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ABSTRACT

The public sector generally places emphasis on ensuring that value for money is achieved through proper procurement practices and processes when acquiring public assets. However, great emphasis is not only required for assets during acquisition, but also throughout its lifetime, and at the point of disposal. The purpose of this paper was to consider the factors that contribute to the successful execution of disposals of public assets by publicly owned sectoral organizations, a consideration which can lead to the achievement of accountability, transparency, integrity, and value for money when disposing of Government-owned property. A descriptive research method was used to establish the factors that contribute to a robust disposal process classified under three broad areas, internal/ direct factors, external/ indirect factors, and other special considerations. Twenty factors, some of which include disposal strategy management, inventory and inspection/evaluation, sustainable disposal, unintentional loss etc., were identified and classified. Although the rationale for this study stems from reawakening the need for proper disposal of public property in the Republic of Trinidad and Tobago, the factors presented are beneficial and applicable for use by any country or public sector organization which desires to implement the practical factors contributing to a robust disposal process.

Keywords: *Disposal, Public Sector, Factors for disposals, Sustainable Disposal*

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INTRODUCTION

On the 26th of April 2023, the Government of Republic of Trinidad and Tobago (GORTT) fully proclaimed all outstanding sections of the Public Procurement and Disposal of Public Property Act 2015, as amended. In doing so, it sought to modernize and update Trinidad and Tobago's archaic procurement, retention, and disposal (PRD) system, a system rooted in a legal and regulatory framework captured in the Central Tenders Board Ordinance 1961 (Makee, et al., 2004). This would bring Trinidad and Tobago in-line with other countries that have also modernized their PRD systems such as: USA, Kenya, Botswana, Jamaica, Australia, Canada etc.

The aim of any PRD legislation is to provide better value for money, accountability, and transparency when spending taxpayers' dollars, be it to purchase, retain or dispose of public assets or personal property. It is often the case that public agencies engaged in PRD activities pay special attention to purchasing and retention. Asset disposal by public organizations has the capacity to attach reusable value to assets, however, this is an area where the failure of the public procurement process is most attributed even though it has the most potential for sustainable procurement practice (Obicci, Mugurusi, & Nagitta, 2021). Disposal of public assets or personal property is important since institutions still have financial value in the discarding of goods, even those that may have undergone wear and tear (Mensah, 2014). Assets are public resources and even if redundant or depreciated, usually still have monetary value for the public body or agency. In some cases, income from disposal can be substantial. Therefore, disposing of goods requires careful planning and needs to be conducted in a way that obtains value for money for the agency, while reducing opportunities for corruption (New South Wales Independent Commission Against Corruption, 2018).

Accountability is a key feature of the public sector. Krent and Zeppos (1999) noted that below-market value dispositions of government assets are customary and so rob taxpayers of billions of dollars each year and so fundamental change cannot be expected in the short term. Being answerable to taxpayers, the government must seek to diminish the underlying levels of distrust by aspiring to develop policies that are compatible with public desires and be accountable for assets through assignment of responsibility and control programs with a high degree of accountability (Brady & Brady, 2001).

Krent and Zeppos (1999, p. 1780) further noted that "no one reform is likely to convert myriad agency disposition practices to market-type efficiency overnight; nor should it, given the many valuable nonmonetary goals underlying the disparate schemes". Innovation in the public sector enables significant improvements and aids the implementation of new and/or significantly improved processes, practices, or services that are undertaken to improve its operations and performance outcomes (OECD, 2016). As such, innovative practices are required for public sector organisations to also achieve value for money, accountability, and transparency from disposals through improvements in the disposal process and practices.

Study Objectives

This study examined the factors that contribute to a robust disposal process in the public sector. The factors were looked at under three (3) broad headings: (i) what needs to occur internally within public sector organizations; (ii) factors external to organizations that contribute to a robust disposal process; and (iii) other special considerations/ factors that can contribute to a stronger disposal process. Identifying these factors can assist not only Trinidad and Tobago but also any country in developing their disposal processes.

METHODOLOGY

This research study was descriptive research based on a theoretical review of previous literature identifying the factors that would result into the

development of a *conceptual model*. The theoretical perspective of the study, therefore, did not allow the paper to follow a rigorous methodology because of its *exploratory nature* due to more textual reviews being made. The population of the study was from a global perspective, looking at all and or any country's public sector organizations.

As such, the research approach used for the study was qualitative and utilized an *exploratory and descriptive design*. Exploratory-Descriptive Qualitative research is used when the concept under study is vague and allows the researcher to explore a topic with limited coverage to contribute to the development of new knowledge in the area (Hunter, McCallum, & Howes, 2019).

The arguments and conclusions of this study were drawn from secondary sources of information through an extensive review of scholarly literature and high-level documents consisting of country-specific legislation (Acts, Regulations, Decrees etc) based on availability. The study also looked at policies/handbooks/guidelines that expound compliance requirements in general and the required objectives of effective and efficient public sector disposal process execution. The collected data were documented, which could result in the development of a model consisting of all the factors essential for a robust disposal process.

The factors are broken up into internal, external, and other factors/considerations. All factors considered for a robust disposal process are shown in Table 1.

Table 1: Internal, External, and Other Factors Contributing to a Robust Disposal Process

Factors Contributing to a Robust Disposal Process	
Internal Factors	▪ Asset/ Inventory/ Stores Management Program and Performance ▪ Disposal Strategic Planning ▪ Life Cycle Costing (LCC)/ Total cost of Ownership (TCO)/ Whole Life Cycle Costing (Whole LCC) ▪ Assignment of Responsible Officers and Capacity Development ▪ Supporting Policies/ Procedures and Guidelines ▪ Disposal Asset Strategy Development and Disposal Committees/ Board of Survey ▪ Inventory and Inspection/ Evaluation ▪ Appraisal/Valuing/Estimating ▪ Stakeholder/Market Analysis ▪ Management Support and Approvals
External Factors	▪ Training and Development and Courses/Program Availability ▪ Regulating Authority ▪ Government/Public Sector Support and Reform/Supporting Legislation ▪ Public Expectation/Emerging Technology/Industry trends ▪ Sustainable Disposal
Other Factors	▪ Special Provisions for IT Equipment ▪ Public Organisation Liability ▪ Revenue from Disposal/Sales ▪ Lost or Stolen Plant and Equipment ▪ Unintentional Loss

INTERNAL FACTORS

Internal factors represent more direct influences that affect the internal operations of the organization. Ten (10) factors are considered in this section.

Asset/Inventory/Stores Management Program and Performance

Public sector organisations should firstly consider adopting a 'fixed asset management program' which essentially involves the effective management of assets including not only maintenance, capital investment, whole life cost analysis or risk, but also involves striking a balance between financial and non-financial metrics (Ratnayake and Markeset, 2012). This is important for several reasons including: control of losses due to pilferage, theft and neglect; maximisation of the use of assets; meeting the growing demands for improved control and accountability to acquire state/ federal funding; avoidance of purchasing unnecessary or duplicative items; and protection of assets from losses from natural disasters, fire and other ills (Brady & Brady, 2001).

Masaro (2018) noted that the rate of investment in fixed assets and stocks, items by a government, and its functional units have increased, leading to the need for asset management systems to secure the expected benefits from same. The 'in place system and practice', enables disposing no longer usable fixed assets and stock items on time from an organization`s premises, to free spaces and storing equipment for other uses, resources for new investment or use and transfer ownership of the assets to other(s) for gaining benefits or transferring risks (Masaro, 2018).

Materials and equipment can become obsolete or unserviceable because of long usage or the introduction of new technology or may simply be procured in quantities that are more than entity-specific demand, thereby creating a surplus. This renders immediate consumption impossible and forces a decision regarding alternative uses for stores/materials placement and disposals (Atiga, Adafula, & Nyeadi, 2015, p. 2).

It is important to note that disposals are not the 'be-all and end-all' of asset management. Lyons (2004, p. 5) noted that "a key component of asset management is to take a strategic view of which assets are best retained and efficiently exploited, as well as to identify those which should be disposed of to generate resources for reinvestment". Analysing an asset's performance over its lifetime is also another essential component for management and disposal of assets since an organization's ability to measure its performance is certainly a key to its success and so performance measurements need to be aligned to its strategic objectives (Matthews & Gibson, 2009).

Disposal Strategic Planning

Strategic planning for asset disposal is referred to as a structured process that ensures an organization's asset portfolio of only those assets that can successfully meet its current needs and service delivery obligations and involves the operational implementation of the organization's strategy on assets (Hastings, 2010). While asset disposal refers to the means through which non-beneficial assets are disposed of, the goal of strategic planning for the disposal of an asset is to provide suitable and equal opportunity to achieve the best return to the public organization through proper identification of non-beneficial assets with implementation of appropriate approaches for their disposal (Giuntini 2010 as cited in Obicci, Mugurusi and Nagitta 2021).

The impact on 'value for money' outcomes are achieved through strategic asset planning because the most vital operative issues such as asset installation, user training, use of the right consumables, asset efficiency, and performance are defined at that level (Obicci, Mugurusi, & Nagitta, 2021). Through strategic assets planning, Obicci, Mugurusi, & Nagitta, (2021) went on to further explain that public organizations can easily define user and operational expectations of the asset's functionality on goals such as the asset's maintenance and obsolescence, which significantly impact the asset disposal outcomes. Moreover, strategic asset planning provides the environmental considerations on the asset's effect during use and the choice of a suitable environmental method of disposal.

The benefits of disposal planning stem from a strategic approach to the management of

Government assets (New South Wales Treasury, 2006). Strategically planning for disposals would assist in kickstarting the smooth initiation, management, and operational implementation, through the preparation of an '*Annual Disposal Plan*'. Some considerations in planning for disposals include the contents of an annual disposal plan; budgeting and allocation of funds; independent valuation of stores; and the award of disposal and documentation of proceedings (Murrende & Namusonge, 2014).

Life Cycle Costing (LCC)/ Total cost of Ownership (TCO)/ Whole Life Cycle Costing (Whole LCC)

Life Cycle Costing (LCC), often also referred to as Total Cost of Ownership (TCO), is a technique used to estimate the total costs that are linked with a purchase and considers not only the costs of buying a product, but also its running costs (energy, maintenance) and the disposal of it; also considering environmental externalities known as "Whole LCC", (Renda, et al., 2012). Capital items/ fixed assets such as furniture, computers, etc. are likely to be employed over a substantial period and so cost implications arise at the main lifetime stages of specification, price, purchasing, installation, operation, and disposal (Baily, Farmer, Jessop, & Jones, 2005).

As noted in the Public Procurement Manual for the Health Sector of Kenya (e-sokoni Consultants, 2008), the cost of acquisition over the equipment's useful life includes design, specifying, purchasing, receiving, storage, and payment, while the cost of ownership include installation, commissioning, operation, maintenance, servicing, upgrading, disposal; causing the lowest 'Life Cycle Cost' of ownership to be of greater significance for capturing 'disposal costs'; rather than just looking to the lowest purchase price, which may result in high cost of ownership.

Assignment of Responsible Officers and Capacity Development

Brady and Brady (2001) noted the importance of a fixed assets management program to the disposal process. In establishing a fixed asset management program, officers must be assigned to specific responsibilities to ensure accountability throughout the process at different levels. This is shown in Figure 1.

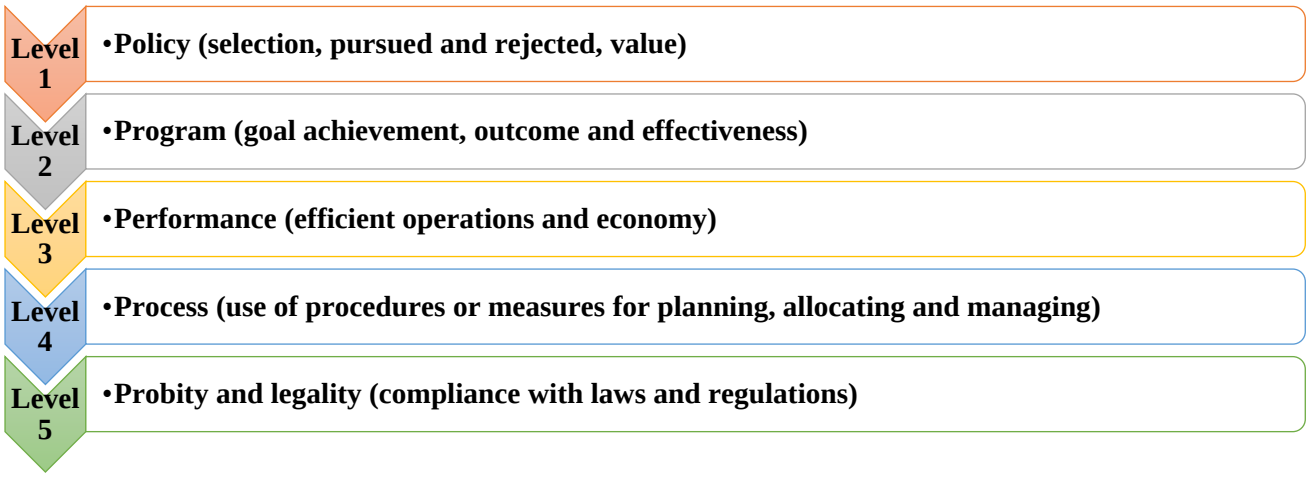

Figure 1: Assignment of Programme Officers (Adapted from Brady & Brady, 2001, p. 11)

Successfully disposing of goods and property in accordance with a policy will depend on having staff who are sufficiently trained, knowledgeable, and motivated to comply, making capacity development an essential element for the success of the disposal process (New South Wales Independent Commission Against Corruption, 2018). Capacity development is about people, their organizations,

and institutions, developing whatever tools are required to control their own development and create societies that work for them (Lusthaus, Adrien, & Perstinger, 1999). As such, when working towards building these capacities, people must have the tools required to control all the processes of capacity development (Lusthaus, Adrien, & Perstinger, 1999).

The limited understanding of public purchasers' asset life cycle management space is unfortunate and obstructs sustainable procurement implementation. As such, strengthening public organizations' capacity in asset disposal management and public assets' disposal towards sustainable procurement, should be public organizations' primary goal, since understanding the factors that drive public asset disposal success will better inform the process (Obicci, Mugurusi, & Nagitta, 2021).

Supporting Policies/ Procedures and Guidelines

Written policies and procedures are required to govern the day-to-day operations of the fixed asset management function such as those concerning how transfers will be handled and must be consistent with the function's goals and objectives and with the agency's policies governing same. Policies are considered broad guidelines for activities, the development of operating procedures and the inclusion of the following general subjects in the procedures manual: goals and objectives, purpose, general definitions, responsibility, personal use of fixed assets, control, and identification, donated assets, transfers, excess property, trade-in of fixed assets, lost, missing or stolen assets, annual inventory verification, acquisition of state/federal surplus property and disposal of surplus property (Brady & Brady, 2001).

Therefore, a written policy and procedures for disposal of goods and property ensure consistency in applying these measures and so key features of any policy should include: compliance with legislation and any relevant Government policies that guide the disposal of goods and property as well as procedures that clearly map out each stage in the process allocating roles, responsibilities, and delegations (New South Wales Independent Commission Against Corruption, 2018). As such, clearly written policy manuals provide several benefits such as, consistency and continuity in business operations, elimination of confusion about proper procedures, discouragement of independent actions, and demonstration that asset management is operating in a business-like manner and is fully accountable (Matthews & Gibson, 2009).

Disposal Asset Strategy Development and Disposal Committees/ Board of Survey

An agency's 'Asset Strategy' is its asset response to its service delivery needs and so an analysis undertaken in such, shows that an asset no longer plays a viable role in supporting service delivery, since its worth lies only in the benefits to be gained from its disposal (New South Wales Treasury, 2006). The Public Procurement Authority, Ghana (2019), recommends that a disposal committee/board must consist of at least three (3) persons, comprising at least one member who will have a technical knowledge of the property being considered and a chairperson, who should not be directly associated with the assets listed for review with the following functions:

- Carry out a physical inspection of the item(s).
- Assess costs and benefits of disposal options.
- Recommend the best disposal option.
- Identify storage and transport issues.
- Complete a 'disposal form' and obtain appropriate approval.
- Undertake disposal process.
- Evaluate and review disposal process.
- Approval for any disposal action should be obtained prior to undertaking such action.

Similarly, an Integrated Project Team (IPT) is central and crucial to the success of smart acquisition which focuses on the whole-life management of a project (known as the CADMID cycle, that is, Concept, Assessment, Development, Manufacture,

In-service, Disposal) as often referred to as 'cradle to grave' life-cycle management (Baily, Farmer, Jessop, & Jones, 2005). Also, the functions of a disposal committee include inspecting unserviceable equipment and property to verify justification for disposal; setting the final appraised value of disposable property; recommending to the Head of Department/ Agency for approval, the manner of disposal and conducting of public biddings for sale accordingly (Funk, et al., 1992). Therefore, the disposal strategy involves selecting the method that increases the return on the assets (Brady & Brady, 2001).

Well-enacted and issued law for carrying out disposal functions has no value on its own unless knowledgeable and experienced concerned bodies are available and/or functional and the establishment of disposal committees is seen as critical for disposing unserviceable assets on time (Masaro, 2018).

Inventory and Inspection/ Evaluation

The Disposal Committee is responsible for preparing an 'Inventory and Inspection Report' which includes an individual survey report, listing of missing spare parts, stencils of chassis and engines number of motor vehicles, and current photographs as well as a report of waste materials as applicable. Inspection is conducted by the Disposal Committee and is aimed at obtaining a first-hand observation of the physical and operational condition of the property and their marketability or ability to attract prospective buyers which can be done separately by each member of the Disposal Committee or as a group, where practicable (Funk, et al., 1992).

Appraisal/Valuing/Estimating

Most property, even though it has reached or exceeded its useful life, may have some residual value and or monetary value (Brady & Brady, 2001). Valuations can play an important part in the effective and efficient disposal of goods and the most accurate determination of value is always what the competitive market is prepared to pay, which could be obtained through expert valuations to ensure realistic sale expectations but should only be used once the goods are of sufficient value. The starting point for evaluation should always be market value, considering that assets should be sold 'as is, where is' without warranties (Public Procurement Authority, Ghana, 2019).

The objective in computing the appraisal value of the property for disposal is to set the government's minimum selling price so that they can receive fair compensation for the items sold, which is usually outlined in an appraisal report prepared by the Disposal Committee. The appraised value shall be computed using the information/data appearing in the inventory and inspection report, consisting of the following basic variables: year of acquisition, cost of acquisition and replacement cost. Additionally, the minimum value set shall be valid for six months until sold, if unsold in that period, a reappraisal is required (Funk, et al., 1992).

Stakeholder/Market Analysis

The achievements from a stakeholder analysis are said to yield useful and accurate information about those persons and organisations that have an interest in the items being disposed or sold (Schmeer, 2000). Schmeer (2000) identified eight (8) steps in the stakeholder analysis process, shown in Figure 2.

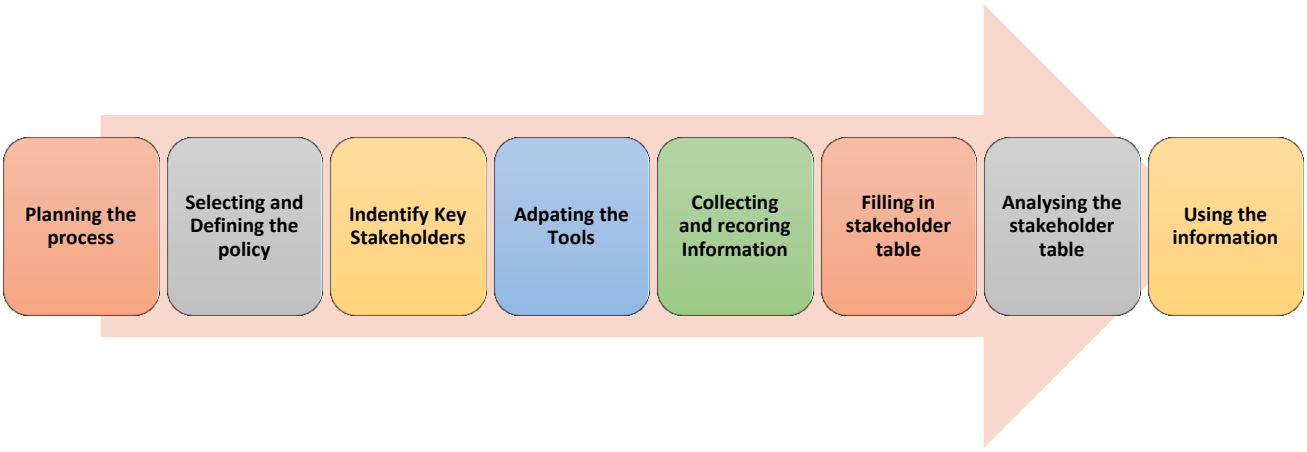

Figure 2: Stakeholder Analysis (Adapted from Schmeer 2000)

A market analysis on the other hand involves a thorough assessment of a market within a specific industry, studying the dynamics of the market, such as volume and value, potential customer segments, buying patterns, competition, target market and other important factors all to aid in reducing risk, identifying emerging trends, helping project revenue and keeping updated with major changes accordingly. As such, a detailed market analysis will usually be part of your business plan or disposal plan as applicable to this study, since it gives a greater understanding of the audience and competition, and aids in building a more targeted marketing or disposal strategy (Freedman, 2023).

Management Support and Approvals

The lack of attention on disposal functions by Heads, Disposal Committee, and Property Management Units of public organizations as well as Regulatory Bodies of the Sub-Cities in Ethiopia, has resulted in ample long stayed assets, unusable fixed assets, and stock items occupying storage spaces and shelving equipment and found under the custody of public organizations. As such, importance must be placed on changing the attitude of managers and concerned bodies of sub-cities as well as City Government in disposal functions, since without this, the asset management functions cannot be complete, efficient/effective and is impossible to ensure value for money (Masaro, 2018).

EXTERNAL FACTORS

External factors are indirect influences that occur outside the control of the organization but essentially effects the organization and its internal operations. Five (5) factors are considered in this section.

Training and Development and Courses/Program Availability

Training and development courses and programs in disposals, are essential for public sector employees to successfully execute the requirements of the disposal process. Training enhances the overall performance of an organization and can be initiated for a variety of reasons for an employee or group of employees, to benchmark the status of improvement, as part of an overall professional development program, for succession planning, to pilot or test the operation of a new performance management system and to train about a specific topic (Kumari & Kumar, 2019). Similarly, Majeed and Shakeel (2017) stated that training is given to the employee to increase their skills and knowledge for a short period of time, for the required or specific purpose and or task; while development consists of a program of different combination of training designed to improve their quality,

performance and provide growth for present and future requirements and needs.

Methods of training include 'on-the-job training' (job rotation, job coaching, job instruction, apprenticeships, internships, and assistantships) and 'off-the-job training' (classroom lectures, audio-visual, simulation, sensitivity trainings) (Kumari & Kumar, 2019). Training is important for members of staff and the organisation as a whole for the following reasons: because organisational success depends on it, competitive advantage of having qualified/ trained staff, aids in a helpful office, valued employees lead to additional fulfilment to careers, satisfied staff and less need for supervision and direction (Majeed & Shakeel, 2017).

Regulating Authority

A Regulatory Body is required to play a significant role in following-up and taking corrective action(s) for upholding the disposal function, corresponding to what is stated in the law and executing disposal accurately and in a timely manner, without creating any harm to physical and natural beings (Masaro, 2018). To alleviate the issue of corporate collapses and ineffective regulators in Australia, the Commonwealth Government initiated heightened levels of awareness of the roles played by corporate financial regulators, significant increases in the budget and resources of regulators, introduction of relevant legislation that increased the penalties for violators that attempted to address inadequate financial reporting and disclosure of obligations of companies, a major factor in a number of corporate collapses (Zubcic & Sims, 2011).

Government/ Public Sector Support and Reform/ Supporting Legislation

Governmental Accounting Standards Board (GASB) in USA requires public agencies to provide an explanation for all activities to the public, since in recent years, there has been an increased demand for improved accountability by government-funded fixed assets. Once proper controls are in place and assets are managed properly, the need for accountability is met and so failure to properly dispose of surplus assets can have serious ramifications for public agencies (Matthews & Gibson, 2009).

Essentially, fixed asset management have authority spelled out in a resolution, charter, or legislation specific as to the authority of an agency or individual, offering the minimum requisites to be met to provide a foundation for the establishment of rules and policies (Matthews & Gibson, 2009). As such, "compliance should go beyond merely obeying applicable laws and regulations and should extend to complying with principles of good governance and accepted community and ethical standards for responsible and ethical behaviour as well" (Zubcic & Sims, 2011, p. 301). Consequently, legislation should represent the minimum fixed assets management requisites to be met by public sector agencies who has the responsibility to maintain its system in greater detail than that called for by legislation, but not below those established minimums (Brady & Brady, 2001).

Public Expectations/ Emerging Technologies/ Industry Trends

The public holds government to a high standard, it is expected that public agencies are transparent, accountable, and efficient; goods and services should be obtained through an open, competitive bidding process, and surplus goods disposed of in a similar fashion (Matthews and Gibson, 2009). Consequently, information management systems and computers are revolutionising the traditional ways of accounting for fixed assets through reliance upon a centralised input of accurate data to make available better service and closer attention to customer needs (Brady and Brady, 2001). Therefore "public services are evolving in a new context of rising public expectation, increasing focus on improving efficiency and value for money, and continuous emergence of new technologies" (Lyons, 2004, p. 15). Due to this dynamic and demanding situation, governments and their functional units are required to provide services at required levels and quality in a cost effective and efficient way (Masaro, 2018).

The reality is more people expect to conduct business with the public sector through electronic means, so naturally governments should operate in a similar fashion (Computer Systems Corporation, 2001 as cited in Matthew and Gibson, 2009). Several software systems presently exist on the market to assist with asset disposition and can include systems for tracking assets through their life cycle, as well as software that manages online property sales (Matthews and Gibson, 2009).

Sustainable Development and Sustainable Disposal

Disposal options should be reviewed and assessed with the aim of managing environmental impacts, maximizing recycling and reuse and determining all opportunities to minimize landfill use and pollution. Accordingly, unethical disposal can have significant remediation costs and might damage the organization's reputation, making it appropriate at this stage to refer to the concept of the 'Life Cycle Cost' for consideration of remediation costs (ISO 20400, 2017).

Although the area of emphasis is on the promotion of public procurement practices that are sustainable, in accordance with national polices and priorities, 'sustainable disposal' is also a growing trend that is achieved when a business can safely dispose of products that minimizes harmful effects to people (consumer), planet and profit. The Sustainable Development Goal (SDG) 12, 'responsible consumption and production', emphasises on decoupling economic growth from environmental degradation and substantially reducing waste generation through reduction, recycling, and reuse, all significant methods of disposal for consideration towards sustainability (United Nations, 2022).

Integrating sustainability into an asset's whole life, means that the decisions and actions across the entire life cycle of the asset from purchase to disposal should reflect this goal (Marlow, Beale, & Burn, 2010). Niosi (2018) described the shift in focus to product disposals by consumers, companies, and society in general, for example, through more concern and awareness for degradation of the environment and chemicals in landfills. However, going beyond the use of 'carbon foot printing' to incorporating a more useful and accurate measurement such as energy use, is essential for embracing the whole life cycle of the product from sourcing to disposal, thus factoring every stage of the product's life (Johnson and Gibson 2014).

As birthed out of having a sustainable business, end-of-life disposal options are another way to extend the life of a product and delay (or completely omit) its final resting place in a landfill, using the three most common disposal options (recycle, lateral cycle and upcycle) as available to consumers who seek to reduce carbon emissions and eliminate waste from landfills (Niosi, 2018).

The key to achieving sustainable disposal, therefore, is that of acceptance of 'Corporate Social Responsibility' (CSR) by public sector organisations, by having a duty to care for all stakeholders; and going beyond meeting statutory obligations but providing community support, encouraging workplace and suppliers' diversity and the protection of international rights (Matthews and Gibson 2009).

E-Waste Disposal and Green Electronics/ Economy

Electronic Waste (e-waste) or Waste Electronic and Electrical Equipment (WEEE) comprises of various electrical devices, cooling equipment, TV sets, PCs, laptops and a wide range of electronic gadgets like smart phones, earphones, smart watches, tablets, printers, memory cards etc.; classified according to their waste management characteristics, that is: temperature exchange devices (cooling and freezing hardware), lamps, display units, large/ small scale equipment and information technology. However, these items pose a serious threat of contamination problems to mankind and the environment, when they are thrown away generating waste, which caused for the year 2019, e-waste to be 53.6 million metric tons globally, expected to reach 74.7 million metric tons by 2030 (Misra, Kumar, & Jain, 2021).

Reducing, reusing and recycling electronic items can have a good impact on the economy by tackling the problem of scarcity of raw materials by re-usage of metals in e-waste, however, it is not a permanent solution for e-waste disposal; hence the emergence of 'green electronics' which aims to identify materials of natural origin to produce applications that are biodegradable (environment friendly) and biocompatible; ultimately promoting ecological, environmentally safe electronics and generating technologies that are both environment and human friendly (Misra, Kumar, & Jain, 2021).

OTHER FACTORS/PROVISIONS/ISSUES

These are factors that are essential to capture any special considerations that may affect or influence the disposal process. These are not captured under the other two (2) areas, direct or indirect, but of great significance to the process and are briefly considered.

The Public Procurement Authority, Ghana (2019) highlighted in their guidelines some essential factors/provisions or issues that could be included for consideration in developing a strong disposal process for the public sector. These factors have not been considered elsewhere in other literature and if excluded, would not have a deleterious impact on the disposal process. Their inclusion would, in the opinion of the researchers, strengthen the disposal process. A description of each provision is shown in Table 2.

DISCUSSION

The review was mostly informed using information on asset management and procurement, as the research on disposal processes for public assets or personal property is limited. Asset management and procurement are closely related to the topic of disposal being a part of the whole lifecycle management process. In the public sector, assets go through the procurement process before they are bought and entered in the books and inventory of an organisation. Assets are then managed through the utilisation, retention, and maintenance stage throughout its useful life up until they require disposal, bringing into effect the disposal process. The disposal process stage is equally as important in the life of an asset to reap the true benefits at its end-of-life. All the factors previously identified play an important role to help a public sector organisation achieve the best return from its disposal exercises.

The factors identified in the research are by no means the totality of factors to be considered in the creation of a robust disposal process. The research on disposal is still in its infancy and can benefit from a similar synergistic relationship that procurement theory and practice have, one where "…daily procurement designs can benefit from the more robust theoretical findings, while practice can fruitfully feed academic research with new problems, suggestions and intuitions" (Dimitry, 2013, p. 152). In a similar manner, once the disposal processes are fully actualised and operationalized, this will provide the fodder for academic researchers to assist in its enhancement.

Table 2: Additional Factors for Consideration to Strengthen the Disposal Process

Provision	Description
Special Provisions for IT Equipment	This provides for machines and equipment to be disposed of cost effectively through donation, with no liability for same given the rate of change in technology equipment, becoming obsolete regularly, with no residual value after 3-to-5-year usage and no market value.
Public Organisation Liability	This ensures that public sector organisations should not offer any warranty on the items it sells, as such, all sale documentation should specify that items are sold 'ex works' or 'as is, where is', with the option of prospective buyers inspecting same before the sale; clearly declare any faults, wear or flaws in the items being disposed and spell out disclaimer on defective goods, mis-description or error in quantity.
Revenue from disposal/sales	This provides for how proceeds from sales are be handled and would vary from country to country. In the case of Ghana, it is in accordance with the Public Financial Management Act, 2016, Act 921 and the Internal Audit Agency Act, 2003 (Act 658).
Lost or Stolen Plant and Equipment	This provides a stepwise approach when managing lost or stolen plant and/or equipment. These steps include: 1. Immediately report to head of the entity. 2. Record incidence. 3. Conduct investigation. 4. Report to police accordingly. 5. Submit insurance claims separately. 6. Update the asset register.
Unintentional Loss	This ensures that entities check that assets identified for disposal do not contain material that is not intended for disposal to avoid embarrassment later. Examples of material that should be cleared from assets before disposal are: 1. Stationery-particularly printed stationery, which could be misused, or used for fraudulent purposes. 2. Software, the unauthorised movement of which could breach licence agreements. 3. Records, files, papers or whiteboards containing information which, if disclosed, could breach privacy legislation. 4. Hazardous stores, the transfer of which could create legal liabilities.

Source: The Public Procurement Authority, Ghana (2019)

By enacting all provisions of the Public Procurement and Disposal of Public Property Act 2015, as amended, the GORTT has placed into sharp focus the need to ensure that disposal processes are properly defined to achieve their intended purposes, that is, value for money, accountability, and transparency. As previously noted, disposal is not given the same prominence as procurement and retention. It may be that a government's perception of value for money, accountability, and transparency is confined to spent taxes, with limited emphasis placed on recouping expended sums. The cost of disposal is considerably less than procurement and retention (Asian Development Bank, 2021). Properly articulated and functioning disposal processes may help change this perception.

Trinidad and Tobago are on the pathway to modernizing its approach to the disposal of public property through the proclamation of the Public Procurement and Disposal of Public Property Act 2015, as amended. As the GORTT is presently developing guidelines to ensure compliance with the Act, it is much too early to determine the efficacy of same. The twenty (20) factors presented in this work provide key areas for GORTT or any other country to consider when designing their disposal process.

CONCLUSION AND SUGGESTIONS FOR FURTURE WORK

This study highlighted twenty (20) factors that a country's public sector bodies and/or organizations should consider when designing their disposal process. These include factors that fall within the purview of the public body, outside the purview of the public body but affects their disposal processes, and some special considerations that public bodies should include within their disposal processes. A functional disposal process is key to ensuring value for money, accountability, and transparency of taxpayer's dollar.

The study highlights factors from many countries disposal process. This supports the need for an innovative model and exemplary disposal process which any country can follow. Having a myriad of best practices nestled in one framework, makes it easy to implement and adopt towards having a robust disposal process.

As noted previously, the factors identified in this study are not the sum totality of the contemplations that go into designing a robust disposal process; but they provide a good starting point to build on. Beyond identifying factors which may have been omitted, consideration should also be given to weighing each factor, providing context for which factor is more important and/or essential to a robust disposal process.

Declaration of Interest

The authors report that Ms Joy Joseph-Lara is a PhD student at the University of Trinidad and Tobago and the contents of this paper forms part of her PhD thesis.

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