years usually above 50 years with a feature of sunk huge sum of monies. The projects possess extensive complex networks with multiple interfaces and Interdependencies such as accessibility (transport) and land value. They are highly influenced with a lot of externalities (positive and negative) and third party consequences while also embedded with multiple objectives such as efficiency, equity and sustainability tradeoffs

Among major projects in Tanzania extends to health sector, power production and distribution, transportation network (*land, water and air*) and a new Government city in Dodoma while improving other existing cities' outlays. These meant to be a foundation of other economic activities as they will attract multiplier effects in economic growth are worth billions of US dollars and carries enormous benefits on social and economic facets.

Vivid evidence of major projects that Tanzania has acted upon include Strategic Road Network to link Tanzania and Mozambique funded by the African Development Bank. Projects to further de-congest Dar es salaam City known as Phase II of the Dar es Salaam Rapid Bus System (DART), improvement of Air transportation with construction of Terminal III at Julius Nyerere International Airport to handle 6.6 million passengers per annum which costs $ 314 million and revival of the defunct Air Tanzania by injecting over $434.79 million[1]. Further projects are expansion of Dar Es Salaam Port 7 berths depth from the current 8 meters to 15 at a cost of Tshs.340 billion ($154 million) to service larger vessels of 304 meters from the current 204 meters and increase more tonnage and on similar page, procurement of new ships for transportation in lake Victoria, Tanganyika and Nyasa.

The construction of standard gauge railway (SGR) from Dar es Salaam to Dodoma (541km) is ongoing at estimated cost of US$ 3.0 Billion contracted to a 50/50 consortium comprising Yapi Merkezi of Turkey and Mota-Engil of Portugal[2]. Another major project on the list is Nyerere Hydroelectric dam project (formely Stiegler's Gorge basin) with expected cost of $3 billion and

[1] https://allafrica.com/stories/201901120008.html on 16/10/2019
[2] https://www.exchange.co.tz/tanzanias-major-projects-set-to-boost-the-economy-by-2025/

production capacity of 2,115 megawatts[3] while also partnering with Uganda on a project for crude oil transportation pipeline from Uganda's oil fiels (Hoima) to Tanga City on the costal shore of Indian Ocean[4]. This 1,443 kilometres (897 mi) Uganda–Tanzania Crude Oil Pipeline (UTCOP) also known as the East African Crude Oil Pipeline (EACOP) is estimated to cost US$4 billion when complete in year 2020[5].

The efforts of strategic development projects in Tanzania join hand to other African states endeavors. Nigeria for example has projects of dredging Lower River Niger cutting across eight Nigerian states with a length of 572 KM at a cost of approximately $ 280 Million to improve water navigation, light railway transportation system project costing $ 1.12-3.0 Billion[6], Abuja Gateway Airport which costing $ 371 Million, Lagos-Calabar Railway connecting the cities of Port Harcourt, Uyo and Aba with length of 1,400 KM at a cost of $10 billion[7], the Mambila Hydroelectric Power Project at a cost of $5.8 billion with a total installed capacity of 3,050MW of electricity and an Eko Atlantic city built on reclaimed waterfront at estimated cost of $ 6 Billion[8].

Kenya's projects includes a standard gauge railway with 969 KM from Mombasa to Malaba at a cost of $9.9 billion[9] and Konza Technology City project at a cost of $14.5 billion in a bid to attract technology talents and investors to drive its economic growth[10]. Surveying DRC, major projects includes a proposed hydroelectric power Dams projects called Grand Inga Dam with a capacity of output of 39,000 MW annually at an estimated cost of $100 billion expected to begin in December 2016 before World Bank withdrew its funding in July same year following disagreements over the project[11].

Another notable major projects on the list is a mega investment on Grand Ethiopian Renaissance Dam formerly known as the Millennium Dam on the Blue Nile River in Benishangul-Gumuz

[3] https://africa.cgtn.com/2019/07/26/tanzania-begins-construction-of-giant-hydropower-dam/
[4] https://en.wikipedia.org/wiki/Uganda%E2%80%93Tanzania_Crude_Oil_Pipeline
[5] ibid
[6] http://sapientvendors.com.ng/8-mega-construction-projects-in-nigeria/ visited on 23.10.2019
[7] Ibid
[8] http://sapientvendors.com.ng/8-mega-construction-projects-in-nigeria/ visited on 23/10/2019
[9] Shem Oirere (2019), Kenya Standard Gauge Railway launch drives freight growth**:** https://www.railjournal.com/freight/kenya-standard-gauge-railway-launch-drives-freight-increase/
[10] Ibid
[11] https://www.constructionkenya.com/4227/largest-projects-africa/ visited on 23/10/2019

with estimated production of 6,000 MW at a cost of $4.8 billion constructed from 2011[12]. From Egypt and South Africa there are projects among others on new cities. In Egypt a project estimated cost is yet to be disclosed though transfer of government ministries, foreign embassies, parliament, and presidential palaces expects to take place between 2020 and 2022 alone at a cost of $45 billion[13] while the Modderfontein Mega City in South Africa is funded by Chinese at a costs $8 billion.[14].

Much as the project results and impacts are desired, the process and huddles of arriving at the accomplishment rests on a number of factors one of them being an efficient role of supply chain professionals. What is it, how it works and what are the common disappointments in major strategic projects mark the centre of this paper. It is important to note that, however strategic and important these projects may be to the wellbeing of the people and realization of sustainable development objectives, failure, frustrations or delays of the projects are likely to occur due to various supply chain challenges which worth investigation.

2.0 The concept of supply chain management

2.1 Supply chain concept

To understand the supply chain management, a foundation should be laid in understanding the concept Supply chain itself. A Supply Chain is a term which has received many clarifications including description as a structured manufacturing process wherein raw materials are transformed into finished goods, then delivered to end customers (Beamon, 1998). Also, Little, A. (1999) defines a term as the combined and coordinated flows of goods from origin to final destination embedding the information flows linked with it. Therefore the whole concept of a supply chain begins with raw materials and complete when goods reaches the final consumers[15]. The flow which is considered under a supply chain represents a connected flow of resources and processes starting with raw materials sourcing and expanding to delivery of finished goods to the end consumer[16]

[12] Ibid
[13] Ibid
[14] Ibid
[15] Tecc.com.au 2002
[16] Bridgefield Group (2006)

From the definitions, agents and activities that form supply chain on a network of activities and intermediaries from raw materials stage to the point where finished goods are consumed are clearly identified. Chow, D. and Heaver, T. (1999) clarifies supply chain as a group of manufacturers, suppliers, distributors, retailers and transportation, information and other logistics management and service providers engaged in providing goods to consumers. Assey, J (2012) summed up from above definitions that core determinants of an effective Supply Chain connote the need for an origin and a destination within which goods flow and accept the approach that overall Supply Chains start with resources (raw materials), combine a number of value adding activities and finish with the transfer of a finished goods to consumers.

Though there may be various definitions on the term supply chain, it is consented in both definitions that, the role it plays is to add value to raw materials through manufacturing process, distribution via intermediaries, warehousing, upstream and downstream flow of information and finances until when goods reach the final consumer. The supply chain is complete when looked at from internal and external perspectives of any project. This may include looking how information and financial resources flow in upstream and downstream direction. On this note, Ayers (2001) says that the supply chain flow involves a physical goods, information, and financial resources among various intermediaries.

2.2 Supply chain management

Supply chain adds value as goods and services flows when connections and nodes in a chain works with efficiency. Having any node that does not carry out well reduces the overall effectiveness of the whole Supply Chain since the principal focus of market competition where efficiency is prioritized is not only between goods, but the supply chains delivering the goods (Assey, 2012). From Assey we learn that having a supply chain alone is not enough for value addition and gaining a competitive edge in market place including implementing major projects at reduced costs. The supply chain should be complemented with an effective management, which brings in supply chain management concept. This is about focusing on more profitable ways of regulating flows of inputs or outputs while managing what defines efficiency in supply chain including timeliness, cost optimization, quality and effective coordination amongst supply chain networks.

From the literature, Supply chain management is clarified as an effectively managing the linking processes for optimizing activities across the Chain (Trkman, P., Stemberger, M. and Jaklic, J., 2005). Ayers (2001) describes it as a maintenance, planning, and supply chain processes activity for the satisfaction of consumers' needs. The Supply Chain Management Professionals' Council (2009) defines it to include designing and management of all activities involved in sourcing and purchasing, transformation, and all logistics management activities including coordination and partnership among network partners. Lambert (2008) adds a leaf on the definition by describing the term as an integration of key business processes across the supply chain for the purpose of creating value to customers and stakeholders. From both scholar's amplification of supply chain management, it is evident that the focus is managing market uncertainties and therefore anchored on examining and managing occurrence and effects of such uncertainties to optimize opportunities (alternatives) for cost savings and better customer service.

2.3 Supply chain activities

Looking at intermediaries or partners and what flows amongst them, supply chain network includes activities of manufacturers, suppliers, distributors, retailers, transporters and other logistics (Chow and Heaver, 1999). It also looks at a flow of information upstream and downstream (Little, 1999) together with goods and financial resources (Ayers, 2001, Mentzer et al., 2001). Other activities of supply chain are new product development, warehousing, marketing, operations, consumers themselves and customer service (Chopra and Meindl, 2001).

3.0 Supply Chain Activities in Execution of Major Projects

Building from literatures above, major development projects have a full set of the supply chain activities as hereunder clarified:

3.1 Conception of project idea, planning and preparation

Supply chain is concerned with new product development where there is production but for major projects the concern is to ensure appropriate conception of project idea. This is a stage where the project is conceived and developed after a thorough consideration of impacts that the project will bring to the beneficiaries. 'We need results not the process'', this is how beneficiaries would say. However, for supply chain professional, appropriate identification of the

project, proper planning and preparations marks vital step towards success. Abraham[17] believes that the traditional approach to success in the construction industry places great emphasis on the ability to plan and execute projects in time.This enables for provision of needed resources and other role distribution amongst linked players. At this stage it is expected that the coordinating player will contact those implementing the project and others responsible for policies directly linked with project.

3.2 Appraisal and selection processes

Before embarking on strategic project, there should be a thorough appraisal to ensure all relevant parameters are cleared such as clearly defining project objectives, inputs and expected outputs. Appraisal is done from financial and non-financial aspects to verify the proposed outputs. For most construction projects, there must be feasibility studies and environmental impact assessment. This is a stage where finances required and respective flow pattern is looked at and how beneficiaries (Customer) will be served to realize the benefits thereon. The supply chain professional has a role at this stage to ensure supply chain activities i.e flow of finances, objectives of the projects and needs of consumers are well aligned.

3.3 Detailed Project design

Major projects requires appropriate detailed design localized to community conditions and focused on the real needs of the community while observing their absorption capacity. There is a need to estimate adequate resources needed and sufficient allowance for resources demand of other on-going projects to avoid heavy additional unplanned borrowing. During project design, it is a time where appropriate specifications of desired output and materials for the project are identified. Designing requires an adequate consideration of other parameters to ensure integration of project into larger and related network or system to avoid frequent design changes in subsequent stages of implementation and introduction of unplanned additions or expansions of the project. It also requires a contingency plan and budget to meet all emergencies or unanticipated incidences which in most cases are not appropriately provided for.

[17] Abraham G. Critical success factors for the construction industry. In: Proc, construction research congress in construction wind of change: integration and innovation (CD-ROM). Construction Institute, Construction Research Council, ASCE, University of Colorado at Boulder; 2003

Design is an important stage of any project and as such it should be accorded adequate time to allow optimization of opportunities available to select and collect baseline data and developmental indicators that will be used as a monitoring, control and post project evaluation benchmarks. Information flow is of utmost importance for project to succeed as it brings together the implementers and beneficiaries along project development time. Designing a project in entirety as an integral part of a larger network or system allows for assessing a need to plan for policy changes necessary for adequate project functioning such as tax incentives, land reforms and legal reforms. Given adequate time to plan, interaction between project planners, ultimate users, clients and beneficiaries can be organized so that all necessary huddles are addressed. The coordination of all key players and identification of supply chain activities for a project is key to bring in all necessary inputs in the development process. It is at this stage where the project risks are identified, mitigations proposed and sourcing procedures and management of inventory are planned.

It is a concern of supply chain professionals to ensure that supply chain activities are optimized to add value on the project while holding cost to optimum levels. Also, with adequate project design and preparations, there is a room to factor in to the project cost, provisions for inflation, material price increases and rises in salary levels which would affect project overall cost.

3.4 Start up and Activation of a project

Strategic projects are huge with wide base of stakeholders locally and beyond boarders. The concern with wide base of stakeholders is taking everyone on board with their consented support to avoid project delays and obsoleteness of designs with passage of time. Some delays may be in granting necessary national and international approval and clearances and in most cases delays may be caused by uncertainty in releases of finances where a project is financed with local and foreign aid components. Studies by Alaghbari et al. (2007) and Sweis et al. (2008) found that financial related factors are some of the most critical factors that can trigger project failure in terms of delay. The study by Kazaz, Ulubeyli and Tuncbilekli (2012) noted that design and material changes, delay of payments and cash flow difficulties by contractors were the three most significant factors affecting major construction projects in Turkey.

Being cross cutting, major projects touches various players and institutions. A good example is given by the Controller and Auditor General (CAG) in the performance report on road construction projects, 2010 where a long list of players includes the contractor, the consultant, utility entities (*TANESCO, TTCL and Water Authorities*), Ministry of Land, Contractors Registration Board (CRB); Engineers Registration Board (ERB), Local Government Authorities, Financiers and others. With all these players, ensuring corruption free processes, avoid inter-organizational rivalry and addressing lack of cooperation in allocating and disbursing resources should be an item of utmost importance when starting a project. It is important therefore to define the relationship of the project organization to broader institutional and administrative structures to provide for inter- organizational commitments

In these projects, there are some commitment Governments make such as the required resources like provision of land free of encumbrance and local contribution of percentage of cost. These commitments must be coordinated to ensure project schedules and costs do not go beyond plans. On the issue of optimization, where the project seems to have different alternatives of reaching to objectives, there is a need of thorough alternative evaluation to ensure whatever is done gives optimum results. The project once started needs effective supervision and so there must be an adequate organizational planning which leads into creation of appropriate or effective project implementation unit with skills mix and supervision blue print.

3.5 Adequate project execution, operation and supervision

During execution of the project, project schedules may delay beyond contracted time frame attracting cost over runs. The delays may be attributed to innumerable factors including inefficient flow of information, uncertainty in resource flow, weaknesses in distribution channels, stock out due to bull whip effects and weaknesses found in the transportation network to the places of project implementation. Project success is a priority to supply chain professionals and therefore any waste along the supply chain is an area of their concern. Supply chain professionals ensures adequate information flow among project players and coordinate the achievement of detailed performance targets. Generally, effective communication is about exchanging meaningful information between people with the aim of influencing their actions and

therefore communication is central to any change process[18]. The greater the change, the greater the need for clear communication about the reasons and rationale behind it, the benefits expected, the plans implemented and proposed effects. This greatly requires a service of well trained and competent supply chain professional who would ensure a complete supply chain is efficient and every single item in the chain works well.

It is also important as far as practicable to avoid excessive fragmentation of responsibility for implementation among government organizations and agencies. The fragmentation cause differences in speed, philosophy and target on the project components. Some of the players may delay funds, other delay land and those responsible for legal advice to the Government may sit on vetting contract for long period of time. Further, inadequate resource and work scheduling, inadequate equipment specifications, delays in delivery and inability to procure required resources, materials and supplies may contribute to slow down the speed of project execution.

During project execution, many factors occur, which in isolation or combination with others affect the project. Bureaucracies and complex payment procedures, ineffective methods of budgeting which fails adequate and timely availability of finances, weakness in personnel management causing high staff turnover, poor staff training and inadequate remuneration structures may end up bringing *'slow down''* and workers strike hence affecting project schedules. As a best practice in human resource management, Conflict among project staff or between project administrators and professional staff must be addressed.

3.6 Inadequate or ineffective external coordination of project activities

Coordination plays a key role in putting together activities and resources towards addressing a common objective. Where a project experiences an insufficient coordination, the chance of success may be jeopardized. Appropriate coordination is needed in securing internal project funding and flow of other resources together with fulfilment of external aid conditions.

[18] OGC. Programme and project management and careers, <http://www.ogc.gov.uk/programme_ and_ project_management_and_career-s.asp>

Where a project cuts across various institutions, it is a success edge to a well-coordinated linkage between them. When working on major project, there is a need to bring together citizens by creating project ownership with them so that they feel responsible to offer any necessary support including protection of project materials against theft and vandalism. On this aspect, projects must be distanced from unnecessary politicization especially where a community is comprised with mult-ideology politics. The community must be invited to participate, motivated and made aware on the impacts the project will have to them. New technology such as a use of social networks, online television and other media may be employed so as to ensure big population is reached with such information such.

3.7 Diffusion and evaluation of project results and follow-up action

To achieve value for money and a strategic edge out of major project, the supply chain professionals have a role to ensure project outputs and benefits reaches wider population in a manner intended by project design. To achieve this end, completed projects should be tested for reflection of original design in terms of its appearance and benefits offered and whether project's benefit accrues to wider population and measures to expected percentages of absorption.

Projects experience huddles on internal reporting and monitoring procedures. Systems should be instituted for monitoring and control by relevant government agencies to timely notice where a project goes astray. With this, these is an opportunity for lessons learnt which practically is useful in other developmental activities. It is relevant also to consider the appropriate placement and utilization of project trained personnel who successful worked with the project. It is expected that the project closure is given adequate attention to allow for timely capitalization of project assets and immediately put to use to the community. Supply chain professionals works on completion reports, project commissioning and contractor's decommissioning and handing over procedures without unnecessary delays. Adequate or effective project post evaluation and procedures are also ideal at this stage.

4.0 Strategic Fitting of Supply Chain Activities in Success of Major Projects

Typically management of supply chain activities represents what is done to timely facilitate the movement of goods and services along the linkage of suppliers and service providers. However, with the growing complications in sourcing and procurement of goods and services, there are

chances that supply chain movement may be costly, untimely, wasteful and full of conflicts which represent inefficiencies in the chain. The choice of procurement process as part of supply chain is vitally important to the success of any construction project. Also, the type of procurement methods in the construction industry that are chosen is a major deciding factor of the overall success of any construction project. Various types of procurement procedures may be opted but in all situations it observes key parameters such as topography, logistics, weather, available technology, finance, labour availability, and services[19].

Value creation is a focus of the Business World and supply chain professionals constantly works to address inefficiencies in the chain. Addressing inefficiencies is connected with precise and timely decisions from the top Management to efficiently manage supply chain with reduced costs[20]. This calls for appropriate and adequate information availability which is a role of supply chain professionals to ensure smooth flow of the same.

Implementing strategic projects embraces a set of activities which do not necessarily flow from the same implementing agent. Taking an example of a standard gauge railway, there are suppliers of locomotives, steel, slabs, electricity etc. The general process for preparing for the railway construction flows from basic plans, base and actual designs, acquisition of various approvals and certifications and discussions with related agencies and organizations, then land for facility construction sites is acquired, and construction begins (Khoshnaw, 2012). To put together all these activities, there is a need of an efficient supply chain management. No matter how well a project is designed, employer and contractors cannot avoid all the risks inherent to the project in question. They may however, make recourse to the mapping of their supply chain in order to identify the threats they are exposed to and reduce their exposure accordingly[21]. Insurance comes in to address project risk exposure but must be well managed to ensure cost optimization.

5.0 Common Supply Chain Huddles that Hits Major Projects

The Project Management Institute reproduced an article by Rondinelly, D.A (1976)[22] titled why development projects fail with an emphasis on problems of project management in developing

[19] https://www.spendedge.com/blogs/types-procurement-construction-industry# visited on 24/10/2019
[20] https://www.strategy-business.com/article/22165?gko=d5c8e
[21] https://www.atlas-mag.net/en/article/insurance-and-supply-chain visited on 24/10/2019
[22] https://www.pmi.org/learning/library/problems-project-management-developing-countries-1739

countries. Among the challenges explained relates to Political, economic, operational, social and physical difficulties which either seriously delay projects or cause them to fail. The following problems are those that occurs most frequently.

5.1 Ineffective project conception, planning and preparation

The supply chain professional is concerned with appropriate identification of the project, proper planning and preparation procedures. With reference to the work of Abraham[23], during early stages, projects suffer insufficient preparatory analysis, sectoral assessment, feasibility studies and technical appraisal which would provide required information for subsequent design. This at times may be contributed by people focusing on overly complex or ineffective bidding and contracting procedures and skip working on other preparations.

5.2 Faulty appraisal and selection processes

Looking at appraisal and selection aspects, projects experience challenges following an overemphasis on economic and technical criteria while neglecting administrative, social, cultural and environmental factors[24]. However good the project might fit in economic and technical boundaries, it is likely to face huddles if culturally, socially and administratively is unsupported. Where this happens, there emerges long lag periods before the project can take off.

Most of major projects are those never undertaken before, in such situation the supply chain professionals find it difficult to estimate a true costs of capital in the appraisal of individual projects or in comparing sets of alternative projects.

5.3 Defective project design

In most cases, capital projects suffer inappropriate design tailored to local conditions, needs and capacities. Also there is underestimation of resource needs, amortization obligations and insufficient allowance for resource demands of other on-going projects. During this stage

[23] Abraham G. Critical success factors for the construction industry. In: Proc, construction research congress in construction wind of change: integration and innovation (CD-ROM). Construction Institute, Construction Research Council, ASCE, University of Colorado at Boulder; 2003

[24] See the example of WWF reaction of Nyerere Hydroelectric Dam at https://wwf.panda.org/wwf_news/press_releases/?350611/WWF-reaction-to-Stieglers-Gorge-hydropower-dam-construction-launch

insufficiently detailed designs have led into frequent design changes in subsequent stages of project planning and to unplanned additions to expansions of the project.

During project design a capital project lacks an integration into larger and related systems or networks. Where this happens, the supply chain suffers unexpected stoppage, cost over runs and re design to integrate the project into the related system or network. This requires a contingency planning to meet all these emergencies or unanticipated delays which in most cases are not appropriately provided for. Rushing to project with aim of impressing miss an opportunity to select and collect baseline data and developmental indicators useful in monitoring, control and post-evaluation subsequently. Lack of this fails measurement of the impact that the capital project creates to social and economic development.

Projects lack plans for policy changes necessary for effective functioning such as tax incentives, land reforms and subsidies or other benefits. With inadequate project preparation, there is a failure to account adequately in financial plans for inflation, price increases and rises in salary levels which later affects overall cost of the project.

5.4 Problems in start-up and activation

Due to wider base of stake-holders, major projects experience delays in obtaining necessary national and international approval and clearance. These delays holds projects and at later times when they are obtained, some of plans unfits into reality or desired outcomes. Being cross cutting, strategic projects pulls various players and institutions and in that respect, existence of Corruption, inter-organizational rivalries and lack of cooperation in allocating and disbursing resources required for project activation exist to challenge project success.

Another challenge experienced at this stage is delays in discharge of Government commitments towards project such as portion of local resources which may also include land with all necessary right of way. Where this component of local resources is delayed, there is a great chance that project fails or delays and result into cost-overruns. Further, projects suffers insufficient analysis and comparison of alternative methods available for attaining project objectives during start-up

and organizational phases hence miss an opportunity to adequately plan for appropriate project implementation unit with skills mix and supervision blue print.

5. 5. Inadequate project execution, operation and supervision

During project execution, there are emerging factors resulting into cost over-runs due to delays in project construction, completion and implementation. Delays in project originate from inefficient flow of information, resources or weaknesses in distribution channels which represents inefficient supply chain. It is more challenging where there is excessive fragmentation of responsibility for implementation among government organizations and agencies. The fragmentation cause differences in speed, philosophy and targets.

The project may also suffer inadequate resources, work scheduling and inadequate equipment specifications. On the other hand, delays in delivery and inability to procure required resources, materials and supplies slows down the speed of project execution. At this stage, many factors occurs which in isolation or combination with others affects the project implementation. Examples of other factors includes an outdated and bureaucratic finance and accounting procedures, ineffective methods of budgeting and weakness in project personnel management.

5.6 Inadequate or ineffective external coordination of project activities

Coordination plays a key role in putting together activities and resources towards addressing a common objective. With insufficient coordination among organizations, projects experiences declining possibility of success. Projects suffer lack of appropriate coordination in securing internal project funding and flow of other resources together with fulfilment of external aid conditions. Where a project cuts across various institutions, lack of a well-coordinated linkage between activities of one Ministry and another leads into irregular flow pattern of resources and actions.

In various major projects, people feels not part of projects and some feels isolated by political, religion and other factors. In that case people from places where projects are implemented may take part in theft and vandalism of project materials and infrastructures offers no protection to the project.

5.7 Deficiencies in diffusion and evaluation of project results and follow-up action

To achieve value for money and a strategic edge out of the major projects, the implementers have a role of ensuring project outputs and benefits reaches wider population as intended by project design. To this end, there are situations where project completed do not reflect the original design in terms of its appearance and benefits offered. In some cases the benefits accrues to narrow population than a design and in other situations there is inadequate or inappropriate utilization of complete projects than initially expected. Projects experiences huddles from poor internal reporting and monitoring procedures. Where there is inadequate monitoring and control by the relevant Government Agencies, it becomes difficult to timely note instances where a project goes astray until when things have gone to an expensive repair. With this Governments have lost opportunities to record lessons learnt which would practically be useful in other developmental endeavors.

To sum up , where major project is on construction, the supply chain is affected by many problems as have been reported by several authors [Vrijhoef and Koskela, (1999), Vrijhoef, (1998), Hong-Minh et al., (2000); Akintoye et al., (2000), O'Brien, (1999), Ofori, (2000)]. Most of these problems are not generated in the conversion process but in the different interfaces that exist within the supply chain. Some of the general problems includes lack of coordination, collaboration and commitment between suppliers and clients within the supply chain, design problems (many changes and inconsistent information), poor quality of materials and components, deficient communication and information transfer, inadequate management within the supply chain, mainly poor planning and control, poor training of contractor's suppliers, subcontractors and workers and a lack of effective methods of measuring the performance of different parties within the supply chain.

6.0 Case Studies on mismanaged supply chain activities in major projects

6.1 Failures in Project Design and construction

In Tanzania the rapid bus (BRT) project experienced implementation challenges due to design blunders as reported in the media. The Minister of State in the Vice President's Office (Union Affairs and the Environment), admitted that implementation of the project did not take into

consideration the advice of the National Environment Management Council (NEMC), which conducted an environmental impact assessment (EIA) and proposed uplifting of the premises to allow water overflow to the ocean[25].

On 26 February 2019, Hellen Nachilongo a reporter of the Citizen Newspaper reported on the Government plans to review BRT phase I project following challenges that the project experiences[26]. In the review, the Government was to look on ways of cooperating with more private operators under the Public Private Partnership (PPP) arrangements which implies that the project designing and execution did not evaluate all possible alternatives at earlier stages.

6.2 Uncertainty in finance availability

Supply chain management requires existence of smooth flow of financial resources so as to pave way for successful completion of a projects. As an example, the flow of finance has been a challenge in implementation of rural electrification projects (REA projects). Suppliers and contractors complained to the Hon. Minister responsible for Energy on the delays in honouring their certificates when presented for payment which hampers timely completion of projects[27]. On other incidence, the expansion of Mtwara airport was delayed due to delays of payment of initial certificates of 15% of contract price amounting to TZS 7.5 Billion, the matter which was intervened by H.E the President of United Republic of Tanzania on 02, April 2019[28]

Due to late and non-payment problems, some countries like United Kingdom, Singapore, New Zealand and some states in Australia, e.g. New South Wales, have already legislated their construction specific statutory payment security regime purposely to address issues on prompt payment in the construction industry to eliminate poor payment practices and smoothen the contractor's cash flow (Lip, 2005; Ameer Ali, 2005).

25 The Citizen of 24 May 2018 available at https://www.thecitizen.co.tz/news/Tanzania-admits-BRT-project-blunder/1840340-4577630-5gm3p2/index.html

26 The Citizen of February 26 2019 available at https://www.thecitizen.co.tz/News/1840340-4999532-2ksac/index.html

27 http://www.rea.go.tz/NewsCenter/TabId/130/ArtMID/639/ArticleID/2162/Waziri-wa-Nishati-Mh-Dk-Merdard-Kalemani-Aagiza-Kuharakisha-Utekelezaji-wa-Miradi-ya-Kusambaza-Umeme-Vijijini.aspx

28 http://mwtc.go.tz/news/rais-dkt-magufuli-atoa-siku-5-mkandarasi-alipwe-fedha-za-awali visited on 25/10/2019

6.3 Insecurity of project materials against vandalism and theft

Issues of security is amongst the supply chain activities that adds to the success of major projects. However, theft and vandalism of project materials and infrastructures hits such performance. A good example is with Tanesco projects which suffers a massive vandalism of electricity poles and other materials from people living in areas where projects are implemented. In Magu it was noted that farmers pulled down the poles to get steal stay and base plate for tying their cattle to ploughs and carts others being the scrap metal dealers[29].

Another example of theft affecting projects was noted on 3rd April 2018 whereby Police in Morogoro Region arrested some men for alleged theft of 2510Lts of Oil from a standard gauge railway Contractor's camp site at Ngerengere[30]. These occurrences are attributed by lack of ownership from the people especially when projects are designed and implemented.

6.4 Unmanaged customers' expectations

Unmanaged expectations of customers hits the success of projects. BRT project in India failed due to Indian's growing love with private automobile due to inefficient ticketing and boarding of BRT busses and lack of integration with other modes of transit.[31]. Further, there was no adequate public education campaigns so that riders (two-wheelers) understand how to use the BRT infrastructures and unchanged travelling behaviour where customers would see an incentive to use BRT network.

6.5 Problems in flow of information and coordination

To have a successful projects that will be celebrated by all stakeholders, the information flow and coordination of fragmented stakeholders need to be prioritized before the project is undertaken. Tanzania once experienced stiff debate on clearance from World Heritage Co-ordinator for a proposed Northern Serengeti tarmac road through Serengeti National Park on grounds that the road could disrupt the migration of approximately 1.5 million wildebeest, zebras

[29] https://www.thecitizen.co.tz/news/Tanesco-suffers-pole-vandalism/1840340-3881200-a0gofyz/index.html visited on 24.10.2019

[30] http://tzrailways.blogspot.com/2018/04/wezi-wa-mafuta-kambi-ya-reli-ya-kisasa.html visited on 24.10.2019

[31] https://www.citylab.com/solutions/2016/12/why-did-bus-rapid-transit-go-bust-in-delhi/510431/ visited on 25/10/2019

and gazelles between Serengeti National Park and Masai Mara National Reserve in Kenya, and increase already high levels of poaching[32].

Following inadequate coordination, on 16th July 2019, H.E the President of the United Republic of Tanzania ordered the Ministry of transport and communication and Ministry of finance to fast track custom clearance of 56 containers carrying materials for construction of new ship in Mwanza[33]. This delay was caused by inadequate coordination and information flow between these Ministries though they all have a stake on the project in question.

To summarize the causes of project failure anchored on failure of supply chain activities, Damoah, Akwei and Mouzughi in Ghana found out from their research on what causes major projects failure in year 2015 that major projects are mostly hit by 10 factors top on the list which are (1) inadequate monitoring and coordination (2) Corruption (3) Political interference (4) Change in government (5) effects of bureaucracy (6) Lack of continuity (7) negative fluctuation of prices (8) poor planning (9) Delays in payments and (10) delays in release of funds[34].

7.0 Conclusion and Way Forward

Implementation of major projects is a process with high degree of fragmentation between participants. This imposes many challenges on successful project completion including lack of coordination of these participants, lack of smooth and timely sharing of information among the players, variation management of inventory levels following the bull whip effects and uncertainties in the availability of adequate project financing.

Supply chain management provides many principles to address fragmentation of players in project management and challenges thereon. However, it is important to note that the concept and principles of supply chain management were developed in the manufacturing environment and so they must be used with customization when considering project implementation[35]. Projects are hit by laxity of project managers to be committed effecting timely changes where

[32] https://www.sciencedaily.com/releases/2019/03/190319112208.htm visited on 25/10/2019
[33] https://www.dailynews.co.tz/news/2019-07-175d2ecb00e1636.aspx visited on 25/10/2019
[34] Damoah, I, et al., (2015) Causes of government project failure in developing countries-Focus on Ghana. Available at https://www.researchgate.net/publication/299537426_ visited on 25/10/2019
[35] Alfredo Serpell and Boris Heredia, Supply Chain Management in Construction: Diagnosis and Application Issues available at https://www.irbnet.de › daten › iconda › CIB5992

projects warrants, prevalence of ineffective communication of appropriate information upstream and downstream the supply chain hampers the successful project completion. It is proposed that to achieve the benefits of SCM in project implementation, it is necessary to apply a very systematic but flexible approach of managing major projects and with a holistic planning horizon so that many of applicable conditions and stakeholders can be factored in.

Amongst the benefits that supply chain offers in major projects is avoiding cost overruns as projects are completed as scheduled, cost optimized, high quality, effective handling of information and resources flows, coordinated institutional and individual players and timely availability of project for beneficiaries consumption. Efficient supply chain plays a vital role in ensuring major development projects are successful. To make the supply chain efficient in facilitating the major projects, there is a need of integration of project processes with shared valuable information amongst project implementers including material demand signals, forecasts of requirements, inventory management, transportation, potential collaboration among players, etc., appropriate planning of Quantity and location of inventory calls for a role of warehousing and security which as well, serves the supply chain value addition. Further, on finances, project managers have to ensure effective cash flow by arranging the payment terms and methodologies for exchanging funds across entities within the supply chain.

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PAPER 03

TITLE: CONTRIBUTION OF PROCUREMENT AND SUPPLY PROFESSIONS IN CREATING VALUE IN SC

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ABSTRACT

Value creation is among hot themes in the world of Procurement and Supply Chain (SC). In previous times, procurement and related activities have been regarded as only cost elements to the organizations. With strategic thinking, procurement and supply as professions, if well planned and done, could create significant values and increase profitability to businesses and organizations. Several modern ways are used to identify values created from procurement and supplies processes by professions. Thus, if professionals and top management leaders work together, will automatically feel and fill the created values along the supply chain. To comprehend how the academic community has been treating such concern I developed a systematic literature review on the ways procurement and supply professions could create value in SC, focusing on the analysis of the development of qualitative (contents) methods to support such models as appear in rich literatures. A content analysis was performed, in an identified sample of several papers, exploiting the value creation models by procurement and supply professionals. Additionally, published value creation by procurement and supply professions in SC definitions were examined and, as result, it was found that there is no consensus in the literature. A sound definition is made basing of common qualifications on value creation systems, which is supported by a comprehensive framework that includes the main identified elements of supply chain management. Moreover, it was concluded that the "proper use" of procurement and supply professions would render value creation, value delivery and

value maintenance along the supply chain. The quantitative models on measuring value created with procurement and supply professions are to be further researched as most of the published work explores the conceptualization of only a limited number of value elements, lacking the development of integrated holistic approaches. These should simultaneously address the main supply chain characteristics and SC value creation elements. Future directions for the academic community are presented, aiming to guide future research work in the area.

Key Words: Procurement, Supply, Value, Value Creation, and Procurement and Supply Value Creation in SC

INTRODUCTION

For procurement and supply professionals, the nature of value has changed over time. The focus has shifted from how to obtain the lowest unit price—through negotiation and, often, adversarial "win-lose" approaches—toward a more holistic value approach. As there is an increase in fear of competition on the marketplace, organizations are focusing more on value (Telgen and Sitar, 2001). The awareness on value came into use after realization that lower price concept is sub-optimal as most of the goods or services offered under it compromises with quality or any other cost element. Porter (1985), developed value analysis whereby procurement is considered to be a support activity and contributes to making a competitive through adding value. With all the necessary inputs provided by the firm, the purchasing function perform value-adding processes like market and value analyses, sourcing, negotiation, etc., with promised output like quality, services, materials, etc (Telgen and Sitar, 2001). Due to the awareness, firms began to focus more on understanding supply chain cost tradeoffs and looking for lowest total landed or ownership cost. Now, its high time procurement and supply profession to focused on best value arrangements understanding that total cost doesn't always paint the full picture. Professions must focus on value and time in order to survive the competitions. Telgen and Sitar (2001), are reporting that nowadays, value-based purchasing focuses the decisions of purchasing professionals on the creation of value, rather than on the traditional objectives of cost savings and efficiency. Main values added by procurement and supply are related to each of the evolution stages towards purchasing maturity (van Weele et al, 1998). The stages identified are:- first stage; assure the continuity of the supply, (Telgen and Sitar, 2001), second stage; savings

and price reduction (Bales and Fearon, 1993), third stage; Savings, Cost reduction, Shorter lead time, Improved quality, Cross unit coordination, Greater compliance to pre-negotiated contracts, Uniform buying, policies and systems, and Reduction of internal cost of operation (Telgen and Sitar, 2001), forth stage; Extensive use of cross-functional teams Improved purchasing efficiency Customer satisfaction Improved lines of communication Reduced total system costs Butler (1995) Dobler and Burt (1996), fifth stage; Closer and more cooperative relation with suppliers, Early involvement in new product development, Improved information system, Improved competence of the purchasing staff, customers and suppliers (Lamming and Cousins, 1997, Lysons 1996), sixth stage; Extensive use of costs functional, supplier development teams, Upgrading supplier capabilities, Collaborate on advance technology with suppliers, Continuous improvement, measures of supplier performance, and Satisfaction of the end customer (Leenders and Schiele,1999). All these stages are time sensitive. Procurement and supply chain professions must seek proper ways of adding value to all their activities and processes related to the profession.

The movement of goods and services in the country and around the world takes a huge chance of myriad risks, losses and difficulties. The solutions for these are known over papers and its high time to practice them. The elimination would be through experience, networking, strategic alliances, research, innovation and benchmarking. All these are the adds on of professionalisms. With all the introduction and background of this paper, the purpose is to come up with the role played by procurement and supply professionals in the modern, dynamic business environment, and the strategic implications of procurement on value creation.

MATERIALS AND METHODS

Being Procurement and Supply Professional

There is no single definition on board which define prerequisites of one being procurement and supply professional. Several authors have written about procurement professional and have mentioned number of qualities one to have to be identified as profession in the field. Paul Larson (2006) did A Survey of Professionals on Topics, Tools, and Techniques for SCM and came up with qualities of being procurement professional. In his study he overviewed a number of

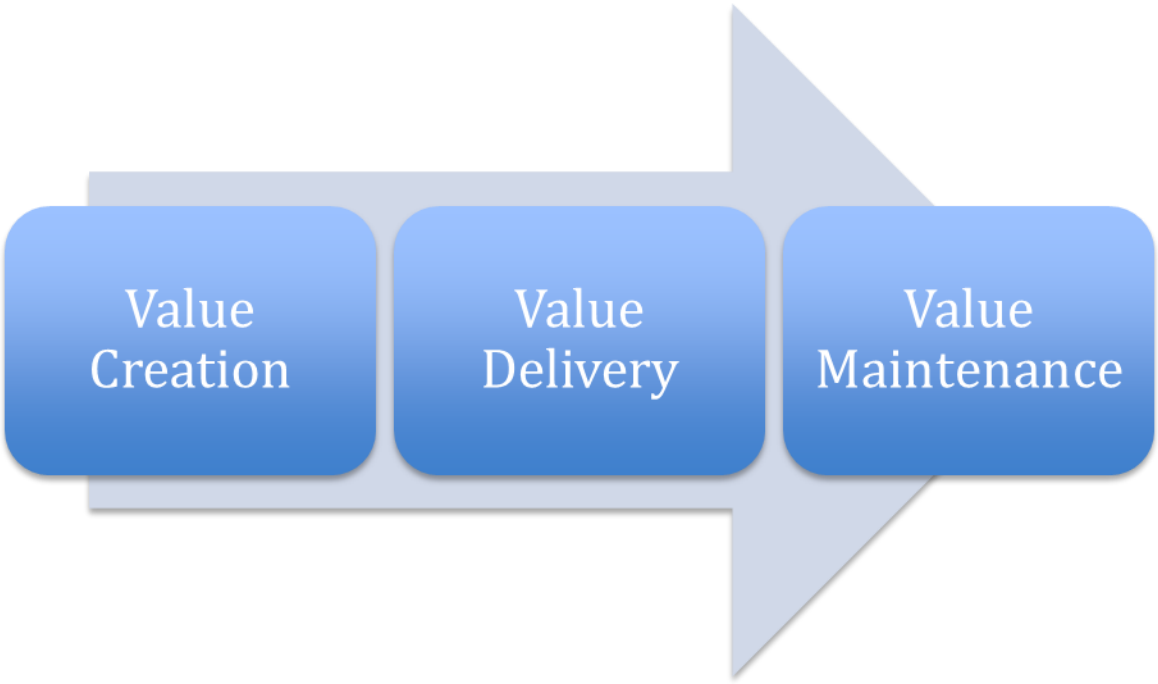
surveys carried out over the past few years that, as part of their design, attempted to determine what skills were required by procurement professional. All of these surveys demonstrated that an effective procurement professional requires a broad cross section of needs to be a very talented and skilled employee and that a good procurement team has the potential to be the superstars of your organization.

Glunipero and Percy (2000) identified the following skills to be: Strategic, Process Management, Team, Decision Making, Behavioral, Negotiation, and Quantitative. A study by Gammelgaard and Larson in 2001 identified: Teamwork, Problem Solving, Supply Chain Awareness, Ability to see the BIG picture, Listening, Speaking, Prioritizing, Motivation, Cross-functional awareness, and Leadership.

After his thorough study, Larson (2006) had the following qualities to be owned by a procurement and supply professional: Communication, Negotiation, Teamwork, Computer (Analytics) Skills, Leadership, Contract Management, Price and Cost Analysis, Purchasing and Supply Management, Supplier Selection / Evaluation, and Relationship Building. These qualities are to be adhered to by the professionals in order to create value

Procurement and supply professions need a wider coverage of skills. The skills for senior managers must be as broad as other managers in other departments of the organization in order they speak the same language. This will automatically switch to value creation, value maintenance and value delivery. And make unparalleled contributions to your bottom line.

Figure One: Value Perspective



Source: Frayer, Whipple, and Daughtery, 2016

All of true professions in the world have codes of conduct, and the meaning and consequences of those codes are taught as part of the formal education of their members. There must be a governing body, composed of respected members of the profession, who oversees members' compliance to the said profession. Within these codes, professional institutions forge an implicit social contract with other members of society: the professions are trusted to control and exercise jurisdiction over this important occupational category. In return, the profession promises, we will ensure that our members are worthy of your trust—that they will not only be competent to perform the tasks they have been entrusted with, but they will conduct themselves with high standards and integrity. On balance we believe that a profession, with well-functioning institutions of discipline, will curb misconduct because moral behavior is an integral part of the identity of professionals—a self-image most are motivated to maintain.

Procurement professions have been overlooked over years and now the awareness of governments and other private institutions are on rise. After all ups and downs as an infant profession, procurement has become a strategic professional function that progressively

identifies the prominence of quality controls and cost, on time delivery, responsibility and accountability of the professions, any many more responsibilities which can be regarded as the mirror image of procurement performance (Munyimi 2019). With contemporary economy of the world, procurement as a profession has been increasing in demand for organizations, companies and institutions to survive competencies. This is reported by Mohamed (2017), who says that "by now procurement (and supply chains management) profession is a cross-cutting function in all economic planning and strategic scenarios that is the essence of value creation into the public services delivery systems and therefore unto the national socio-economic development equation."

The procurement and supply professionalism have not been on fully recognition as the have never been on support of the socio-economic planning culture and the execution of the socio-economic plans thereto. The legal frameworks is fragment in the ay that do not provide concrete institutional frameworks sufficient to ensure full participation of procurement and supply professions into strategic planning and implementation based on the available financial and physical resources, instead it depend on the willingness of the head of institutions. The value created by these professions does not solely justify the use of the intended resources especially in the public procurements and public services delivery systems. The story is different in private sectors whereby the profession is respected and for sure contributes much on competitiveness of the firms. In the manufacturing and services enterprises, procurement and supply professions must perform their best to ensure that the functions contribute enough of value in ensuring the optimization of enterprise-wide resources allocation and utilization in the services industry and marketing.

The Changing Role Played By Procurement and Supply Professionals

There are several changes over years on roles of managing procurement processes. The activities have changed now compared to those in early decades (see in Brown, Bessant & Lamming 2013; Mehra & Inman 2004). Traditionally procurement personnel was tasked to source key materials for production purpose, currently are facing the very new role, beyond just sourcing materials for production. The past tasks are outdated in almost all the ways, currently, the technological changes is driving everything without an exceptional to procurement and supply professionals.

Previous objective of the then purchasing was on enhancing cost advantages the business on board and this has been taken over by the need for a strategic oriented philosophy in competitiveness (Arora 2014). Therefore it is essential that management acknowledges weaknesses in the procurement and supply function and adhere to the new and dynamic global environment and socio-economic agents.

The procurement and supply professionals have their main role in organizations. They have to make sure that strategic objectives of the organizations are well filled and facilitate the inter-functional and inter-organization collaborations (relationships), and are well maintained for the success of the organization. Handfield (2011) had four points towards roles of procurement and supply professionals within organizations:

- Assisting functioning requirements
- Enduring the organizational persistence
- Control the procurement processes and managing performance of suppliers that are in organization database, and
- Developing and maintaining strong relationships with other functional groups with and outside organization

Assisting Functioning Requirements

Procurement supply professionals must understand the business environment in which their firms are operating Handfield (2011). Professionals must observe the six rights of buying goods involves: buying goods and services at the right price, from the right source, in the right quantity, at the right time, at the right specifications that meet users' needs and to the right internal customer. The group of internal customers includes all the user departments to whom the good or services are intended to be provided to them. This group includes: Internal customers include manufacturing, physical distribution centers, engineering and technical groups, research and development, information and technology, transportation and other services.

Enduring The Organizational Persistence

Procurement and supply professionals should develop integrated supply chain strategies that are in line with organizational goals and objectives. Handfield (2011) observed the following strategies to be the ones:

- Checking the supply market stability and sustainability, including material prices, supply shortages and supplier changes
- Translating the trends and effects on strategies of the company
- Assisting the organization's to know their strategic goods and their supplier's availability locally and globally.

Control the Procurement Processes and Managing Performance of Suppliers That Are in Organization Database

Effectiveness and efficiency of procurement process is among the key functional roles of the professional on their day-to-day activities. They have to also control the profiles of the suppliers as they are listed by their organizations as they're updated time-to-time. Professionals are tasked to identify existing and new opportunities and coordinate and manage internal operations of the firm. The internal operations are among the macro process of supply chain and have a chance of changing games, as they need. The achievement of this is possible through: Managing internal operations in the most efficient and effective manner can be achieved by:

- Assessing professional needs in terms of professional training and growth for employees
- Having laws, regulations, and policies in place for organization management
- Defining procurement strategy and structure
- Providing procurement leadership to the organization.

The supply base can be enhanced through identifying new potential suppliers, developing relationships and improving and developing non-competitive existing suppliers (Handfield 2011). In support of Handfield (2011), Cha, Lee and Cha (2014) restate that the objective can be achieved through teamwork, collaboration and partnering, communication of purpose, ownership and accountability for sourcing processes.

Developing And Maintaining Strong Relationships With Other Functional Groups Within And Outside Organization

The functions available in organizations depend on the nature of operations conducted. The functions available in organizations must work together in order to fulfill the targeted goals. These functions (production and manufacturing, finance, human resources management, marketing, and others) affect performance of each other. Procurement function is termed to be the highest spender of the organizations and must meet the needs of each function and organization at large. Failure of procurement function to meet the needs of other functions is the failure of the organization and industry at large. Procurement and supply function is responsible for all the activities in their department. In order the procurement and supply function works well, there must be professionals who do everything to make things work for organization. Highest percent of procured goods are origination from user department and few from the department itself. The procurement proposal is to be prepared and sent to authorities for approval before the funds are released. Sooth operation of the procurement department through the professionals available will make sure that there is conformance of quality and specifications as required by production and engineering for their manufacturing processes. Goods bought by organization for resale must be of required quality to avoid unnecessary costs. The professionals are also able to handle reverse logistics that is among complex part of procurement process as there are no known routes for them. This means that the procurement function must interrelate with other functions in an organization for the overall success of the firm.

AREAS FOR PROCUREMENT AND SUPPLY PROFESSIONS VALUE CREATION

Various authors in various dimensions and settings have defined the term value (see in Mohamed, (2017), Kahkonen and Lintukangas (2012), Sharmah (2012) and Huemer (2006). These authors have define value in procurement and supply that doesn't end with reducing costs, rather it is increasing operational performance, creating and driving efficiencies, working collaboratively with other functions within the firm and inter-firms and making sure there is continuous improvements. They also mentioned the following as the qualifications of procurement value; becoming a Customer facing capability; connecting commercial and technical capabilities of the Company; activating key supplier relationships; Reducing supply vulnerability; accessing new products, R&D and innovation; lowering costs; delivering high quality goods and services; and creating transparency across the Companies spend activities.

The procurement and supply professional creates value in many ways and give a competitive edge to their organizations, either in public or private procurement. Value creation by this profession is an interdisciplinary practice because of the scope. Functioning of all government and non-government agencies are essentially made possible by procurement and supply of goods and services (McCue and Gianakis, 2001). These functioning of agencies depend on the professions (procurement and supply) who work hand in hand in their organization to make the end-to-end needs is met. The importance of procurement and supply professions has been gaining importance after their participation in strategic thinking of organizations (Snider and Rendon, 2012; Thai, 2001). The academic world also started to recognize the importance of the professional performance towards success of the firm and several of them started working on their curriculums in order to meet industrial needs. As science and technology is advancing, procurement and its associated practices, the field is increasingly becoming complex. The complexity is exacerbated by procurement being integrated with all levels of government operations (Gunasekaran, Subramanian and Rahman, 2015; Callendar and Mathews, 2000; Cooper, 1980). Gunasekaran et al (2015) report that there are a good number of complexities if the focal firms decide to engage into global sourcing. The complexities increase if the performers of the duties are non-professionals.

To further complicate matters, procurement and supply is a dynamic system continuously changing and evolving through interaction among procurement laws and regulations, organizational structure, procurement processes and methods, techniques and technology, procurement professionalism and personnel (Childs et al., 1994; Thai, 2001). There are increasing expectations and needs for procurement and supply professionals to be multi and cross-trained in various category expertise like, business administration analytics, and communication skills, relationship skills, and leadership skills (Hochman and Boll, 2009).

Procurement and supply is a range of many activities that are professional in nature and they're supposed to be done professionally. Practice of procurement and supply covers all activities from source selection to post-contract administrative evaluation. They need professional attempts to make them strategic. They have become common across the world thus governments and private organizations are attempting to modernize their procurement and supply functions (Dimitri, 2013; Kaufmann et al., 2016; Nash et al., 2007; Prier and McCue, 2009; Snider and Rendon,

2012). They can be best done if professionals are employed to perform them. Recent literatures even suggests that procurement is beginning to be recognized as an emerging profession (Brown and Potoski, 2003; Gordon et al., 2000; McCue and Gianakis, 2001; Romzek and Johnston, 2005; Thai, 2001), though it has been difficulty (in some organizations) to define demarcations of the field as it intermingles with almost every function. Currently there is a good number of studies done on procurement and supply professional and the way they can change the organization performance in various ways. Presently, there are few studies conducted specifically on examining the procurement supply professional value creation. Most of the study looks on the processes associated with procurement and supply only function and the subsequent knowledge, skills and abilities necessary to effectuate efficient and effective procurement practices. This has led to complexities in terms of how procurement and supply professional is defined, how it is practiced and what one could expect of those who actually practice the procurement function in government and private institutions.

One of the most intensive examinations of the actual tasks performed by procurement and supply professionals was done by the UPPCC In 2012, and they identified key areas the professional could create values. Several areas were identified and were termed to be foremost in the field of procurement and supply. The areas are including procurement administration; sourcing; negotiation process; contract administration; supply management; and strategic procurement (UPPCC, 2012). Evidences indicate that procurement and supply professionals play a fundamental role on success of firms by undertaking departmental goals which bust is in line with overall objectives of the firm.

At this juncture, procurement and supply professional's dominant activities for value creation are elaborated from literatures. Additionally, it's important to examine each domain as is reflected in the literature to establish the foundation for justifying each one and its link to procurement and supply profession. Here are the ways;

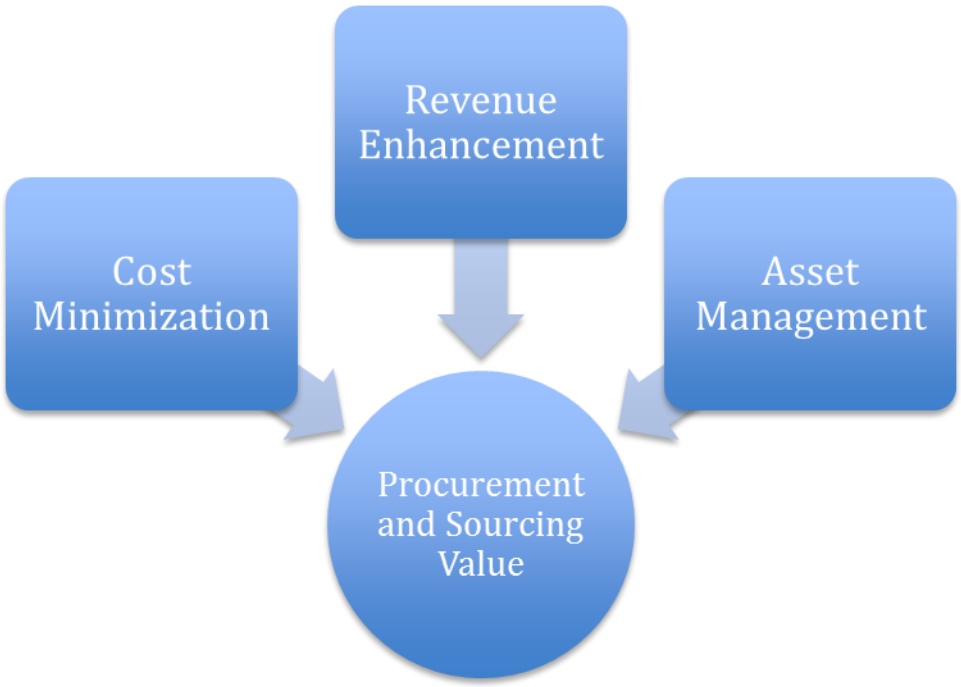
Procurement and Supply Administration

Proper procurement and supply professionals are the ones responsible to do proper procurement and supply administration. Being proper means they can provide the overall framework for

efficient and effective financial administration (from the procurement and supply perspectives). The administration of procurement and encompasses skills and knowledge that are complex, vast and wide in scope. There are laws, regulations and policies for procurement and supply, they are somehow fragmented (Thai, 2001), and they vary depending on the level of government and the specific agency. These laws, regulations and policies need to be applied together to run the organization smoothly. If one is able to apply this, there is value creation. Professions in the field of procurement and supply must be conversant with procurement and supply administration to create the said value.

The procurement and supply professionals must exercise substantial managerial and technical responsibilities in implementing the procurement laws, regulations and policies. By doing so there is value creation through work well done. Procurement and supply professionals must be able to fit onto managerial decision-making; the day-to-day activities have remarkable impact on the economy and require knowledge in budgeting and accounting. As was accorded by Callendar and Mathews (2000), the financial transactions involving public procurement averages to 10-30 per cent of the Gross National Product of countries.

Figure Two: Financial Impact



Source: Frayer, Whipple, and Daughtery, 2016

To be efficient and effective is difficult especially in government sectors as compared to private sectors. The diverse and competing objectives are leading to failure interpretation of the themes by government agencies (Arlbjorn and Freytag, 2012). These competing goals fall under two general categories: procurement goals and non-procurement goals (Thai, 2001). The procurement goals are to be met by procurement and supply professionals and include the following; monetary and tangible objectives such as quality, timeliness, cost, minimizing business, financial and technical risks, maximizing competition and maintaining ethical practice and integrity. On the other hand there are non-direct procurement goals. These also must be met partly by procurement and supply professionals, as the profession is not done in isolation. The non-procurement goals include the social, equity and intangible objectives such as improving domestic or local economy, environmental protection and sustainable procurement, social goals and international relations. In day-to-day practices, professionals from procurement and supply side must be conversant with all the jargons procurement is connected to.

Ultimately, with all procurement's function in operation, procurement and supply administration

includes various skills like relationship management (interaction) with personnel and monitoring of their compliancy to the laws, regulations and policies set forth by governments and their watchdog agencies.

Procurement and Sourcing

One of the professional's competences can be tested on is ability to source and create value. Procurement and supply professionals must have this quality to qualify being ones. Sourcing has become one of the mediums to transmute the nature of the procurement profession. It has changed from being transactional processing to an analytics, complex and strategic function (Hochman and Boll, 2009). Being able to source, one must be multi-faceted. Skills like managing relationships (supplier), application of advanced technology and its techniques, understanding and using business analytics in supply market dynamic are essential (Hochman and Boll, 2009). Professionals see sourcing as an integrated function and essential part of strategic operations of organizations. The demands on procurement and supply professionals' competence in sourcing are equivalently important. Even though all the dominant dimensions of knowledge and skills interlink, sourcing in most cases is closely associated to the negotiation process because of product specification, competitive procurement, offer evaluation, supplier requirements and relationships just to name a few (Soares-Aguiar and Palma-dos-Reis, 2008).

In other hands, procurement professionals are accountable for expending a huge amount of companies' revenue or of the national budget (Anthon, Bogetoft & Thorsen 2007; Levaggi 1999). As established on this advance, profitability of organizations, industries and country is dependent on their competitiveness and the way they treat their customers. All these are guided by the ways procurement professionals are effectively carrying out their responsibilities. From these authors, it is evident that procurement professionals could create value, deliver value and maintain value in their doings. Consequently guaranteeing high levels of professionalism in the procurement and supply discipline would help to exclude most significant problems arising from improper functioning of the practices.

Negotiation Process

One could think that negation is a part of sourcing. It is true that negotiation and sourcing are

almost coming from the same stem. But negation has its uniqueness in procurement. It has a separate sphere in procurement certification because it is a vital skill for any professional to come to a business agreement with its trading partners (Ertel, 1999; Ritter et al., 2004; Smeltzer et al., 2006). Negotiation skills are a must for procurement and supply professionals to have for value creation to their organizations (Stack, 2011). One unique aspect of the negotiation process compared to other procurement skills and knowledge is the need for procurement professionals to establish rapport with suppliers (Carr and Pearson, 1999). The ability to establish trust is essential in the negotiation process (Butler, 1999). Similar to all aspects of the public procurement profession, negotiation processes also evolved from operational to strategic level; increasing the organization's competitiveness by providing better pricing, faster response, consolidating processes and reducing documentation requirements (Attaran and Attaran, 2002; Kim et al., 2015).

Stack, (2011) insist that effective negotiators had opportunities to create value and increase the organization financial power. Value-creating strategies of negotiation involve number of processes like; creative problem solving approaches, making trades more beneficial, influence differences, the use of conditional contracts, and ways to cut the cost of agreement.

Contract Administration

Contract administration and management is among the areas needing expertise in procurement and supply. It's an extension of collaboration between an organization and other organizations (buyer-supplier relationships) contract administration and management goes beyond getting a lowest bidders and offering them a work. There is a need of applying multi-parameters approach on its acquisition and management. Procurement and supply professionals must be able to examine costs of the contract (total cost of ownership or total acquisition costs), time to be covered on the said contract and qualities of the suppliers in the contract (El-Sayegh and Rabie, 2016; Herbsman and Ellis, 1992). The contract administration comprises of all the processes from the need identification to wards and to completion of the task, and after sales management. Being procurement professional, one must know all the hurdles associated with contract management, like foreseeing possible disputes and possibilities of termination. One must able to be prepared to take care of all these as the contract management is on progress. Procurement

professional must be able to safeguard the interests of the organization. One of the predetermining of being procurement professional in Tanzania is to clearly understand statutes, rules and regulations (especially PPA 2011, Regulations 2013, and Amendments of 2016) that are also supporting contract administration. Professionals are liable to monitor the ways suppliers are complying to specifications of the contracts, evaluation of supplier performance and settlement of possible disputes before they occur (Lieberman and Morgan, 2007) as supported by the constitution of URT and specifically the PPA 2011, PPR 2013 and Amendments of 2016.

Supply Management

There is an increased emphasis on supply management as is on procurement management and related fields. Its emphasis is on changing from the traditional ways of doing things and shifting towards professional supply management. The changes is breaking the functions and organizational silos and moving toward global view of things. The view is on making supply management takes a strategic application of what is done. The new comprehensive is on understanding of target costing, value engineering, supplier development, and electronic procurement (Nelson, Moody and Stegner, 2002). These have been around since time immemorial but are being rediscovered as the roles of supply management has been shifted from being routine to strategic. Being strategic, supply management is potentially a value creation engine for the organizations. Procurement and supply professionals, who are in industry for a long period of time, understand how value creation is possible with supply management. Business professionals who have long been involved in supply management understand its power to create value (Presutti Jr., 2003). The coming of electronic procurement has made supply management to be visible by top managements and hence include it to be among organization's strategic objectives.

Currently, supply management is synonym of the old purchasing agent function. Supply management is the one that changed its role from being traditional process-based activity to knowledge, skills and accountability-based procurement. This one enhances the quality management, supports informed decision-making (with the use of data analytics) and continuous improvements and innovations (Korosec, 2003). Supply management came to be strategic after adoption of technology and using it to drive its entire processes. (Bajjaly, 1999; Hammer, 1990).

Moreover, procurement and supply professionals must master information technology to coordinate and integrate activities among the participants along the supply chain (Holley et al., 2002; Sundarraj and Talluri, 2003). Another critical constituent is to make supply chain centralized process and allow collaborations in order to adapt the changing needs, forecast needs, track performance and reduce reaction time (Choy and Lee, 2003). Procurement professionals must be able to view the entire process holistically and involve all participants in the process to promote effectiveness through communication and transparency (Croom, 2001; Thompson, 1996). Finally, procurement professionals should expand their selection of vendors to promote efficiency through public-private partnership and healthy competition (Smith and Rupp, 2002).

Strategic Procurement Planning

In procurement and supply chain, forecasting, planning and developing suitable analytical techniques are responsibilities of procurement professionals so as to meet the intended demands. Procurement professionals must be proficient in forecasting for ordered input quantity, quality, cost reduction, continuity of supply and materials planning (Carter and Narasimhan, 1996; Freeman and Cavinato, 1990; Heberling, 1993). The forecasting must be a collaborative with other functions in the organization, and must be shared (collaborated) with other organizations in the same supply chain. The strategic procurement planning is comprised of the complexities, risks, and value of the project. The success or failure to tackle all these drawbacks is contingent to the performance of procurement professionals on board. The strategic procurement planning is a complex process and the ability of the professionals to do it well will not remove complexities but rather will make it go through it smoothly. If the professionals are well in terms knowledge, skills and attitudes and they're well informed, problem-solving process would be easier to them. The strategic planning is associated with high risks as the complexity and long chain comprising of a big number of organization with various capacities are working together. Procurement professionals are urged to be doing researches on problems they meet on day-to-day activities in order to solve the common problems and come up with permanent solutions. Having solutions to the everyday problems is a value creation to an organization initiated by the procurement and supply professionals. Researches and other approaches to solve procurement and supply problems will ensure the procurement approaches are proportional and relevant. Technically

complex, high market risk, and/or high-value projects or procurement contracts may require a detailed strategic procurement plan, while routine, low-risk, and/or low-value projects or procurement contracts may require a simple justification for the preferred procurement approaches.

Utilize Good Data

The procurement and supply chain management, with current trend produce millions of data everyday. The data are useful if procurement and supply professionals are able to configure them into useful meaning to solve their daily challenges. The data to be used must be of high quality and consistent. For a complex supply chain that involves product development, engineering, packaging, delivery, sales, forecasting and more, using data correctly creates insights that drive revenue and increase efficiency. Its difficulty to work if one has a mountain of complex and poorly verified data. You might end up a day by crunching the numbers without getting

This ensures everyone in a supply chain has the best foundation to base his or her decision-making on. Data is there to make things simpler and less complex. If you are feeling hindered by multiple, complicated inputs and analytical processes, there are portals to be applied to save your time and by getting crunched data ready for interpretation.

Supply chain executives are stressing expanded opportunities for value creation in new product development and after-sale service and support areas. The ability to bring supplier expertise together to work on challenges beyond traditional procurement and sourcing reach is a new horizon for many organizations. To most firms, the ideology has shifted to recognize that “we do not believe everything has to be invented inside our four walls.” Bringing innovation to the market involves more than one’s own firm and innovation may be an innovative service as opposed to product related.

Creating Strategic Impact

It's a challenge to many organizations practicing supply chain to define value and creating strategic impact. Connecting demand and supply through defining supplier capabilities to customer requirements and creating value propositions is a unique functioning. This can only be

achieved if there is compelling critical, driven by integrative, and is end-to-end thinking. The different between organizations is not based on buying varied products but the way professionals are handing the matter and adding more value to their company than the other. An organization is to think if they are doing everything strategically. Firms are challenging the conventional wisdom every day.

Frayer, Whipple and Daughtery (2016) advocated that there is four interrelated strategic activities are required for procurement and sourcing professionals to create competitive advantage in integrated supply chains. Procurement process discipline has many things to do with ensuring that standard processes, such as supplier analysis and qualification, as well as financial and commercial controls are in place. If not, firms have no ability to compare and contrast options and cannot ensure compliance with policies and processes. The presence of procurement process discipline will make a firm being able to influence its buying power and enhance value.

An organization must have a long-term plan on creating value and emphasizing it. Procurement and supply professionals can make this possible by sourcing strategically. In precise, procurement and supply are supposed to know contemporary supplier capabilities and match it with demand. From here the importance of supplier relationship can be realized through mapping the growing of buying firm and the roadmap towards being global company. Procurement and supply professionals, through relationship management, must make sure that strategic suppliers understand the buying firm's plans in different global markets and associate that with the supplier capabilities needed in various regions. Procurement and supply professionals must be able to evaluate suppliers' skills and see if are matching what is needed in a particular region, new suppliers must be qualified if the present one is not satisfying the demand. Procurement and supply professionals must be able to do supply evaluation and qualification in an extended period ranging from 12-18 months in order to engage the desired ones.

The leveraged supplier unique knowledge enhances intentions of the firm. Procurement professionals are supposed to engage suppliers with capabilities and essential expertise, who are hard to find in the market.

The four strategic touches of creating competitive advantages through procurement professionals are progressive and work in harmony. Each level needs a continual investment to make sure that

they are working together for the benefits of the firm. Procurement process discipline is focusing beyond buying organization and should strict deal with internal processes to make sure everything is buttoned up. This ensures end-to-end supply chain is achieved and thus the tier two suppliers are able to execute an order as well.

The procurement and supply professionals embrace the control of supply base and suppliers, and this should be done professionally. Professionals never focus on short sightedness things like squeezing cost; they have to look on bigger issues like expertise in order to offer better products and services in marketplace. The competitive advantage can be experienced if there is supplier recognition that they offer much more when engaged collaboratively in search of goals that are meaningful to customers, and not just internal functional metrics. Procurement professionals are claiming that suppliers can become part of the solution when engaged fully in supply chain by the concerned firm.

Figure Three: Creating Competitive Advantage through Procurement Professional

Source: Frayer, Whipple, and Daughtery, 2016

Achievement of strategic impact is through connecting customers and suppliers in the seamless supply chain. Suppliers, if well and fully engaged can be part of customers (buyers) solutions by transferring the innovations to customers. For the circle to work, internal and external connections must have progressive improvement and management. The connections need visibility across supply chain through information sharing. The following characteristics are a must list; improved information technology or systems, such as enterprise resource planning (ERP), streamlined demand planning processes that provided suppliers with information sooner, and using different inventory management systems, such as vendor managed inventory (VMI). The list, if fully made will increase visibility and undoubtedly makes everything smoother. The inventory levels of our firms and suppliers will drastically be reduced to the surprisingly low level.

Conclusions

The major goal of presence of procurement and supply professionals in our organizations is to

create, deliver and maintain procurement value in integrated supply chain. The professionals are to know the traditional value concept first and then align them with strategic objectives of their firms. This will make them improve their strategic improve strategic impact, extend scope of responsibility and accountability, can also drive the core-creation concept and earn preferential treatment from their counterpart in business. Its now confirmed that the future success of our organizations can be realized from our suppliers and have integral and pivotal role to play to organization's success. The co-working capability with suppliers will be our true differentiators from our competitors. As a procurement and supply professional, how do you deliver these recommendations?

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PAPER 04

Procurement Projects using Modern Methods; Adoption, Challenges and Way forward.

A Paper Presented at the Conference on Sustainable Procurement and Supply chain practice for Modern Economy, Dodoma Convention Centre 3-5 December 2019

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Abstract

The Tanzania Vision 2025 and the Five Year Development Plan II are aiming at industrialization and high level economy to reach the target as middle income country by 2025. Construction is one of the main drivers of the growth of the economy using different project delivery systems. Modern Project delivery method refers to the Project delivery method refers to the owners' approach in organizing the project team that will manage the entire design and construction. There are several delivery methods that can be used in the entire construction industry. They can be categorized in three groups: design-bid-build, construction management and design-build. Selecting the appropriate delivery method is a key factor in achieving project objectives and project success. Each project delivery method has its advantages and disadvantages and they deal differently regarding the different owners' objectives. This paper presents the project delivery methods advantages disadvantages The paper indicates that alternative delivery methods such as design-build and construction management have higher effectiveness in achieving most of the owners' objectives than the traditional design-bid-build method.

CONTENTS

1.0 INTRODUCTION

The Tanzania Vision 2025 and the Five Year Development Plan II are aiming at industrialization and high level economy to reach the target as middle income Country by 2025. Construction is one of the main drivers of the growth of the economy using different project delivery approaches. According to National economic survey 2018, the economy of Tanzania advanced 7.1 percent year-on-year in the fourth quarter of 2018 in which the Construction is one of the main drivers of the growth of the economy accounting for (17.3 percent Vs manufacturing (16.7 percent, ; transport & storage (12.6 percent; trade & repair (8 percent vs 6.9 percent) and electricity (9.8 percent . By January 2019, the volume increased e to nearly 4.5 Trillion TZS due to flagship projects. As the Tanzanian economy advances gradually into a "middle income economy" due to industrialization, construction projects are likely to increase both in numbers and sizes, Improvement of efficiency in the delivery of these projects is necessary.

Owners and contractors are faced with the challenge of completing projects on time, within budget and deliver a quality product in a safe way. Project delivery method refers to the owners' approach in organizing the project team that will manage the entire design and construction, process (Gould and Joyce, 2003). There are several delivery methods that can be used on construction projects. They can be categorized in three groups: traditional -design-bid-build, construction management and design-build. Selecting the appropriate project delivery method is a key concern to owners and construction professionals. This choice affects project execution, time, cost, quality and safety which are the main objectives of any construction project. The decision is usually made by the owner based on the unique characteristics of the project, owner's objectives, degree of risk, level of information available or needed at time of project concept, level of desired client's involvement, and interaction between design and construction among other factors. The construction industry today faces tremendous challenges due to increased project complexity, tough competition, and increased demand on quality and safety, schedule and budget constraints. This paper presents the procurement project delivery using modern methods; adoption, challenges and way forward. The results indicate that alternative delivery methods such as design-build and construction management have higher effectiveness in achieving most of the owners' objectives than the traditional design-bid-build method.

2.0 PROJECT DELIVERY METHODS/OPTIONS

The project delivery methods/options are categorized in three groups: traditional design-bid-build, construction management and design-build

2.1 Traditional Delivery Method

The most common method is the traditional delivery method. In the traditional method, the owner contracts with a consultant for the design portion of the project and then separately contracts with a construction professional (contractor) for project execution. One of the major disadvantages of this method is that construction professionals are brought later in the project after the design is complete meaning that the design is not usually reviewed for constructability before it is finished (Gould, 2002). It is also difficult to fast track projects using the traditional delivery method. This arrangement is the longest in terms of design and construction time (Gould, 2002). In addition, this arrangement results in adversarial relationship between owner, designer and contractors which leads to unnecessary claims and delays. The traditional method often positions the contractor against the architect/ engineer/ client, rather than encouraging teamwork toward common targets (Kumaraswamy et al., 2002).

2.2. The Design-Build (DB) Method

One of the alternative delivery methods in Construction Management where the owner contracts with a construction management company to manage the design and construction phases of the project is the Design and Build (D & B) delivery method. The Design and Build (D&B) is whereby the owner contracts with a single entity to perform both design and construction under one contract (Ling et al., 2004). The new delivery methods offer many advantages to owners such as shorten project duration, relatively reduced cost, and non-adversarial relationships. Thus, owners have to choose a delivery method that enables them to achieve their objectives. Konchar & Sanvido (1998) compared three project delivery methods in terms of four factors which are unit cost, cost growth, construction speed and schedule growth. Their findings indicated that Design and Build was superior to Construction Management at Risk and Design-Bid-Build. Ibbs et al. (2003) compared Design and Build to Design-Bid-Build based on time, cost and productivity. They stated that the timesaving was a definitive advantage of Design and Build while the cost and productivity results were not convincing.

Dell'Isola (2002) studied the impact of delivery methods on cost and schedule and compared the advantages and disadvantages of the three delivery methods DBB, DB and CM at Risk. Bai and Hezam (2003) described the advantages and disadvantages of 14 project delivery methods. The factors discussed include contractor early involvement, funding, coordination, design & construction time, price competition, flexibility, single point of responsibility and construction time. Another study (Gransberg et al., 2003) compared the performance of Design-Build and Design-Bid-Build in the US. The study showed that cost growth and time growth are significantly lower for DB than DBB while the cost per square foot was lower but not in all cases.

A research by the Construction Industry Institute CII (Anderson, 2003) identified 12 delivery methods and 20 selection factors divided into 3 categories: cost related, schedule related and other factors. The research team also developed a selection model using Excel®. The decision model is based on relative ranking of the different selection factors. Each project is unique and owners have different objectives. Owners need to decide among many alternative delivery methods using multi objectives. The decision is not a simple one especially with the cognitive bias of decision makers and the tendency to choose the method that they are familiar method. Thus, there is a need for a formal decision making process that allows decision makers to specify their objectives, select the appropriate selection factors and their relative importance, and choose a method based on the effectiveness of that method in achieving the project objectives. This paper presents a comparison among the main delivery methods with regard to their effectiveness in meeting project objectives

Traditional Delivery Methods Using the traditional delivery method, design-bid-build, the owner has two contracts: one with the designer for project design and bids preparation and a separate contract with a general contractor for the construction phase. During the construction phase the designer and contractor have working relationship. The multiple DBB is used when the owner wishes to divide the project into packages and contracts with a separate designer and general contractor for each package. The multiple prime contractor's method is used when the owner contracts with one consultant for the design phase but then awards the construction contracts to multiple general contractors. The advantages of using this method are cost savings and schedule compression, while the disadvantages are coordination and management difficulties.

2.3 Construction Management Based Delivery Methods

The management based delivery methods include the construction management method where the owner hires a construction management company to manage the design and construction aspects of the project. In this method, the owner has a separate contract with the construction manager, designer, and general contractor. Construction management contracts are particularly attractive to organizations that periodically build complex structures but do not desire to maintain a full-time construction staff (Halpin and Woodhead, 1998). The agency construction management method is used when the owner desires division of the project into packages so the owner will have a contract with the construction manager, the designer, and multiple trade contracts with separate contractors. The Construction Manager at Risk method is used when the owner hires a construction management company to provide both construction management services and general construction of the project. In this case, the owner transfers much of the risk to the CM company.

The Engineering-Procurement and Construction Management (EP-CM) method is a hybrid of the design-build and the construction management approach. In this case, the owner hires an EP-CM company for the design and procurement of materials and then assist the owner in managing the construction project. This approach has the advantage that the owner retains the contractual relationships with the contractors while passing the responsibility for managing and coordinating to the EPC contract (Hartman, 2003). The program management method is used to manage multiple related projects. The owner hires a program manager to manage the separate contracts.

2.4 The Multiple Design-Build method

The Multiple Design-Build method is used when the owner has separate contracts with several design-build contractors. The Build-Operate-Transfer (BOT) method is similar to the design-build but with financing option. It is used when the owner wants the facility but cannot afford to own it (Hartman, 2003). The Bridging method is used when the owner hires a consulting company to assist in selecting and monitoring of the design-build contractor.

3.. PROJECT DELIVERY METHODS EFFECTIVENESS

The set of selection factors that affect the owners' decision of the most appropriate delivery method were determined through literature review. For this paper identifies selection factors are identified and grouped into categories. In terms of effectiveness of each delivery method in dealing with the different project objectives

3.1. Time & Cost Related Factors

Time related factors are extremely important in deciding the appropriate delivery method. This is particularly true where competition is increasing and owners desire that their products completed in a short time. The first factor is ensuring that the construction project is completed with the shortest possible time. The second factor is completing the construction project on schedule but not necessarily the shortest time. Cost related factors are always at the center of decision making. These factors include ensuring that the construction project is completed with the lowest possible time. The second factor is completing the construction project within budget but not necessarily the cheapest.

3.2. Scope

Changes & Quality Related Factors, Scope related factors include the level of scope definition at the time of contract award. Each delivery method requires a different level of scope definition to achieve the desired results. The level and number of changes expected during project execution is another factor affecting the choice of delivery method. The third factor is the flexibility to make changes. Many owners desire that the delivery method should be flexible enough to allow them to make changes as needed. Quality related factors include one factor to measure the project delivery method's ability to attain the highest overall quality. Although a high quality is always desired by owners, each method achieve this objective in different ways.

3.3 Owner's Organization Related Factors

Owner organization factors deal with the owner's organization and the level of experience of its staff. These include the level of in-house management experience and the owners' desire for construction professional input during the early phases of the project. Another factor is the owner's desire to be involved in the project and to have control over different aspects of the project. The fourth factor deals with the owners' desire for single or separate project contracts. If the owner desires a single project contract, the only delivery methods that support this objective is Design-Build or Build-Operate-Transfer. The last factor is the owners' desire for a single

construction contract. Some owners prefer separate construction contracts to benefit from price competition and sometimes faster construction.

3.4 Cash Flow, Risk and Relationship Related Factors

The next category is funding and cash flow factors. Some owners do not wish to commit the construction cost of the project in the early phases. Design-Build methods require that early commitment. Phased construction delivery methods allows the owner to spread that commitment. The second factor involves the owners' desire for early estimating which is important for budgeting and financial planning. The methods that allow early estimating are the ones that involve construction professional input during the early phases. The third factor relates to the need for financing. If the owner desires financing, the Build-Operate-Transfer method provides that option. Other methods of financing are also available but were not studied in this research. The risk and relationships factors include the amount of risk the owner is willing to take and the owners' desire to minimize adversarial relationships. Almost all respondents agreed that the traditional method is not effective in minimizing adversarial relationships. Figure 4 presents the comparison of the effectiveness of each delivery method with regard to these factors.

3.5 Project Characteristics Related Factors

Project characteristics factors relate to the importance of the project to achieving organizational objectives, the project complexity and the familiarity of the owners' staff with the type of project. Management based and design-build methods are more suited to handle important, complex and unfamiliar projects.

4. USE OF FIDIC CONDITIONS OF CONTRACT

The option to use FIDIC Conditions of Contract -Yellow Book; Their use is NOT new in Tanzania – extensively used in civil works. FIDC Have been used for donor funded projects such as the World Bank (FIDIC Pink Book, 2005, 2006); Millennium Challenge Account (FIDIC Red and Yellow Books, 1999 Editions) and others; There are countless books and guidelines on their use/applications published worldwide.

The FIDIC Yellow Book – Key Features are;

- The Yellow Book is appropriate where the Employer intends to shift the design responsibility to the Contractor.
- The Contractor assumes the responsibility for the design and the execution of the Works in accordance with the Employer's Requirements.
- Any payments shall become due subject to the Contract Administrator´s determination and certification (normally based on milestone achievements – no measurement of quantities necessary).
- The Contractor bears the full risk of exceeding quantities whilst the Employer bears the risk of less quantities as contemplated by the Parties at tender stage.
- There is experience of using FIDIC Yellow Book in Tanzania – MCA-T for Civil Engineering Works – Energy and Water Treatment Plants);
- Five (5) [and probably more as on now] separate contracts completed VERY successfully;
- No experience for building works for public entities under PPA 2004 or PPA 2011 prior to 2013.
- These needed to fit within the PPA framework as a complete D&B Bidding Document;
- Once ready they were approved by PPRA as per the requirement of the law.

5. PROJECT EXECUTION /DELIVERY IMPLEMENTATION CHALLENGES

5,1 Lack of Regulation and Legal Framework

It has been argued that the limited implementation of the D & B delivery system in Tanzania road infrastructure project can be attributed to the lack of regulation and framework (Even though the integrated project delivery system such as D & B is an acceptable delivery system in accordance to Law of Government and Tanzanian Government Regulation ? there is no detailed explanation for and guidance on implementing D & B project delivery system, particularly in road infrastructure.

Lack of enlightenment and instruction often lead to problems with misinterpretation and inappropriate attitude. Moreover, the fundamental issue of implementing D & B project delivery system is the absence of specific rules and criteria to regulate D & B project delivery system. For example, there is not clarification of the entity of the design builder, and what the criteria

used to decide which project is appropriate to adopt D & B project delivery system (Ministry of Public Works 2008). Lack of regulation and framework leads to difficulty in demystifying and accommodating D & B project delivery system.

Similarly, Wahyudi (Wahyudi 2009) argues that this delivery system needs provision of appropriate budget in its implementation. D & B, in general, is executed based on performance. Performance contract usually apply to multiyear budgeting arrangement, while current project delivery system use one-year budgeting arrangement (Ministry of Public Works 2008; Wahyudi 2009). The multiyear arrangement funding has to be clearly stated. The client, in this case is the government and should implement D & B project delivery system only if there is an adequate and clear budget arrangement. Otherwise, owners or clients can experience potential obstacle regarding in obtaining sufficient funds for implementing. Clear budget arrangement can convince the design builder that the clients are able to fund the project immediately. This circumstance can affect the implementation of DB project delivery system.

6. FACTORS THAT CAN PROMOTE THE IMPLEMENTATION OF THE D & B PROJECT DELIVERY SYSTEM

Improved Regulation

The need to tighten current regulations in order to advance the adoption of D & B has been argue by the National Construction council that "Selection of the design-build project delivery system without modification to current statutes and regulations can result in consequences that are contrary to the public interest". Accordingly, legal and regulatory changes are being sought by the public agencies to regulate the implementation of D & B project delivery system. It is also expected that the detailed clarification of the regulations can overcome the barriers to implementing the D & B project delivery system. Therefore, modification for regulation is required to accommodate the implementation of DB project delivery system (Rahadian 2009). These amendments should provide further clarifications to aspects such as types of projects that are appropriate for design-build project delivery system, project procedures and appropriate designer builder entities.

a. Project appropriate for the D & B project delivery system.

Gibson et al. (2007) emphasizes that deciding on when a project is appropriate for D & B project delivery system and on what type of project is suitable for D & B project delivery system are the critical stages to gain real benefit from the process. A debate is still ensuing over which projects are appropriate for the use of the D & B project delivery system in Tanzania. In the development of a D & B project delivery system, the argument for what type of projects are appropriate for the D & B project delivery system has changed. The D & B project delivery system is perceived as a suitable approach for complex projects in all construction types (ASCE 1992; Molenaar and Songer 1998) as well as small project such as road widening or new construction, road rehabilitation or reconstruction, and for bridges (USDOT Federal Highway Administration 2006). Lam et.al (2004) suggested that types of projects need to be selected based on the size of project, level of complexity and project location. Accordingly, the type of projects suitable for using the D & B project delivery system require further clarification in future amendments to the regulation

b. Project procedure

The current government legislation has not provided clear guidance on the procedures for using D & B project delivery system. Project procedures consist of a contractual arrangement and the tendering system (Akintoye 1994; Yates 1995; Sadeh, D and A 2000; Lam ,Chan and Chan 2004). There are three main methods of tendering namely (Molenaar, Songer and Barash 1999): One step: award criteria based on price only Two step: award criteria based on qualifications and price Qualification-based: award criteria based on qualifications only, or qualifications and price

For instance, in the United States, the use of D & B project delivery system was inhibited by the Federal Acquisition Regulation and the 1972 Brooks Act. It led the state and local procurement statutes to follow the federal procurement models (Pietroforte and Miller 2002). In 1996, the Federal Acquisition Reform Act (FARA) decreed that D & B project delivery system can be engaged by using a two-phase procedure (Molenaar, Songer and Barash 1999; Pietroforte and Miller 2002). Therefore, there is a need for procedures to be made clear before DB can be adopted as an alternative delivery system in Tanzania.

c. Design builder entity

The management of the DB delivery system, such as design criteria process, procurement process and executing process that can impact on the party which holds a dominant role in the Design Builder (Ministry of Public Works 2008). Tenah (2000, p.36) asserts that there is legal concern related to the relationship among the involved parties. Beard et al. (2001) emphasize the importance of the DB structural variations and how they relate to the structure of the design-build organization and the different arrangements undertaken within. The existence of a team that involves the builder and designer creates unique legal issues considering the relationship between them. The formation of a design build entity will vary depending on several factors, as follows (National Society of Professional Engineers 1995): Because the entity of design builder need to be regulated in the statute, it is inevitable that the design-build project delivery system as a new approach can create confusion in establishing this entity. Similarly, a mechanism that should be determined whether the constructor has entity including planner and supervisor or a consortium that consist of constructor, planner and supervisor. The need for structuring the organization is considering the effect of DB that may arise on the ability to Builder Design serves the client.

Another reason is the management of the delivery system such as:

- The scope of the project
- The technical, managerial and administrative design and construction capability of the owner
- The technical, managerial and administrative design and construction capability of outside designers and constructors
- The availability of outside designers and constructors
- The owner's preference as to the structure of the outside design-builder team
- The requirements of or restriction in federal, state or local statute and regulations
- The availability of financing, insurance, and bonding to the DB team members
- Customary business practices in locality or region

Beard et al. (2001) proposes several structural variations in D & B Entity, as follows:

- Owner and Joint- Venture Design Builder
- Owner and Constructor-Led Design-Builder

- Owner and Designer-Led Design-Builder
- Owner and Integrated Design-Builder
- Owner and Developer-Led Design- Builder

Hence, there is a need to structure the organization in a DB entity as it can have effect on the ability of the Design Builder to serve as the client. For this reason, the entity of design builder in the DB delivery system needs to be regulated in the statute. However, there is confusion in establishing this entity. For example, a mechanism should be developed to guide the determination of whether the constructor should have an entity as planner and supervisor or a consortium that consists of constructor, planner and supervisor.

MANAGEMENT

Beside the strengthening of regulations, there is a need to strengthen the management aspects of organization in order to embark on D & B delivery system. This aspect is related to the owner competencies that involve experience, knowledge and skill. Although the D & B project delivery system is extensively used and increasingly adopted, many agencies do not have the institutional culture suitable for implementing and operating a new project delivery system (Molenaar ,Songer and Barash 1999; Molenaar and Gransberg 2001). Therefore, the clients will experience difficulties if they are not accustomed to new system.

a. Communication

In implementing the D & B project delivery system, the agency or client plays an important role. Experience and skill are crucial in successfully implementing designbuild projects (Mo and Ng 1997; Leung 1999; Ling and Liu 2004; Lam ,Chan and Chan 2004; Lam ,Chan and Chan 2008; Xia and Chan 2010). The client should have experience of managing DB projects, and have skilled team members (Lam ,Chan and Chan 2004). Experience and skill enable the owner to manage the design process and design change (Pearson and Skues 1999; Chan ,Ho and Tam 2001). The skills involved are project management and technical skills (Lam ,Chan and Chan 2008), and the staff will assist the client in the process of implementing the design and build project delivery system. The required project management skills can include: communication and feedback systems, quality, safety, risk and a conflict management system, organizational structures, control mechanisms of subcontractors' works, and the overall managerial actions in

planning, organizing, leading and controlling (Lam, Chan and Chan 2004). Lam (2008) states that the management needs to be involved in the up-front planning efforts and effectiveness of communication, control system, management system and organizational culture. Effective communication is expected to gain successful implementation DB project delivery system. It can be done amongst ministries, division and parties involved in Design Build project delivery system.

b. Knowledge sharing and training

The infrastructure issues involve policy and decision-making that require practice and skills of the parties involved in this project delivery system. Lack of skills, experience and knowledge can be overcome with education through training in infrastructure field. This effort can address several challenges in the fields of infrastructure (Soemardi and Wirahadi kusumah 2009), namely, first, efforts to incorporate a broader vision and integrated skills in the infrastructure education must not ignore the role of professional, second, practitioners or professionals must be willing to appreciate the value, contribution, and the views and interests of other stakeholders. The bureaucrats and practitioners should be more open with each other and respect among the various infrastructure professions (planners, engineers, architects, managers, decision makers, and environmental activists). The third challenge, the professional and bureaucrats are necessary to develop and implement work practices and procedures that are open to the input of other parties. The clients should provide efforts prior to executing DB projects, such as training, seminars, workshop with regard to DB project delivery system. The education through training, seminar and workshop in infrastructure field can be done by inviting expert from other countries and division or organization who have applied DB project delivery system. Moreover, senior staffs of client who have past experience in executing DB projects should be able to educate others, share knowledge and keep communication to their junior about the DB project delivery system.

6. SAMPLE LARGE BUILDING PROJECTS IMPLEMENTED USING D&B

In Tanzania, the D & B Sample Large Building Projects Implemented using D&B includes the following:

i) Expansion of Lower Ruvu Water Treatment plant

ii) Eco Residence built at Hananasif- Kinondoni, Dar es Salaam

iii) PSSSF – Sam Nujoma Tower

iv) Victoria Place- Kijitonyama -Kinondoni Dar es Salaam

v) Morroco Square etc

7. **CONCLUSION**

This paper presented the procurement project using modern methods and results indicate that alternative delivery methods such as design-build and construction management have higher effectiveness in achieving most of the owners' objectives than the traditional design-bid-build method The paper also outlined the factors that influence the implementation of DB project delivery system. Lack of regulation and legal framework; and lack of experience, skill and knowledge are the reasons why D & B project delivery system is not widely implemented. Based on comprehensive literature review, there are two main ways to overcome those obstacles. Firstly, improved regulation by enlightening project appropriate for D & B project delivery system, project procedure and design builder entity. Management is second way to overcome lack of experience, skill and knowledge. It can be done by enhanced communication, training and knowledge sharing.

The Paper indicates that Design-Build methods are more effective in meeting most project objectives followed by construction management at risk, construction management and lastly the traditional design-bid-build. Design and build is relatively more effective in ensuring the shortest project duration than Construction Management methods. The traditional delivery methods are not effective in ensuring the shortest duration. Construction management method is the most effective in ensuring staying within budget. The results also show that the Design-Bid-Build methods provide the greatest flexibility to incorporate changes during the design and construction of the project. However, this may come at a higher cost. Design-Build is better suited to handle changes and ensuring the highest quality.

The organizations with limited experience required a delivery method that included a construction professional to be present at the early phases. Design-Build methods do not allow a high level of involvement by the owner. Using Alternative delivery methods and minimizing the number of contracting parties help minimizing adversarial relationships. With regards to project characteristics, design-build method is more effective than construction management at risk,

construction management and design-bid-build (in that order) in handling essential, complex and unfamiliar projects.

Selecting the appropriate project delivery method is a key decision that has to be made in the early phases of the project. There are many delivery methods that can be used on any project. The decision is usually based on certain factors of importance to the owner. Owners are usually tempted to use the delivery method that they are familiar with. However, this might be a great mistake since familiar methods are not necessarily effective in all situations. The effectiveness of the delivery methods vary according to the factors. Owners must rank their objectives and choose the method that maximizes the effectiveness in achieving the project objectives.

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United Republic of Tanzania, Development Vision 2025

PAPER 06

Dr. Christopher P. Nditi
PhD, CSP (T)

PERSONAL PROFILE

Dr. Christopher Nditi is a specialist in Procurement and project Management with over 25 years of Procurement work experience and 7years Post-graduate Experience. He has a PhD (Walden University-USA- 2011) in Applied Management and Decision Science with focus on Information System Management; MSc in Project Management, Information System Management and Networking and Communication (DeVry University USA - 2008),B.Sc.-Management Information Science(Franklin University USA-2001), MBA Finance(University of Dar- 1999) , ADMM(St Augustine University aka NSTI-1991). Certified Supplies Professional (PSPTB a.k.a NBMM-2004).

Dr Nditi is Proficient in all areas relating to the management of procurement, finance, and project and information system. Accomplished several Procurement professional presentations at seminars or workshops for senior executive staff as well as teaching short courses. Proven track records in increasing productivity, quality, and satisfaction. He worked as Head and then the Director of Procurement Management in central Government for over 24 years. Dr Nditi Has vast knowledge and experience in practical procurement activities and participated in several procurement committee set by the Government.

Academically and professionally, Dr Nditi has been a post graduate adjunct lecturer for Higher learning institutions such as KIU-Dsm, TUMAINI-Dsm, IAA-Arusha, and CBE –Dodoma; He was also appointed in 2018, as external examiner of Mzumbe University(Postgraduate studies in procurement and Supply Chain management). Professionally, he is Research Supervisor and

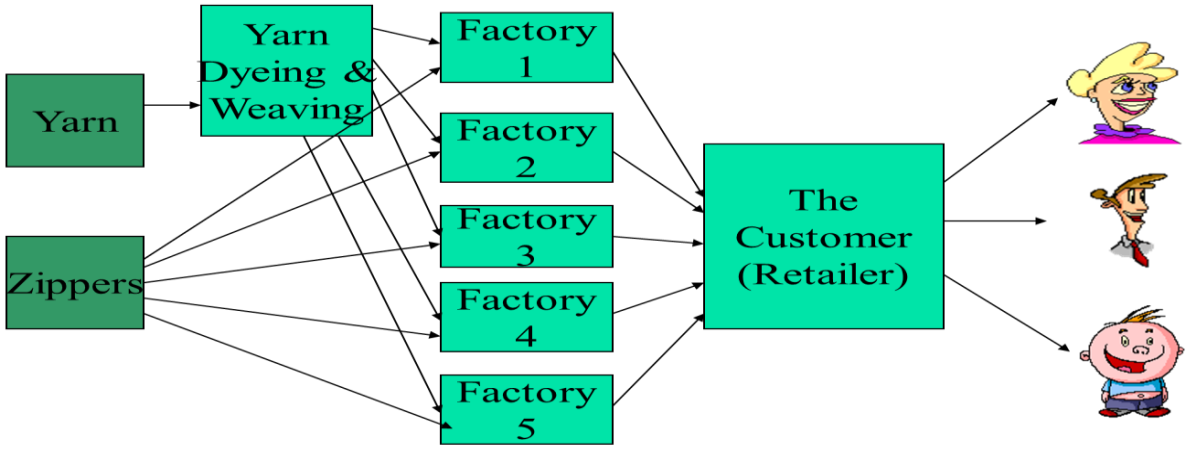
workshop facilitator at Procurement and Supplies Technician Board (PSPTB) for Certified Procurement and Supplies Professional (CPSP) candidates since 2016.

In 2019 he was appointed as team member for re-affirmation-accreditation visit at College of Business Education (CBE) –Dodoma under the sponsorship of National Council for Technical Education (NACTE).In the same year he was also appointed as team member in developing Public Procurement Operation Manual under coordination of the Ministry of Finance and Planning(MOFP).In 2018, Dr Nditi was invited to Present Paper on Logistics and agricultural Supply chain and the paper on Inter organizational Information System which was held at the 1st African Logistics and Supply Chain Conference & Operation Management, organized by University of Dar es Salaam Business School (UDBS), this was sponsored by KUEHNE foundation in Switzerland. In 2017 he Presented paper on E-procurement and the journey towards industrialization, at PSPTB annual conference, Held from 4-5 December, 2017 at AICC, Arusha. In the same year, he Facilitated training on Information system management for Social Security Staff from Eastern and central Africa under sponsorship of Eastern and Central Africa Social Security Association(ECASSA), which held in Arusha.

In 2016, He has also participated as Member of Curriculum Validation Committee (Master of Supply Chain Management) facilitated by NACTE. Also Facilitated Training on Procurement and Contract management for Social Security institutions in Eastern and Central Africa under sponsorship of ECASSA, Arusha. In 2015 he was appointed as Chairman of Curriculum Validation Committee (Project Management) facilitated by NACTE, and also participated as a Member of Ministry of Finance and Planning Committee for the preparation of Public Procurement Operational Policy.

THEME: SUSTAINABLE PROCUREMENT AND SUPPLY CHAIN PRACTICES FOR MODERN ECONOMY

Sub-theme: Enhance service delivery through sustainable procurement and supply chain activities.



By

Dr. Christopher .P. Nditi

PhD (AMDS), CSP (T)

Abstract for the paper to be presented at the 10th Procurement and Supplies Professionals Annual Conference

30th OCTOBER 2019

ABSTRACT:

Over the last several decades supply chain trends have affected global market convergence and make business to become true global. During the recent two decades, goods flow has been tremendously increased, even though the amount of goods remains at the steady state.

Globalization in the business sector has resulted in a dramatic growth of the cross border movement of commodities and goods due to social and economic regulatory frameworks. This lack of a common playfield regarding important aspects of sustainability creates a need for transparency in the supply chains. (UNEP, 2010). In this context achieving sustainability in the supply chains is a core issue.

ABBREVIATION LIST

BMI	Business Monitor International
IBM	International Business Machines Corporation
GPSA	Government Procurement Services Agency
IVD	Immunization and Vaccines Development
MSD	Medical Stores Department
NACP	National AIDS Control Programme
OECD	Organization for Economic Co-operation and Development
PPA	Public Procurement Act
PPR	Public Procurement Regulation
PWC	Price Water House Company
TAMESA	Tanzania Mechanical and Electrical Services Agency
TANESCO	Tanzania Electrical Supply Company Limited
TFDA	Tanzania Food and Drugs Authority
UNEP	United Nation Environment Program

1. INTRODUCTION

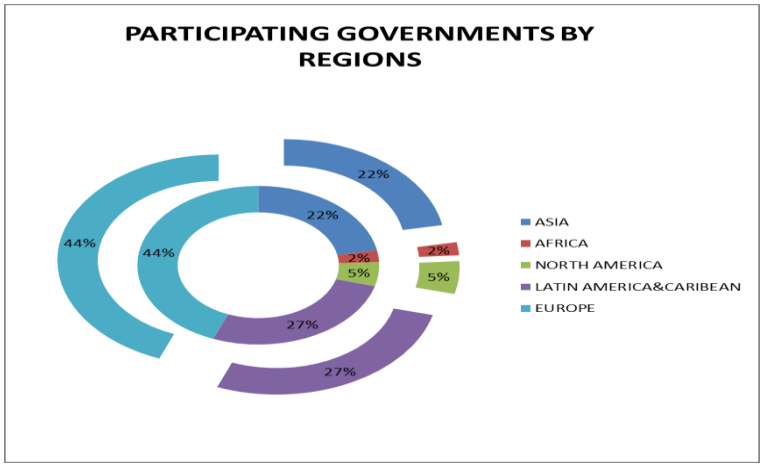
This paper shows the theoretical and empirical understanding of the whole systems of service delivery through sustainable procurement and supply chain within an organization. In addition the structure of the paper covers the Introduction, Background, Key concepts, the sustainability impact of procurement and supply chain practices in Tanzania, enhancement of service delivery through sustainable procurement and supply chain activities, service delivery system by public Institutions (taking cases of MSD, GPSA, TANESCO,and TAMESA), and private institutions(taking case Bakhresa-TZ and Wal-Mart-USA) , Practical Challenges facing sustainable service delivery, and way forward.

2 BACKGROUND

Public procurement and supply chain are increasingly recognized as an instrument of government policy and a lever for wider economic, social and environmental change (OECD, 2007). Procurement and supply chain processes that consider social, economic and environmental factors are able to drive sustainability along value chains (UNEP, 2017). External pressure and incentives set by governments, customers, investors and stakeholders are regarded as the starting points on sustainable Procurement and supply chain management.

The 2017 global review shows that the trend of national governments in the use of procurement to meet the Sustainable Development Goals (SDGs) was growing.

Figure 1: Participating governments by regions



Source data: UNEP (2017)

Supply chain development not only benefits the private sector but also creates spin-offs that stimulate social, economical and environmental sustainable development in the region (employment generation, added value, decreases of product losses, etc.). Public support (e.g. development of the institutional infrastructure) plays an important role to create an enabling environment for private sector development(Roekel, et al, 2002).

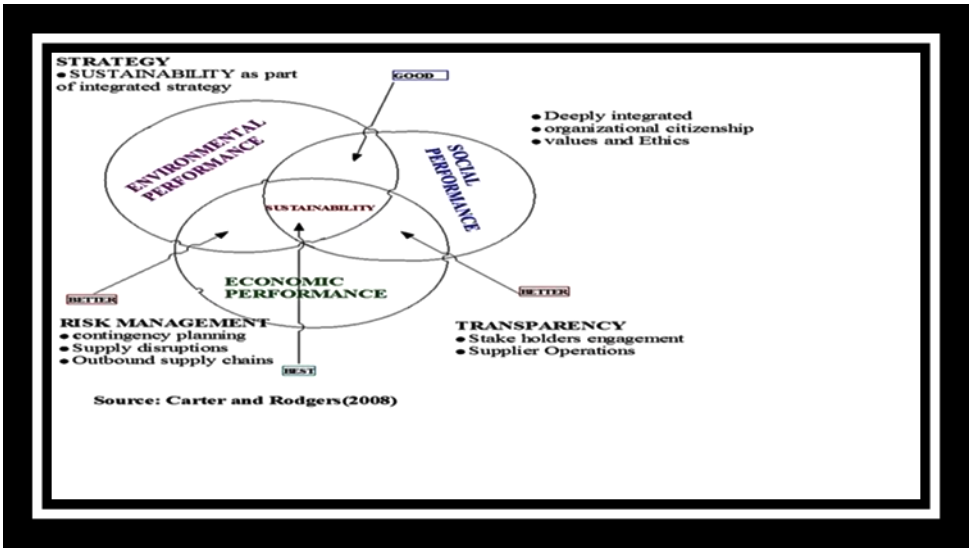
If countries are concerned about how economic, social and environmental criteria may be used in public procurement without harming the integrity of the process, then the practice of sustainable procurement and supply chain needs to be pursued.

Traditional procurement has focused on value for money considerations only whilst Sustainable procurement involves achieving value for money on a whole life basis by considering the economic, environmental and social issues associated with the goods and services bought, with the goal of reducing possible adverse effects.

3. KEY CONCEPTS

3.1 **Sustainability** The internationally recognized definition of sustainability is the use of resources to meet the needs of the present, without compromising the ability of future generations to meet their own needs (UNEP, 2010).

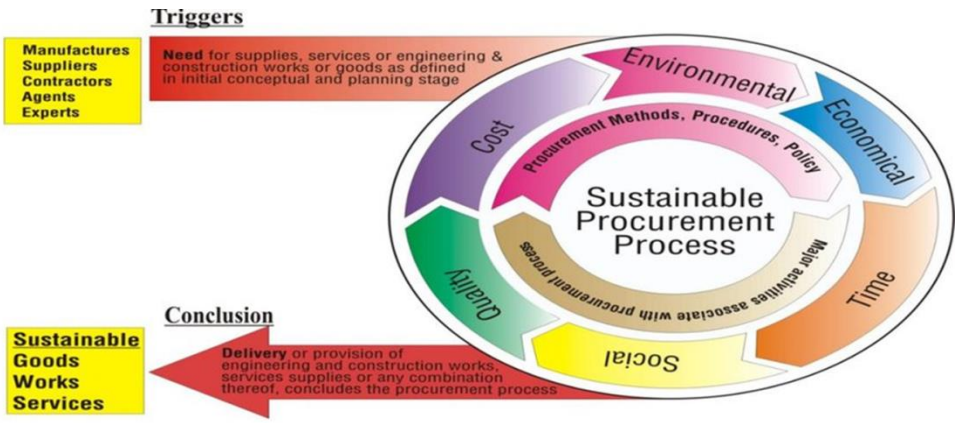
Figure 2: SUSTAINABILITY



3.2 **Sustainable Procurement** is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, while minimizing damage to the environment.(PWC; 2010)

3.3 **Sustainable Public Procurement** is a process whereby public institutions meet their needs for goods, services and works in a way that achieves value for money on a whole life cycle basis in terms of generating benefits not only to the organization, but also to society and the economy, while minimizing damage to the environment (Aurora Energy System, 2008).

Figure 3: Sustainable procurement process

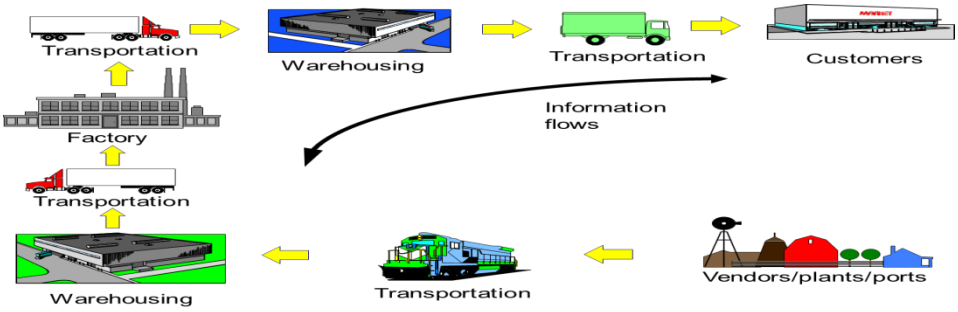


Source: Research gate (2018)

3.4 **Sustainable service delivery** ensures that current community service needs, and how those services are delivered in a socially, economically and environmentally responsible manner. (Toolkit, 2019).

3.5 **Sustainable supply chain management** "The management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social (UNEP, 2010).

Figure 4: Supply Chain Overview

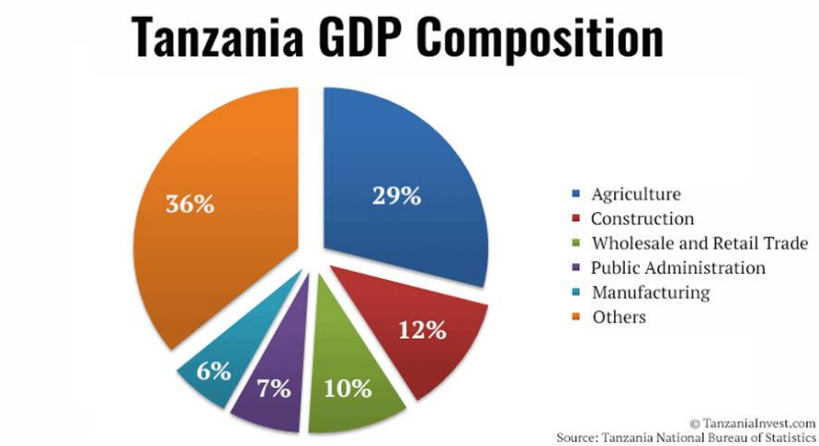


3.6 **Supply chain risk management** is defined as the ability of a firm to understand and manage its economic, environmental and social risks in the supply chain (UNEP, 2010).The concept of supply chain was first introduced in early 1980's and its focus was based on supply chain of dependent items and independent items from point of origin to the point of consumption (Somashekari, et al, 2013).

4. THE SUSTAINABILITY IMPACT OF PROCUREMENT AND SUPPLY CHAIN PRACTICES IN TANZANIA

Public procurement wields enormous purchasing power, accounting for an average up to 30 percent of GDP in many developing countries (UNEP 2017). Tanzania's economic growth is expected to average 6.2% between 2017 and 2026.

Figure 5: Tanzania GDP composition



Source data: Tanzania Invest (2019)

The growth is underpinned by infrastructure development and a growing consumer base. Heavy infrastructure investment into rail, port and road is expected to be one of the main drivers of Gross Domestic Product (GDP) growth between 2017 and 2026(Deloitte, 2017).The infrastructure development in Tanzania will strengthen logistics and enhance the service delivery through Sustainable Procurement supply chains.

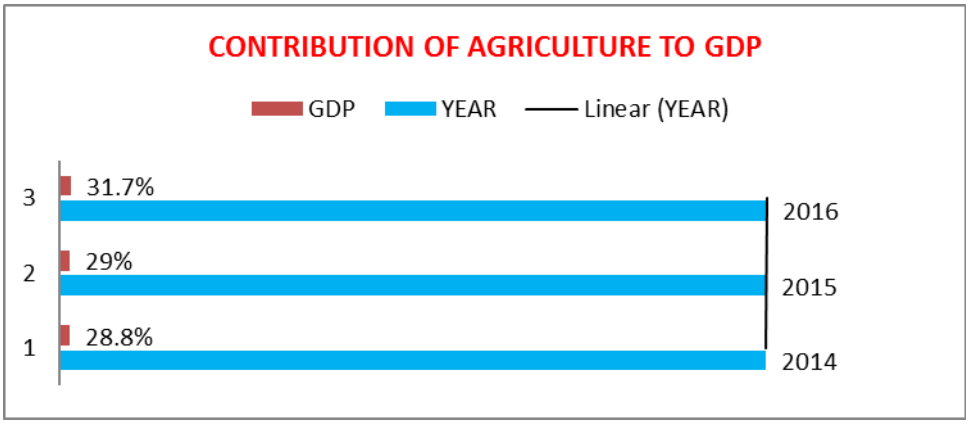
The strategic role of Procurement and Supply as a lever for sustainable development is much more manifested now than before. Public procurement and supply chain are increasingly seen as activities that should not only focus on short time values, but also on long-term benefits by supporting wider social, economic and environmental objectives. In recent years, communities have become increasingly interested in how organizations and their suppliers impact on the environment, society and the economy (Kalubanga, 2012).

Since 2017, there are increasing numbers of organizations and governments were found to monitor their sustainable public procurement policy implementation and results, and to set specific targets. This is key to managing internal performance and shifting from the occasional inclusion of environmental and social factors in procurement processes to a culture in which sustainable public procurement is the norm, and sustainability is seen as a strategic consideration in the purchasing of goods, works and services (UNEP, 2017).

4.1. Sustainability issues on Procurement and Supply chain in Agricultural sector

Since agriculture is the mainstay of the Tanzanian economy, the manufacturing industry is centered on the processing of local agricultural goods. Currently the sector alone provides employment to 65.5% of Tanzanians. The contribution of the agricultural sector to the economic growth and the development of Tanzanians have continued to increase. In 2015, the agricultural sector contributed 29% of the GDP, compared to 28.8% in 2014. In 2016 agricultural sector contributed 31.70% of the GDP. This was the largest contribution, surpassing all other sectors. (Delloite, 2017).

Figure 5: Contribution of Agricultural products to GDP



Source data (Delloite, 2019)

Risk management has been identified as an important facet of Sustainable Supply Chain Management (SSCM), together with transparency, strategy and culture. The management of risk is identified as a way to address long term sustainable issues, like risks for biodiversity loss, climate change, food insecurity or hazards to workers and public(UNEP 2017).

It is the mission of the government through the Ministry responsible for Agriculture to deliver quality agricultural and cooperative services, provide conducive environment to stakeholders, build capacity of local Government Authorities and facilitate the private sector to contribute

effectively to sustainable agricultural production, productivity and cooperative development. However sustainability in procurement and Supply chain of agricultural inputs is still questionable especially to farmers who are working in farms.

4.1.1 Environmental impacts

Agricultural growing has a potentially significant environmental impact; some are being sensitive to pest infestation and weed competition. Some cultivation also includes significant inputs of chemical fertilizers, defoliants and film. These inputs can increase yields greatly, but also negative environmental impacts such as land degradation, water shortage and a spread of pollutants.

4.1.2 Social impacts

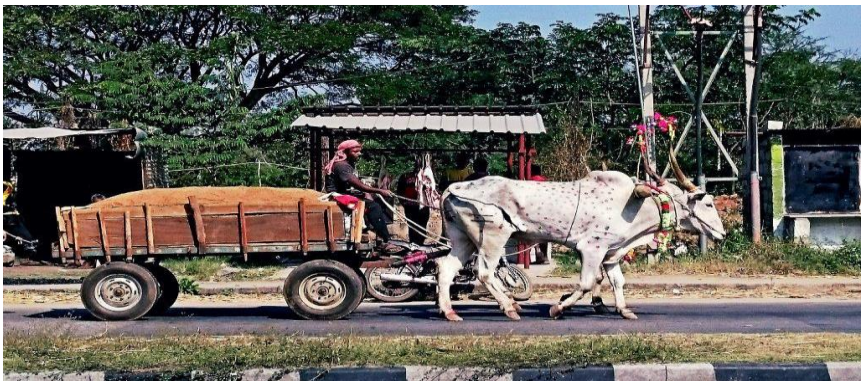
Key risks on health and safety in Agricultural production are workers being exposed to harmful toxins, primarily because they are not provided with, or do not wear, adequate personnel protective equipment while spraying pesticides.

4.1.3 Economic Impacts

Community infrastructure is a foundation of sustained and growing economic and social development. Infrastructure is critical to meeting recreational, institutional, cultural and other needs of the community. Properly built and effectively maintained infrastructure supports public health and safety, and mitigates potential adverse environmental impacts.

In the absence of strong infrastructure especially in rural areas will result in poor Product delivery system, where farmers may find themselves transport most of the produce, either as head loading or using pack animals, to both nearby and long distance markets.

Figure 6: traditional product delivery system



4.2 Advantages of Sustainable Procurement and Supply Chain

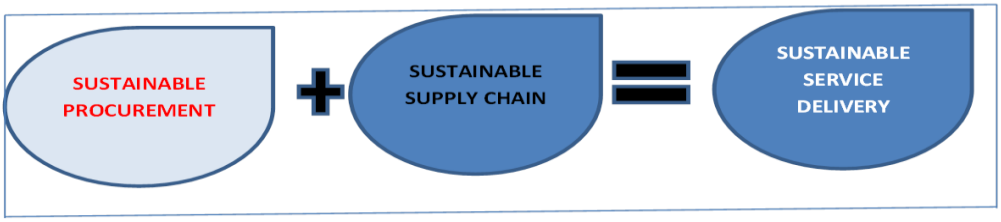
The advantages of sustainable procurement and supply chain management are numerous, like the reduction of product losses, increase in sales, reduction of transaction costs, a better control of product quality and safety and the dissemination of technology, capital and knowledge among the chain partners.

By considering environmental issues from a competitive view point, has made organizations to improve organizational efficiency, reduce waste, overcome supply chain risk, and achieve competitive position (Humphreys, 2003).With sustainability issues becoming vital in the developmental agenda of nations, it is time to shift the focus public procurement systems and supply chain from mainly immediate economic advantages to sustainable public procurement systems and supply chain, which will result in long term benefits.

5.0. ENHANCEMENT OF SERVICE DELIVERY THROUGH SUSTAINABLE PROCUREMENT AND SUPPLY CHAIN ACTIVITIES

The efficient and effective service delivery system depends highly on how well an organization is implementing sustainable Procurement and Supply Chain practices.

Figure 7: sustainable Procurement and Supply Chain

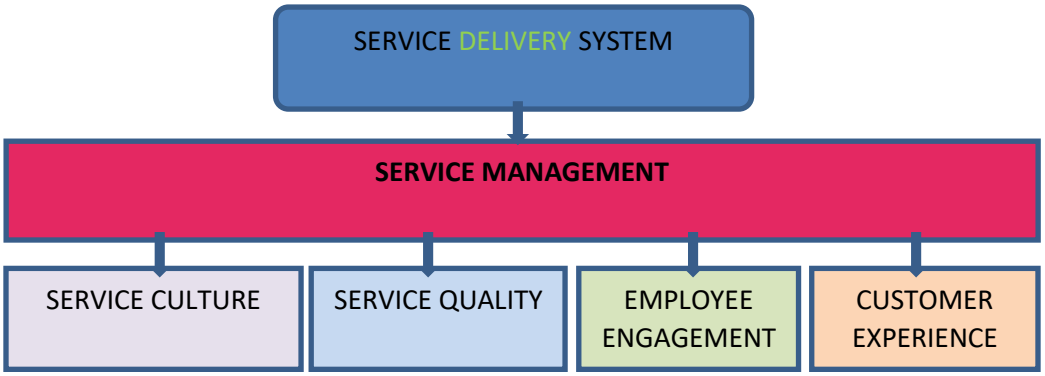


In order to provide high levels of service quality and therefore create value for clients, service organizations need to plan the delivery of their services and to ensure the successful implementation of the actual plan. Delivering services of high quality is an important pursuit for service providers that seek to create and provide value to their customers.

Service delivery systems normally should be able to produce several positive outcomes, ranging from reduced costs, and increased availability of efficient operations, improved service quality and optimum customer experience (Walley and Amin, 1994).

Running a successful service Organization should be synonymous with delivering excelling service. Designing the service delivery system should focus on what creates value to the core organizations and how to engage frontline employees to deliver the ultimate customer experience.

Figure 8 : Service Delivery System



Source: ISS (2019).

i. **Service Culture** is built on elements of leadership principles, norms, work habits and vision, mission and values. Culture is the set of overriding principles

according to which management controls, maintains and develops the social process that manifests itself as delivery of service and gives value to customers.

ii. **Employee Engagement** includes employee attitude activities, purpose driven leadership and HR processes. Even the best designed processes and systems will only be effective if carried out by people with higher engagement.

iii. **Service Quality** includes strategies, processes and performance management systems. Helping the client fulfill their mission and supporting them in the pursuit of their organizational purpose, must be the foundation of any service provider partnership.

iv. **Customer Experience** includes elements of customer intelligence, account management and continuous improvements. Perception is king and constantly evaluating how both customer and end-user perceive service delivery is important for continuous collaboration.

6.0 SERVICE DELIVERY SYSTEM BY PUBLIC, PRIVATE AND INTERNATIONAL INSTITUTIONS

6.1 PUBLIC INSTITUTIONS

Delivery of various public goods and services is one basic responsibility of the public institutions. Though with expansion of the market many services are available in the private sector but some of the core services will continue to be delivered by the Public institutions, because of nature of such services.Some of Public institutions that deliver services to the public sector are MSD, GPSA, TANESCO, TAMESA, etc.

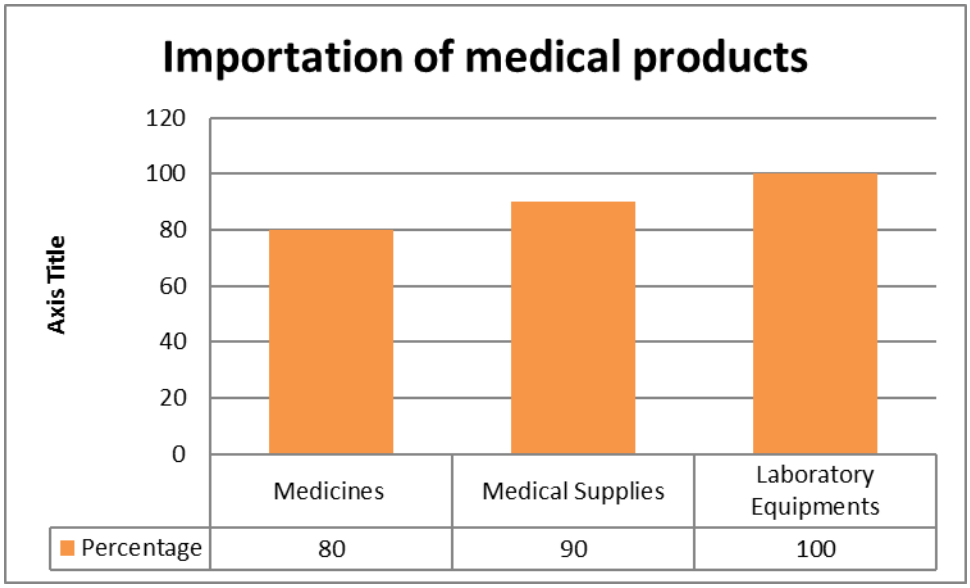
Poor market Research normally affects the product and price to be charged to the clients. An effective Marketing research normally helps the organization to understand the price and product, in relation to other internal charges such as transport cost, inventory cost, before charging the customers or clients.

6.1.1. Medical Stores Department (MSD)

There is continuing commitment of government and partners to strengthen the medical procurement and supply system. MSD has responsibility to develop, maintain and manage an efficient and cost effective logistics system of Procurement, Storage and Distribution of safe and quality essential medicines, medical supplies and laboratory reagents for public and approved private health facilities.

MSD is the largest importer of which 80% of medicines, 90% of medical supplies and 100% laboratory supplies are imported from different countries across the world.

Figure 9: percentage of medical importation



Source data (MSD, 2019)

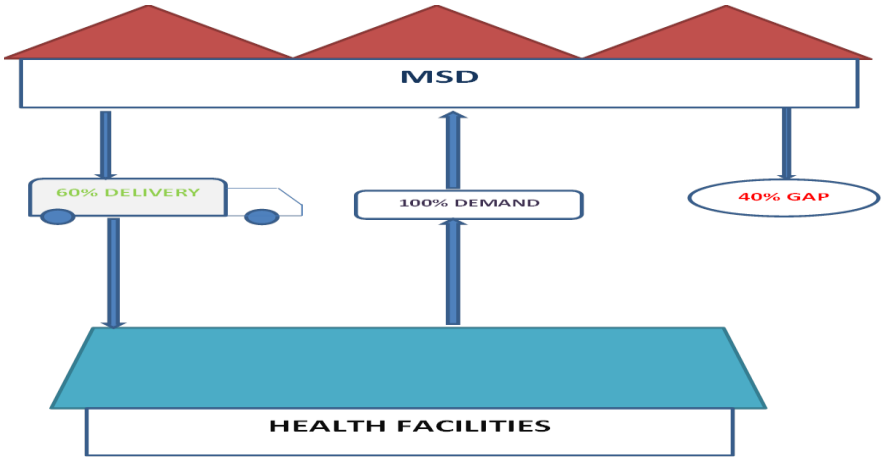
From 2017, MSD procures its medicines and medical supplies direct from manufacturers instead of suppliers to ensure the improvement of medicines availability as well as lowering the medicine prices by half and quarter to some medicines of which most prices were before.

MSD delivers essential medicines, medical supplies and Laboratory reagents direct to more than 5,600 Health facilities (hospitals, Health centers and dispensaries) across the country. The system of Direct Delivery has registered tremendous improvements in terms of timely service delivery, order fill rate, quality and accurate documentation, which have in turn led to increased customer satisfaction (MSD, 2019). MSD also distributes program commodities whose delivery system is integrated with essential items with the support of electronic logistics management system (ELMIS).

Medical Stores Department (MSD) is the pillar for supplying medicines Public health facilities in Tanzania. But they face challenges in filling orders of these health facilities. The supply gap stemming from the out-of-stock situation and low order fulfillment rates for supplies by MSD needs to be complemented by medicines from other sources. District Councils may purchase from private suppliers in case of stock-out at MSD upon its approval. However, this procedure is lacking consistency and transparency, is bureaucratic and uneconomic, and it prolongs lead-time for delivery of supplies.

The availability of medicines in public health facilities in Tanzania is problematic. Medicines shortages are often caused by unavailability at Medical Stores Department, the national supplier for public health facilities. During such stock-outs, districts may purchase from private suppliers. According to Jazia (2016), it was noticed that MSD was able to deliver at least 60% of medical supplies and equipment, and there is a 40% gap in delivery system. However the government promotes public private partnership (PPP).

Figure 10: MSD service delivery System



Source Data: Jazia (2016)

A PPP was established engaging one private sector pharmaceutical supplier as the Prime Vendor to provide the complementary medicines needed by public health facilities in Tanzania. There is a need for supply channel complimentary to MSD. During such stock-outs, districts may purchase from private suppliers. However, this procedure is intransparent, bureaucratic and uneconomic. In 2015 MSD conducted Strategic Review,• and in 2016 they released Review Report which has highlighted several gaps in its Customer Service Delivery level (as shown in the following figure) and recommended strategies for the improvement of the service:

Figure 11: 2019 MSD's Performance review

KEY AREAS	KEY GAP	RECOMMENDATION
FINANCE	INADEQUATE FUNDING	1. ADDITIONAL SOURCES OF FUND 2. TIMELY DISBURSEMENT OF FUND
SUPPLY CHAIN	OPERATIONAL INEFFICIENCY	1. IMPROVE QUANTIFICATION 2. IMPROVE PROCUREMENT LEAD TIME 3. IMPROVE INVENTORY MANAGEMENT 4. IMPROVE INVENTORY SYSTEM.
PEOPLE	WEAK PERFORMANCE MANAGEMENT	1. ALIGNMENT WITH MSD GOALS 2. MANNING AND SKILL LEVEL
TECHNOLOGY	INEFFICIENT IT SYSTEM	1. BARCODING 2. SLAS WITH VENDORS
GOVERNANCE	GOVERNANCE GAP	1. BOARD CHARTER 2. BOARD SKILL SET 3. BOARD ANNUAL EVALUATION

Source data: Bwanakunu (2019).

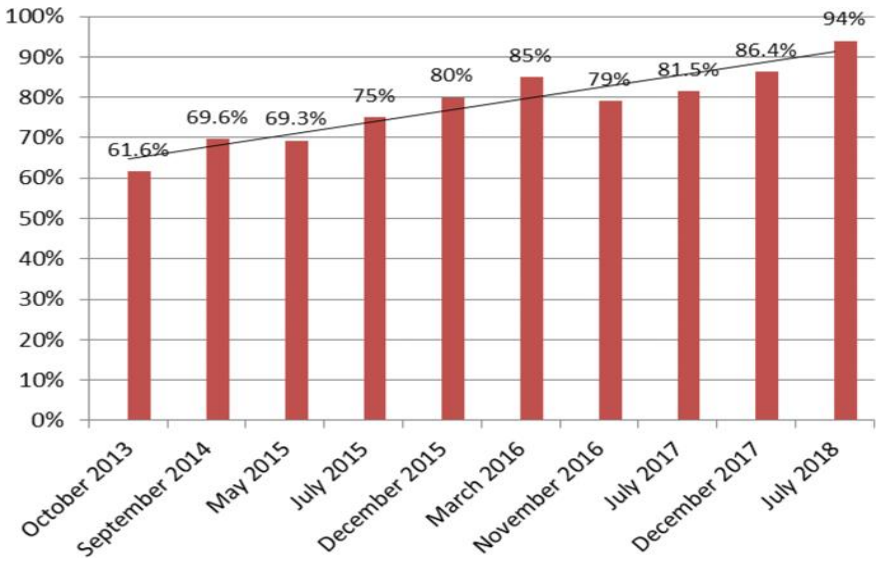
According to Bwanakunu(2019),MSD faced several challenges which needs special attention such as Overstayed items, mode of distribution of public items needs improvement for public access, inconsistent stock levels, quantifications of viral load reagents threatens stock availability and capacity to maintain cold chai commodities in health facilities.

Also the government debt as at February 2019 was 218,978,855,297. (USD 90.1M). This debt is due to the donated items for the three programs through unpaid Procurement Supply Management costs; NACP- $40.7m, IVD-$14m, TFDA-$13m, others $24.3m.However Debt verification exercise done in December 2018 and Government set aside TZS 50.0 billion for repayment in FY2018/19, and also they requested Donors to reduce quantities.

In 2018, medicines availability increased from 69% in 2014 to 94%. Prime vendor supplies are of assured quality and average prices are comparable

to prices of Medical Stores Department. Procurement procedures are simplified, shortened, standardized, transparent and well-governed. Procurement capacity was enhanced at all levels of the health system. Proven successful, the Prime Vendor system pilot was rolled-out nationally, on government request, to all 26 regions of mainland Tanzania, covering 185 councils and 5381 health facilities as per figure 12 below (Jazia, 2019):

Figure 12: Medicines availability in the region



Source: Jazia(2019)

For the long time the effect of rationing throughout the supply chain at MSD has caused the continual out-of-stock situation and rationing. In view of this the government has supported MSD to break the negative cycle is by starting at the beginning of the supply chain and ensuring that suppliers actually deliver what is ordered, on time and enhance sustainable delivery of medicine and medical equipments.

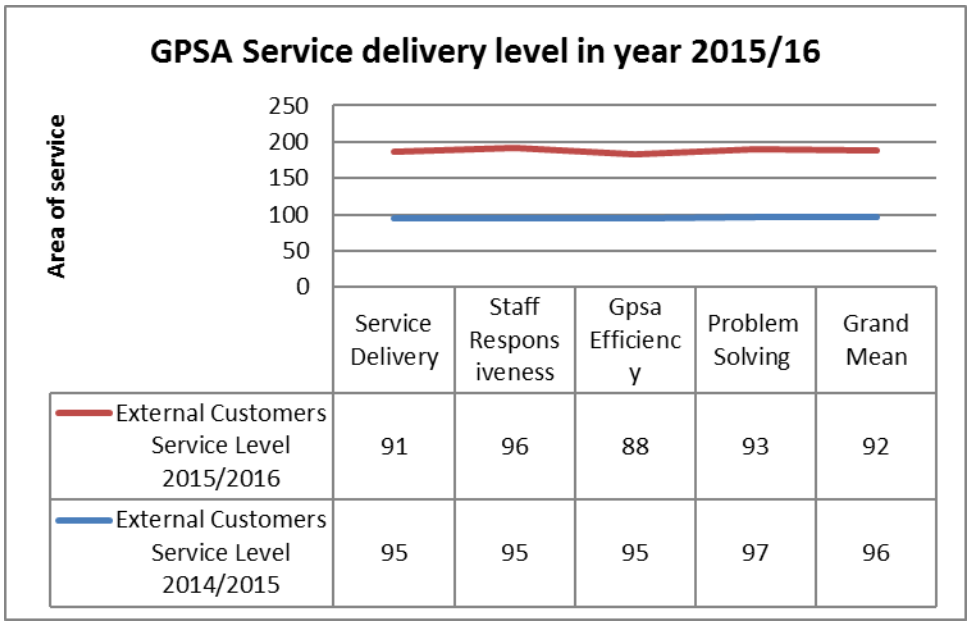
6.1.2 Government Procurement Services Agency (GPSA)

The Agency is responsible for procurement, storage and distribution of stock items for re-sale to Government and Non-government institutions, provision of clearing and forwarding and consultancy services, and warehousing facilities, arranging for procurement of common use items and services by Ministries, Independent Department and Agencies (MDAs) and Local Government Authorities (LGAs) using framework contracts(.

In recent years GPSA has managed to enhance service delivery for fuel and stocked items in almost all mainland regions, and to ensure service delivery GPSA is working harder and harder to improve service delivery in terms of quality, efficiency, timeliness, and satisfaction. However GPSA is working out some challenges relating delay in service delivery of Vehicles and other common used equipment in order to raise the quality of customer service level.

In 2015/16 GPSA conducted monitoring and evaluation in order to assess the performance level. The report testified that the Satisfaction level of external customers with the quality of services offered by GPSA decreased from 96% in 2014/2015 to 92% in 2015/2016 as shown in Table below:

Figure 13: External customers Satisfaction with GPSA'delivery services for FY 2015/16

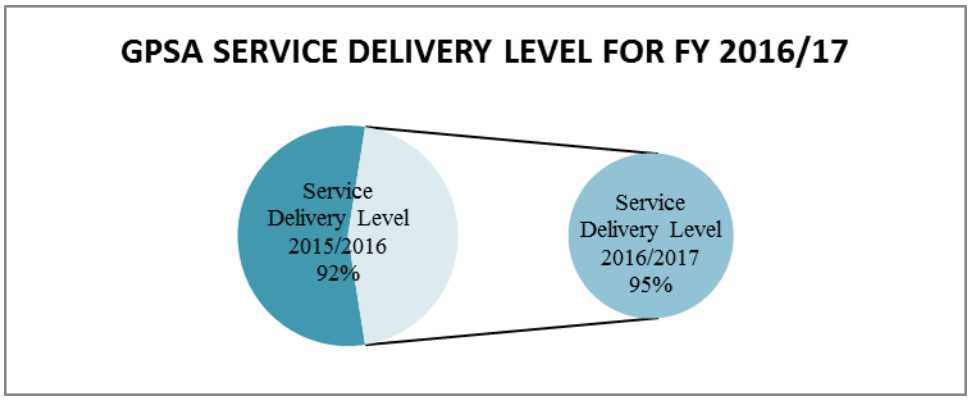


Source data: GPSA (2016).

According to the monitoring and evaluation report of 2016, the management was advised to improve quality of services offered to its external customers.

In view of this and the process of reviewing the strategic plan, the Agency conducted a service delivery survey in June, 2017, to see how far they have gone about the improvement quality of service offered to tis external customers. Findings indicated that level of satisfaction of external customers with the quality of services offered by the Agency increased from 92% in 2015/2016 to 95% in 2016/2017.

Figure 14: External customers Satisfaction with GPSA'delivery services for FY 2016/17



Source data : GPSA (2018)

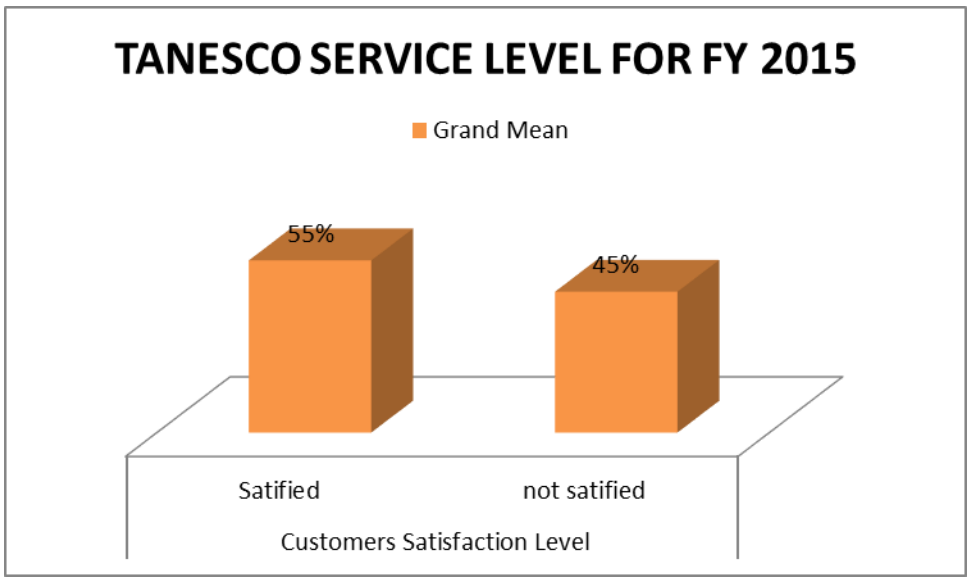
6.1.3 Tanzania Electrical Supplies Company Limited (TANESCO)

The mission of TANESCO is to generate, transmit and supply electricity in the most efficient, competitive and sustainable manner and they have a vision of ensuring Improvement of power availability, reliability and efficiency.

TANESCO is enhancing service delivery by mitigating some challenges it had before such as inadequate electricity services, poor electricity infrastructure, poor emergency response, complex connection procedures, poor customer services, corruption and frequent power cuts by TANESCO staff.

In year 2015 , TANESCO have been able to survey the state of satisfaction of the customer against their service (Customer Satisfaction Survey), which was aimed to find out what area do we do well and areas exposed for a Company to deal with. We carried out a telephonic by calling total 2400 customers across the country. The result of the survey showed that 55% of customers were satisfied. Areas which performed were; good customer care in TANESCO offices, power stability, Awareness on TANESCO products and services and construction of service line.

Figure 15: Customer Satisfaction Survey



According to CAG report (2019), there have been delays in procurement of required spare parts or goods due to late submission of specifications or inputs for initiation of the procurement process by power plants. Also TANESCO did not adequately do market research for procurement of spare parts.

In view of that TANESCO has great plans for improving the performance of the Company by serving her Customers better and ensuring increased revenue collections.

According to CAG REPORT(2018), TANESCO has committed to be responsive and accountable to reliable services delivery as per customers' needs and interests through various business re-engineering process focusing on improving corporate image. For the issues of sustainability, the company continues to enhance service delivery by managing environmental and social management measures in compliance with national laws and regulations, and international environmental standards.

6.2 PRIVATE INSTITUTIONS

Sustainable procurement and supply chain are now widely recognized as a strategic lever to drive innovation and improve the sustainability performance of both public and private

sector organizations across the globe (UNEP, 2017). Sustainable procurement practices are not limited to Central Government and local government agencies. The private sector and NGOs are also showing global leadership in this area.Practical example of Successful private institution indulged in successful service delivery Bakhresa in Tanzania, Wal-Mart in USA, etc.

6.2.1 Bakhresa group

Bakhresa has a mission of increasing and sustaining the living standards of Africans by enhancing service delivery of essential products and services of global quality at affordable prices.

The Bakhresa Group currently brings together 19 companies, with operations in 8 broad areas, including grain milling and storage, food products, packaging, plastic recycling, logistics and transport, telecommunications, real estate and petroleum. The Bakhresa Group currently is successfully operating in Tanzania (including Zanzibar), Malawi, Uganda, Kenya, Zambia, Rwanda, and Mozambique. Its flour milling operations in East Africa makes up more than 89% of total sales (SAIIA, 2012). Bakhresa has succeeded in supply chain management by ensuring that the right items are delivered to the right customer at the right time by the most efficient means, while maintain an affordable prices of their products.

For the case of sustainability in procurement and supply, a part of Bakhresa's core values is the belief in continuously improving environmental performance through efficient operations, reduced impacts, natural resource and cost savings, long-term availability of raw materials and water, sustainable, profitable growth (Bakhresa group, 2013).The group is enhancing the Sustainable Development Goals (SDGs) which provide a momentous opportunity for change in social, economic and environmental issues.

6.2.2 Wal-Mart- USA

Wal-Mart is good example of an institution with sustainable service delivery system. Wal-Mart was found by Sam Walton in 1952. Sam started business with $20,000 he borrowed from his father in-law plus $5,000 saving when he left military service. Sam passed away in 1992; he left his business annual sales of nearly $50 billion.

According to Supply Chain Digest, these retail giant stocks products made in more than 70 countries and at any given time, operate more than 11,000 stores in 27 countries around the world, and manage an average of $32 billion in inventory. The entire organization is committed to a business model of driving costs out of supply chains to enable consumers to save money and live better (tradegecko, 2017).

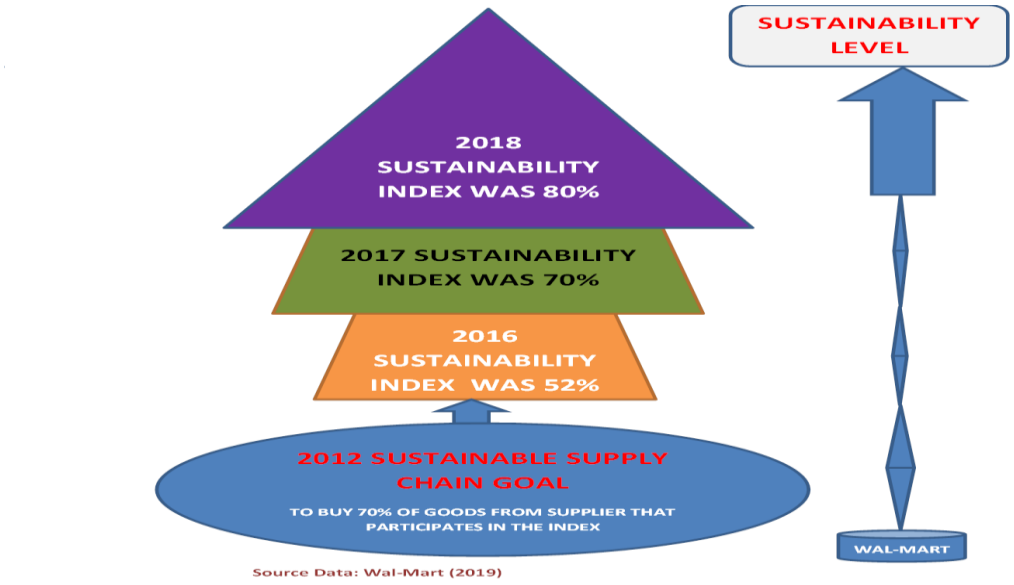
Wal-Mart began with the goal to provide customers with the goods they wanted, whenever and wherever they wanted them. The company then focused on developing cost structures that allowed it to offer everyday low pricing. Wal-Mart's supply chain management contributed to its success. Wal-Mart has long practiced strategic sourcing to find products at the best price from suppliers who are in a position to ensure they can meet demand. Over the past twenty years, Wal-Mart has become the world's largest and arguably most powerful retailer with the sustainable service delivery (Tradegecko, 2019).

For the issue of sustainability, Wal-Mart provides access to high-quality, essential products to people around the world. They strive to do this in a way that enhances economic opportunity, promotes long-term environmental and social sustainability, and strengthens local communities (Wal-Mart, 2019).Wal-Mart's aspirations for sustainable product supply chains go beyond managing risk in their own sourcing; they aim to bring about significant and lasting improvement across product supply chains through collaborative efforts with suppliers, NGOs and

others. Wal-Mart encourages suppliers to report through the Sustainability Index that includes data from suppliers on key environmental, social and other performance indicators at the category level (Wal-Mart, 2019).

The Index reflects responses from more than 1,500 unique suppliers covering 115 categories and departments across Wal-Mart U.S. and Sam's Club U.S. they set a goal in 2012 to buy 70% of our U.S. goods from suppliers that participate in the Index (in categories covered by the Index). They met that goal in 2017, and in 2018, more than 80% of such goods came from participating suppliers. Wal-Mart and Sam's Club U.S. suppliers have improved their Sustainability Index scores by 28% compared with 2016(Wal-Mart, 2019).

Figure 16: Sustainable Supply chain index scores



7.0. PRACTICAL CHALLENGES FACING SERVICE DELIVERY.

7.1 Some Public Institutions which perform service delivery system do not procure goods and services basing on actual demand and fail to receive supplies on time. and thus , there are negative cycle of buying too little, and always being in short supply and having to ration customers.

7.2 Delay in service delivery by Public institutions. According to CAG audit report (2019) Delay in delivery Due to inadequate competition. For Some institutions,

late or poor delivery may sometimes be caused by user department which fails to timely submit specifications for the items that are supposed to be procured.

7.3 Lack of information about the demand, prices, and delivery time for goods and services, due inadequate market research conducted by Procuring Entities

7.4 A clear understanding of the concept of sustainability and how it is related to the procurement process is still lacking especially within the context of a developing countries.

8.0 WAY FORWARD.

8.1 All institutions that are indulged in service delivery they should make sure that they are arranging the materials and services requirement planning according the actual demand of clients. They have to work on requirement collections before performing procurement and supply activities.

8.2 To avoid unnecessary delay institutions should make sure, they arrange their terms of reference or statement of requirement at the right time so that goods, works or services should be procured at the right quality and in timely manner in accordance with the procuring entity's priorities ,as per regulation 5 (2) (a-c) of PPR (2013) and its amendments (2016).

8.3 In order to enhance sustainable service delivery procuring entities are advised to conduct a thorough Market research from within and outside Tanzania, in order to get the right information for the goods and services to be procured or rendered.

8.4 New trends in the field of procurement require embedment of sustainability principles in the way the entire procurement process is executed rather than focusing merely on the procurement procedures of public organizations, driving the procurement sector to sustainability will require significant cooperation between the public and private sectors.

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PAPER 07

Change Management in Supply Chain Perspective to Achieve Value for Money.

1.1 *Introduction*

Supply chain management has evolved from a functionally oriented discipline in materials management, manufacturing, warehouse and distribution management to a discipline dealing with complex flow issues related to the global movement of products and information. The supply chain discipline has matured beyond back door logistics function and found its way as an executive agenda whose objective is positively contributing -to the generation of value to the company . Similar to the uptake of information technology as an enabler for process change in the 1980s, supply chain management has become an enabler for transformational change in the way products and services are developed and brought to market to satisfy customers' needs. This 'growth spurt' demands new levels of human performance to effectively handle the paradigm shift outlook which has changed status and roles of the supply chain management.

Therefore as alluded earlier on the need for innovation is increasingly demanded to exponentially compare with the steady state in the past few decades. The speed of change and emergence of new technologies are driving the demand for broader skill sets; workforce diversity and employee turnover are further complicating the people issue for organizations. The skills shortage is already being recognized.

Based on this background,this paper is aims to elucidate the dynamics encroaching the profession and the readiness of the professionals to adopt the changes affecting their career so as to ensure that g employers gets the best of professional services hence best value for money.

1.2 *Profession dynamism*

According to O'Dell et.al, (2011) Knowledge management is a systematic effort to enable information and knowledge to grow, flow and create value. The supply management profession globally today is offering services beyond functional expertise, where for stance both accountability and advisory roles are more pronounced today than ever before both in public and private sectors.

According to various reports of Mining sector, GGM and the then ACACIA supply chain is one of the strategic commercial units which among other things were responsible for costs initiatives, compliance of local content requirements and planning, process, logistic and inventories. Mining Local Content Regulation 2018 regulation 37, 38 and 39 requires all mineral right holders of the prospecting license(s), processing licence(s), mineral licence(s), special mining licence(s), contractors and subcontractors are required to submit the quarterly performance local content report showing among other things the set up of procurement unit structure and capacity which includes number of local skilled, semi-skilled and unskilled staff members. The reports further showed the goods or services procured locally. This is an indicative that the private sector is equally self regulated on all issues related to supply chain.

On the other hand Section 33(2) in the Public procurement Act of 2011 (RE 2016) has transformed the profession outlook in the public sector. The Government appreciated on the role of procurement and supply in socio economic development by elevating roles /functions played by professionals from operational to strategic level i.e. from clerical reporting to Board Room reporting. To achive this the Government had to make bold decision to develop the Public Service scheme No. 3 of 2015 where the career path for procurement officers, supply officers and asset management officers have been redefined. This decision needs an applause as it in line with the requirement of PPA 2001 RE 2016.

Confidently we can boast ourselves that the procurement and supply profession now controls the heartbeat of organization, by sitting on the driver's seat in business opportunity creation aiming that maximize revenue generation by minimizing costs thus an increased

economic profit which in other words is value creation as well as value for money transacting.

1.3 *Supply chain*

Supply chain may be defined as alignment of firms operations that bring products or services to the market (Lambert, Stock, and Ellram, 1998). It can further be considered as network of organisations roles that involve, the upstream and downstream linkages as well as backward linkages in different processes and activities that produce value in the form of products and services in the hands of the ultimate customer (Christopher, 1992).

Supply chain therefore is a life cycle processes comprising physical or products, information, financial, and knowledge flows and risks flows where the purpose is to satisfy the end-user requirements with products and services from multiple linked suppliers (Ayers, 2001; with emphasis added).

Supply chain is a system of organizations, people, activities, information, and resources involved in moving a product or service from manufacturers, logistics providers, and distributors to end-customers. These stakeholders have business processes which are related each other, such as procurement, manufacturing, storage, information technology, distribution and transportation (Christopher, 2010).

The effectiveness of supply chain flows in Tanzania is more pronounced business community as value creation and revenue generation has remained the primary focus of their strategies so as to remain competitive in market volatility.

1.4 *Value for money*

Value for money (VFM) is derived from the optimal balance of benefits and costs on the basis of total cost of ownership. The nature of public procurement is such that it involves discretionary decision-taking on behalf of government at all levels. Value for money is therefore not a choice of goods or services which is based on the lowest bid price but a choice based on the whole life costs of the project or service.

Value for money is a term generally used to describe an explicit commitment to ensuring the best results possible are obtained from the money spent. In the UK Government, use of this term reflects a concern for more transparency and accountability in spending public funds, and for obtaining the maximum benefit from the resources available (Barnett et al 2010)

Value for money for stance in public procurement is achieved through pursuing the lowest whole of life cost, clearly defining relevant benefits and delivering on time. Preventing waste and fostering competition, transparency and accountability during the tendering process are key conditions to achieving value for money. Value for Money refers to a judicious, economic and efficient use of state resources at a reasonable cost. Value for money is not about achieving the lowest initial price: it is defined as the optimum combination of whole life costs and quality.

Flanagan, et al (1989) cited in (SCI-Network, 2011) explain the concept of Whole Life Costing (WLC) as an economic evaluation technique that concerns the assessment of the total cost of an asset over its operating life, including initial capital costs, maintenance costs, operating costs and the cost or benefit of the eventual disposal of the asset at the end of its life. It can also be said to be the total cost of owning an asset over its entire life. Whole life cost includes all costs such as design and building costs, operating costs, associated financing costs, depreciation, and disposal costs. Whole-life cost also takes certain costs that are usually overlooked into account, such as environmental impact and social costs.

Value for money in business environment has been at the heart of business decision and over years has been measured before project commencement to ascertain viability of the projects. Tools like payback period (PP), Internal rate of return (IRR), Net present value (NPV) have been used to assess the project or business before commencement to assess whether there is value for money or is viability. Furthermore a number of decision models

such as buy out, lease or buy, specials order, temporary shutdown of the business, make or buy of the product has been at the centric of value for money.

Value for money in the public sector which is service oriented involves consideration of the contribution to be made to advancing government policies and priorities while achieving the best return and performance for the money being spent (Bauld & McGuinness, 2006, p. 20). This means that public procurement entities can choose to award a contract based on other criteria other than the lowest price. One of the factors considered is the whole life cycle cost (Raymond, 2008).

Value for money is not about achieving the lowest initial price or cost price or selling price, but the optimum combination of whole life costs and quality (World Bank, 2003). Behan (1994) points out the real Value for money is how much the goods or service purchased cost to own and use. Barnett et al, (2010) indicate that Value for money reflects a concern for more transparency and accountability in spending Public Funds, and for obtaining the maximum benefit from the resources available. Batho Pele Handbook (2007) suggests that Value for money is achieved when public procurements are executed economically and efficiently. For this to happen, government departments are required to adapt to creative ways to simplify procedures and eliminate wasteful expenditure and inefficiency to promote productive use of resources in public procurement.

At the heart of the concept of Value for money, are three critical components namely, economy, efficiency and effectiveness. This is known as the 3 E‘s. (Batho Pele Handbook, 2007). Their reflections are:-

Economy: Explores whether specific inputs are acquired at the lowest cost and 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.

Effectiveness: The extent to which outputs achieve the desired outcomes or the capability of producing a desired result or the ability to produce desired output .

1.5 *Change management*

Change management refers to the implementation of a certain approach or methodology to ensure the organizational change effort is successful, including to ensure a clear vision and/or goals for the project, and to modify systems in the organization to more effectively achieve the goals. The change management activities can range from a planned, structured and explicit approach (successful change efforts usually are) to unplanned and implicit.

Change should not be done for the sake of change -- it's a strategy to accomplish some overall goal. Usually organizational change is provoked by some major outside driving force, e.g., substantial cuts in funding, address major new markets/clients, need for dramatic increases in productivity/services, performance enhancement, etc. Typically, organizations must undertake organization-wide change to evolve to a different level in their life cycle, e.g., going from a highly reactive, entrepreneurial organization to more stable and planned development. Transition to a new chief executive can provoke organization-wide change when his or her new and unique personality pervades the entire organization.

Why change may be resisted .

a) People are afraid of the unknown. Many people think things are already just fine and don't understand the need for change.

b) Many are inherently cynical about change, particularly from reading about the notion of "change" as if it's a mantra.

c) Many doubt there are effective means to accomplish major organizational change.

d) Often there are conflicting goals in the organization, e.g., to increase resources to accomplish the change yet concurrently cut costs to remain viable.

e) Organization-wide change often goes against the very values held dear by members in the organization, that is, the change may go against how members believe things should be done**.**

That is why much of organizational-change literature discusses needed changes in the culture of the organization, including changes in members' values and beliefs and in the way they enact these values and beliefs.

Note that our procurement personnel must start with their culture, the IT is taking over all the operations how these people are going to survive. There is a very big RISK in the invention of technology

1.6 *Leadership and change management*

According to Gilmore, leadership is a paradox; it is needed the most when circumstances make it emergence and effective exercise most difficult. The rate of change in the wider society is accelerating. Toffler (1971) refers to its effect on human as future shock, and Schom (1971) assets that we are in the era in which change is not simply a manifestation of a transition from one period of stability to another but endemic. Therefore Change management is often very confusing for executives to deploy. With so many effective tools available, it is often difficult to determine which tools should be applied to what situations, and how the tools could be used in combination.

According to Kurt Lewin's three levels change model, he describes changes using an ice block concepts where he propagated Unfreeze-Change –Refreeze model as the best approach to manage organization changes.

Unfreezing stage, this means as a leader you have to provide rationale for changes, create some of physchological safety concerning the changes and create minor level of guilty/ anxiety for change. This is important to overcome the stains of individual resistance and win group conformity. This can be achieved through increasing the driving forces that diect behavior away from existing situation or status quo and decrese the restaining forces that negatively affect the movement from the existing equilibrium.

Change or moving stage provides information that support the proposed changes, it brings about actual shift behavior to excute the intended changes. Therefore involves the process of change in thought, feeling, behavior or all three, that is in some way more liberating or more productive. The change process can be dynamic and if it is to effective

it will probably take some time and involve transition period. In order to gain efficiency, people will have to take new tasks and responsibilities which entails a learning curve that will at first slow the organization down. Therefore change process has to be viewed as an investment both interms of time and the allocation of resources.

Refreezing stage- Changes will reach its full effect if it is made permanent. Once the organization or process changes have been made and the structure has ragined its effectiveness, effort should be made to cement them and make sure the new organization or process reaches it standards.

John Kotter, on the other hand developed eight stages of leading change process. These includes

(i) **Establishing a Sense of Urgency**

Through this the leader have a duty of examining the market and competitive realities, identifying and discussing crises, potential crises, or major opportunities, Create crises by allowing financial loss, exposing managers to major weakness vs competitors, eliminate obvious examples of excess and set revenue, income, productivity, customer satisfaction target high

This can be achieved by stopping measuring subunit perfomance based on narrow function goals, insist people to talk regulary to unsatisfied customers and bombard people with information on future opportunities.

(ii) **Creating the Guiding Coalition**

This involves putting together a group with enough power to lead the change and getting the group to work together like a team

(iii)**Developing a Vision and Strategy.**

This can be achieved by creating a vision to help direct the change effort and developing strategies for achieving that vision.

(iv)**Communicating the Change Vision**

Using every vehicle or strategies possible to constantly communicate the new vision & strategies and having the guiding coalition role model the behavior expected of employees

(v) **Empowering Broad-Based Action**

At this stage a leader should be in a position of getting rid of obstacles by changing systems or structures that undermine the change vision and encouraging risk taking and nontraditional ideas, activities, and actions

(vi) **Generating Short-Term Wins**

Planning for visible improvement in performance or "wins" is one thing but creating those wins and visibly recognizing and rewarding people who made the wins possible is critical success factor for a leader. The benefits of short tems wins includes

- Provide evidence that sacrifices are worth it
- Reward change agents with a pat on the back
- Help fine-tune vision and strategies
- Undermine cynics and self-serving resisters
- Keep bosses on board
- Build momentum-turns neutrals into supporters , reluctant supporters into active helpers

(vii) **Consolidating Gains and Producing More Change**

As leader at this stage take advantage of using increased credibility to change all systems, structures, and policies that don't fit together and don't fit the transformation vision by hiring, promoting, and developing people who can implement the change vision. This may include also reinvigorating the process with new projects, themes, and change agents

(viii) **Anchoring New Approaches in the Culture**

The leader is responsible for creating better performance through customer and productivity oriented behavior, more and better leadership, and more effective management. This can be through articulating the connections between new behaviors and organizational success and developing means to ensure leadership development and succession

It is evident therefore supply chain professionals cannot distance themselves in knowing how to handle turbulences that may be caused by changes as they play a strategic role in the organization. For example, benchmarking, a process that has been shown to be a valuable means of learning how one company's supply chain performance compares to that of other organizations, has proven to be a valuable tool utilized in managing change in the supply chain. Through this process, companies are able to clearly identify performance gaps, and thus, focus their supply chain management efforts on the area's most in need of improvement.

Any company that has undertaken the mission of implementing an integrated supply chain management strategy knows that one of the greatest challenges it faces is the significant change in internal culture that is required to make the supply chain redesign successful. It is not an easy thing, to re-condition people to accept change, especially in organizations where a certain mindset has prevailed for many years. However difficult it may be to accomplish, change can be implemented successfully when directed by a strong and knowledgeable leader, who understands the tools available for achieving positive change, as well as their role in initiating and sustaining these changes

1.7 *Drivers for changes*

There are a number of identified megatrends that affects the profession and professionals as discussed here under.

a) Globalization

Companies are increasingly seeking for the lowest cost production or service point in the world. This has forced company to extend their productions factory in areas with cheap labor such as Asians Countries, and sometimes seeking time difference has

been used as strategy to increase production within 12 working hours without incurring overtime costs.

b) Technologies

The unit cost of information will continue to drop and become nearly infinitely available. Therefore information will increasingly be used to impact inventories, production, design, flow, sales etc

c) Regulatory policies and issues

These will continue to dominate overall corporate performance and supply will be involved in many ways

d) Management shifts-

Management of all functions is increasingly demanding in terms of speed of competitive pressure, increased need for innovation.

1.8 *Expectation from Chief Executive Officer's*

With the changing market dynamics, the change management process in supply chain is a must to reduce costs and increase revenue and profit. Center for strategic supply leadership research revealed six tenants of professionals' duties and challenges.

a) Supply is at the forefront of the company-

In the past profession played a passive role and was placed at the end of the string of decision making. Today supply chain is under magnifying glasses of senior management for performance affecting corporate finance and competitiveness. The Bottom line of it is, supply chain manager are now visible leaders and managers of the company that determines the profitability of the organization.

b) Top revenue is now a performance expectation of supply

Since post economic crises period Corporate growth is necessary than ever before where competitive pressure dictate that companies seek innovation speedily and effectively for both part of the company competitiveness or NGO's. it therefore crystal clear that supply chain controls the heart beat of many organizations.

c) Take the initiative with opportunities and problem

Procurement and Supply used to be passive function ie. waiting for others to give it requisitions or by working off annual plans. Today everyone in the company is

expected to scan for opportunities and problems that cut into organization performance. Thus professional's contribution in determining the effect of purchasing costs in pricing strategies, that at the end affects the product competitiveness in the market and hence survival of the company more visible today that it was before.

d) Slim and extend the supply chain

For the company to remain competitive and sustain its market share, then making decision to reduce complexity and unneeded costs, processes and assets is very crucial. Embracing innovations and use of ICT technology in business process re-engineering or improvement has remained the key success factor that pushes company to opt for their survival.

e) Managing risk

Risks management in supply chain has increasingly being important as we deal with both local and international community. Therefore planning must be further into the supply chain to mitigate expected risks that may affect the Business.

f) Professionals are the CFOs of the supply chain

Traditionally, company focused much on financial performance measurement. Finance and accounting knowledge and use of these languages was essential for effective professional.Therefore globally CEO expectations for supply management professionals in the near future is to come with leadership role as today's cost/price crunch will become a way of life, strategic focus will be on brand, Technological will hit the wall ,Industrial consolidation will be inevitable and widespread and global commerce will be the single driving force that dominates all aspect of competitions.

This being the case procurement and supply Professionals needs to assume leadership roles that means taking the initiatives in a way that bring new revenue to the business, remove unnecessary steps, assets, and costs, and reduce risks.

1.9 Conclusion -Change management in supply chain and strategies to achieve value for money

Supply chain management integrates key business processes from end user through original suppliers, manufacturer, trading, and third-party logistics partners in a supply chain. Integration is a critical success factor in a dynamic market environment and is prerequisite for enhancing value for money in the system and for effective performance of the supply chain by sharing and utilization of resources, assets, facilities, processes; sharing of information, knowledge, systems between different tiers in the chain and is vital for the success of each chain in improving lead-times, process execution efficiencies and costs, quality of the process, inventory costs, and information transfer in a supply chain. Integration leads to better collaboration for synchronized production scheduling, collaborative product development, collaborative demand and logistic planning.

Also with increased information visibility and relevant operational knowledge and data exchange, integrated supply chain partners can be more responsive to volatile demand resulting from frequent changes in competition, technology, regulations etc. (capacity for flexibility). Integration is required not only for economic benefits but also for compliances in terms of social and community, diversity, environment, ethics, financial responsibility, human rights, safety, organizational policies, industry code of conduct, various national / international laws, regulations, standards and issues.

Therefore achieving value for money is one of the main objectives for effective supply chain practice but it is always difficult to achieve this value for money in all supply chain activities, the following five steps on how to achieve value for money is recommended

a) **Cost reduction strategy**

Financial goals of the company are profitability, return on capital invested, liquidity, and so on; cost reduction will be a cornerstone to support these goals especially if business strategies are based on cost leadership. In public sector cost reduction will support services provision and efficiency targets .Basically Cost reduction strategies are knowing what the costs really are and then looking at how to reduce them. So effective cost analysis must be applied in order to identify and eliminate waste and re-negotiate prices if

needed. Effective supply chain management may secure cost reductions through measures such as the following.

(i) **Process engineering or re-engineering**, to streamline and integrate processes, eliminating unnecessary activities and process inefficiencies

(ii) **Organisational restructuring** to minimise labour and overhead costs and maximise process efficiencies (less duplication of effort, fewer managerial and co-ordinatory mechanisms, and so on.

(iii)**Outsourcing or off-shoring non-core competencies** to obtain value at less cost and internal resources can be more efficiently focused also the organisation can dispose assets to generate cash to enhance liquidity.

(iv)**Applying ICT and automation technologies** to streamline processes and to increase productivity and reduce labour costs. The effect of 4^{th} industrial revolution on professional competences is vividly seen today in Tanzania as a relity than it was before. Adaptability of new invertions coupled with Innovation and creativity is no longer a choice to professionals if at all wants to survive in digital, artificial intelligence revolution.

(v) **Finally and most importantly Developing supplier relationships** for cost and price advantages by developing collaboration to encourage mutual cost reduction, reduce sourcing and transaction costs, and so on

b) **Reducing inventory costs and administration**

Modern thinking suggests that ‘inventory is evil’ for two reasons ; first, an organisation holds stock that reduces the amount of cash available as money have been paid to acquire or manufacture the stock, and will not be recovered until the stock is sold.

Secondly, stock is a sign for inefficient work practices; if there were no buffer stock to fall back on we would have to remedy such inefficiencies, but with stock in hand we can afford to overlook them. No organisation would adopt this thinking to the point of holding no stock at all. But it is obvious that minimizing stock will help in achieving operational efficiency, provided that our customers will be disappoint due to lack of stock. Applying

stockless buying techniques such as Just In Time (JIT), Vendor Managing Inventory (VIM) concepts etc, buyers can minimize the levels of stock needed by working closely with suppliers; they do not deliver the ordered goods until the moment that the buying organization actually needs it.

Transportation has to be consider and its problems due to things like bad weather, failure in the system, poor infrastructure, poor mgt decisions, etc. This requires very close coordination with suppliers, who must be continually updated on production schedules.

Also, buyers can apply consignment stocking techniques which means that suppliers provide a buyer with stock, on the buyer's premises, but without charging for it in advance. Instead, the buyer pays for the stock only as he uses it. This protects the buyer's cash flow, while at the same time he benefits from having stock on hand at the supplier's expense.

Supplier Managed Inventory is another technique the buyers can utilize to avoid holding and administrative costs. It is similar to consignment stocking but in this case the stock is held at supplier's premises so the supplier covers stock holding costs and administrative costs and when the buying organization needs this stock, the supplier delivers immediately.

Therefore there is a need to hedge so that to avoid risks in price fluctuations in commodities purchasing especially in volatile market situations, where you may need to compare cash price contracts and futures contracts, compare contango and basis as key price structures

c) **Collaboration on cost reduction**

Another area where suppliers can help the buyer in achieving value for money is a joint initiative to reduce costs. So it is vital for purchasing to contribute in reducing costs right along the supply chain, while maintaining and improving quality. Procurement team will be required to increase the level of trust between the company and their suppliers which

will facilitate using open book costing. When trust is built the suppliers will be ready to talk frankly about their cost structures and several benefits will be gained such as:

(i) cost-based pricing enables the buyer to get to know the supplier's operations and processes
(ii) it enables joint identification of areas for cost reduction and added value;
(iii) cost based pricing reassures buyers that they are receiving value for money

Cost transparency is even more radical approach as it is considered as two-way sharing of cost information on activities in which buyer and supplier have common interests. This is more suited to a strategic partnership relationship with appropriate confidentiality protection.

d) **Trade-offs**

There is always a trade-off between cost objectives, quality, and delivery objectives. This has led to the recognition that cost/price and 'value' are not the same thing. 'Value for money' has been defined as 'the optimum combination of whole life cost and the quality necessary to meet the customer's requirement'. It is an important strategic objective, particularly in the public and non-profit sector; there are number of purchasing techniques that buyers can use to obtain value for money such as .

(i) The use of value engineering of new products and value analysis to eliminate non-essential features.
(ii) Adopting whole life costing methodologies, rather than focusing on purchase price.
(iii) Consolidation of requirements to facilitate negotiation of contracts and prices
(iv) Encouraging standardization to reduce costs of spares and maintenance
(v) Using proactive sourcing techniques such as challenging preferred supplier to ensure competitive value, and including in contracts a provision for year-on-year price reductions
(vi) Using e-procurement for process efficiencies
(vii) Global purchasing (to take advantage of low-cost country production)

e) **Payment and warranty terms**

In relation to payment, a buyer in collaboration with finance team must honour the due date term in any contract. But that does not prevent him from negotiating hard for extended payment terms (90 days credit rather than 60) If payment is delayed by 30 days, the money will be earning interest on deposit, or reducing the overdraft interest. So this is much better than having the money in the supplier's account. But If the buyer on purpose delays payment beyond the due date, it will have a damaging effect on supplier relations. So we need to be careful with payment due date.

Sometimes if the buying organisation has extra cash resources buyers can use it shorten payment period that may help in getting better pricing arrangement for example you can ask the supplier to provide extra discount for early payment taking into consideration the interest rate earned if the money stayed at the bank compared to the discount percentage by this way you will get better value for money and enhanced relationship with the supplier.

Warranty terms are another area, often overlooked, where added value can be leveraged. Buyers should look out for opportunities to include warranty terms in supply contracts. As We run a risk of disruption to operations, or having to compensate a disappointed customer, in the event of product failure. If such failure can be traced to an input purchased from a supplier, it is entirely appropriate that the supplier should bear the cost. A warranty term is one that places an obligation on the supplier in such circumstances to compensate the buyer in whole or in part.

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PAPER 09

IMPLEMENTATION OF FORCE ACCOUNT: CONCEPT, PROCEDURES, SUCCESS AND CHALLENGES

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Procurement Expert – Tanzania

ABSTRACT

In procurement perspective, Force Account (FA) means undertaking construction works by the Procuring Entity (PE) using own personnel/labour and equipment. In other literatures, it is also known as direct labour, departmental forces or direct work. Effective implementation of FA has significant impact on value for money when compared to contracting private firm that may spend a lengthy time, its process can even be more complex, costly, and disputes arise depending on the nature of procurement and contract. In Tanzania under the fifth term government, implementation of FA has been area of interest to develop and rehabilitate many health centres, hospitals, schools, colleges and public administration offices just to mention few. Challenges in implementation of FA include but not limited to lack of simplified FA manual/guideline, inadequate equipment and labour within the PEs, public or semi-public agencies, inadequate technology, un-defined roles, powers and reporting structure within and outside the PE to enforce good governance in implementing FA as well as lack of quality assurance plan and control in some PEs.

Keyword: Force Account (FA)

1.0 INTRODUCTION

It is becoming much emphasized in the public sector to use FA in implementation of various construction projects to ensure cost-effectiveness and value for money in spending scarce resources. However, there is a dilemma whether most of the Procuring entities (PE) and other stakeholders at large understand clearly the concept, procedures and challenges of FA. This paper entails to examine the concept, procedures, success and challenges of using FA in implementation of construction projects in the public sector – a case study of Tanzania.

2.0 FORCE ACCOUNT CONCEPT

FA refers to, “direct labour”, “departmental forces” and “direct work” whereby the PE execute works using their personnel and equipment (Satyanarayana, 2012). In the same context, the Public Procurement Regulations (PPR 2013) as amended in 2016 that governs procurement activities in Tanzania defines FA as a process where works are carried out by a public or semi - public departments or agencies by using its personnel and equipment or in collaboration with any other public or private entity. Similarly, in Uganda – the Public Procurement and Disposal of Public Assets (PPDA Act, 2003), the law under which procurement activities in Uganda are governed, defines FA as undertaking the works of a procuring entity using own personnel and equipment or of another PE. Likewise, in Jamaica -The Ministry of Finance and Public service guideline (2007) defines, FA as a procurement method where a government implements rehabilitative or development work by utilizing its internal resources rather than contracting the work to an external entity. In such instances, the government entity may be required to procure raw materials and/or engage temporary labor to carry out the work.

Circumstances render the PE use FA, something found common in legal frameworks governing procurement not only in most of the East Africa countries but also in America countries like Jamaica, is the circumstances under which FA is justifiable. For instance in Tanzania, FA may be justified where it meets any of the following conditions (PPR, 2013; Reg. 167):- (a) works are scattered or in remote locations for which qualified construction firms are unlikely to tender at reasonable prices; (b) work is required to be carried out without disrupting ongoing operations; (c) risks of unavoidable work interruption are better borne by a PE or public authority than by a private contractor; (d) there are emergencies which require a prompt attention; (e) the PE has qualified personnel to carry out and supervise the required works; or (f) the maintenance or construction is part of the routine activity of the PE.

Sometimes, it is hard for PE to get justifications whether FA is acceptable approach to apply or not where the agenda emanate from other authorities however the PE is still required to carry out assessment to answer the following fundamental questions: -

Area	Fundamental questions

Project –Need assessment	-What to be done? why to be done? how to be done? when to be done? and Who to do it? -Answers should bring– Purpose, Scope, Cost estimates, Timeline, Role and Responsibility.
Internal Resources	if PE should implement FA, what internal resources (personnel and equipment) available?
External Resources	- if resources to implement FA not available, what any other public entity can perform part or whole project in the most effective and efficient manner?
Risks	what barriers/risks ahead implementing FA over contracting private contractor?

3.0 FORCE ACCOUNT PROCEDURES

Any organization to succeed should set forth procedures to operate and make decision. Similarly, FA procedures are imperative tool not only to provide a guide for different PEs to implement FA in a common manner but also allow possible achievement of transparency, accountability, fairness and ethical conduct in the public procurement. If no, documented procedures risk of corruption and fraudulent may increase and audit to reveal such evil become nearly impossible due to absence of audit basis. Unlucky enough, the procurement legal framework prevailing in Tanzania provides conditions to apply FA but remains silent on the procedures should be adhered by the PE when implementing FA. This attributed the Ministry of Education, Science and Technology and the Ministry of Regional Administrative Secretaries and Local Government Authorities (2019) issue guidelines to provide procedures for construction of health centers, school, administration offices and other infrastructure in LGAs and learning institutions using force account. Specifically, the guideline (2019) required PE to follow FA procedures as (informally translated from Swahili to English) and summarized below-

a) Identify project requirements into two simple categorize namely; schedule/BoQ of materials and equipment to be procured and another schedule/BoQ of activities and/or service to be performed by the contractor/direct labor;
b) Justifications for force account and proper records';

c) Use of the best-restricted procurement method – Directly procurement from manufacturer, shopping, single source or mini-competition to procure required materials, equipment or engage another public agency or local.

d) Carry out negotiation to ensure that agreed cost fall within estimates or fund provided for the project;

e) User department should obtain accounting officer approval prior to commence implementation of the project;

f) Use list of provided public agencies or, the PE may use direct contractor (local fundi), direct labour under supervision of PE's experts

Moreover, for lower level government the Ministry responsible for LGAs (2018) issued the guideline for construction of 67 district hospitals, Administration office, OPD and pharmacy store which provide the same procedures given above save for appointment of committees for carrying out procurement, inspection of procured goods and works quality control and assurance by the Accounting Officer.

Similarly, neighbor countries of Kenya and Uganda ready have force account guideline that merely stipulates common procedures. According to Kenya National Treasury guideline (2016), the procedures for application of FA shall be as follows:-

i) The user department must first prepare a detailed proposal to provide (a) scope of goods, works and services required to complete the project, (b) status of the project where applicable (c) Justifications for use of force account, Bill of Quantities to be procured and the available internal expertise, capacity and competencies to undertake the project and (d) cost analysis of fees/rates using approved government subsistence rates,

ii) Submit the proposal to Head of procurement function for review and recommendation to the Accounting Officer (AO),

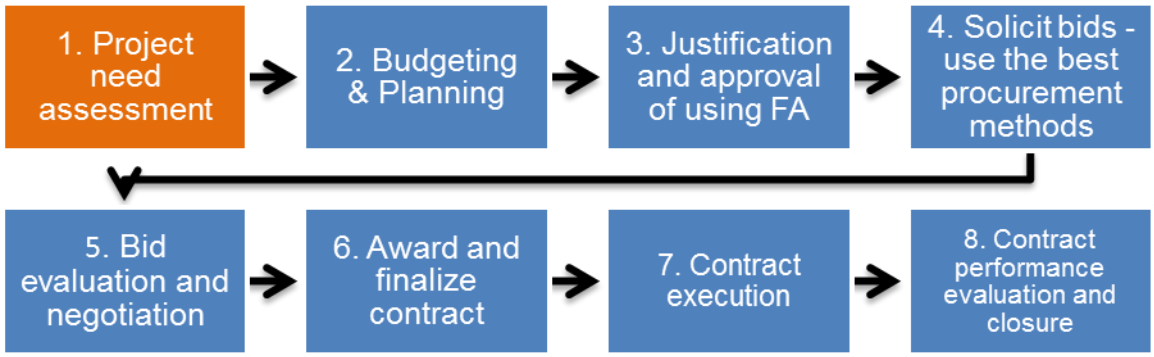
iii) Upon approval, User department and Procurement function commence implementation,

iv) The total costs of the project must not exceed threshold of Ksh 5 Million (TZS.112 Million)

It further clarifies that force account is not equivalent to community participation as FA focuses on the use of public servants, public assets, equipment and labour.

To bring together reviewed literature and author practice, this paper draws eight (8) basic force account procedures that begin at early stage of need assessment throughout procurement and contract performance evaluation and closure stage as summarized in figure. 1:-

Figure 1: Basic eight (8) Procedures of force account



Nevertheless, under force account, no procurement procedures apply because the PE use own resources (Labour, Equipment and facilities) however the above given procurement procedure 4 to 8 apply in acquisition of resources not owned by the PE.

4.0 FORCE ACCOUNT SUCCESS

Use of force account in Tanzania particularly under the fifth government has evidenced successful cost reduction, time saving, creation of employment opportunities and growth of local economy (Jafo, 2019). In the same perspective, Mbabazi & Mgurusi (2017) argues that there are many advantages to performing work internally including lower costs (on large volume jobs) as it utilizes existing resources that are already available "internally", close monitoring of the quality of work and rapid response as employees who work for the procurement agency, are aware of specific criteria, and can be made accountable.

5.0 FORCE ACCOUNT CHALLENGES

PPRA (2019) during procurement audit for 2018/19, PPRA conducted audit on other specific areas of interest to the Government including procurement through force account method and the following challenges were revealed:-

a) **Non - compliance on procurement process**; FA carried out at lower level of government, the tendering document used to procure material were not as per issued guideline and the tendering document missed necessary information relating to tender and evaluation criteria were ambiguous.

b) **Lack of use GPSA Framework Agreement**, building material is among the CUIS whereby PEs required to procure those building materials from suppliers awarded framework agreements. Therefore, the PEs were required to conduct mini competition on prices of required building materials from at least three (3) suppliers with framework agreement and seek tender board approval or procurement committee approval before issuing of local purchase order to the supplier with the lowest price within the prevailing market price. However, this approach was not applied which might have reduced cost in terms of time and procurement transactional cost.

c) **Inadequate contract finalization and management,** draft contracts not approved by procurement committee, contracts not vetted by legal, contracts not signed properly, progress reports not prepared, payments to casual labor done without the records to justify for the amount paid, contracts for construction entered between the PEs and contractor not contain all necessary documentations that form part of the contract, payment made without carrying out inspection of works done, and advance payments paid while not stated in the contracts and without having any security from the contractor.

d) **Inadequate Quality control;** no quality assurance plan prepared, no inspection and quality testing reports for works done.

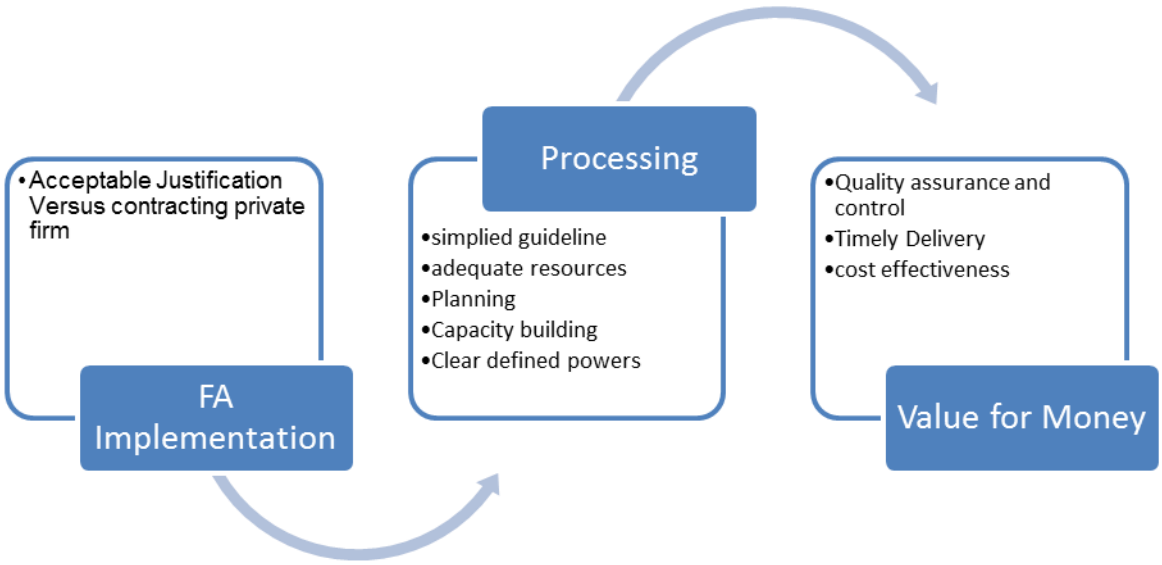
e) **Weakness in guideline issued by the Ministry of Education, Science and Technology (MoEST) and the Ministry for RAS and LGAs;** the guidelines intended to be used by all stakeholders who receive funds from the Ministry for construction and rehabilitation of various buildings and associated infrastructures in colleges, schools and health sector. However, the guidelines lacked clear definition of who is accounting Officer between the

District Executive Officer (DED), Regional Administrative Secretary (RAs) and Head of college or school, they provided contradictory powers between the tender board and the procurement committee, they remained silent on the procedures to be followed to procure building materials from the surrounding community of the project and they remained silent on the procedure for quality control.

Satyanarayana (2012) argues that, force account model exposes the government to the greatest degree of risk, since it cannot pass risk on to any other entity besides itself and the force operations have fundamental inefficiencies including lack of financial discipline because they are not driven by profit motives, a PE will often receive additional budget allocations when it generates cost overruns unlike a private firm that has a rigid budget constraint. In addition, unlike a private firm that must deliver before it is paid, allocations to force account units are often not tied to output. He concludes that, although its efficiency can be increased through reform, it is unlikely to ever reach the efficiency achieved by contracting out to the private sector.

The effectiveness of the force account is largely dependent on the availability of equipment, materials and adequate supervision within the procuring entity. According to Gongera and Petts (2003), FA does not allow cost systems to reflect government pays for the full cost of maintenance, as other expenses such as salaries, unit infrastructure maintenance and initial cost of equipment. Government absorbs all related costs of finance, importation and taxes and other overheads hence the actual total cost over a period is difficult to ascertain; although they can be achieved if required.

Figure 2. Concept for Successful force account



6.0 RECOMMENDATION

Procurement practitioners entrusted with the responsibility to carry out or oversee force account should familiarize themselves with the concept, conditions and procedures of FA provided in legal framework to achieve intended outcome;

The government should continue to enhance concerned public semi-public agencies in terms of adequate equipment; personnel, technology and training to allow sustainable service delivery;

Existing FA guideline(s) should be reviewed to issue clear and simplified guideline to apply force account in lower level government. Among other issues, the guideline should consider to waive the requirements of performance security, advance payment guarantee, power of attorney, registration by relevant statutory or professional bodies from lower level contractors and labor. Further, the guideline should provide that no procurement procedures apply when the engaged public or semi-public requires to acquire building material linked directly to undertake the project.

7.0 CONCLUSION

Use of force account increases greater opportunity for government to yield benefits in terms of cost, quality, staff capacity building, internal confidentiality and security assurance. But it is

worth to draw lines that in order to yield the said FA benefits adequate project assessment on what to be done? why to be done? how to be done? when to be done? and Who to do it? is not avoidable. This paper therefore calls critical thinking on the best ways to implement FA and achieve the intended best outcome without compromising the prevailing laws (procurement laws, construction laws, safety laws, contractual laws, Employment laws and tax laws just mentioning few of them.

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PAPER 10

Critical Success Factors Influencing Tanzania National e-Procurement System (TANePS) Adoption in Public Sector: Buyer-Supplier Perspective

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ABSTRACT

The objective of this study was to fill the knowledge gap through determining the buyers' and suppliers' perception on critical success factors influencing TANePS adoption in public sector. Specifically, the study evaluated: the influence of legal framework towards TANePS implementation in public sector; the influence of performance expectancy towards TANePS implementation in the public sector; the influence of relative advantage towards TANePS implementation in the public sector and the influence of attitude towards TANePS implementation in public sector. This study was guided by Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology, Organization and Environment model (TOE). This study also adopted positivism philosophy and cross-sectional survey research design. Additionally, the study used purposive and stratified sampling techniques. Sample size was 157. Questionnaires with closed ended questions and documentary review were used for data collection. The collected data were analysed by using descriptive statistics with the help of Statistical Package for Social Sciences (SPSS) software Version 21 and by using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the help of SmartPLS 3 software. Finally, an integrated final model showing the relationship between TANePS adoption and stakeholders' (buyers' and suppliers') perception on critical success factors influencing the new system was validated of which legal framework and relative advantage have an indirect influence towards TANePS implementation (both have p-values= 0.000). However, performance expectancy has direct and indirect influence towards TANePS implementation (has p-value

=0.000). Above all, attitude has direct influence towards TANePS implementation (has p-value =0.000). The findings and recommendations of this study are anticipated to improve the adoption of TANePS in all procuring entities in the country.
Key Words: Critical Success Factors, e-Procurement Adoption, Tanzania

INTRODUCTION

Many countries around the world are increasingly becoming focused on improving their public procurement systems both in terms of their legal framework and their practical procedure (Schooner *et al.,* 2008) from traditional procurement to electronic procurement (e-procurement). In developing countries particularly in Uganda, Ghana, Malaysia, Kenya and Tanzania, there has been a tremendous paradigm shift towards e-procurement adoption in public sector (Basheka *et al.,* 2012; Azanlerigu and Akay, 2015; Kassim and Hussin, 2013; Rotich and Okello, 2015; Mwangi *et al.,* 2018) due to the fact that e-procurement system has gained a reputation of being one of the most effective way to advance its performance in attaining sustainable procurement and sustainable supply chain (Iles, 2017). However, implementing of e-procurement in developing countries is still young (Watuleke, 2017) and in the Tanzanian public sector it is still at infant stage (Suleiman, 2015).

Monczka and Carter (2015) claim that e-procurement practice leads to better payment processes, eliminate administrative errors, increase buyers' productivity, makes information management easy for a given business and serves to reduce procurement cycle time and costs. Furthermore, Jeptoo and Karanja (2017) emphasizes that the public sector organizations which adopted e-procurement system have been able to increase efficiency, transparency, save operations/administration cost and reduce corruption in public services. In addition, the study by Malekia (2018) on e-procurement adoption in Tanzania reveals that e-procurement relatively removes chances of corruption in the public sector because of being an online based approach with minimal face to face contact between the government officials and the suppliers.

Nevertheless, the study by Latif (2014) on e-procurement adoption in Turkey revealed that some stakeholders (for example procuring entities' staff and suppliers) do hesitate to use e-procurement system due to diverse perceptions on critical success factors influencing adoption of the new system. According to Latif (2014), the diverse perceptions are based on psychological

reasons, fear of the unknown technology, supplier's reluctance to use the system and organizational concerns (procurement staff's opposition for perceived loss of power).

The study by Watuleke (2017) on the other hand reveals that the success of any new technology (for example e-procurement) adoption requires mutual perception of stakeholders on important critical success factors which influence the adoption of the new technology. The critical success factors include : for example coercive pressure (legal framework) of the country influences new technology adoption decisions (Tornatzky and Fleischer, 1990; Suleiman, 2015) perceived performance expectancy of the system influences new technology adoption decisions (Venkatesh*et al.,* 2003); relative advantage (perceived benefits) of the system influences new technology adoption decisions (Tornatzky and Fleischer,1990; Rogers, 2003; Suleiman, 2015); the attitude of top management and users towards implementation of the new system influence new technology adoption decisions (Tornatzky and Fleischer, 1990;Kassim and Hussin, 2013; Suleiman, 2015).

With regard to the paradigm shift towards the adoption of e-procurement in the Tanzanian public sector, it is important for the government leaders and policy makers to have a framework of analysis for decision making regarding stakeholders' perception on critical success factors influencing Tanzanian National e-Procurement System (TANePS) adoption. The empirical evidence reveals that in experimenting with new procurement system (for example TANePS), government leaders and policy makers need a framework of analysis for decision making pertaining to stakeholders' interests (Schooner *et al*., 2008) on important critical success factors which influence the adoption of the new procurement system. And stakeholders' interests should play role in decision making in terms of new public procurement system design, development, and reform *(ibid).* With that note, this study was guided by Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh *et al.* (2003); and the Technology, Organization and Environment model (TOE) by Tornatzky and Fleischer (1990).

BACKGROUND OF E-PROCUREMENT ADOPTION INITIATIVES IN TANZANIA

With regard to e-procurement adoption initiatives in Tanzania, the government, beginning in the mid-1990s, has initiated a number of procurement reforms in its public procurement system with the aim of making it more efficient, effective and transparent (The National Public Procurement Policy (NPPP), 2012). In addition, the government has been undertaking reforms in the public procurement legal framework, by amending the Public Procurement Act 2011 and its Public Procurement Regulations 2013 with the aim of supporting e-procurement which is more efficient, effective and transparent in terms of its performance and benefits (the National ICT Policy (NICTP, 2016)). The amendments of PPA 2011 and PPR 2013 in 2016 led to the implementation of TANePS in 2018. TANePS was piloted in 71 selected procuring entities situated in Arusha, Dar es Salaam, Dodoma, Mbeya and Mwanza during the financial year 2017/2018 (Public Procurement Regulatory Authority (PPRA), 2019). In addition, 257 procurement officers from 71 procuring entities and 1056 suppliers of common use items (goods) were trained for piloting the system during the financial year 2017/2018 *(ibid).*

Despite the amendments of public procurement legal frameworks (Schooner *et al.*, 2008) to focus on e-procurement adoption, the benefits that could be achieved from a successful e-procurement implementation in the public sector (Basheka *et al.*, 2012) and its positive contribution to the development of the public procurement process performance (Mujtaba, 2014), some stakeholders (procurement officers and suppliers) have been waving to adopt TANePS due to diverse perception. The diverse perception of procurement officers and suppliers on TANePS adoption was evidenced by the Public Procurement Regulatory Authority Annual Performance Evaluation Report for the financial year 2017/2018 which showed that only 730 (69.1 per cent) of the trained suppliers registered in the system and 326 (30.9 per cent) of the trained suppliers were reluctant to register in the system (PPRA, 2018). Additionally, 63. 4% per cent of the selected procuring entities for piloting TANePS were not implementing the system during the financial year 2017/2018 and 2018/2019 (PPRA, 2019). However, there was drop out of the registered suppliers in TANePS by 1.2% during the financial year 2018/2019 (*ibid*).

Regardless of the training which had been conducted by PPRA to empower procurement officers and suppliers on the use and application of TANePS during the financial year 2018/2019 and 2019/2020 respectively, the rate of adoption of the new public procurement system in all selected

procuring entities is still unconvinced. This situation is alarming to failure of TANePS adoption initiatives and needs attention to be paid to comprehend scientifically the existing challenges for its adoption in the country.

Currently, little of literature on e-procurement adoption in developing countries (Watuleke, 2017;Ibem*et al.* 2016; Azanlerigu and Akay, 2015;Ombat, 2015; Shale, 2014;Mgidlana, 2013; Kassim and Hussin, 2013), Tanzania in particular (Malekia, 2018; Suleiman, 2015) has focused either on buyers' perspective or suppliers' perspective and the focus on both buyers' and suppliers' perspective has been ignored.

Presently, in Tanzania, there is inadequate information with regard to the perception of stakeholders (procurement experts from procuring entities and suppliers) on critical success factors influencing TANePS adoption in the public sector which has focused on both buyers' (procurement experts' from procuring entities) and suppliers' perspective. If this inadequate information was not addressed, then a framework of analysis for decision making pertaining to stakeholders' (procurement experts' and suppliers') interests on critical success factors influencing public procurement system (TANePS) design, development and reform would not be comprehended.

Objectives of the Study

General Objective

The general objective of this study was to determine the buyers' (procurement experts') and suppliers' perception on critical success factors influencing TANePS adoption in public sector.

Specific Objectives

The following were the specific research objectives of the study:

i. To evaluate the influence of legal framework towards TANePS implementation in the public sector
ii. To assess the influence of performance expectancy towards TANePS implementation in the public sector
iii. To ascertain the influence of relative advantage (perceived benefits) towards TANePS implementation in the public sector

iv. To examine the influence of attitude towards TANePS implementation in the public sector

LITERATURE REVIEW

Definition of Key Terms

Critical Success Factors

Watuleke (2017) asserts that critical success factors represent a number of factors that determine a successful implementation of an e-procurement system in an institution, oversight of such factors may make implementation problematic. Critical success factors in the context of this study are the most important factors (legal framework, performance expectancy, relative advantage and the attitude) that determine a successful implementation of TANePS in public sector and misperception of those factors may make implementation more challenging.

E-procurement Adoption

Ibem *et al.* (2016) defined e-procurement adoption as the actual use of web-based technologies, tools or processes to support the execution of procurement activities. In the context of this study, e-procurement adoption is a decision to make full use of an innovation which consists of a series of steps (analyzing the requirements, designing the standard product, constructing the technical architecture, test workability of the system and implementing the system) from the formulation of the procurement strategy to the actual implementation of an internet-based procurement system by the government in conducting procurement functions.

This definition has been contextualized from the definitions of e-procurement by Morris (2000), PPA, 2011 and the definition of adoption by Rogers (2003). In addition, the series of steps have been contextualized from the study by Rajkumar (2001) who asserted that, once a decision has been made to implement e-procurement technology, a standard life cycle must be followed which includes planning or analyzing the requirements for the system. At this stage, key stakeholders are assembled to obtain their viewpoints and concerns also users of the e-procurement system are invited to share their views (Rajkumar, 2001). The second part of standard life cycle is defining or designing the standard product needs to be customized to link the gap between the standard product and functionality that suits the adopting e-procurement

system *(ibid).* The vendor and adopting company meet to set priorities of the functionalities to adopt first according to the cost of customization. Also, functional specifications are agreed upon before finalizing the contract *(ibid).*

The third part of standard life cycle is developing or constructing the technical architecture of the procurement system then inscribe the rules and regulations of procuring in the system. Modifications to the standard e-procurement system are to be done so the functionalities the adopting company desires can be added to the standard product. A test of workability of modification to the e- procurement system is conducted to get the confirmation of ultimate users of the system (Rajkumar, 2001). The last standard life cycle is implementing or deploying the system. At this atage, staff is trained and a pilot implementation of a small portion of procurement is done by the e-procurement system. If the testing process is satisfactory after adjustments, a bigger portion of the whole system undergoes a change. This continues until the whole system deploys the e-procurement (*ibid*).

Tanzania

According to the World Bank (2008), developing countries are all countries with low- and middle-income with gross national income (GNI) per capita below US$11,905. In the context of this study, Tanzania is one of the developing countries with low wealth and low level of e-procurement adoption for green supply chain in public sector.

Theoretical Literature Review

This study was guided by two theories; Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh *et al.* (2003) and the Technology, Organization and Environment (TOE) model by Tornatzky and Fleischer (1990). UTAUT uses four core determinants including performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) (Venkatesh *et al.,* 2003). With this fact, the theory is relevant to this study because it contains the determinant of adopting new technology (eg performance expectancy) which is useful in this study. Regardless of the relevance of the theory in this study, it does not focus on organizations (public sector) perspective in adopting new technology for public gains

and it does not show the relationship of its determinants and other critical success from organizational oriented model (eg TOE) in adopting new technology.

For the purpose of guiding this study which involves suppliers as individuals and procuring entities as organizations, Technology, Organization and Environment (TOE) Model was looked into to fill this gap. The TOE theory has been used by a large number of studies to investigate the adoption of, for example, Electronic Data Interchange (EDI), open systems, e-business and the main contribution of TOE is that it encourages the researcher to take the broader context into account in which innovation takes place (Masele, 2014). TOE theory has been criticized that, although it has been used to study the adoption of innovations, it does not provide concrete model describing the factors that influence the organizational adoption decision; it rather provides taxonomy for classifying adoption factors in their respective context (ibid). With this fact, the theory is relevant to this study because it contains the determinants of adopting new technology (legal framework, relative advantage, attitude of top management and users) which are useful in this study.

Regardless of the relevance of the theory in this study, it does not focus on individuals' (private) perspective in adopting new technology and it does not show the interaction of legal framework and other determinants from private (individual) oriented theory in adopting new technology. Therefore, this study intended to determine the buyers' and suppliers' perception on critical success factors influencing e-procurement adoption model for green supply chain in developing countries, Tanzania in particular. In order to accommodate both perspective and fill the existing theoretical and empirical gaps in literature, UTAUT and TOE model guided this study. Table 1 shows the theories' emphasis against missing important aspects.

Table 1 Theories' Emphasis against Missing Important Aspects

Theory	**Emphasis**	**Author**	**Missing Important Aspects**
Unified	Four core determinants including	Venkatesh *et al.*	Does not consider the

Theory of Acceptance and Use of Technology (UTAUT)	performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) for individual's (private) adoption of new technology	(2003);	public organizational' perspective and does not show the interaction of its determinants with legal framework, relative advantage and attitude in adopting new technology
Technology, Organizational and Environmental Model (TOE)	Three context group elements; organizational (attitudes), technological (relative advantage/perceived benefits) and external environment (legal framework/coercive pressure,), that are posited to interact with each other and influence new technology decisions adoption for public organizational	Tornatzky and Fleischer (1990)	Does not consider the individuals' perspective and does not show the concrete model with determinants from private (individual) oriented theory (eg. UTAUT) in adopting new technology

Source: Researcher' Theoretical Review, 2019

Empirical Literature Review

Current studies concerning e-procurement adoption have not been focusing on developing a model for green supply chain. Little of literature on e-procurement adoption in developing countries (Watuleke, 2017;Ibem *et al.*, 2016; Azanlerigu and Akay, 2015; Shale, 2014;Mgidlana, 2013; Rotich and Okello. (2015); Kassim and Hussin, 2013; Ombat, 2015;), Tanzania in particular (Malekia, 2018; Suleiman, 2015) has focused either on buyers' perspective or suppliers' perspective and the focus on both buyers'-suppliers' perspective and the use of Partial Least Squares Structural Equation Modelling (PLS-SEM) and SmartPLS 3 software for data analysis. have been ignored. Table 2 shows the empirical literature' (EL) against (Gap) missing important aspects.

Table 2 Empirical Literature' (EL) against (Gap) Missing Important Aspects

Title	Author (s)	Country	Missing Literature (Gap)
Factors Affecting the Adoption of E-Procurement Technologies From the Supplier Perspective.	Mgidlana (2013)	South Africa	Buyers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
A Success Model for the Malaysian Government E-Procurement System: The Buyer Perspective	Kassim and Hussin (2013).	Malaysia	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
Role of E-Procurement Strategy on the Performance of State Corporations in Kenya. The Buyer Perspective	Shale (2014)	Kenya	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
Prospects and Challenges of E-Procurement in Some Selected Public Institutions in Ghana. The Buyer Perspective	Azanlerigu and Akay (2015)	Ghana	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
Relationship between E-Procurement Systems and Performance of Procurement Function in Commercial Banks in Kenya. The Buyer Perspective	Ombat (2015)	Kenya	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
Analysis of Use of E-Procurement on Performance of the Procurement	Rotich and Okello. (2015).	Kenya	Suppliers' perspective and the use of PLS SEM

Functions of County Governments: Buyer Perspective			with the help of SmartPLS 3 software were ignored
Adoption of E-procurement and Value Addition: Tanzania Context Buyer Perspective	Suleiman (2015).	Tanzania	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
Factors Influencing E-Procurement Adoption in the Nigerian Building Industry. The Buyer Perspective	Ibem *et al.* (2016)	Nigeria	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
E-procurement: Evolution and Adoption. A review of Literature. The Buyer Perspective	Watuleke (2017)	Uganda	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored
E-Procurement as Anti-Corruption Tool in Public Procurement in Tanzania. Buyer Perspective	Malekia (2018)	Tanzania	Suppliers' perspective and the use of PLS SEM with the help of SmartPLS 3 software were ignored

Source: Researcher' Empirical Literature Review, 2019

Theoretical and Empirical Gaps

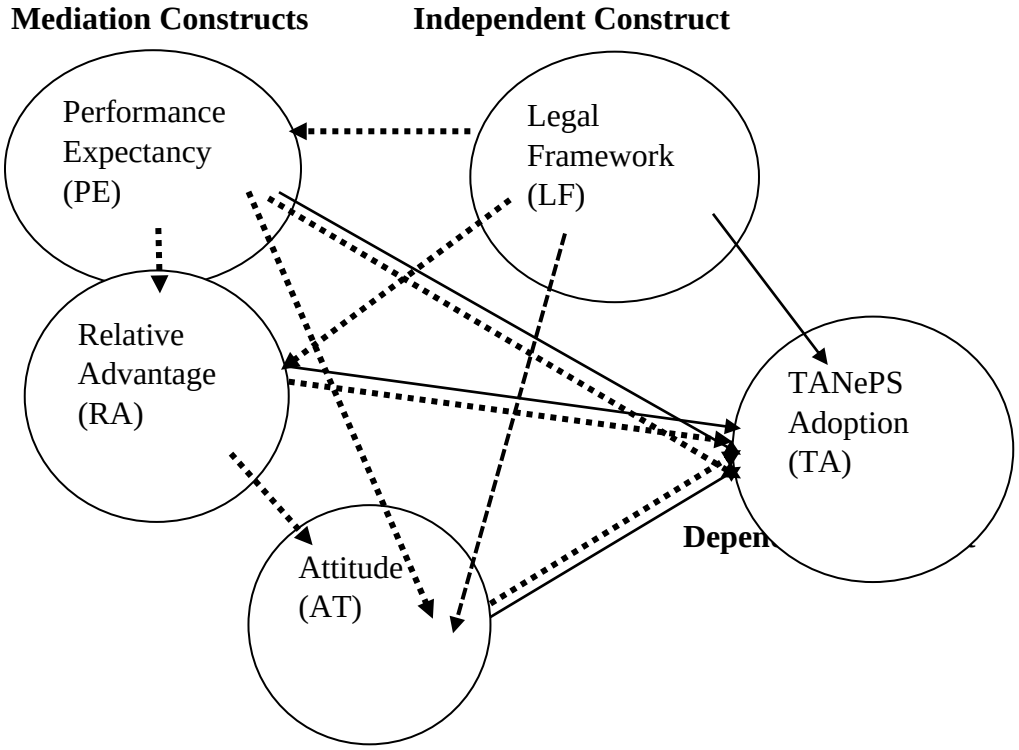
The existing theories and theoretical models have inadequately focused on both stakeholders' (procurement experts from public sector and suppliers from private sector) perception in adopting new technology. In addition, little current existing empirical literature with regard to e-procurement adoption focuses on suppliers' perspective or on buyers' perspective and studies which combine both suppliers'-buyers' perspectives and the use of PLS-SEM with the help of

SmartPLS on critical success factors influencing e-procurement adoption model for green supply chain are insufficient. Therefore, this study has included both the perception of buyers (procurement experts from public sector) and suppliers (from private sector) on the legal on critical success factors influencing e-procurement adoption model for green supply chain in developing countries, Tanzania in particular a substance that the existing literature is explaining inadequately. Furthermore, the integrated e-procurement adoption model for green supply chain has been well comprehended in this study of which the existing theories and theoretical models are clarifying ineffectively.

Theoretical Model

The proposed theoretical model for this study based on critical thinking of the researcher after reviewing theoretical and empirical literature. Figure 1 shows the theoretical model for this study.

Figure 1. Theoretical Model



Key

Direct relationships

Indirect relationships

Source: Researcher's Own Theoretical Model, 2019

Hypotheses Generated from the Proposed Theoretical Model

H_{1a}: Legal framework (LFs) positively and directly influences TANePS adoption in the public sector.

$H_{1b:}$ In the presence of Performance Expectancy (PE), Relative Advantages (RA) and Attitude (AT), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1c:}$ In the presence of Performance Expectancy (PE) and Relative advantages (RA), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1d:}$ In the presence of Performance Expectancy (PE), and Attitude (AT), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1e:}$ In the presence of Relative Advantages (RA) and Attitude (AT), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1f:}$ In the presence of Performance Expectancy (PE), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1g:}$ In the presence of Relative Advantages (RA), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

$H_{1h:}$ In the presence of Attitude (AT), Legal framework (LFs) positively and indirectly influences TANePS adoption in the public sector.

H_{2a}: Performance expectancy (PE) positively and directly influences TANePS adoption in the public sector

H_{2b}: In the presence of Relative Advantage (RA) and Attitude (AT), Performance Expectancy (PE) positively and indirectly influences TANePS adoption in the public sector.

H_{2c}: In the presence of Attitude (AT), Performance Expectancy (PE) positively and indirectly influences TANePS adoption in the public sector.

H_{3a}: Relative advantage (RA) positively and directly influences TANePS adoption in the public sector.

$H_{3b:}$ In the presence of Attitude (AT) Relative advantage (RA) positively and indirectly influences TANePS adoption in the public sector.

$H_{4:}$ Attitude (AT) positively and directly influences TANePS adoption in the public sector.

Constructs and Survey Items

Table 3 shows the constructs and survey items for the study.

Table 3 Constructs and Survey Items

Construct	Definition	Survey Item	Citation
Legal Framework	…the entire set of legal instruments that contains rules concerning the process of acquiring goods, works and services …includes Acts and Regulations	I understand TANePS was developed in accordance with the requirement of the Public Procurement Act (PPA) 2011 and its amendment 2016	Mrope (2018)
		I understand TANePS supports various public procurement procedures as directed by the Public Procurement Regulation (PPR), 2013 and its amendment 2016	
		I understand the rules of TANePS application are basing on the Public Procurement Act (PPA) 2011 and its amendment 2016	
		I understand the regulations of TANePS application are basing on the Public Procurement Regulation (PPR), 2013 and its amendment 2016	
Performance Expectancy	…is defined as a degree to which using technology will provide benefits to consumers in performing certain activities, and is theorized to influence behavioral intention to use technology	I find TANePS is user friendly in procurement process	Venkatesh *et al*. (2012)
		I find TANePS helps in transaction of money more quickly	
		I find TANePS removes chances of corruption	
		I find TANePS reduces procurement cycle time	
Relative Advantage	…is defined as the extent to which the innovation is viewed by users to be better than the existing	I find TANePS reduces transaction errors in public procurement process	(Rogers, 2003; Suleim
		I find TANePS reduces transaction costs in public procurement process	

	idea; i.e. perceived cost and benefits However, perceived benefits include 'direct benefits' like reduction in transaction errors and transaction costs, improved data accuracy and faster tendering process	I find TANePS improves data accuracy in public procurement process	an 2015).
		I find TANePS faster tendering process in public procurement process	
Attitude	…in this context of study means having positive or negative mind set of buyers or suppliers towards TANePS adoption in public sector	I like the idea of using TANePS in public procurement process	Kassim and Hussin (2013)
		I intend to continue learning how to use TANePS in public procurement process	
		I plan to continue using TANePS in public procurement process.	
		I will continue taking advantages of TANePS in improving my efficiency in public procurement process.	
		I will continue taking advantages of TANePS in improving my effectiveness in public procurement process.	
TANePS Adoption	…is a decision to make full use of an innovation which consists of a series of steps from the formulation of the procurement strategy to the actual implementation of an internet-based procurement system" by the Government in conducting procurement	When I use TANePS, there is better procurement services due to improved performance services	Kassim and Hussin (2013).
		When I use TANePS, human efforts are reduced due to increased efficiency	
		When I use TANePS, bureaucratic procedures are reduced due to increased efficiency	
		When I use TANePS, processing time is reduced due to increased efficiency	
		When I use TANePS, more opportunities for	

	functions. E-procurement in public sector comprises the following success factors; service performance, efficiency, transparency and information quality	potential suppliers are realized due to increased transparency	
		When I use TANePS, the information is more comprehensive due to improved information quality	
		When I use TANePS, the information is more accurate due to improved information quality	
		When I use TANePS, the information is more consistent due to improved information quality	

Researcher's Literature Review, 2019

RESEARCH METHODOLOGY

This study adopted positivism philosophy and cross-sectional survey research design. The study also used non-probability (purposive) sampling and probability (stratified) sampling techniques. Questionnaires with closed ended questions and documentary review was used for data collection. The collected data were analyzed by using descriptive statistics with the help of Statistical Package for Social Sciences (SPSS) software Version 21 and by using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the help of SmartPLS 3 software.

Area of the Study

The research was conducted in Tanzania because of the initiatives shown of improving the public procurement systems which led to piloting TANePS adoption in procuring entities. In addition, 71 procuring entities situated in Arusha, Dar es Salaam, Dodoma, Mbeya and Mwanza were selected for piloting TANePS adoption during the financial year 2017/2018. Therefore, the study was conducted in those five cities of Tanzania from which suppliers and procurement experts working with procuring entities were trained how to use and interact with TANePS. With this note, the data and information required for this study were comprehensive.

Target Population and Sample Size

Targeted population was 987 of whom 730 were suppliers who were trained and registered in TANePS and 257 were procurement experts who were trained with regard to TANePS application (PPRA, 2019). The sample size was obtained using Yamane formula (Magigi, 2015) given by: $n = N / (1 + N (e)^2)$ Where n=the required sample, N= Target Population, e=Level of Precision assuming a 95% confidence level and precision of ±5%, Given N=987 (PPRA, 2019) then n=285 (approximated) from whom 211 (approximated) were expected to be suppliers registered in TANePS and 74 (approximated) were expected to be procurement experts.Table 4 shows the expected sample size.

Table 4 Expected Sample Size

Type of Respondent	**Targeted Population**	**Expected Sample Size (ESS)**	**Percentage (%) of (ESS)**
Procurement Experts	257	74	7.5
Suppliers	730	211	21.4
Total	**987**	**285**	**28.9**

Researcher's Expected Sample Size, 2019

Sampling Design and Procedures

The study used purposive and stratified sampling techniques. The method of purposive sampling was used to develop the sample of the research under discussion and to meet the objectives of the study. Freedman *et al.* (2007) assert that, the category of non-probability sampling techniques, sample members are selected on the basis of their knowledge, relationships and expertise regarding a research subject. With this context, the respondents of this study were procurement experts from selected procuring entities under piloting TANePS adoption and registered suppliers in TANePS. Then stratified sampling technique was used of which respondents were grouped into five strata from five cities (for trained procurement experts from selected procuring entities) and from each procuring entity respondents were selected randomly. Additionally,

suppliers were grouped into two strata (registered suppliers with telephone number only and registered suppliers with both telephone number and e-mail address). The reason for using this sampling technique was to ensure each trained procurement expert and registered supplier in TANePS was fairly represented because was regarded to have required knowledge and skills pertaining piloting TANePS adoption in the country. However, stratified sampling technique was used based on the minimum number of respondents required (40) per rule of thumb suggested by Hair *et al.* (2014).

Variables, Indicators, Level of Measurement, Data Analysis Method and Tool

Table 5 shows variables, indicators, level of measurement, data analysis method and tool.

Table 5 Variables, Indicators, Level of Measurement, Data Analysis Method and Tool

Dependent Variable	**Indicators**	**Level of Measurement**	**Data Analysis Method**	**Data Analysis Tool**
TANePS Adoption	service performance, efficiency, transparency and information quality	Ordinal	PLS-SEM	SmartPLS
Independent Variable	**Indicators**	**Level of Measurement**	**Data Analysis Method**	**Data Analysis Tool**
Legal Framework	Influence of PPA 2011 and its amendment PPA 2016, on TANePS adoption and its operations Influence of PPR 2013 and its amendment PPR 2016 on TANePS adoption and its operations	Ordinal	PLS-SEM	SmartPLS

Performanc e expectancy	Simplify procurement process, simplify payment process, remove chances of corruption, reduce procurement cycle time	Ordinal	PLS-SEM	SmartPLS
Relative Advantage	Reduction in transaction errors, transaction costs, improved data accuracy, faster tendering process,	Ordinal	PLS-SEM	SmartPLS
Attitude	Like the system, Intend to learn, Plan to use, Intend to take advantages	Ordinal	PLS-SEM	SmartPLS

Source: Researcher' Construct, 2019

FINDINGS

The study used fifty (50) respondents for piloting data analysis from whom 15 were procurement experts and 35 were suppliers. The data analysis of 50 respondents was possible because the rule of thumb suggested by Hair *et al.* (2014) for applying PLS-SEM and SmartPLS 3 software in data analysis was useful which requires number of indicators of the exogenous latent construct (with maximum indicators) times ten equals to be the minimum number of the sample size for the research model to be tested its relationships of constructs and indicators. Therefore, only 40 respondents were required to fulfil the minimum requirement of the reflective model of this study for data analysis by using PLS-SEM and Smart PLS 3 software due to the fact that the exogeneous latent construct of the research model (legal framework) had four indicators. The number of procurement experts and suppliers for piloting data analysis based on the ratio of the expected sample size times the minimum number of respondents required (40) per rule of thumb suggested by Hair *et al.* (2014).

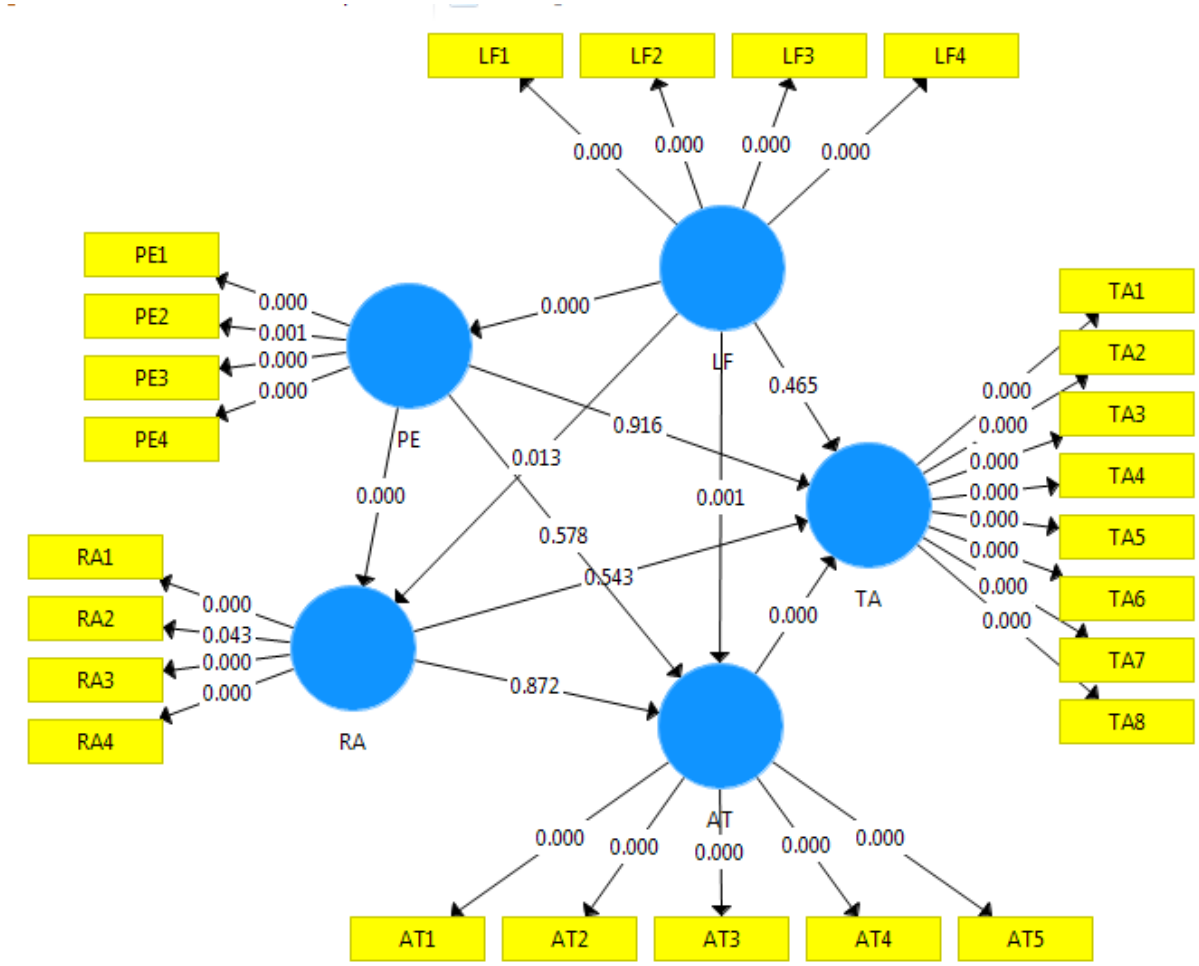
Pilot Study Findings for Assessing Reflective Measurement Models

SmartPLS 3 software was used to check for internal consistency reliability of which the report after running PLS algorithm the results of Cronbach ‘s Alpha and composite reliability for all constructs were above 0.7 which indicated that the measurement instruments were reliable. SmartPLS also was used to check the convergent validity in piloting data analysis of which the Average Variance Extracted (AVE) was higher than 0.5 which indicated for each construct’s validity was able to converge in order to explain the variance of its items.

Pilot Study Findings for Assessing Reflective Structure Models

SmartPLS 3 software was used to check for Coefficient of Determination (R^2) and size of Path Coefficient of which the report after running PLS algorithm the results of Coefficient of Determination (R^2) for all constructs were above 0.25 as recommended by Hair *et al*. (2018). In addition, significant of Path Coefficient was checked after running bootstrapping. The results showed that three hypotheses were rejected and eleven (78.6%) hypotheses were accepted. The piloted data for analysis were not included in the actual data analysis of the study findings. Figure 2 shows the results of significant of Path Coefficient after running bootstrapping.

Figure 2 Significant of Path Coefficient after Running Bootstrapping



Source: Pilot Data Analysis, 2019

Significant of Path Coefficient (Hypotheses Testing for pilot Analysis)

Table 6 shows the significant of path coefficient (hypotheses testing for pilot analysis)

Table 6 Significant of Path Coefficient (Hypotheses Testing for Pilot Analysis)

Hypothesis	Path	P-value	Remark
$H1_a$	LF -> TA	0.465	Rejected
$H1_b$	LF->PE ->RA ->AT->	0.000	Accepted

	TA		
$H1_c$	LF->PE ->RA -> TA	0.000	Accepted
$H1_d$	LF->RA ->AT-> TA	0.000	Accepted
$H1_e$	LF->PE ->AT-> TA	0.000	Accepted
$H1_f$	LF->PE -> TA	0.000	Accepted
$H1_g$	LF-> RA -> TA	0.000	Accepted
$H1_h$	LF ->AT-> TA	0.000	Accepted
$H2_a$	PE->TA	0.916	Rejected
$H2_b$	PE ->RA -> TA	0.000	Accepted
$H2_c$	PE ->RA->AT -> TA	0.000	Accepted
$H3_a$	RA -> TA	0.543	Rejected
$H3_b$	RA ->AT-> TA	0.000	Accepted
H4	AT-> TA	0.000	Accepted

Source: Pilot Hypothesis Testing Results, 2019

Respondents' Rate

Table 7 shows the rate of respondents after actual data collection.

Table 7 Respondents' Rate

Type of Respondent	**Expected Sample Size (ESS)**	**Actual Sample Size (ASS)**	**Percentage (%) of (ASS)**
Procurement Expert	74	100	35.1
Suppler	211	57	20
Total	**285**	**157**	**55.1**

Study's Actual Sample Size, 2019

The study used one hundred fifty-seven (157) respondents for data analysis from whom 100 were procurement experts and 57 were suppliers. Justification of the sample size used based on the rule of thumb suggested by Hair *et al.* (2014) for applying PLS-SEM and SmartPLS 3 software in data analysis which requires number of indicators of the exogenous latent construct (with maximum indicators) times ten equals to be the minimum number of the sample size for the research model to be tested its relationships of constructs and indicators. In this study, only 40 respondents were required to fulfil the minimum requirement for data analysis by using PLS-SEM with the help of Smart PLS 3 software because the exogeneous latent construct of the research model (legal framework) had four indicators.

The number of procurement experts and suppliers used in this study exceeds the minimum number of respondents required in each case per rule of thumb suggested by Hair *et al.* (2014). However, PLS-SEM offers extensive potential for analyzing large datasets, therefore, respondents more than 40 in each case was considered as potential for data analysis. The number of procurement experts and suppliers for data analysis of this study based on the ratio of the expected sample size times the minimum number of respondents required (40) per rule of thumb suggested by Hair *et al.* (2014).

Education Level of Respondents against Type of Respondent

Table 8 shows the education level of respondents against type of respondent. The findings imply that the information and data provided by the respondents for this study were actual and comprehensive.

Table 8 Education Level of Respondents * Type of Respondent Cross Tabulation

	Type of respondent	**Total**

		Procuring Entity' Staff (Procurement Experts)	Supplier	
Education Level of Respondents	Standard Seven	0	4	4
	Secondary level	0	15	15
	Certificate Level	0	5	5
	Diploma Level	8	14	22
	Degree Level	50	15	65
	Master's Degre	41	4	45
	Ph.D Level	1	0	1
Total		**100**	**57**	**157**

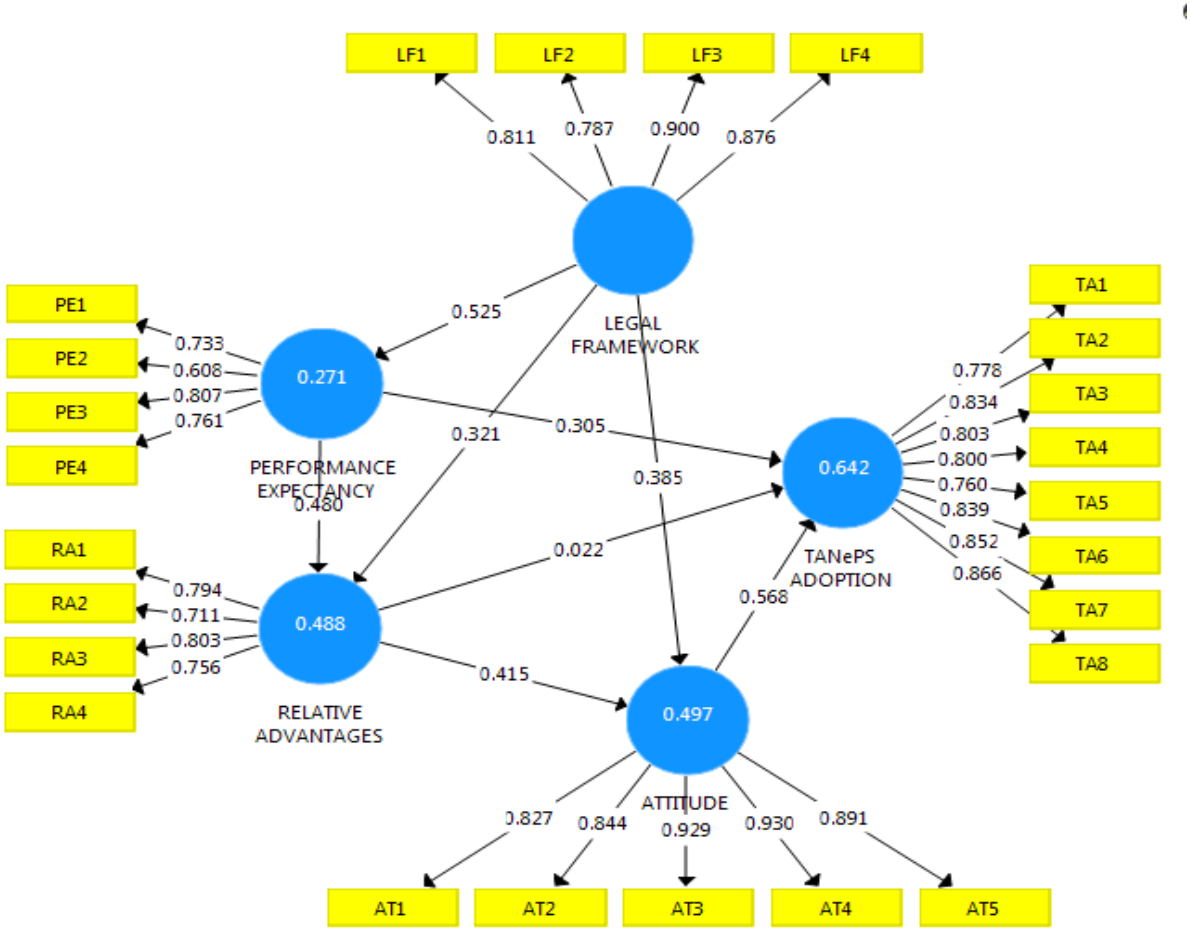
Source: Researh Findings, 2019

Assessing Reflective Measurement Models for the Study

Indicator's (Loadings) Reliabilities

After executing PLS algorithm, Figure 2 shows all indicators loadings of the constructs of the research model are above 0.708 as recommended except PE2 which is 0.608. Therefore, each construct explains more than 50 percent of the indicator's variance, thus providing acceptable item reliability (Hair *et al*., 2018).

Figure 2 Indicator's (Loadings) Reliabilities



Source: Researh Findings, 2019

Summary of Cronbach's Alpha, Composite Reliability and AVE

Table 9 shows the summary of Cronbach's Alpha, Composite Reliability and AVE

Table 9 Summary of Cronbach's Alpha, Composite Reliability and AVE

	Cronbach's	Composite	Average Variance Extracted

	Alpha>0.7	Reliability>0.7	(AVE)>0.5
AT	0.929	0.947	0.781
LF	0.859	0.904	0.704
PE	0.71	0.82	0.534
RA	0.767	0.851	0.588
TA	0.928	0.941	0.667

Source: Researh Findings, 2019

Table 10 shows the HTMT less than 0.9 as recommended for structural models with constructs that are conceptually very similar, such as cognitive satisfaction, affective satisfaction, loyalty and others of similar.

Table 10 Heterotrait-Monotrait Ratio (HTMT)

	AT	LF	PE	RA
LF	0.692			
PE	0.727	0.658		
RA	0.745	0.697	0.854	
TA	0.82	0.565	0.79	0.675

Source: Researh Findings, 2019

Assessing Structural Models

Collinearity Statistics (VIF)

Table 11 shows VIF values of which only two indicators AT3 and AT 4 out of five for the construct AT are above 5 values.

Table 11 Collinearity Statistics (VIF) for Inner Model<5

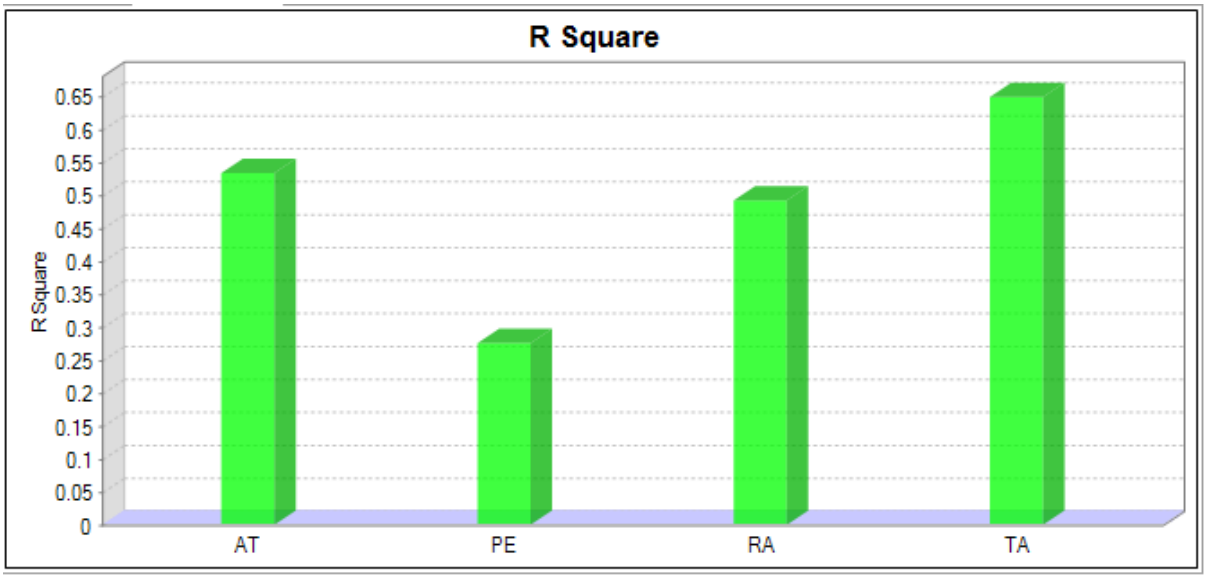
	AT	PE	RA	TA
AT				2.144
LF	1.585	1.000	1.381	1.818
PE	1.829		1.381	1.949
RA	1.97			2.154

Source: Researh Findings, 2019

R^2 Value of the Endogenous Constructs

Figure 3 indicates R^2 values that predicts perception and is more than 0.25 as recommended by Hair *et al*. (2018) in each endogenous construct for this research model.

Figure 3 Value of the Endogenous Constructs



Source: Researh Findings, 2019

f Square

Table 12 shows the f^2 effect size of partial and full mediation of the constructs in this research model of the study. As a rule of thumb, values higher than 0.02, 0.15, and 0.35 depict small, medium, and large f^2 effect sizes (Hair *et al*., 2018).

Table 12 f Square

	AT	PE	RA	TA
AT				0.444

LF	0.1	0.382	0.142	0.001
PE	0.1		0.324	0.143
RA	0.1			0.001

Source: Researh Findings, 2019

Q Square for Endogenous Construct

Table 13 shows the values of Q^2 for each endogenous construct which is more than zero as recommended.

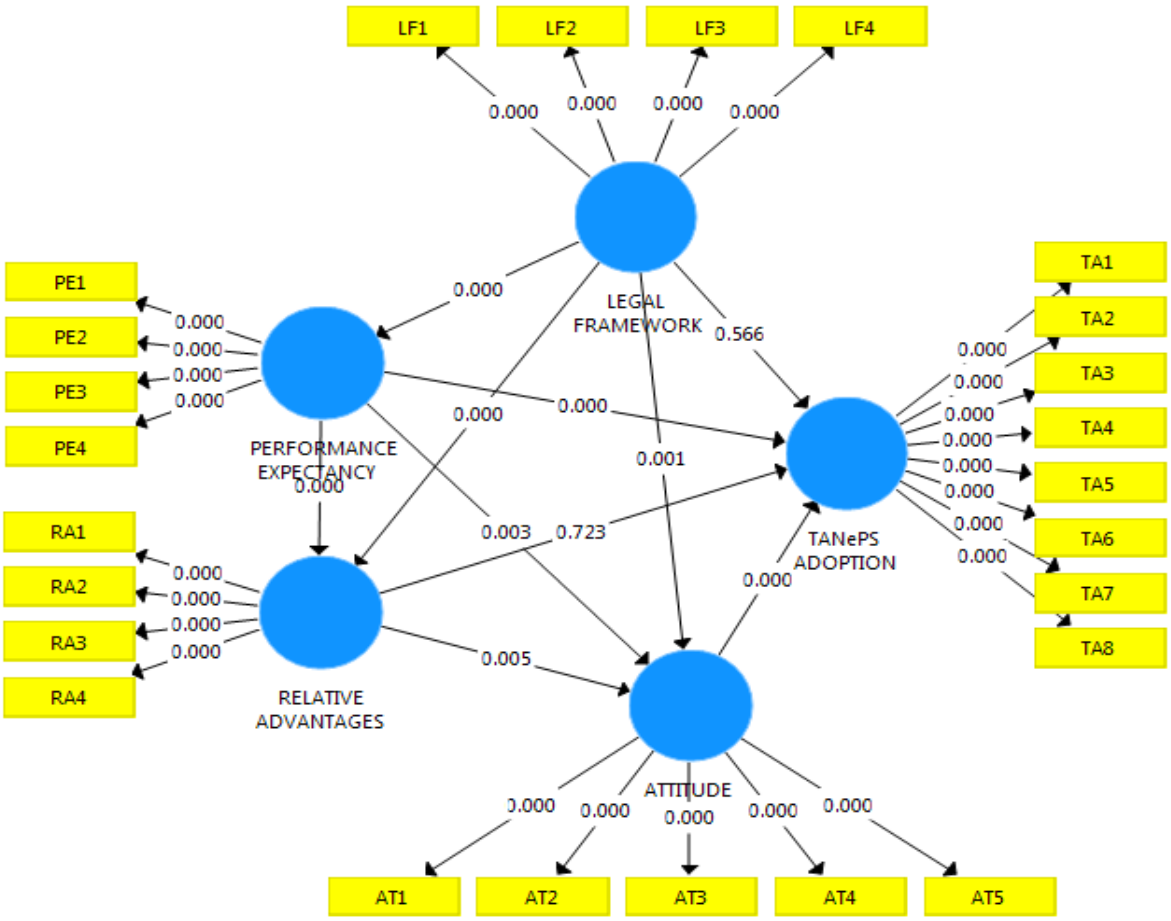
Table 13 The Values of Q Square for Endogenous Construct

	SSO	**SSE**	**Q^2 (=1-SSE/SSO)>0**
AT	785	488.553	0.378
LF	628	628	
PE	628	546.055	0.13
RA	628	469.427	0.253
TA	1,256.00	757.551	0.397

Source: Researh Findings, 2019

Figure 4 and Figure 5 show the statistical significance and relevance of the path coefficients of the research model respectively. The results in figure 4 show that two direct hypothesized relationships were rejected. However, the results in figure 5 show that one hypothesis has negative direction towards TANePS adoption.

Figure 4 Statistical Significance of the Hypothesized Relationships



Source: Researh Findings, 2019

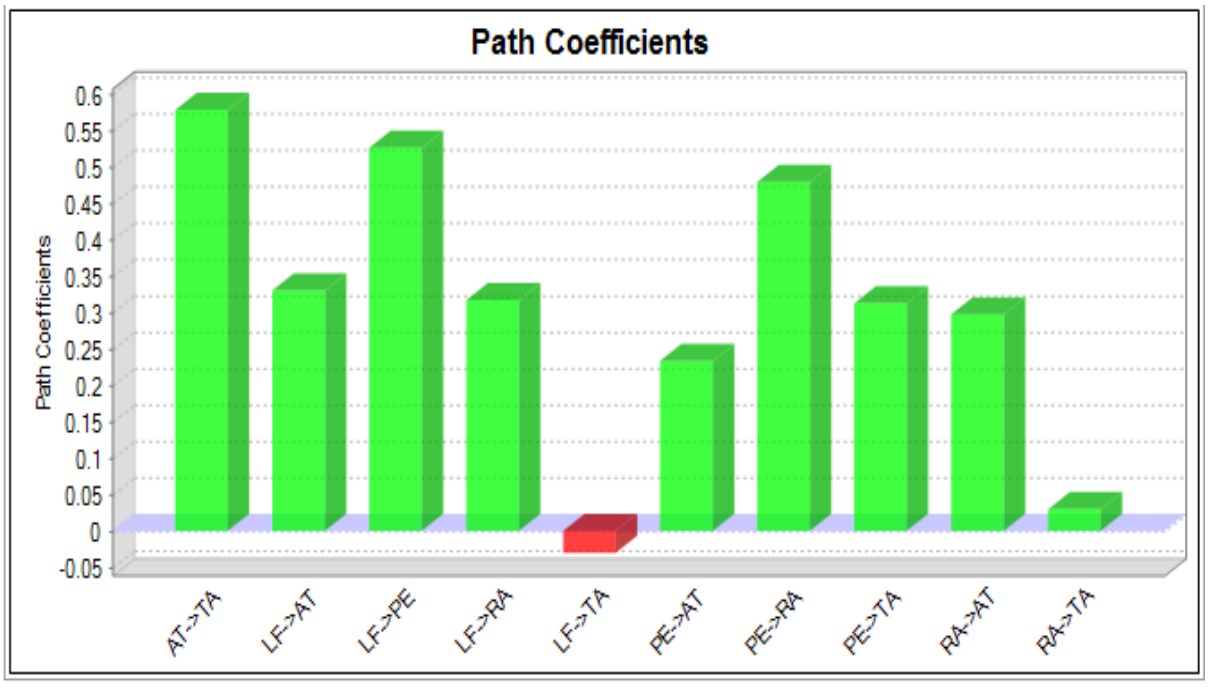
Findings of Hypotheses from the Theoretical Model

Hypothesis	Path	P-value	Remark
$H1_a$	LF -> TA	0.566	Rejected
$H1_b$	LF->PE ->RA ->AT-> TA	0.000	Accepted
$H1_c$	LF->PE ->RA -> TA	0.000	Accepted
$H1_d$	LF->RA ->AT-> TA	0.000	Accepted
$H1_e$	LF->PE ->AT-> TA	0.000	Accepted

$H1_f$	LF->PE -> TA	0.000	Accepted
$H1_g$	LF-> RA -> TA	0.000	Accepted
$H1_h$	LF ->AT-> TA	0.000	Accepted
$H2_a$	PE->TA	0.000	Accepted
$H2_b$	PE ->RA -> TA	0.000	Accepted
$H2_c$	PE ->RA->AT -> TA	0.000	Accepted
$H3_a$	RA -> TA	0.723	Rejected
$H3_b$	RA ->AT-> TA	0.000	Accepted
H4	AT-> TA	0.000	Accepted

Source: Researh Findings, 2019

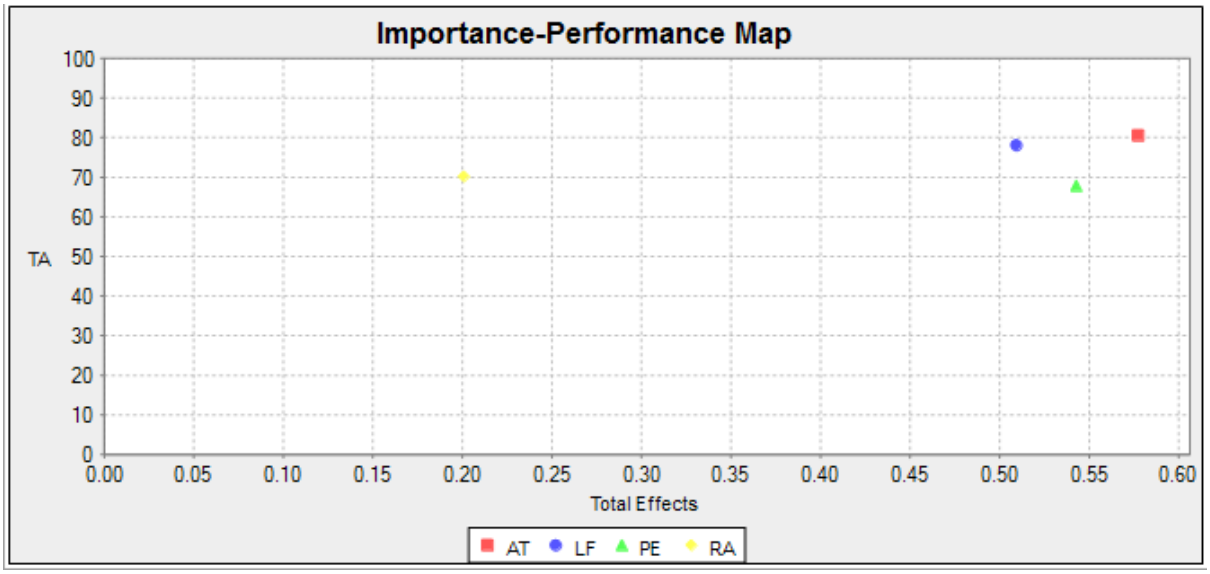
Figure 5 Path Coefficients



Source: Researh Findings, 2019

Figure 6 shows the constructs legal framework, performance expectancy and attitude are more important and their performance is high to the research model. However, the construct relative advantage is not more important but highly needed in terms of its performance for the research model.

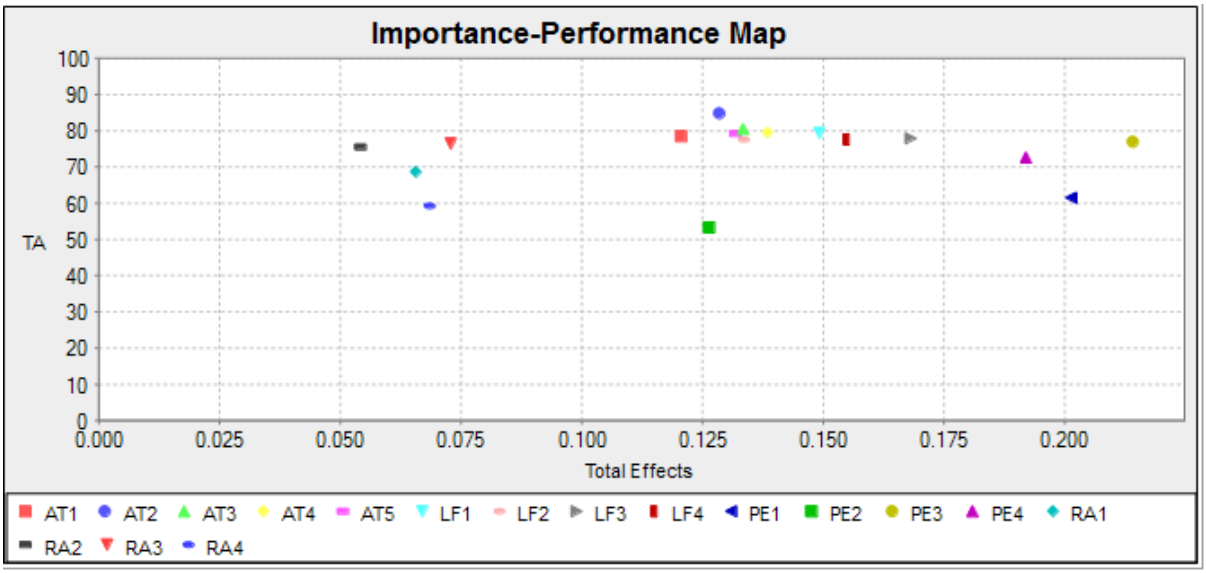
Figure 6 Importance-Performance Map (TA) (Constructs Standardized Effects)



Source: Researh Findings, 2019

Figure 7 shows the indicators of the construct's legal framework, performance expectancy and attitude are more important and their performance is high to the research model. However, the indicators of the construct relative advantage are not more important but they have high performance for the existence of the research model.

Figure 7 Importance-Performance Map (TA) (Indicators Standardized Effects)

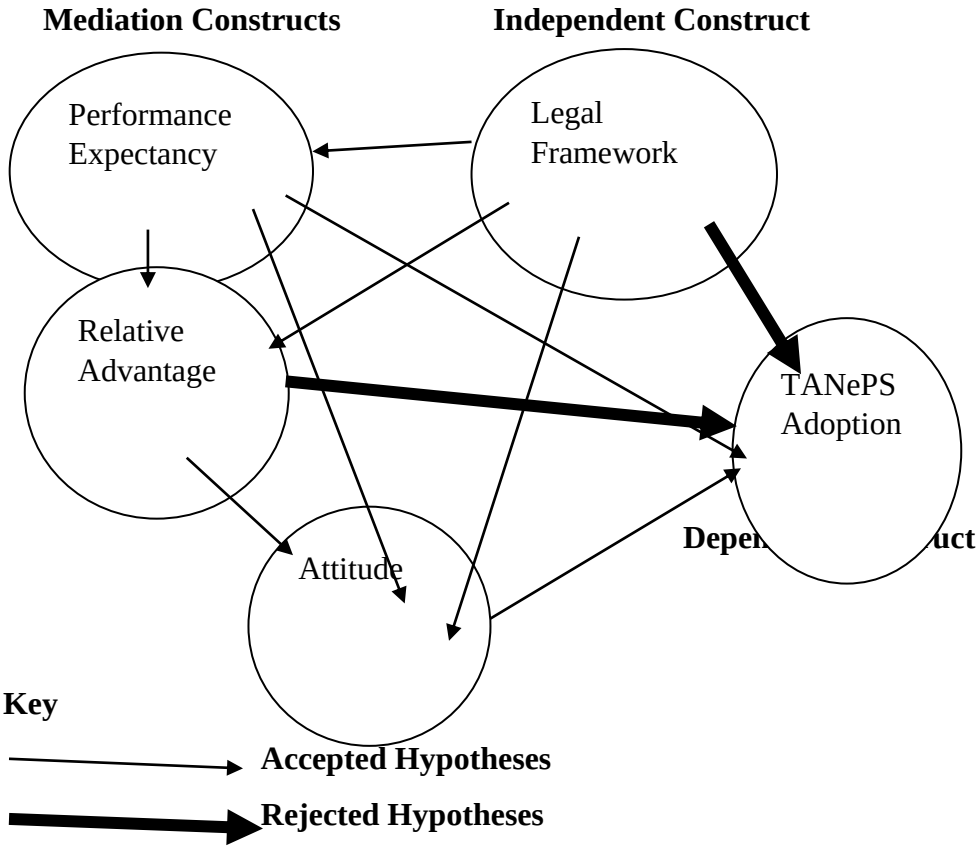


Source: Researh Findings, 2019

DISCUSSION OF FINDINGS

The e-Procurement Adoption Model for Green Supply Chain of this study has been formulated based on the findings, the existing empirical literature and selected relevant theories. From the proposed model, fourteen (14) hypotheses were formulated of which twelve (12) (85.7%) of them were very significant. This model is valid to buyer-supplier perspective or buyer perspective, or supplier perspective in evolution of the public procurement process from traditional to e-procurement context. Additionally, the model is valid when researchers use a method for data analysis which accommodates direct and indirect relationships like PLS-SEM with the help of SmartPLS 3 software. However, validity of this model is not limited to the geographical area in the world. Figure 8 Shows the final e-Procurement Adoption Model.

Figure: 8 Final e-Procurement Adoption Model



Source: Researcher's Own Theoretical Model, 2019

Influences of Hypothesized Critical Success Factors on TANePS Adoption

Legal Framework (LF)

Legal framework was postulated to positively and indirectly influence TANePS adoption in public sector through performance expectancy, relative advantage and attitude. The findings were positively and statistically significant (p-value = 0.000). These findings were similar to the previous studies like the study by Azanlerigu and Akay (2015) on prospects and challenges of e-procurement in some selected public institutions in Ghana and the study by Masele (2014) on Adoption of Green E-Business Applications for Sustainable Tourism Development in Developing Countries the Case of Tanzania. Although these findings of this study were similar with some other previous studies on technology adoption for public benefits, this study has added new knowledge with regard to the influence of legal framework on new technology

(TANePS) adoption in two perspective; public and private sector gains of which the existing theories and empirical studies are revealing vainly.

Performance Expectancy (PE)

In this study performance expectancy was postulated to positively, directly and indirectly influence TANePS adoption in public sector. The findings were found positive and statistically significant (p-value = 0.000). The findings of this study differ from the previous studies for example the study by Taluka (2016) on understanding factors influencing consumer behavioural intention to use mobile payment services in rural Tanzania: Which revealed that performance expectancy (PE) was positive but not statistically significant. In addition, the study by Masele (2014) on Adoption of Green E-Business Applications for Sustainable Tourism Development in Developing Countries the Case of Tanzania defined Performance Expectancy or Perceived Usefulness is the extent to which a person believes that using a particular system will enhance his or her job performance.

The study by Masele (2014) posited that the higher the performance expectancy among the small and medium tourism enterprises, the higher the influence on intention to adopt and use green e-business. The findings however, showed insignificant influence of performance expectancy on green e-business adoption. Although these findings differ with some other studies on technology adoption for private benefits, the UTAUT postulated performance expectancy to influence new technologies adoption in private sector. Therefore, this study has added new knowledge with regard to the influence of performance expectancy on new technology (TANePS) adoption in two perspective; public and private sector of which the existing theories and empirical studies are illuminating ineffectively.

Relative Advantage (RA)

In this study relative advantage was postulated to positively, directly and indirectly influence TANePS adoption in public sector. The findings were positively and insignificant for direct influence of TANePS adoption in public sector (p-value was 0.723). On the other hand, the

findings were positively and significant for indirect influence of TANePS adoption in public sector through attitude as mediator (p-value was 0.000). These findings correspond to the previous studies' findings for example the study by Ibem *et al*. (2016) on factors influencing e-procurement adoption in the Nigerian building industry revealed that the perceived benefits of e-procurement were the reason why most organizations in the construction industry use it in Nigeria.

The study by Ibem *et al*. (2016) suggests that the decision to adopt e-procurement by organizations in the Nigerian construction industry is partly influenced by the associated benefits in enhancing efficiency in project delivery, eliminating geographic barrier to participation in procurement activities and improving effective communication among project team member. In addition, the study by Intharaksa (2009) on using diffusion of innovation theory to explain the degree of faculty adoption of web-based instruction in a Thai University revealed that one of the basic attributes of innovation perceived to speed up web-based instruction rate of adoption was relative advantage. Although these findings are similar with some other studies on technology adoption for public and private benefits, the TOE postulated relative advantage as part of technological factor which influences new technologies adoption in public sector. Therefore, this study has contributed new knowledge with regard to the influence of relative advantage on new technology (TANePS) adoption in two perspective; public and private sector of which the existing theories and empirical studies are enlightening ineffectually.

Attitude (AT)

In this study attitude was postulated to positively and directly influence TANePS adoption in public sector. The findings were positively and directly significant for influence of TANePS adoption in public sector (p-value was 0.000).These findings are similar to the findings of the study by Kassim and Hussin (2013) on a success model for the Malaysian Government e-procurement system revealed that user attitude has always been found to have a strong, direct and positive effect with behaviour and there is link between attitude and behavior.

However, user attitude is the fundamental in attitudinal research and has been supported in a wide variety of settings. In addition, Kassim and Hussin (2013) assert that the attitude is still

significant in determining the public e-procurement system use among the agencies and this can be clarified by feelings of the top management as one of the users, and the perceptions from other users on the system like suppliers that are accumulated to form a cumulative decision that either accelerate or hold up the use decision. Although these findings are similar with some other studies on technology adoption for public benefits, the TOE postulated top management attitude as part of organizational factor which influences new technologies adoption in public sector. Therefore, this study has contributed new knowledge with regard to the influence of attitude on new technology (TANePS) adoption in two perspective; public and private sector of which the existing theories and empirical studies are informative indecisively.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Basing on the specific research objectives of this study, the UTAUT and TOE model adopted for the study, the hypothesized relations of the research model of the study and the findings, it is concluded that the study has significant contribution in terms of filling the theoretical and empirical knowledge gaps. In addition, the UTAUT and TOE model have significant contribution to the achievement of the specific objectives of this study. This would have practical implications in terms of public procurement policy implementation and applicability of TANePS in the public sector. The recommendations of this study are anticipated to improve the adoption of TANePS and be implemented successful in all procuring entities in the country. Therefore, this report can be used by the Government leaders and policy makers as framework of analysis for decision making with regard to stakeholders' (procurement experts from procuring entities and suppliers') interests on TANePS adoption in the public sector. However, this study would help other future researchers to use the final integrated model in the process of adding new knowledge to the existing literature when conducting researches related to buyer-supplier perspective.

Conclusions

Contribution of the Theories (UTAUT and TOE Model) to the Study

The specific objectives of this study were guided by critical success factors influencing the adoption of new technology (TANePS) from UTAUT and TOE Model. Basing on the specific

objective one with critical success factor legal framework from TOE model, it is therefore concluded that, the positive and indirect relationship between legal framework and TANePS adoption was contributed by UTAUT and TOE Model due to the fact that the legal framework was mediated by the critical success factor from UTAUT 'performance expectancy' and other two; relative advantage and attitude from TOE Model. Specific objective two was guided by critical success factor from UTAUT 'performance expectancy' which had positive, direct and indirect relationships with TANePS adoption.

The indirect relationship was mediated by relative advantage and attitude from TOE Model which implies that the interaction and relationship of performance expectancy in research model was contributed by the UTAUT and TOE Model. The specific objective three was guided by critical success factor from TOE Model 'relative advantage' which had positive and indirect relationship with TANePS adoption. The indirect relationship was mediated by attitude from TOE Model which implies that the interaction and relationship of relative advantage in research model was contributed by the UTAUT and TOE Model. The fourth specific objective was guided by critical success factor from TOE Model 'attitude' which had positive and direct relationship with TANePS adoption. The direct relationship of attitude in this research model was contributed by the UTAUT and TOE Model.

Theoretical Contribution of the Study

Basing on the theoretical gap and the hypothesized relationships of the determinants of adoption of new technology from UTAUT (performance expectancy) and TOE model (legal framework, relative advantage and attitude), it is therefore concluded that the gap identified has been filled which leads to the theoretical (philosophical) contribution in the existing theories. The interaction and relationship between performance expectancy from UTAUT and legal framework, relative advantage and attitude from TOE model has been sufficiently comprehended a substance that the existing literature was missing. Furthermore, the integrated theoretical model with critical success factors influencing positively, directly and indirectly the adoption of new technology (TANePS) for buyer's and supplier's perspective has been well comprehended in this study of which the existing theories and theoretical models are clarifying inadequately.

Empirical Contribution of the Study

Basing on the focus of previous empirical studies conducted in developing countries and the focus of this study, it is therefore concluded that the empirical gap which was existing has been filled due to the fact that, this study has included both the perception of buyers (procurement experts from procuring entities) and suppliers on the critical success factors influencing e-procurement (for example TANePS) adoption a substance that the existing empirical literature was explaining insufficiently.

Practical Implications of the Study

The final integrated model of this study is useful in the process of adding new knowledge to the existing literature when conducting researches related to buyer-supplier perspective and would have practical implications in terms of public procurement policy implementation and applicability of TANePS in the public sector. Basing on the relationship of the legal framework with other critical success factors influencing TANePS adoption, the final integrated model of this study suggests that, legal framework should not be used directly in the process of adopting new technology (TANePS) particularly when suppliers (private sector) are involved in Government business. Instead the legal framework should be used indirectly after significant change of the mindset of the traditional suppliers, the top management of all procuring entities and the procurement experts working with procuring entities. The significant change of the mindset can be done through training with regard to the performance expectancy and the benefits of TANePS it brings to the supplier community, and also to the government.

Recommendations

Recommendations to the Government, PPRA and GPSA

Basing on the findings and final integrated research model of this study, PPRA should ensure the true potential and benefits of TANePS adoption are realized by all parties involved. Firstly, significant change to the mindset of the traditional suppliers who have not registered into the

system, the top management of all procuring entities and the procurement experts working with procuring entities is required. This can be done through active and continuous promotion and education of TANePS performance expectancy and the benefits it brings to the supplier community, and also to the government.

The Government through PPRA must have a clear strategy to overcome the barriers to change of some stakeholders' attitude and must have greatest commitment towards the adoption of TANePS in all procuring entities of the country. Part of the strategy is to involve in a severe assessment of the current situation of the TANePS adoption in all procuring entities whose staff (procurement experts and IT experts) have been trained on the use and interact with the system. In addition, PPRA should assess the reality on the ground with regard to some government official's status who are suppliers. Furthermore, PPRA should continuously monitor and evaluate the level of TANePS adoption in all procuring entities implementing the system.

The Government through PPRA should remove the financial guarantee rule, particularly, for small public tenders especially for new local suppliers who are new participants in public tenders offered by the procuring entities through TANePS.

There are concerns that suppliers are registered with two bodies GPSA and PPRA in piloting TANePS adoption. For the purpose of monitoring the drop out of registered suppliers in TANePS, it is recommended to have one agency or authority to deal with registration for suppliers.

There are concerns that corruption is practiced by some public officials in procuring entities hence limits local suppliers in accessing the public tenders through TANePS. This is an area which the Government through PCCB should take strong measures upon corruptive officials after implementing TANePS in all procuring entities.

Recommendations to the Procuring Entities, Suppliers and Financial Institutions

Since the trust, security and privacy culture can prohibit or create a room for adoption of TANePS, it is therefore recommended that, all parties involved in TANePS must be trustful and overcome the barriers to change from traditional procurement system to e-procurement system.

For that reason, procuring entities, suppliers and the financial institutions must trust each other in successful application of TANePS in public procurement process.

Recommendations to Future Researchers (Areas for Further Research)

This study based on deductive approach. With that note, the study proposes inductive or mix approach for future studies. The assumption is that given this study's stated implications to the theories, empirical literature and to practical, it is anticipated that the situation will change not only in ways procurement experts and suppliers will interact with TANePS but also the believable message that they pose in the respective change of their mind set.

This study includes the perception of few procurement experts and few suppliers on critical success factors influencing TANePS adoption in the country, it is therefore recommended that, further researches may include the voice of the politicians, accounting officers of procuring entities because e-procurement problems lie with government's inability to meet the political and managerial will. It is believed that, politicians and accounting officers can influence the use of e-procurement by both procuring entities and suppliers, therefore, as public procurement systems are converted from a manual process to an electronic, change of mindset of top management in each procuring entity is important.

Lastly, the model of this study is recommended to be tested to other developing countries to see its applicability and if it can be generalized for e-procurement adoption in public sector.

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