



ESPPRA | ESWATINI
PUBLIC
PROCUREMENT
REGULATORY
AGENCY

A SURVEY OF MARKET PRICES FOR COMMON USE ITEMS

Eswatini Public Procurement
Regulatory Agency



**A SURVEY OF
MARKET PRICES
FOR COMMON
USE ITEMS**
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TABLE OF CONTENTS

	ACRONYMS	6
	DEFINITION OF KEY TERMS	7
1.	INTRODUCTION	8
1.1.	Objectives of the Study	9
2.	PRICE CATALOGUES & e-PROCUREMENT	10
2.1.	Functions of price catalogues	10
2.2.	Leveraging e-procurement for development of price catalogues	12
2.3.	Select Case Studies	14
2.3.1.	Umucyo (Rwanda e-Procurement System)	14
2.3.2.	Ghana Electronic Procurement System (GHANEPS)	16
2.3.3.	Public Procurement and Asset Disposal Board (PPADB) of Botswana	18
2.3.4.	Public Procurement Regulatory Authority (PPRA) of Kenya	19
2.4.	Lessons Learnt	20
3.	METHODOLOGY	22
3.1.	Collection of Market Prices for Common Use Items	22
3.1.1.	Data Collection Tool Development and Pre-Testing	23
3.1.2.	Description of Data	24
3.2.	Calculation of Price Averages	24
3.2.1.	Dealing with Outliers	25
3.3.	Designing and Developing an Online Catalogue (e-Catalogue)	25
3.4.	Preparing and putting in place a process that would allow the Agency to produce a Biennial Price Catalogue for all Procuring Entities	25
4.	GENERAL OBSERVATIONS	26
5.	FINDINGS PER CATEGORY OF COMMON USE ITEMS	29
5.1.	Tyres, Tubes, Tyre Accessories, and Tubeless Valves	29
5.2.	Office Furniture	31
5.3.	Fruits and Vegetables	32
5.4.	Building Materials	34
5.5.	Blinds and Curtains	34
5.6.	Petroleum Gas	36
5.7.	Cleaning Material and Chemicals	36
5.8.	Office Stationery	37

5.9.	Computer Consumables	37
5.10.	Meat and Meat Products	38
5.11.	ICT	40
5.12.	GROCERIES	42
5.13.	BATTERIES	43
5.14.	LUBES, OILS, GREASES	46
5.15.	ELETRICAL MATERIAL	47
5.16.	Protective Clothing and Uniform	48
6.	CONCLUSION	51
7.	RECOMMENDATIONS	52
	REFERENCES	54

ACRONYMS

Acronym	Description
ACBF	African Capacity Building Foundation
AOS	Africa Olleh Services
ESEPARC	The Eswatini Economic Policy Analysis and Research Centre
ESPPRA	Eswatini Public Procurement Regulatory Agency
GHANEPS	Ghana Electronic Procurement System
ICT	Information and Communication Technology
NDS	National Development Strategy
OAG	Office of the Auditor General
OECD	Organisation for Economic Co-operation and Development
OKI	Oki Electric Industry
PPA	Public Procurement Authority
PPAD	Public Procurement and Asset Disposal
PPADB	Public Procurement and Asset Disposal Board
PPRA	Public Procurement Regulatory Authority
PRSAP	Poverty Reduction Strategy and Action Plan
RPPA	Rwanda Public Procurement Authority
UK	United Kingdom
UNSPSC	United Nations Standard Product and Service Code
USA	United States of America
VAT	Value Added Tax

DEFINITION OF KEY TERMS

Common Use Items

According to the Eswatini Public Procurement Act 2011, common use items are any goods, works or services required by more than one requesting entity, for which the Government can obtain greater efficiency and value for money through centralised purchasing.

Electronic Catalogue (E-Catalogue)

Electronic Catalogue is an electronic system information which includes product information including make or brand, type, technical specification, and price.

Electronic Procurement (E-Procurement)

E-procurement refers to the integration of digital technologies in the replacement or redesign of paper-based procedures throughout the procurement process (OECD, 2019)

Procurement

The Eswatini Public Procurement Act 2011 defines procurement as the acquisition, by purchase, rental, lease, hire purchase, license, franchise or any other contractual means, of any type of goods, works, services or assets or any combination of goods, works, services or assets.

Public Procurement

Public Procurement refers to the purchase by governments and state-owned enterprises of goods, services, and works (OECD, 2023) it needs to carry out its functions using public funds.

Procuring Entity

The Eswatini Public Procurement Act 2011 defines procuring entity as any entity designated to conduct public procurement activities as stipulated in section 31 of the Act, whether on behalf of itself or another requesting entity, and may include the Technical Secretariat and any Ministry, Department, Agency, Category A public Enterprise or Local Government Authority.

Supplier

A supplier is a person, commercial company or other organisation, which provides goods, services or works in the market. A supplier does not need to have responded to a request from a public institution.

Tender

A tender refers to the process through which government invites bids for a purchase or project. A document containing specific information on requirements and terms associated with a potential contract must be submitted within a definite timeline. Tender methods can vary depending on the type, value and risk of goods, services and works to be procured. The main types of tender are: open tender, direct purchase, negotiated purchase and accelerated public tender (OECD, 2022).

Tenderer

According to the Eswatini Public Procurement Act 2011, a tenderer is an entity that offers to provide goods, works or services in response to an invitation from a procuring entity and includes, where applicable potential tenderers and applicants to pre-qualify.

Vendor

A vendor is someone who sells something; a “seller.”

1.

Introduction

The Eswatini Public Procurement Regulatory Agency (ESPPRA) engaged the Eswatini Economic Policy Analysis and Research Centre (ESEPARC) to conduct a Survey of Market Prices for Common Use Items. The Survey seeks to establish the most competitive prices for predetermined common use items in all four regions of the country, by collecting quotes from at least three suppliers. The results will be made available in an electronic Catalogue (e-Catalogue) updated annually, allowing procuring entities and suppliers to access the most up-to-date market prices. The survey has been successfully conducted, and the e-Catalogue is now available for use.

Eswatini, like many other countries, recognises the importance of public procurement reforms and the direct impact on the pricing of goods and services in the country. The e-Catalogue is a tool that strengthens the relationship between suppliers and procuring entities, while also promoting good governance and transparency in the procurement system. The purpose of the e-Catalogue is to prevent anti-competitive behaviour from suppliers, thus providing a level playing field for businesses of all sizes in the country. Therefore, this report is the first step in putting together the set of information that can be used to bridge current gaps in public procurement and to create a shared use item pricing catalogue. The catalogue will provide suppliers and procuring entities easy access to price data and will display the current market prices of commonly used items in the country.

A well-functioning public procurement system is one that ensures that government entities obtain the goods and services they need in the most cost effective and transparent manner possible. It should ensure that there is a fair and open competition among suppliers to ensure the best value for the money spent. At the core of a public procurement system is the procurement process itself. This process should be conducted in accordance with the regulations set out by the government, and should be open and transparent to all stakeholders. This includes the full disclosure of all procurement-related information such as the scope of the contract, the selection criteria, and the evaluation process. A competitive bidding process should be put in place to promote competition and to ensure that the most cost effective supplier is chosen. Over and above, there is a need to provide open contracting data which will seek to detail which companies were awarded tenders, who



“Empowering Eswatini’s Public Procurement: Introducing the e-Catalogue for Transparent and Competitive Market Prices.”

are their directors and their gender, types of tenders awarded, the total sum of the tenders and the award dates and the completion dates of the contracts.

To promote competition, e-Catalogues can be used to provide suppliers with easy access to all the information they need in order to submit a bid. By providing this information in an easily accessible and organised format, suppliers can easily compare prices and bid for contracts. This helps to increase competition and ensures that the government receives the best value for its money. Evaluation of bids is a critical part of the public procurement process. A fair and transparent evaluation process should be established to ensure that all bids are evaluated in a consistent and unbiased manner. This can include the evaluation of both qualitative and quantitative criteria, such as quality of goods/services, delivery times, and cost. The use of e-Catalogues can help to ensure that suppliers have access to all the necessary information to submit a bid and that the government receives the best value for its money.

This report provides an account of the market prices collected to develop Eswatini's first ever e-Catalogue of common use items procured by Government and its entities. ESEPARC conducted the study on the prices of common use items with the following objectives:

1.1. Objectives of the Study

- I. To perform an analysis of market prices for commodities;
- II. Prepare and put in place a process that would allow ESPPRA to produce an annual price catalogue for all procuring entities; and
- III. To produce the ESPPRA's first price catalogue.

Research conducted across multiple countries indicates that public procurement constitutes a significant part of government spending. According to ESPPRA (2021), Eswatini's public expenditure was estimated to be E9.67 billion. Unfortunately, developing countries usually suffer from weak and corrupt public procurement systems. To ensure that public money is spent in a sensible and cost-effective way, a well-designed purchasing process must be put in place. This will guarantee that policies are followed, potential issues are avoided, and a successful result is achieved (Simemba, 2013). In order for Eswatini to benefit from effective and efficient public procurement, various reforms must be introduced to public procurement system of the country.

Public procurement reforms, which improve transparency, efficiency, and accessibility of the system, are essential in countries all over the world, including Eswatini. The e-Catalogue will help strengthen interaction between suppliers and procuring entities, thus improving good governance and increasing procurement transparency. According to ESPPRA (2021), implementing an Electronic Government Procurement (e-GP) system could result in E2.9 billion in economic benefits for both the Government and its suppliers through efficiencies and cost savings, both tangible and intangible.

Establishing prices for common use items in public procurement is essential to prevent suppliers from overcharging, which increases costs for procuring entities. It also prevents anti-competitive behaviour among suppliers by providing a level playing field for large and small businesses. Tanzania's Public Procurement Regulatory Authority (2016) outlines the following useful characteristics of common use items:

- Any item or material that must be used by more than one procuring entity;
- A consumable item, excluding repair parts or other technical items;
- A readily available off-the-shelf commercial item; and
- Any part or component required in the assembly of two or more completed items.

2.

Price Catalogues & e-Procurement

2.1. Functions of price catalogues

A price catalogue is a tool used in public procurement systems to establish a list of prices for goods and services that government agencies can use to purchase these items. These catalogues often include detailed descriptions of the items, their various components, and their prices. Common features include a cataloguing system, item descriptions, and pricing. Necessary features include a secure authentication system and a payment system that is compatible with the government agency's payment system.

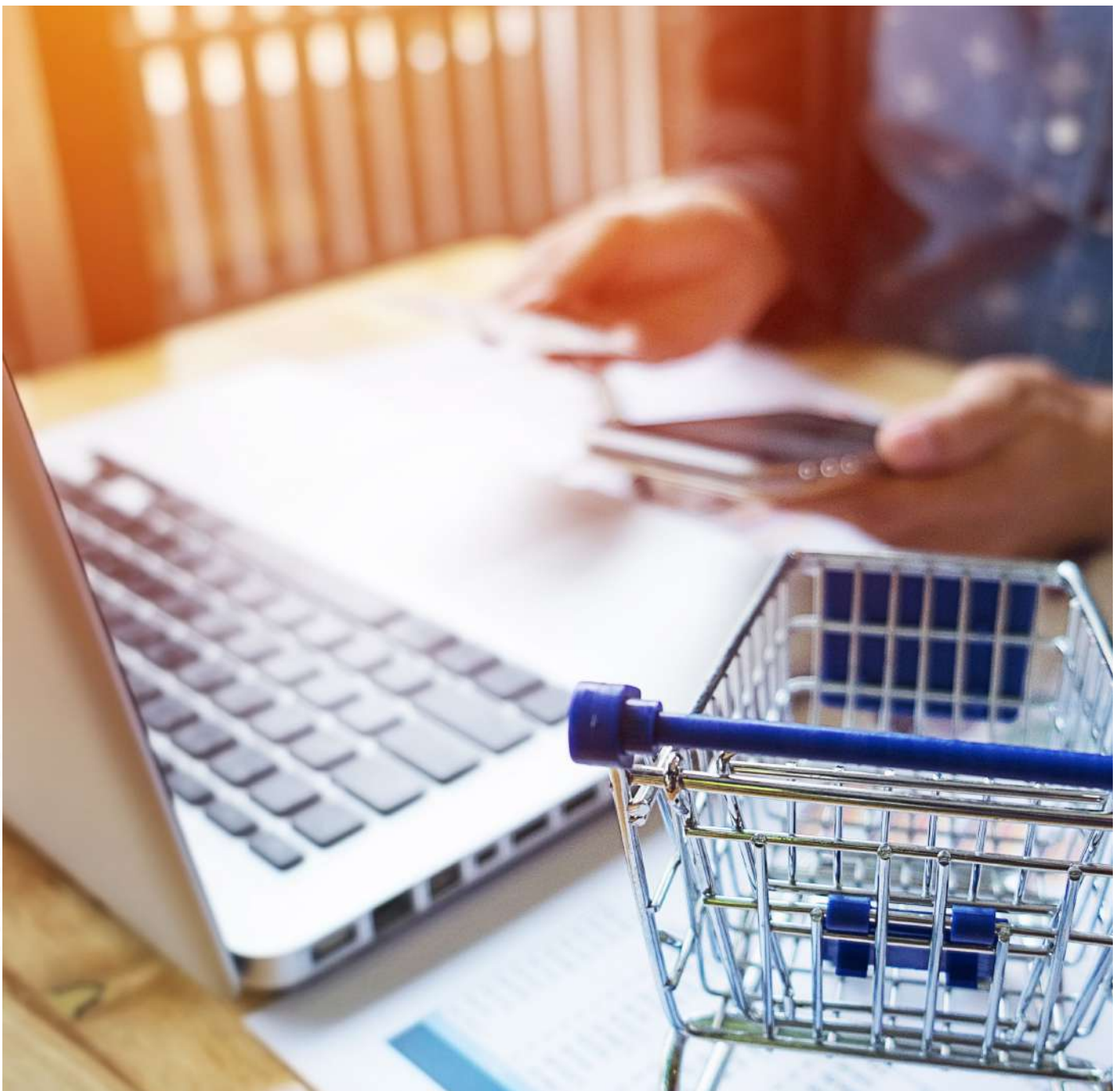


Price-catalogues:
Streamlining
Procurement,
Promoting Fairness,
and Ensuring
Transparency in Public
Purchases.

- **Price-catalogues are used to ensure that all purchases are made at fair and reasonable prices.** They also help simplify the procurement process by providing pre-established prices for commonly purchased items and services. By providing a standard list of prices, price-catalogues reduce the time needed to compare prices among different vendors and eliminate the need to negotiate prices. It enables public procurement regulatory agencies to ensure that their purchasing decisions are based on fair market prices. It also helps government agencies to ensure that they are not being overcharged for the goods and services they are buying.
- **The price catalogue helps consumers by ensuring that they are getting the best value for their money when purchasing goods and services from government agencies.** It also helps suppliers by providing a transparent and competitive environment for them to bid for contracts.
- **Examples of countries that have implemented price catalogues include the United States, the United Kingdom, Canada, and Australia.** In the United States, the General Services Administration (GSA) maintains a catalogue of prices for goods and services that government agencies can purchase. In the United Kingdom, the Government Procurement Service maintains a catalogue of prices for goods and services that government agencies can purchase. In Canada, the Canadian Federal government maintains a catalogue of prices for goods and services that government agencies can purchase. In Australia, the Australian Government maintains a catalogue of prices for goods and services that government agencies can purchase.
- **Overall, the price catalogue is a useful tool for both the public procurement regulatory agencies and the consumers and suppliers in the public procurement system.** It provides a secure and transparent way for government agencies to purchase goods and services, and it ensures that consumers and suppliers are getting the best value for their money.

According to Azanlerigu and Akay (2015), procurement data storage and information dissemination can be improved by an electronic procurement (e-procurement) information system implemented on web-based technology which will allow data to be stored electronically. E-procurement is a technology-enabled method of procurement that involves the use of digital platforms to purchase goods and services. It enables the efficient management of the entire procurement process from vendor selection to payment. E-procurement is increasingly being used by governments to create more efficient and transparent procurement processes.

As such, it is increasingly being used to support the implementation of price-catalogues for public procurement regulatory agencies. Moreover, given the globalisation and internalisation of businesses, the internet has become a viable tool for public sector organisations. An e-procurement information system provides the public with timely and accurate information about public procurement at the lowest cost possible. Suppliers or service providers will have access to the procuring entity's procurement plans and bidding documents through the internet, increasing competition among potential suppliers.

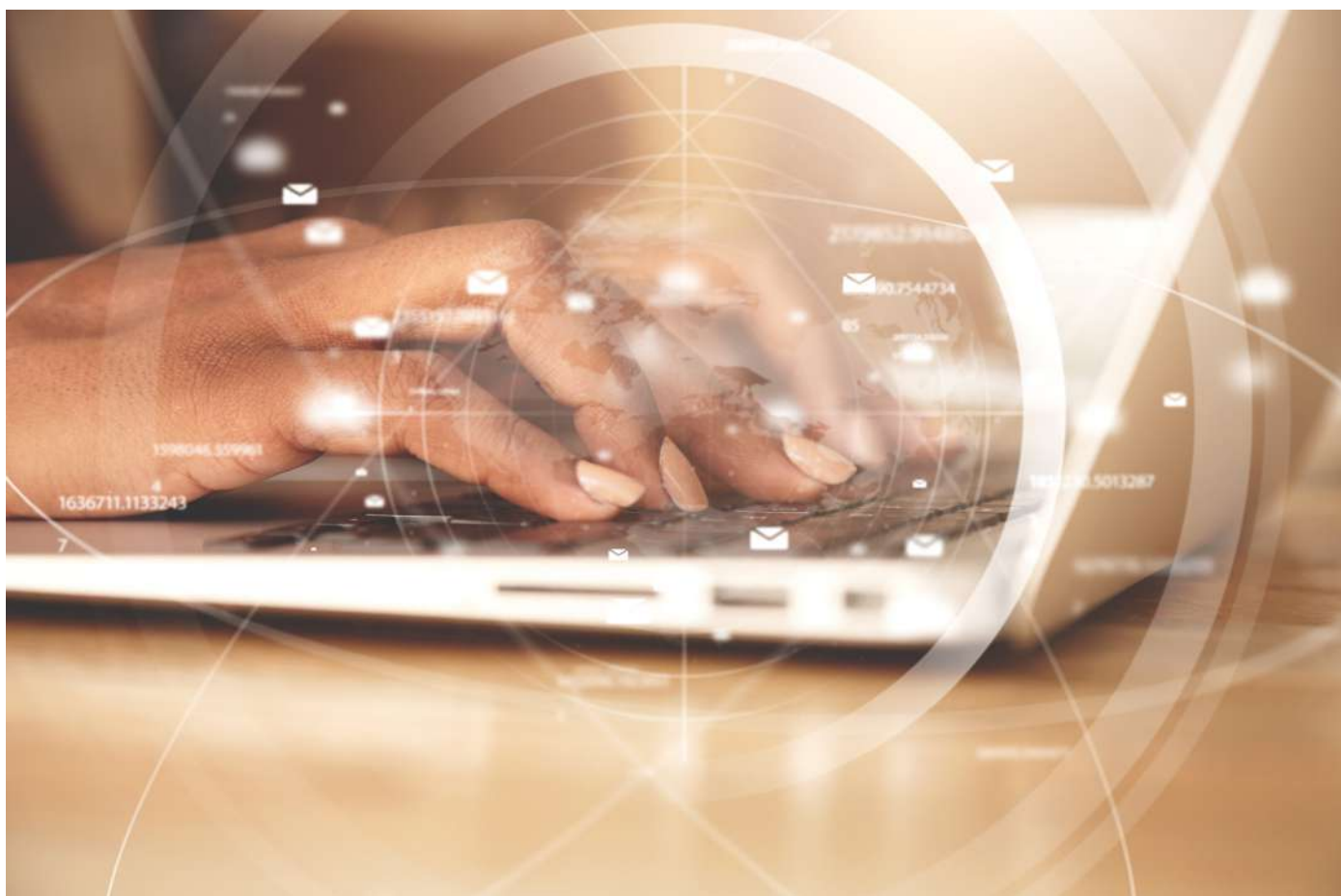


2.2. Leveraging e-procurement for development of price catalogues

E-procurement has been identified as a key component of public sector reform due to its potential to increase efficiency and reduce costs, while simultaneously improving the quality of public services (Azanlerigu & Akay, 2015). By utilising electronic tools, e-procurement systems can simplify the purchasing process for government personnel, improve collaboration between stakeholders, and provide a platform for the additional transparency of public procurement transactions (Davila, Gupta, & Palmer, 2003). Additionally, e-procurement can increase the speed of the purchasing process and reduce paperwork, resulting in cost savings for both the government and suppliers (Ofori & Fuseini, 2020).

Given its potential to improve the quality, transparency, and efficiency of public procurement, e-procurement has been identified as a priority for public sector organisations worldwide. It provides numerous advantages, including improved collaboration between stakeholders, cost savings, and reduced paperwork, and therefore has the potential to enhance the quality of public services.

E-procurement is prevalent among developed countries such as Belgium, Italy, Austria, Canada, the United Kingdom (UK), and the United States of America (USA). Adoption of e-procurement in their public sectors has resulted in numerous benefits such as reduced corruption, adequacy of information, reduced transaction costs, minimised maverick purchases, ensured value for money, increased competition, and enhanced accountability and transparency (Ofori & Fuseini, 2020). In light of these benefits, e-procurement is sprouting around the world, with a few Africa governments launching initiatives to implement new technologies aimed at improving public procurements. Tunisia, Ethiopia, Rwanda, Mauritius, Zambia, Tanzania, Kenya, and Ghana have all made deliberate decisions to utilise e-government platforms to deliver public goods and services (Azamela, Tang, Ackah, & Awozum, 2022).



According to Ibrahim et al. (2014), there are two primary philosophies for e-procurement systems: Enterprise Portal and Enterprise Applications.

- Enterprise Portal systems allow for the creation of digital marketplaces, while Enterprise Applications focus on workflow systems that support requisitions to payment cycles, as well as e-Catalogue systems, which list suppliers' items and prices over the internet (Vaidya et al., 2006).
- The e-procurement value chain consists of indent management, e-tendering, e-auctioning, vendor management, catalogue management, and contract management. Indent management, which is involved in tender preparation, is an optional component of the value chain and each procuring entity or department can define their own indenting process (Prempeh & Asare, 2017).

The use of e-procurement can support the implementation of price-catalogues for public procurement regulatory agencies in several ways.

- **First, it can be used to create and maintain an e-catalogue of prices for common use items procured by government and government entities.** The development of an e-catalogue of prices can be done using a database that stores prices for goods and services from vendors. This database can be maintained and updated regularly to ensure that the e-catalogue of prices is accurate and up-to-date. Additionally, the use of e-procurement can help streamline the process of updating the e-catalogue of prices and make the process more efficient.
- **Second, the use of e-procurement can help enforce the use of the e-catalogue of prices by government and government entities.** By using a digital platform to purchase goods and services, government and its entities can be required to use the e-catalogue of prices when making purchases. This ensures that all purchases are made at fair and reasonable prices as outlined in the e-catalogue. Additionally, the use of e-procurement enables the tracking of purchases made by government and government entities to ensure that the e-catalogue of prices is being followed.
- **Third, the use of e-procurement can support the implementation of price-catalogues by providing a platform for vendors to submit pricing information.** Vendors can submit their prices for goods and services directly to the e-catalogue, which can then be reviewed and updated as needed. This makes it easier for new vendors to enter the market and compete for government and government entity contracts. Additionally, it enables the government and its entities to compare prices from different vendors and make informed decisions when purchasing goods and services.
- **Basically, the use of e-procurement can support the implementation of price-catalogues for public procurement regulatory agencies.** By providing an e-catalogue of prices for common use items procured by government and government entities, enforcing the use of the e-catalogue, and providing a platform for vendors to submit pricing information, the use of e-procurement can help ensure that all purchases are made at fair and reasonable prices. This helps to create a more efficient and transparent procurement process and ensures that the public sector is obtaining value for money when making purchases.

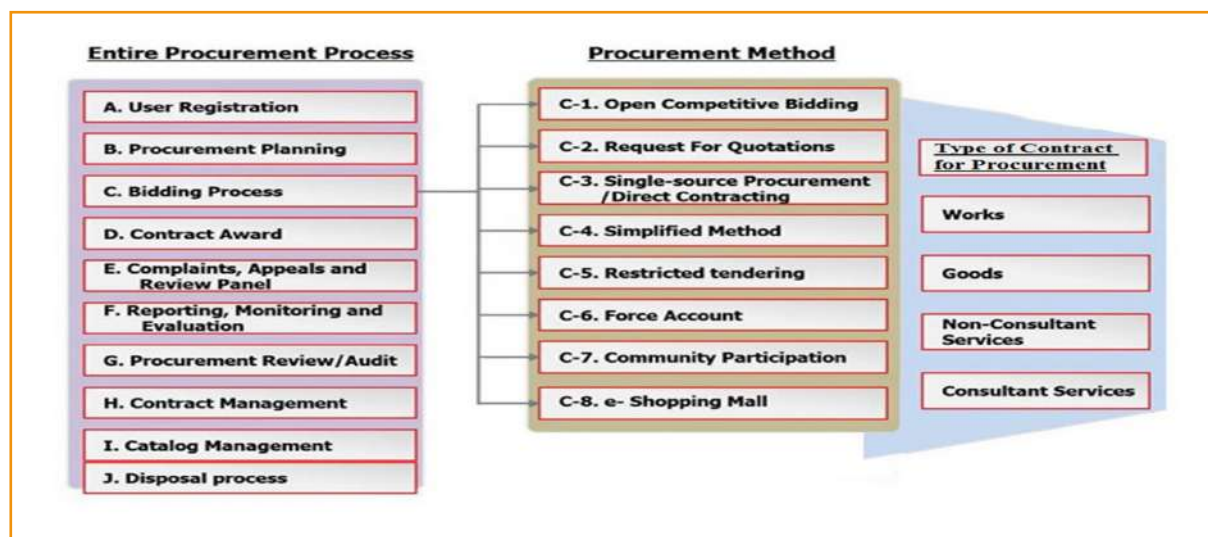
2.3. Select Case Studies

2.3.1. Umucyo (Rwanda e-Procurement System)


The Government of Rwanda has taken steps to streamline its public procurement system in order to align it with the fundamental principles of transparency, competition, economy, efficiency, fairness and accountability. In 2018, Rwanda became the first country in Africa to implement an e-procurement system nationally, following enactment of a new procurement law in 2007. The World Bank funded the development of the web-based e-procurement system called “Umucyo” after conducting a feasibility study that identified the following challenges in Rwanda’s traditional procurement system: inconvenient business registration; inaccurate management information and analytics; lack of one-stop procurement portal; and inefficient document and records management system (World Bank, 2018).

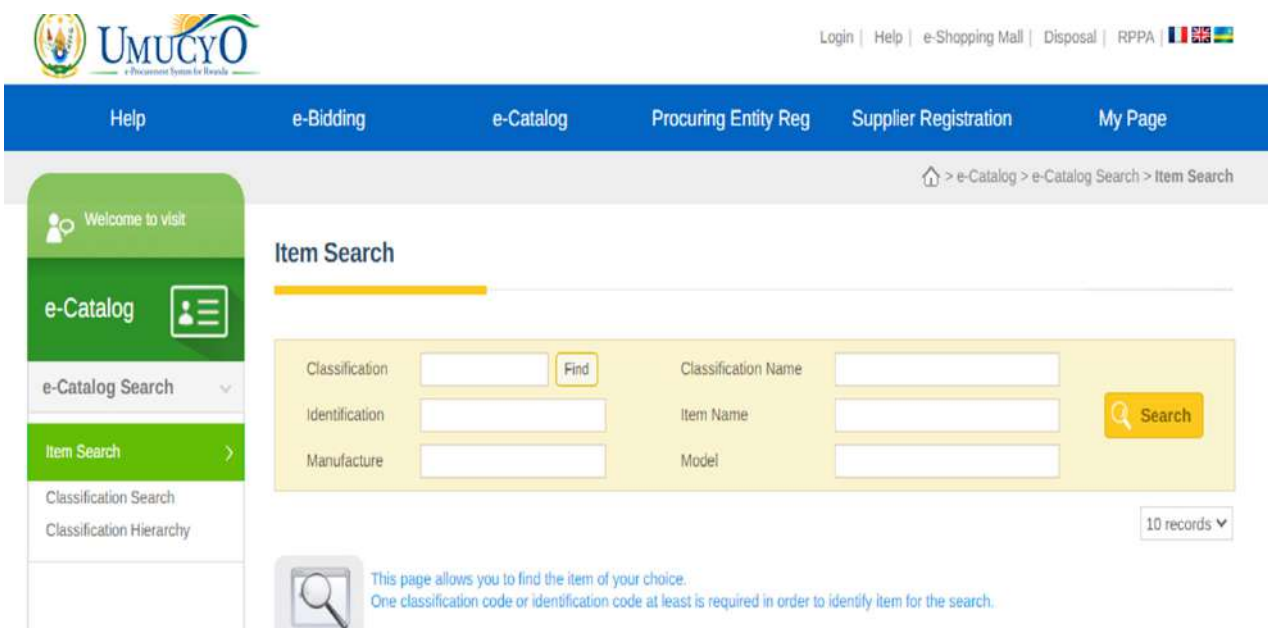
Africa Olleh Services Limited (AOS), a joint venture between the Rwandan Government and Korean Telecom Corporation, created the online procurement system based on the Korean model, which is widely considered to be one of the most advanced in the world. The government purchases goods, works, services, and non-consultancy services through this web-based procurement system. The system consists of an online portal through which suppliers can register and submit bids. The system would automatically verify the authenticity of documents uploaded by the supplier during the registration process. Following the acceptance of a bid, the system could prepare the contract and send it to the winning bidder for review. After the supplier had accepted and electronically signed the contract, the contract is shared with Rwanda’s financial management information system to issue payments (World Bank, 2018). The system supports all the procurement methods and procurement processes provisioned under the Act and additionally supports the e-Catalogue as well.

/// Figure 1: Procurement System based on Rwanda Public Procurement Processes



Source: Adopted from Danish Energy Management & Esbensen (2017)

 Figure 2: A Snapshot of the Rwanda's E-Catalogue Interface



The screenshot displays the Rwanda's E-Catalogue Interface. At the top, there is a header with the UMUCYO logo and navigation links: Login, Help, e-Shopping Mall, Disposal, RPPA, and flags for France, the UK, and Rwanda. Below this is a blue navigation bar with links: Help, e-Bidding, e-Catalog, Procuring Entity Reg, Supplier Registration, and My Page. A breadcrumb trail shows the path: Home > e-Catalog > e-Catalog Search > Item Search.

On the left, a green sidebar contains a 'Welcome to visit' message, an 'e-Catalog' link with a menu icon, and a search section with 'e-Catalog Search' (dropdown), 'Item Search' (active), 'Classification Search', and 'Classification Hierarchy'.

The main content area is titled 'Item Search'. It features a search form with the following fields:

- Classification: Find
- Classification Name:
- Identification:
- Item Name:
- Manufacture:
- Model:

 A yellow 'Search' button is located to the right of the Item Name field. Below the form, it indicates '10 records' with a dropdown arrow.

At the bottom of the search area, there is a magnifying glass icon and a message: 'This page allows you to find the item of your choice. One classification code or identification code at least is required in order to identify item for the search.'

Source: <https://www.umucyo.gov.rw/>

Schools, hospitals, and health care facilities were initially excluded from using the system. The law exempted projects funded by international development aid from using the system and gave the Rwanda Public Procurement Authority (RPPA) the authority to grant waivers on an individual basis. The portal has increased the efficiency and transparency of public procurement processes. The Government of Rwanda aims to provide all government services online by 2024 (up from 40% of services in 2017) (Global Green Growth Institute, 2019).

The adoption of the e-procurement system resulted in the following benefits (Office of Ombudsman, 2019):

- Reduced risks of corruption in public procurement by eliminating physical contact between suppliers and government officials;
- Time and cost of public procurement was also reduced through the use of online processing for the entire procurement process (e.g., the cost on advertisement of the tender, cost of print out of tender documents, filling space of document related to the tender, etc.);
- Increased public procurement efficiency through standardisation of electronic documents, supplier registration, and goods and services information;
- Created a single channel and portal for public procurement contracts;
- Provided value to the government by eliminating corruption channels for obtaining sufficient information on products and suppliers.


The World Bank (2018) highlights the following success drivers of the Rwandan e-procurement system:


- Rwanda's **political leadership-initiated** procurement reform by passing a new procurement law in 2007 and establishing a new procurement regulatory body in 2008. Political leaders sought advice from the Republic of Korea, which has one of the most advanced e-procurement systems in the world, in order to custom-design a new system for Rwanda;
- **Institutional capacity** was a critical component of this reform. Rwanda was able to build capacity within its government to implement an e-procurement system by forming a joint venture with a Korean company and seeking World Bank's assistance. Through built-in automated controls, the new system aided the government in enforcing its procurement policies. The government also assisted small and medium-sized businesses in learning how to use the system by collaborating with internet cafes across the country to train businesses interested in bidding for government contracts;
- The new system improved **transparency** in the procurement process. The government's procurement website provided equal information on the bidding processes for all types of businesses, as well as public access to procurement reports, government contracts, and bid prices;
- **Technology** formed the basis of the e-procurement system. The procurement website provided a centralised online portal to accessing information as well as obtaining documents and templates needed to participate in the procurement process. The automated system for processing bids and contracts streamlined processes, reduced the possibility of bidders falsifying documents, and made the procurement process faster and more efficient for both businesses and government organizations.

2.3.2. Ghana Electronic Procurement System (GHANEPS)

Ghana's Public Procurement Authority (PPA) launched the Ghana Electronic Procurement System (GHANEPS) in 2019 developed under the requirement of public procurement laws, to facilitate public procurement processes in Ghana. The system is intended to curb irregularities and unnecessary costs in the procurement process and to prevent cartels from forming to bid for public contracts (Allen, 2022). It is a collaborative web-based system that offers a secure, interactive, and dynamic environment for carrying out procurement of any category, complexity, or value. Ghana's Electronic Procurement System facilitates the procurement of goods, works, consultancy, non-consultancy, and asset disposal. The system also supports various public procurement procedures such as user registration, tender notification, tender preparation and submission, online tender evaluation, contract awarding, creation and management of catalogue, creation and management of framework agreements, and auctions and payments (Anyorigya, 2022).

All public entities were expected to use the e-procurement system for procurement by 2020. Despite the fact that 430 bodies have been enrolled in the system since 2019, the majority of public institutions are not using it. The Public Procurement Authority (PPA) is pressing for laws to mandate all public entities to publish tender information on the country's e-procurement platform to improve transparency (Allen, 2022). By the end of 2023, the PPA intends to award all public contracts through the GHANEPS. In the context of Ghana, the citizen's demand for accountability and transparency in the acquisition and use of public services has influenced the implementation of e-government systems (Azamela, Tang, Ackah, & Awozum, 2022).

 Figure 3: A Snapshot of Listed Tenders in GHANEPS



The screenshot displays the GHANEPS website interface. At the top, the logo 'GHANEPS' is visible with the tagline 'Emu Da Ho'. The header includes navigation links: Homepage, About, User Guides, Help, and Contact Us. A search bar is present with the text 'Search: Tenders' and buttons for 'Search', 'Advanced Search', and 'Current Tenders'. The time '15:20:53 GMT' is shown on the left.

On the left sidebar, there are sections for 'Log In' (with links for Log In, Forgot your password?, and Register as a Supplier) and 'Information' (with links for Annual Procurement Plan, Current Tenders, Awarded Contracts, Bidding Advertisements, Opened Bid Details, Public Notice, Supplier Training Videos, User Guides, Statistics, and Calendar).

The main content area shows 'Simple search' results. A table lists 5 matches:

#	Tender Title	Procuring Entity	Info	Bids Submission Deadline	Procedure	Status
1	Procurement of Cardiovascular/Hematinics/Intravenous Drugs	TRAUMA SPECIALIST HOSPITAL	AND	15/11/2022 15:00:00	National Competitive Tendering	Bid Submission
2	Procurement of Anaesthetic Drugs	TRAUMA SPECIALIST HOSPITAL	AND	15/11/2022 13:00:00	National Competitive Tendering	Bid Submission
3	Procurement of Anti Malarial Drugs	TRAUMA SPECIALIST HOSPITAL	AND	14/11/2022 13:00:00	National Competitive Tendering	Bid Submission
4	Procurement of Central Nervous System Drugs	TRAUMA SPECIALIST HOSPITAL	AND	14/11/2022 13:00:00	National Competitive Tendering	Bid Submission
5	VEHICLE	Eastern Hospital	Regional	15/11/2022 10:30:00	National Competitive Tendering	Bid Submission

At the bottom of the table area, it says 'Displaying all 5 matches.' and 'Page 1 of 1' with navigation arrows.

The footer of the page includes 'Last Update: 01 November 2022' and '©2022 European Dynamics'.

Source: GHANEPS Website (2022)

Ofori and Fuseini (2020) investigated the critical success factors (CSFs) for adopting an e-procurement system in Ghana's public sector procurement activities. Critical success factors are those that are essential to the successful implementation and use of an e-procurement system. Their research discovered the following factors and elements that could enable and facilitate the successful implementation of GHANEPS.

➤ Management support in the provision of the physical infrastructure

The availability and accessibility of quality of physical infrastructure, as well as the type and quality of physical infrastructure, such as internet facilities, e-procurement tools and application, ICT infrastructure in terms of hardware, and skilled personnel in any organisation is a function of top management's attitude towards the use of such facilities and its willingness to invest in their acquisition. Similarly, the level of awareness of e-procurement technologies among staff members is affected by type of human resource hired as well the in-service training they receive within the organisations. These issues are primarily influenced by top management of the public organisations in terms of policies and strategic decisions; and are critical components that should be put in place for effective deployment and long-term use of an e-procurement system. This infrastructure requires management support due to the high financial commitment in the short-term needed to put it in place (Ofori & Fuseini, 2020).

➤ E-procurement system features

Institutions that are expected to adopt and use GHANEPS are concerned with transaction security, common procedure standards, trust and integrity, and the compatibility of the e-procurement system. Rogers' Diffusion of Innovation (DOI) theory of 1995 supports Ofori and Fuseini's findings. Rogers noted that these are perceived characteristics of an innovative tool or technology that would encourage or discourage its adoption by firms/individuals. As a result, developers of e-procurement technologies must ensure that these characteristics are of the highest standard while also ensuring the system's usability.

➤ Monitoring and control

The monitoring and control component highlights issues affecting the users of the e-procurement system. Ofori and Fuseini (2020) linked this component to the Technology Acceptance Model (TAM) theory, which explains how workers perceive the usefulness of new technologies. According to the theory, acceptance of an innovative tool is influenced by the ease with which workers can learn, operate and use it. As a result, when implementing an innovative system, workers' behaviour and attitudes must be taken into account. To ensure the success of e-procurement in the public sector, common standards for describing, displaying, and specifying materials, works, and services must be implemented in public sector organisations. Users of the e-procurement system should also have the necessary skills to operate it. Workers may be resistant to the innovative technology, necessitating an effective change management plan and training for all stakeholders involved in the procurement process.

2.3.3. Public Procurement and Asset Disposal Board (PPADB) of Botswana

The Public Procurement and Asset Disposal Board (PPADB) was established as a parastatal entity in July 2002 following the promulgation of the Public Procurement and Asset Disposal (PPAD), Act 42:08 of 2001 which marked a major reform in procurement. The role of PPADB is to adjudicate and award tenders for the Central Government. The Public Procurement and Asset Disposal Board is also responsible for contractor registration and discipline, issuance standardised bidding documents, vetting of tender documents prior to issue, capacity building, and compliance monitoring, and providing overall advice on public procurement and assets disposal in order to improve efficiency. In accordance with section 26 of the PPAD Act, the PPADB compiles price catalogues or Guides every year. Prices are shown in the price catalogue as averages (arithmetic means) (see Figure 4). In order to determine indicative prices, a minimum of four contractors or suppliers and four procuring entities provide comparable prices. A simple arithmetic mean is calculated from these to arrive at the Reference Price. The PPADB emphasises that a bidder's price that falls outside the stipulated lower limit and upper limit, without justifiable cause, is disqualified from further evaluation, regardless of the extent to which it varies. Prices that fall within the margin of deviation are deemed reasonable.

According to the PPADB, the goal of developing the catalogues/guides is to strengthen the public procurement system in order to achieve high levels of rationality, cost reasonableness, transparency and integrity, and enhance value for money in public procurement. Procuring entities are required to use the catalogues/guides to develop procurement plans, assess reasonableness of prices during evaluation, and generate cost estimates. The price catalogue also serves as a reference point or benchmark for contractors. The PPADB also publishes instructions for procuring entities and suppliers on how to use the price catalogue. According to the price catalogue published in 2021, the price list sometimes includes brand names for the respective items, mentioned solely to emphasise the item's specificity. The listed brand names are not an exclusive recommendation or prescription by PPADB, but merely mentioned for informational purposes. Furthermore, the use of the catalogues or guides to assess reasonableness is not applicable to Works Construction projects, unless where there is procurement of items that constitute building materials (as per the specific catalogue/guide), which would in such instances be a supplies function. The guide also highlights that the plus (upper limit) or minus (lower limit) 15% deviation threshold should not be confused with the Engineers' estimate, which the Board has abolished.



Figure 4: A Snapshot of Botswana's Price Reference Guide

No.	Item Code	Item Name	Specification	Unit	Reference Prices per Locality (BWP)									
					Francistown	Gaborone	Ghanzi	Hukuntsi	Jwaneng	Kavare	Lethakane	Lobatse	Maun	Palapye
1	TR00101	Tyre	10.00R20 16 Speed Symbol-K, Max Load (kg)-3250, Brand- General/Dunlop/Lanvigator, or nearest equivalent	Each	4324,03	3945,14	4430,13	-	-	4600,00	4640,00	4000,00	5159,30	4237,75
2	TR00102	Tyre	11.2-24 Speed Symbol-B, Max Load (kg)-1250, Brand- BKT/Apollo/Duopro, or nearest equivalent	Each	4116,62	3455,96	3850,50	-	-	3740,00	-	4500,00	3392,50	3456,90
3	TR00103	Tyre	11R22.5 16 Speed Symbol-M, Max Load (kg)-3000, Brand-Triangle/Headway/Welplus, or nearest equivalent	Each	4331,64	4128,61	3508,59	3858,49	4000,00	4610,00	3220,00	3450,00	4526,50	4100,13
4	TR00104	Tyre	11R22.5 Speed Symbol-L, Max Load (kg)-3150, Brand-Goodyear/Triangle/Apollo, or nearest equivalent	Each	5155,78	4939,66	-	4493,13	5232,50	5520,00	-	-	5543,00	5155,45
5	TR00105	Tyre	12.5-80 12 Speed Symbol-30km/h, Max Load (kg)-2650, Brand-BKT/Firestone/Alliance, or nearest equivalent	Each	4037,54	3689,00	4255,00	3562,84	-	4310,69	3450,00	3450,00	4065,64	4715,00
6	TR00106	Tyre	12.00R20 18 Speed Symbol-K, Max Load (kg)-3750, Brand- Kapsen/Dunlop/Bridgestone, or nearest equivalent	Each	6140,46	5384,22	6375,40	-	6382,50	6810,00	6970,00	-	6870,86	6829,00
7	TR00107	Tyre	12R22.5 18 Speed Symbol-K, Max Load (kg)-3550, Brand-Nama/Sunitrac/Triangle, or nearest equivalent	Each	3904,62	3297,89	4600,10	-	4275,00	4008,88	3766,25	3335,00	4248,77	4484,00
8	TR00108	Tyre	12R22.5 Speed Symbol-L, Max Load (kg)-3550, Brand-Firestone/Goodyear/Duopro, or nearest equivalent	Each	4450,40	4012,09	-	4443,75	4550,00	4875,00	-	-	4769,77	4360,80

Source: PPADB Price Reference Guide (2022)

2.3.4. Public Procurement Regulatory Authority (PPRA) of Kenya

Public Procurement Regulatory Authority (PPRA) of Kenya assumed its regulatory functions after the enactment of the Public Procurement and Asset Disposal Act in 2015. The Act establishes the PPRA, among other functions, to monitor, assess, and review the public procurement and asset disposal systems to ensure they adhere to the national values and other provisions, such as Article 227 of the constitution on public procurement.

Periodically, the PPRA prepare what is called a Market Price Index, which is essentially a price list of commonly procured items with item specifications, unit of purchase, and respective brand names from various procuring entities for the various categories, as well as the location of outlets where these items are procured (see Figure 5). The Kenyan public procurement system adopted the United Nations Standard Products and Services Code (UNSPSC) for efficient and accurate classification of listed goods and services. This data is gathered by distributing a questionnaire that describes the items to selected outlets. The Market Price Index was developed to guide procuring entities with pricing decisions, thereby avoiding overpricing of goods. It is also used as a benchmark for investigations by the Office of the Auditor General (OAG) and other watchdog agencies.

The data collected from the outlets is analysed to determine the average price for each item. The resulting average price considers the various types currently available in the market. Where prices obtained from different outlets for various items differed greatly, prices out of sync with the others are ignored in calculating the average. In cases where there are less than three prices for a specific item in a town, then the mean price for the item is viewed as prone to bias and is therefore excluded from the report. According to the PPRA, the prices are indicative, and the procuring entity are urged to consider the provisions of Regulation 43(4) of the Public Procurement and Asset Disposal Regulations of 2020 when making a procurement decision based on the Market Price Index.

In some cases, the brand names are only mentioned to emphasise the item's uniqueness. Therefore, the stated brand names are not an exclusive recommendation or prescription by PPRA to public entities, but are merely mentioned for the purpose of information. The July 2021 Market Survey prices were collected in five towns: Nairobi, Mombasa, Kisumu, Eldoret and Bungoma. Except for Nairobi, where ten outlets were targeted, all other towns had five outlets per category. Geometric Mean, Standard Deviation, Coefficient of Variation, and Count were the variables calculated (PPRA, 2021).



Figure 5: A Snapshot of Kenya's Market Price Index

I. BUILDING MATERIALS

Code	Service	Units of Measurement	Mombasa	Eldoret	Bungoma	Kisumu	Nairobi	All	UNSPSC Code
1201	Cement (Ordinary)	50 Kg bag	643	580	597	592	580	598	301116.01
1202	Water Proof Cement	1 Kg bag	134	129	105	154	128	126	301116.02
1203	Road Lime	Raw 25 Kg bag	553	678	603	621	321	523	111117.01
1204	Sand	Per ton	-	-	1,019	1,800	1,297	1,310	111116.01
1205	Aggregate/ballast	Per ton	-	-	-	-	1,977	1,991	301023.04
1206	Structural steel	Per ton	-	-	-	-	-	-	111118.01
1207	Gravel/Murram	Per ton	-	-	992	-	-	-	111116.02
1208	Quarry Dust	Per ton	-	-	975	958	1,310	1,031	111116.03
1209	Black light steel pipe 6 meters	15mm Normal Bore x 2mm thick	-	-	-	-	1,116	1,136	401417.01
1210	Black light steel pipe 6 meters	25mm Normal Bore x 2.65mm thick	1,500	-	1,494	1,860	2,012	1,831	401417.02
1211	Black light steel pipe 6 meters	40mm Normal Bore x 2.90mm thick	2,664	3,160	2,081	3,017	3,437	2,971	401417.03
1212	Black medium steel pipe 6 metres	15mm Normal Bore x 2.65mm thick	-	-	1,485	1,707	1,328	1,388	401417.04
1213	Black medium steel pipe 6 metres	25mm Normal Bore x 3.25mm thick	-	-	2,065	3,003	2,352	2,345	401417.05

Source: PPRA Market Price Index Survey Results (2021)

2.3.4. Lessons learnt

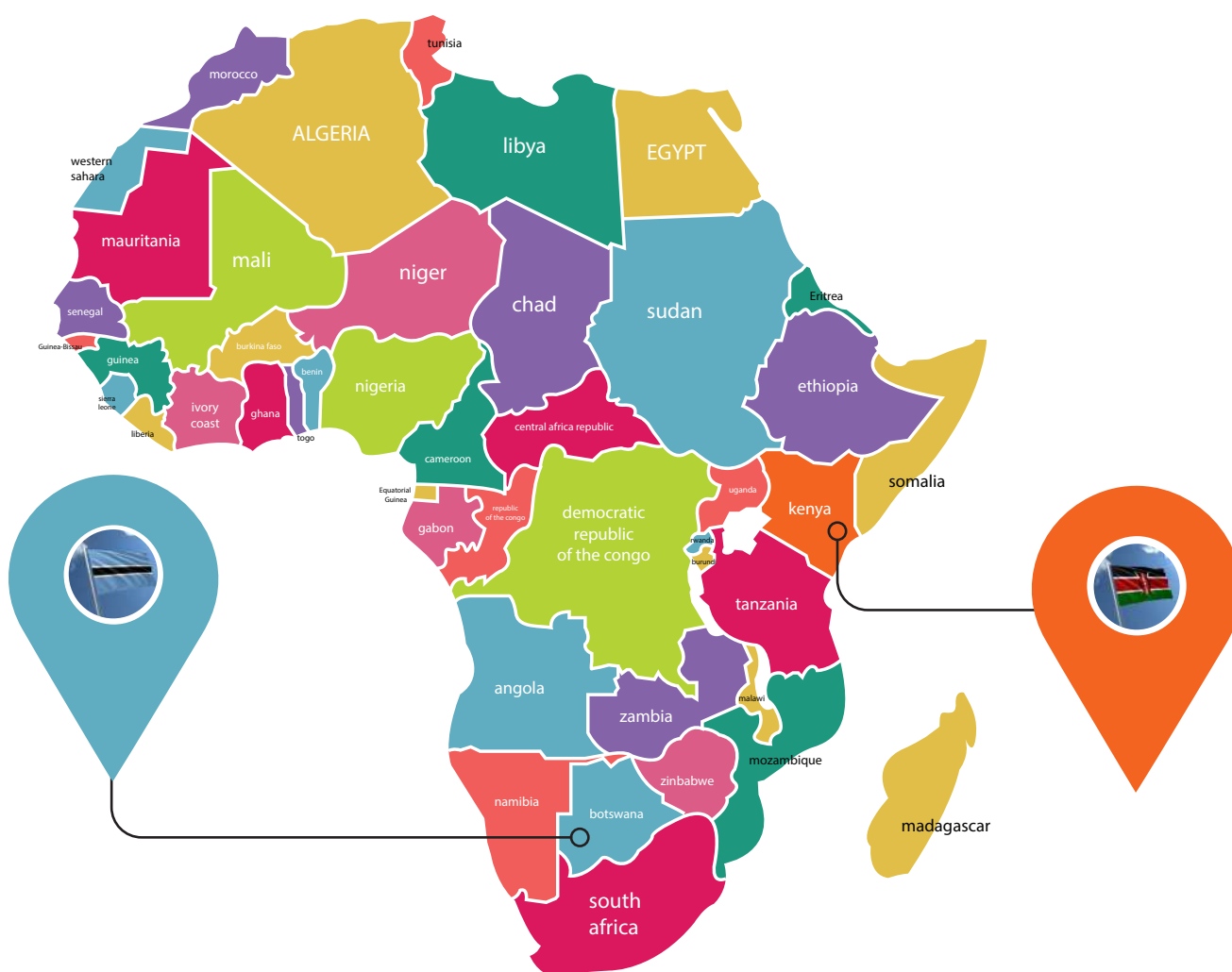
Public procurement is at the heart of good governance worldwide. A reliable and transparent public procurement system can promote economic and social development. The potential of e-procurement to enhance the efficiency and effectiveness of public sector procurement is well documented in literature. There are critical success factors that must be considered for the successful implementation of a public e-procurement system. The critical success factors include, among others, the willingness from organisation management and politicians to implement the system, institutional capacity, legislative support, partnership with development partners (e.g., World Bank, UNDP), implementation strategy and framework, internet access and availability of ICT infrastructure, and security of the e-procurement features.

The ESPPRA with support from the World Bank conducted an e-Government Procurement (e-GP) Readiness Assessment in 2019. The Government Procurement Readiness Assessment was intended to determine level of readiness of Eswatini public and private sector to make a transition to e-Government Procurement in a sustainable manner (ESPPRA, 2019).

- **The assessment found that the level of readiness of Eswatini is satisfactory for the phased introduction of the e-GP system, starting with the most ready and most willing procuring entities and gradually rolling out across the country.**
- **One of the recommendations of the readiness report was the introduction of price guides or price catalogues to help procuring entities with procurement estimation, benchmarking the prices in the evaluation and defining the level of quality of the procurement items.**

Based on the analysis of the case studies from Rwanda and Ghana and the findings of the readiness assessment report, Eswatini is not 100 percent ready to implement an end-to-end e-procurement system like the Umucyo and GHANEPS.

- However, as the ESPPRA develops the e-catalogue, it should have it in mind that, **ultimately, an integrated end-to-end e-procurement system is the cornerstone of public sector procurement reforms.** The end-to-end e-procurement system should be home-grown and it should align with the existing process.
- The Survey of Market Prices for Common Use Items is thus a **positive step towards implementing procurement reforms in Eswatini.**
- **Lessons can be drawn from countries such as Botswana and Kenya on how ESPPRA can set up and present the e-Catalogue.** The Public Procurement Act of 2011 section 8 gives ESPPRA the authority to introduce information and communication technology (ICT) in public procurement. Specifically, section 8(1) mandates ESPPRA to “examine and recommend ways of introducing in public procurement, at appropriate stages, the use of ICT, and other technical innovations, where such technology promotes the objectives of the Act.” The regulatory authority will need to develop the rules and regulations to enforce the use of the e-Catalogue by procuring entities when making procurement decisions.



3. / Methodology

This section presents the methodology or approach used to achieve the objectives of the study. This report is the result of a Survey of Market Prices for Common Use Items collected from several outlets across all four regions of the country including Hhohho, Manzini, Lubombo, and Shiselweni. The study was conducted in the following stages: Stage 1 involved profiling typical suppliers in each category and physically collecting market prices from at least three purposively selected retail outlets; Stage 2 entailed calculating price averages; and Stage 3 involved designing and developing the e-catalogue.

3.1. Collection of Market Prices for Common Use Items

A market survey collecting prices of common use items procured by government and its entities was conducted in all four regions of Eswatini. The survey collected product descriptions, specifications, brands, and prices from at least three outlets in each of the four regions. Suppliers were purposefully sampled, and were chosen as those who would be used by the procuring entities. Retailers and suppliers were surveyed in the towns of Mbabane, Piggs Peak, Matsapha, Manzini, Mankayane, Siphofaneni, Matata, Siteki, Simunye, and Nhlangano.

Information on suppliers was gathered from the procuring entities and their extensive knowledge of the industries used to identify key suppliers. To obtain the most accurate price quotes, the data collection team selected at least three quotes per item from each of the four regions in the country, resulting in a total of 12 prices per item.

The average price of each item was calculated from the maximum number of quotes solicited for each particular item. Since there are 17 categories of common use products, it was estimated that there are approximately 16,202 individual common use items that needed to be quoted for prices, implying that the team needed to collect a total of approximately 193,404 prices. Table 1 presents the categories of common use items.



ESEPARC's comprehensive research across Eswatini's regions delves into common use items, capturing prices, specifications, and brands. Purposeful sampling and collaboration with key suppliers ensure robust data, with over 193,404 prices collected for approximately 16,202 individual items. A closer look at Table 1 reveals the diverse categories shaping informed decision-making in public procurement."

/// Table 1: Categories of Common Use Items

Category	No. of items	Three (3) prices per region	Prices to be solicited
Batteries	60	12	720
Blinds and Curtaining	648	12	7, 776
Building Materials	7, 143		85, 716
Cleaning Materials and Chemicals	215	12	2, 580
Computer Consumables	1, 443	12	17, 316
Electrical Materials	4, 000	12	48, 000
Fruits and Vegetables	46	12	552
Groceries	186	12	2, 232
ICT	300	12	3, 600
Lubricants, Oils, and Greases	52	12	624
Meat and Meat Products	55	12	660
Office Furniture	123	12	1, 656
Office Stationery	524	12	6, 288
Petroleum Gas	8	12	96
Tyres	337	12	4, 044
Printing of Stationery	737	12	8, 844
Protective Clothing and Uniform	225	12	2, 700
Total	16,102		193,404

3.1.1. Data Collection Tool Development and Pre-Testing

The research team recruited 64 experienced data collectors (enumerators) to undertake the survey. Supervisors were selected based on their research experience and leadership capabilities. A data collection tool was developed with relevant information (product/product description, specifications, unit/unit of measurement, and supplier prices and contact information). A three-day training workshop was conducted for the enumerators to understand the survey's purpose and objectives, and a pre-testing of the data collection tool was conducted to ensure its accuracy. Finally, enumerators conducted face-to-face interviews with suppliers to administer the data collection tool, confirming the business's existence and product quality.

/// Figure 6: A Snapshot of the Data Collection Tool

Product Description	Product Specifications	Unit/Unit of Measurement	Name of Supplier 1	Name of Supplier 2	Name of Supplier 3
			Location; Contact Details	Location; Contact Details	Location; Contact Details
			Price (SZL)	Price (SZL)	Price (SZL)

Source: Microsoft Excel Spreadsheet

In order to ensure accuracy, the data collected in the field was submitted for assessment and validation. This process monitored for duplicates and undefined values, and any spreadsheets containing errors were rejected and returned to the responsible enumerator for review and correction.

3.1.2. Description of Data

The data provided gives approximate regional prices for items listed to assist procuring entities with budgeting and to get the best value for money. Comparing the prices quoted to the existing market prices before entering into a contract with a supplier can enable the procuring entities to make accurate estimations on the purchase amount for each of the items they are looking for as well as find the most suitable supplier to deliver the required item.

The list of items in each category is not exhaustive in terms providing all types of goods procured by government and its entities. The catalogue of prices only covers common use items.

- **Prices collected are inclusive of value added tax (VAT)** and are not subject to any product promotion discounts that may have been in effect at the time of data collection.
- It is worth noting that the **prices in the e-catalogue serve as a reference point for both the procuring entity and the supplier, and that the actual prices may vary slightly between suppliers.**
- **The average market price information can help businesses develop a successful pricing strategy by determining the price range in which they are most likely to win a tender.**
- The price guide **should be reviewed and updated annually** to ensure prices are updated with changes in the market such as inflation, demand, supply, etc. In a year where the market survey could not be undertaken, the Consumer Price Index (CPI) will be used to indicate changes in prices of common use items.

3.2. Calculation of Price Averages

The data was captured in Microsoft Excel Spreadsheets and was analysed using simple statistical procedures. During the analysis the following statistical measurements were calculated: Count, Arithmetic Mean or Average, Standard Deviation, and Confidence Interval.

I. The Arithmetic Mean or Average is the sum of a collection of prices divided by the count of prices in the collection. **It is a simple average of all prices collected.** On its own it communicates the basic price information but does not indicate anything about the spread of the prices in terms of minimum and maximum price. Other statistical indicators were calculated to convey information about the spread of prices away from the mean price, as well as the price range a bulk of the suppliers are most likely to charge.

II. The Standard Deviation measures how widely prices are dispersed from the average price. **A low standard deviation signifies a minor variation from the average price, while a higher standard deviation means the prices have deviated considerably from the average price.** The standard deviation is calculated as $\sqrt{(\sum(P-p)^2)/n}$ where P denotes the observed price, p denotes the mean of all the observed prices, and n is the total number of observed prices.

III. A confidence interval (CI) is a range of values around the expected outcome within which we expect the actual outcome to be some specified percentage of the time. A 95% confidence interval was used in this instance. **Meaning that we expect quoted prices to fall within a certain range (lower limit and upper limit) 95% of the time.**

IV. A Count is the number of valid prices which were used to calculate the mean. ***In this case, valid prices are prices obtained after eliminating the outlier prices.***

Items with no regional average price were either not available at the time of data collection or there were no prices to generate the average price. Items which did not meet the criteria for three quotations were not included in the pricing guide.

3.2.1. Dealing with Outliers

Outliers in the data were identified and dealt with appropriately. Price outliers caused by data entry errors were corrected. When an error could not be corrected, the price was removed from the data. In cases where there were less than three prices for a specific item in a region, the average price for the item was viewed as prone to bias and was therefore excluded from the report.

3.3. Designing and Developing an Online Catalogue (e-Catalogue)

E-catalogues are an important component of any e-procurement solution, and they are more than just a tool for loading the prices and features of products and services for approval and then integrating into an e-marketplace to purchase against. They are, in essence, intelligent and integrated sources of information that enable nearly all purchasing scenarios, with the support of a robust e-marketplace where requesters can search between e-catalogues — all while adhering with the organisation's business rules and standards.

The platform will include a database of 17 common use item categories, including prices, unit, and specifications. Given that these items' quality and future trends may change, the e-catalogue will need to be updated and adjusted to reflect changes in the number of items, preferences, and prices per category.

- ***It is important to note that the e-catalogue must be user-friendly in order to communicate complex information in a simple way that all procuring entities and suppliers can use.***
- ***The e-catalogue will have a back-end for ESPPRA administrators and a portal for suppliers to input their prices for common use items for that year.***

The calculation of common use items must be designed in such a way that it becomes automated, allowing for efficient catalogue production each year. In the initial phase there will be issues of incomplete, inconsistent, or inaccurate data. This data can be improved over time by communicating with procuring entities and suppliers about how the data will be used and published, as well as the importance of having accurate data.

3.4. Preparing and putting in place a process that would allow the Agency to produce an Annual Price Catalogue for all Procuring Entities

The procurement system is a complex process that necessitates the participation various stakeholders in order to develop, monitor, and implement a transparent and efficient system. The involvement of different stakeholders in the development of the ESPPRA's annual price cataloguing system is critical. Procuring institutions understand the types of products and services required by their organisations to meet institutional needs, and suppliers are aware of market availability and pricing. Accordingly, engagement with common suppliers of specific products should also be established and maintained to ensure that they actively participate in updating information in the e-Catalogue. Ensuring widespread and coherent participation of all stakeholders will improve data availability.

In the initial phase, the catalogue contains information of common used items including their specifications, unit of purchase, and brand names from various suppliers for the different categories. The prices of common use items are to be collected and published annually, because of possible changes in market prices and availability of products. The prices collected will be analysed to determine average prices for each year the catalogue is published.

4.

General Observations

The Survey of Market Prices for Common Use Items was carried out in all regions of the country including Hhohho, Manzini, Lubombo, and Shiselweni. The survey collected prices from 580 suppliers, with Hhohho and Ma regions accounting for 79.0% of those covered (see Table 2).

- ***The majority of economic activity takes place in the Manzini Hhohho regions, particularly along the Ngwenya-Mbabane-Matsi Manzini corridor. It is not surprising that the majority of suppliers located in these areas.***
- It is also worth noting that some vendors provided prices for multiple categories. For example, one supplier, e.g., Investments Group C, provide cleaning supplies, protective clothing, and office furniture procuring entities. As a result, the 580 observed include vendors were counted more than once due to this reason.
- ***There are categories in the Lubombo and Shiselweni region that recorded zero prices, either because the items were simply not supplied by the vendors or because there were no vendors in the region that supplied the specified items.*** These categories include, Blinds and Curtaining, Cleaning Materials and Chemicals, Information and Communication Technology (ICT), Computer Consumables, Lubricants, Oils, and Greases, and Printing of Stationery. The gap between the regions is worth further investigation to ascertain other reasons why this is happening so that strategies can be employed to encourage suppliers in the Lubombo and Shiselweni region to participate in public procurement system.



Addressing Disparities: Zero prices recorded in Lubombo and Shiselweni regions prompt investigation. Unveiling reasons behind vendor absence in specified categories fuels strategies for inclusive public procurement participation.

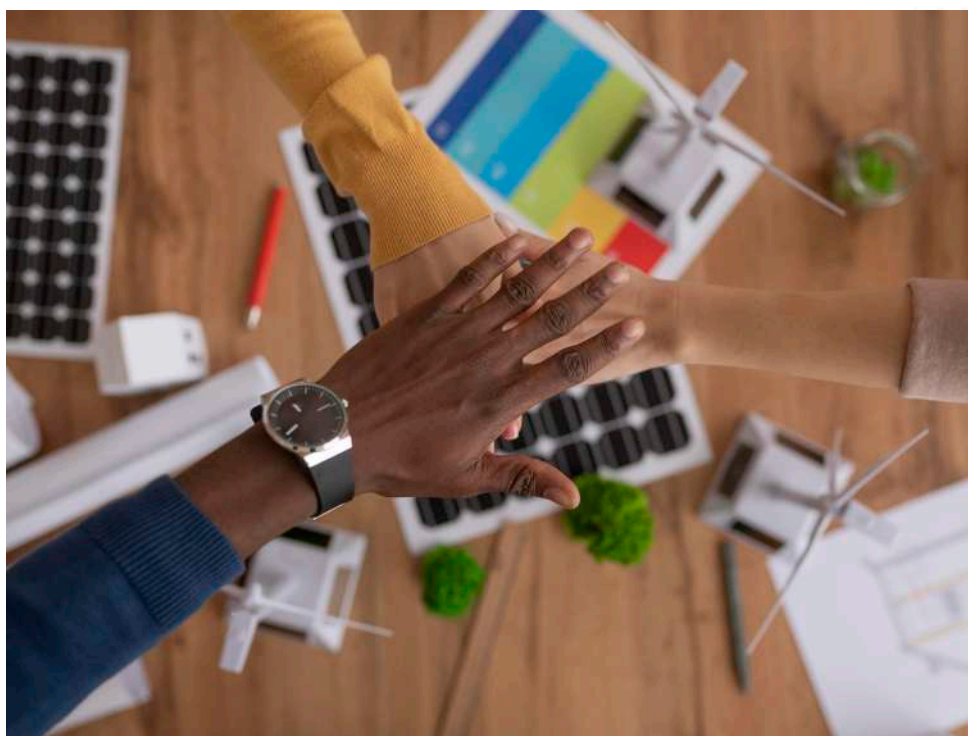


Table 2: Number of Suppliers covered in all Regions

Category	Regions				Total
	Hhohho	Manzini	Lubombo	Shiselweni	
Batteries	8	10	11	3	32
Blinds and Curtaining	14	5	0	2	21
Building Materials	29	57	4	2	92
Cleaning Materials and Chemicals	23	13	0	2	38
Computer Consumables	25	10	0	2	37
Electrical Materials	24	24	7	9	64
Fruits and Vegetables	8	12	6	5	31
Groceries	11	11	8	4	34
ICT	11	8	0	2	21
Lubricants, Oils, and Greases	4	1	1	0	6
Meat and Meat Products	9	10	7	7	33
Office Furniture	22	14	9	7	52
Office Stationery	16	17	4	6	43
Petroleum Gas	5	5	5	2	17
Printing of Stationery	6	2	0	0	8
Protective Clothing and Uniform	13	16	4	1	34
Tyres	9	4	1	3	17
Total	237	219	67	57	580

- **Data collection has revealed dissatisfaction among public procurement vendors with procuring entities and the public procurement regulatory environment.** They lamented about late payments for goods or services, especially from Government ministries. In 2018, reports indicated that the Government of Eswatini owed suppliers about E5 billion. This debt has been ongoing for years due to the Government's weak financial position and weak internal control where some invoices were not known by Government, yet the Suppliers referred to those as late payments. Consequently, suppliers have become discouraged from participating in tenders, resulting in fewer bidders for requests. **This subdued level of competition has compromised the goal of public procurement policy to achieve the best value for money.** Those who do bid have to take out bank loans at high interest rates, thus increasing tender prices to counter the high interest rates and late payment for central Government.
- **Interactions with suppliers across the country also indicated that some suppliers are not fully aware of ESPPRA's mandate and its role in public procurement.** They bemoaned corruption in public procurement and were of the view that ESPPRA is not doing enough to promote compliance with procurement rules, and hence some suppliers refused to participate in the study for this reason. Some suppliers were apprehensive about participation because of the misconception that ESPPRA and the Government were trying to fix prices for common used items, believing the collected prices would become outdated in the next six months due to inflation. This calls for more engagement between ESPPRA and suppliers to build a better understanding of the regulator's role in advancing Eswatini's public procurement system.

- **Price differences between suppliers were observed.** The extent of price variations were due to a number of factors. Prices were collected from both retail outlets and businesses that bid for government tenders. The data reveals that prices of government suppliers are higher than retail suppliers, since their customers are mainly the public. The Law of One Price states that identical assets or commodities should have the same price no matter where they are, but this is not always true. In reality, each business must factor its own costs of doing business, for example shipping, transaction fees, and tariffs, when setting their prices. As a result, the cost of doing business differs from one business to another, leading to the observed price variation.
- **Classifying and describing common items posed a few challenges, as some suppliers found it difficult to comprehend or relate to the terminology (nomenclature) used to characterise each item or class of items.** This was particularly true for items under Building Materials, Electrical Materials, Computer Consumables, and Office Furniture. The list of items under Building Materials and Electrical Materials was so extensive that it deterred some suppliers from providing a price list. Moreover, a majority of the specified quantities in the Groceries categories were not available in retail outlets, thus prices collected were of quantities which were available at the time of data collection. Harmonising the description and classification of common use items with international standards, like the United Nations Standard Product and Service Code (UNSPSC), could help solve some of these issues. Finally, suppliers of Computer Consumables and ICT identified some items as outdated or obsolete, including items from brands such as Brother, Kyocera, OKI, Panasonic, and Epson.



5.

Findings per category of common use items

5.1. Tyres, Tubes, Tyre Accessories, and Tubeless Valves

There are 337 unique items in the tyres, tubes, and accessories category. The items in this category are classified based on tyre size, speed rate, and the type of vehicle that uses the specified tyre. Tubes are classified by size and speed rate, whereas tyre accessories are classified by flap sizes, patches, cross-ply and radial gaiters, tubeless repair kit, solution, lubricants, offer to buy back old tyres, and flap size (C/NC). Tubeless valves are classified based on vehicle type and valve size. Prices were obtained from 9 suppliers in Hhohho, 4 in Manzini, 1 in Lubombo, and 3 in the Shiselweni region.

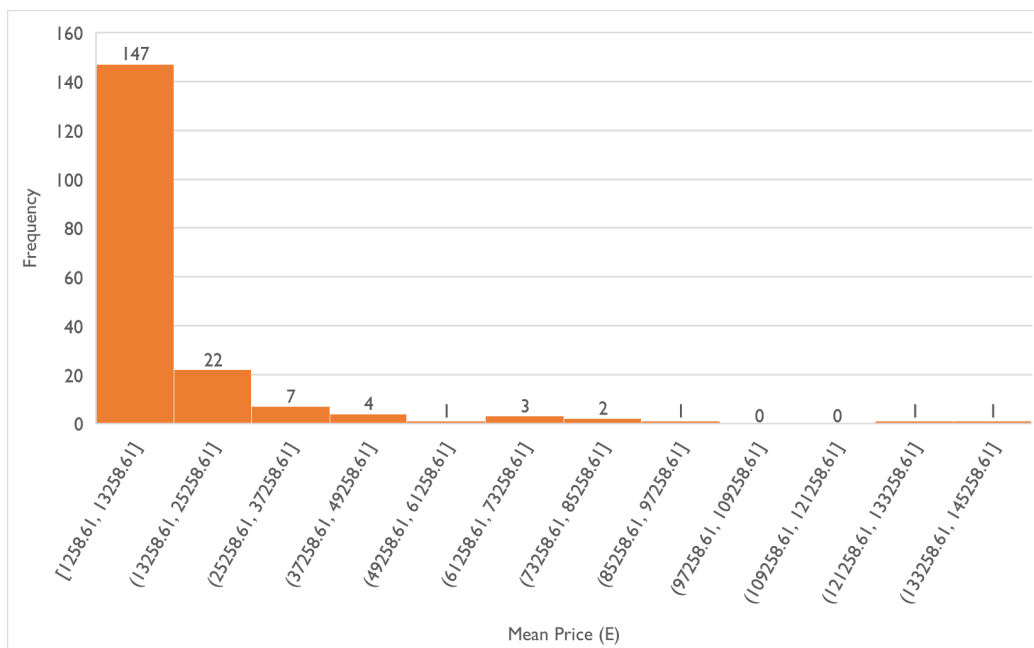


+ Tyres

- **There are 190 different kinds of tyres in the dataset.** The brands of tyres for which prices were collected includes, Continental, Goodyear, Firestone, Cooper, Apollo, Bridgestone, Michelin, and Dunlop.
- The tyres are **further classified according to type of vehicle they are produced** for such as light Vehicles (Sedans, Kombis, and Buses), Truck S (Recovery, Fire Engines, Troop Carriers, Tipper, and Drop-Sides), Plant Earthmovers (Loader, Grader, Industrial Tyres, etc.), Farm Tractors, and Trailers (Industrial Tyres).
- Fewer prices were collected for Apollo, and Bridgestone brands. **Continental tyres have the highest number (498) of prices collected followed by Firestone (484) and Dunlop (477).** The following brands had tyres that did not have prices: Goodyear (10 tyres), Firestone (19 tyres), Cooper (183 tyres), Apollo (114 tyres), Bridgestone (77), Michelin (79), Dunlop (39).
- According to Figure 6 below, the **majority of Continental tyre prices are between E1,349.18 and E13,349.18** depending on the type of vehicle, tyre size, and speed rate ply. The second most frequently observed prices are between E13,349.18 and E25,349.18. **The most expensive Continental tyres are for Farm Tractors, Trailers (industrial tyres) and Plant Earthmovers and are within the price ranges E133,349.18 and E145,349.18 towards the tail end of the histogram.**

Tires, Tubes, and Accessories: 337 unique items, diverse classifications, and comprehensive pricing from various suppliers across regions.

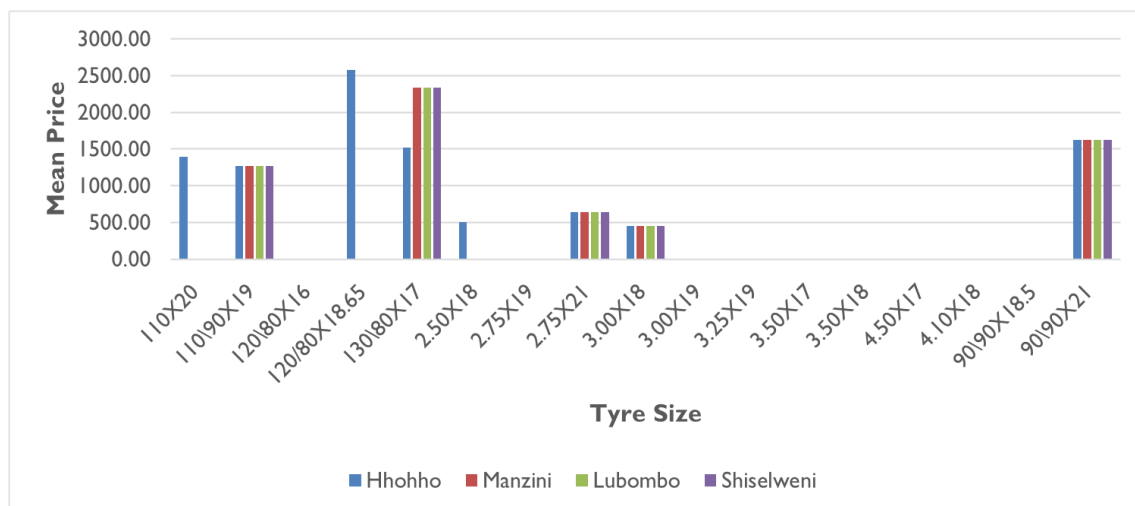
Figure 6: Continental Tyre Prices



+ Motorbikes Tyres

➤ **There are 17 different types of motorbike tyres** and nine (9) of them had no mean prices collected in all the four regions. Tyre sizes 110/90X19 130/80X17, 2.75X21, 3.00X18, and 90/90X21 retail at the same price point across all the 4 regions, as shown in the graph below. **The prices of these the above-mentioned tyres were obtained from one supplier who has shops in all 4 regions and charges the same prices for an item regardless of the location of the shop.**

Figure 7: Prices of Motorbike Tyres per Region



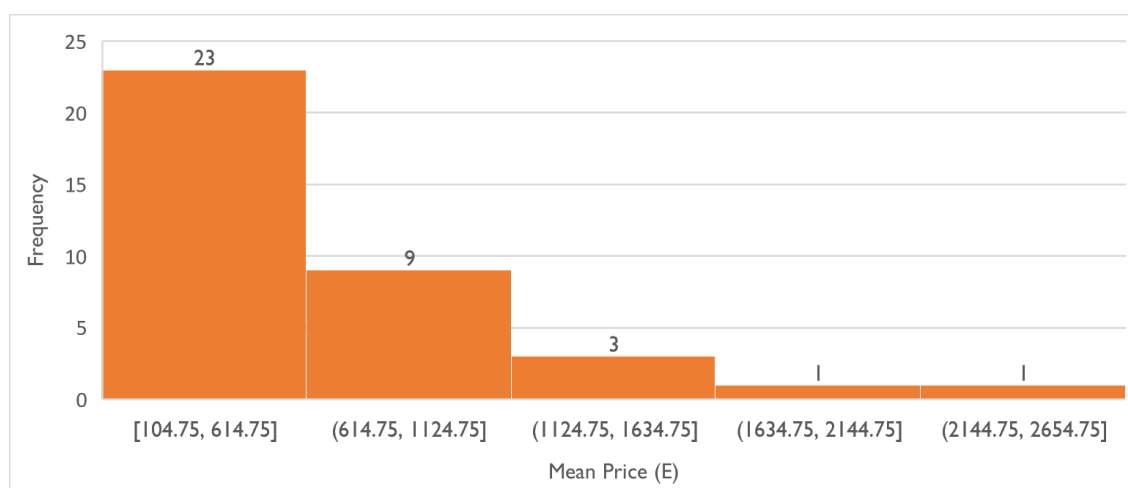
+ Tubeless Valves

- Mean prices for all tubeless valves were collected in all four regions of the country. The mean prices also vary according to the vehicle type such as, sedans, pickups/station wagons, kombis, ordinary trucks and buses, special trucks (Man, M/Benz etc.), army vehicles, tractors, earthmovers, and clamp-in tubeless stud. **Earthmovers JUMBO J690 are the most expensive valves.**

+ Tube

- **There are 40 different tube variations.** Figure 8 below shows the mean prices of tubes. The price of most of the tubes ranges between E104.75 and E614.75 depending on the size and speed rate of the tyre. The second most frequently observed prices were between E614.75 and E1,124.75; the prices landed in this range 9 times.

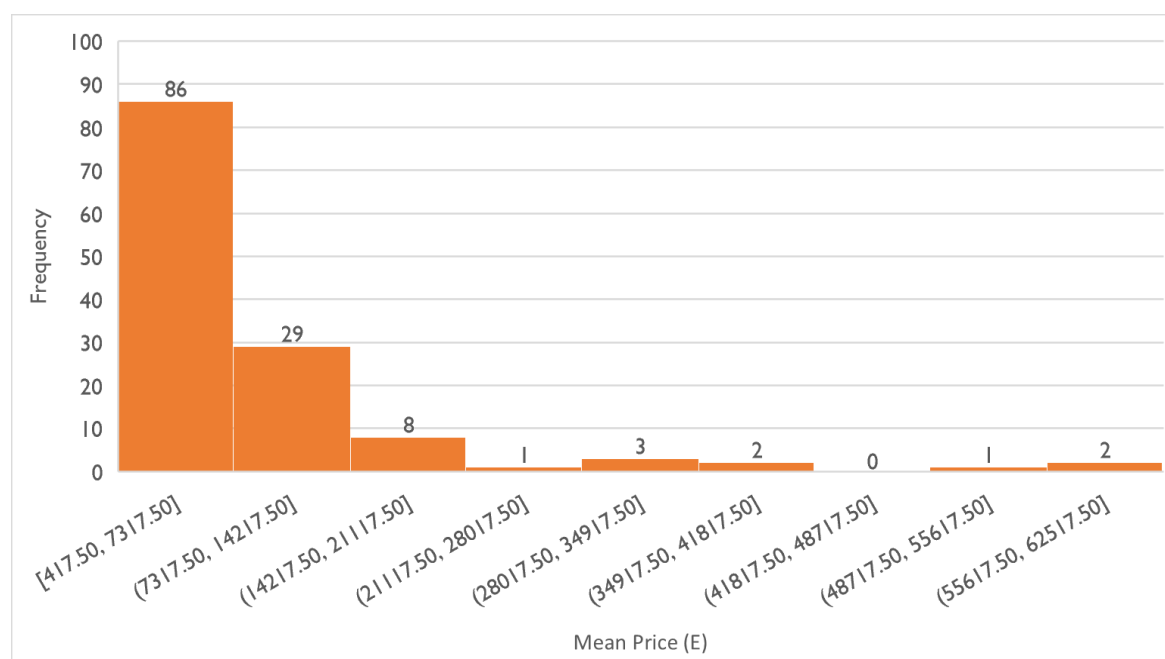
/// Figure 8: Prices of Tyre Tubes



+ 5.2 Office Furniture

- **The Office Furniture category has 123 items and each one of them has an average price.** The items are classified as desks, office tables and file dips, office chairs, foam rubber mattresses covered with green calico material embossed SG 2002/2003, filing cabinets, boardroom tables, reception, household furniture, and office couches/sofas.
- Prices were solicited from 22 suppliers in the Hhohho region (Mbabane, Sidwashini, and Pigg's Peak), 14 in Manzini (Manzini, Matsapha, Mankayane), nine (9) in Lubombo (Siteki, Matata, Simunye), and seven (7) in Shiselweni (Nhlangano).
- Suppliers in the Lubombo and Shiselweni regions did not supply 102 and 111 of the common use items, respectively.
- Figure 9 below shows the price ranges of office furniture. **The majority prices of office furniture items are between 417.50 and E7,317.50 depending on the specifications.** The second most frequently observed prices were between E7,317.50 and E14,217.50. Based on the graph, it is clear that the mean prices of office furniture are not normally distributed and are positively skewed.
- **Boardroom tables are the most expensive items under this category, with prices going up to E59,408.01, followed by office desks which can cost as much as E50,998.00.**

/// Figure 9: Office Furniture

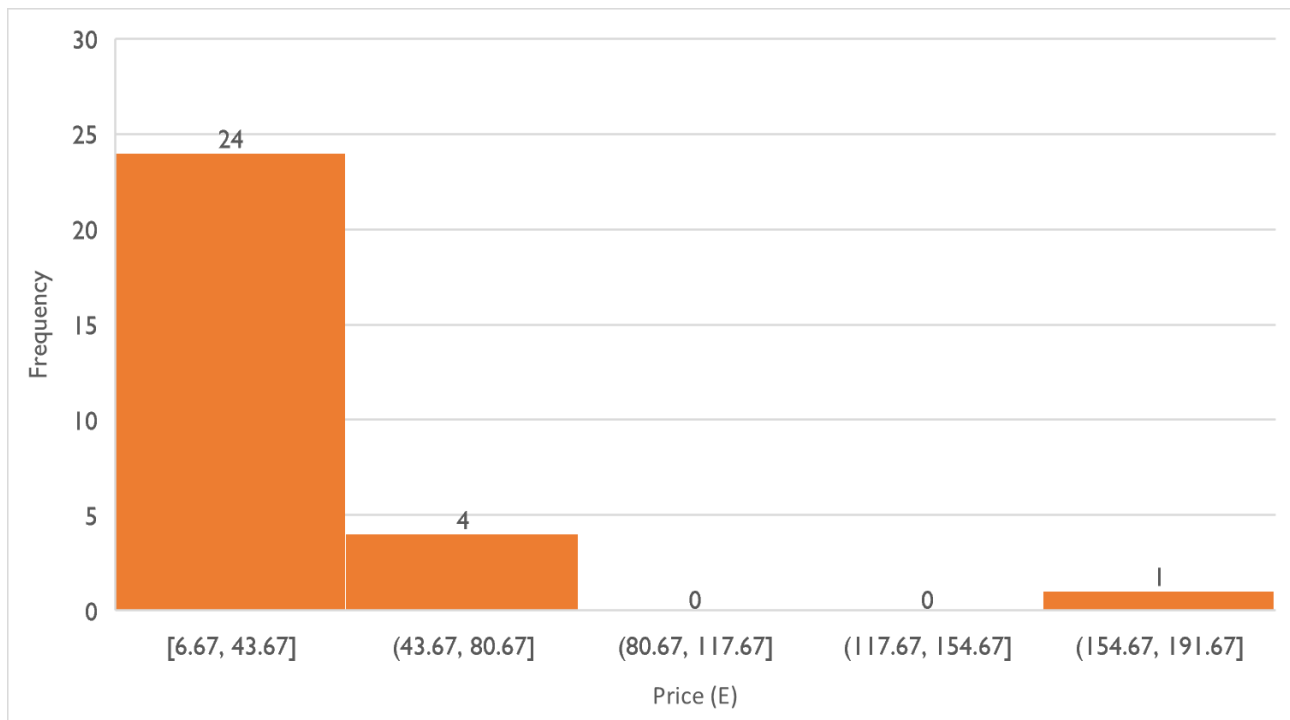


+ 5.3. Fruits and Vegetables

- **Fruits and vegetables category has 46 items classified per kg, per bundle, per head, and per 10kg. Prices from both retailers and wholesalers were collected. However, there were no wholesale prices for fruits and vegetables in the Lubombo region.**
- During data collection, items classified per 10kg were discovered to be packaged in 7kg, 5kg, and 3kg in retail shops and were accordingly reclassified where applicable. This was not the case for wholesalers who sold fruits and vegetable per 10kg.
- Prices were collected from eight (8) suppliers in Hhohho region (Mbabane, Pigg's Peak), 12 in Manzini (Manzini, Matsapha, Mankayane), six (6) in Lubombo (Siphofaneni, Siteki), and five (5) in Shiselweni region, which only consisted of Nhlanguano town.
- Every single item in this category has a mean price except those that were not found in stores because they were out of season at the time of data collection. These are peaches, litchis, jugo beans, and sweet potatoes.
- Figure 10 below shows the retail price ranges of fruits and vegetables. **The retail prices of fruits and vegetables range between E6.67 and E43.67 depending on the item and its price per kg.** The second frequently observed price ranges were between E43.67 and E80.67, which were prices of Potatoes (7kg) and Onion (7kg). Gem squash (7kg) was the only item that fell into price range E154.67 and E191.67 at the tail end of the Histogram.



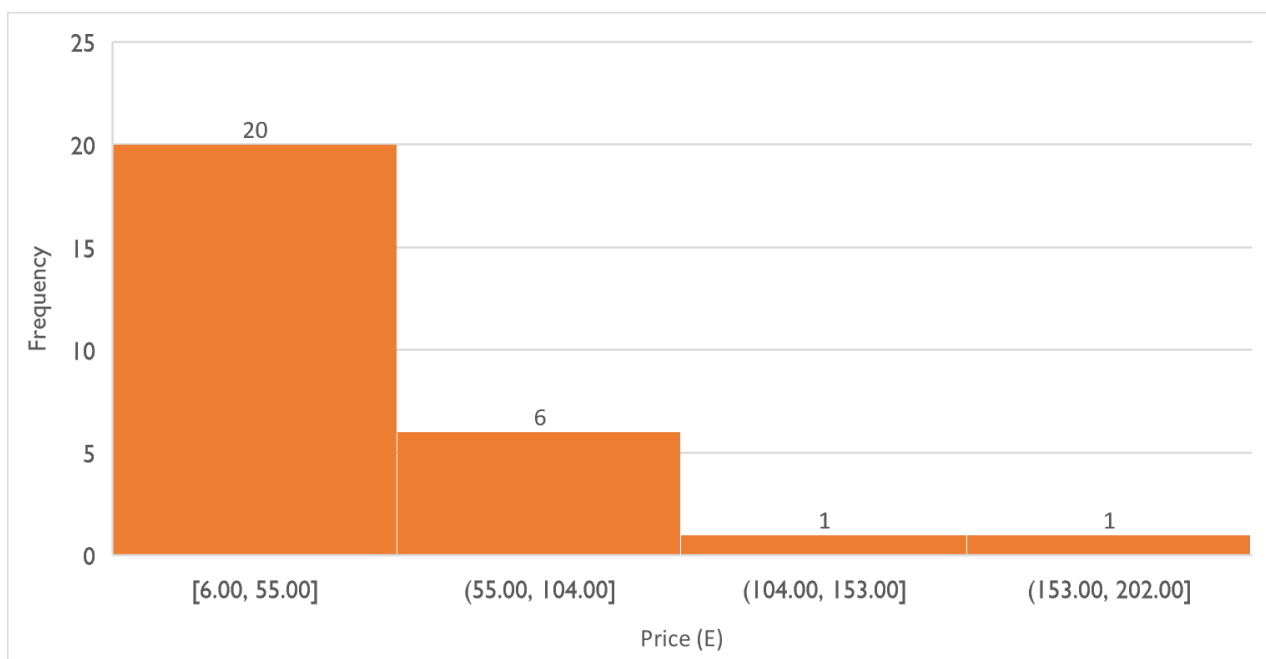
Figure 10: Retail Prices of Fruits and Vegetables




➤ Figure 11 below shows a **summary of the wholesale prices for fruits and vegetables** exhibiting a similar trend to that of retail prices. The wholesale prices are not normally distributed and are positively skewed. The majority of the prices are within the price range E6.00 and E55.00. The second most observed prices are between E55.00 and E104.00. The most expensive item were tomatoes (10kg) which fell within the price range E153,99 and E200.00.







Figure 11: Wholesale Prices of Fruits and Vegetables










5.4. Building Materials

 **The building material category has 7,134 items classified as general building materials, pipes uPV, pipes HDPE, pipes galv, accessories & equip, pump & accessories, and other materials.**

-  Prices were solicited from 28 suppliers in the Hhohho region (Sidwashini, Mbabane, and Piggs Peak), 57 in Manzini region (Manzini, Matsapha, Mankayane), 4 in Lubombo (Siphofaneni, Siteki), and 2 in Shiselweni (Nhlangano).
-  The major challenge in this category is the classification and description of the items which is unclear in some instances. Harmonising the description and classification of common use items with international standards, e.g., the United Nations Standard Product and Service Code (UNSPSC), could help solve this problem.
-  The Shiselweni and Lubombo regions contributed prices for only 114 items. Prices for pipes uPVC, pipes HDPE, pipes galv, accessories and equipment, pumps and accessories, and other materials were only obtained from suppliers located Hhohho and Manzini.
-  Prices were obtained from both the retailers and businesses that supply Government tenders. There is a stark difference between the prices of the two sets of suppliers. Prices collected from businesses that supply public procuring entities are much higher than regular retailers. Suppliers of public procuring entities have to take into consideration numerous factors such as delays in payments from Government when setting the prices of items. Thus, they tend to charge public procuring entities more to counter for the risks and effects of delays in payments.

5.5. Blinds and Curtains

 **There are 164 items under the blinds and curtains category.** These items are divided into 3 categories namely 127mm vertical blinds; curtaining materials and curtaining accessories. The 127mm vertical blinds fall into six (6) groups.

-  Group 1 consists of Dawn, Haze, Maggie, and Corduroy;
-  Group 2 consists of Athena, Bijou, Blaze, Fern, Jazz, Leaf, Malimo, New Van Goch, Paris, regal, Venus, Vogue;
-  Group 3 consists of A-Range, D-Range, Europe, Mosaic, Safari, Season, VT;
-  Group 4 consists of Bali, Ethnic, Mischa, Squares;
-  Group 5 consists of Glacier, Metallic, Minimal Glare, Finesse, W4 Spruce, Flame; and
-  Group 6 consist of Belair, Bushman, Classic, Kansas, Kalahari, Pheonix, and Vibe Metallic Brulee.

- Each group is categorised into different descriptions (D1000, D13000, D1600, D1900, D2200, D2500, D2800, D3000 and track only). Under the curtaining materials, the items are divided into Fabric with block code and lace with embroidery. Curtaining accessories are divided into 5 items namely Heavy-Duty Curtains with runners and brackets, Light Duty Curtains Tracks with runners and brackets, Curtain Rods, Curtain Tie Backs, and Curtain Tie Backs varying in different sizes.
- Blinds and curtains were mainly found in the Hhohho region, particularly at Mbabane and Sidwashini. It is also worth noting that no products were found under the blind and curtains category in the Shiselweni and Lubombo regions.
- The arithmetic mean of group 1 D3000 in Manzini region was E1,445.86 under 127 mm vertical blinds, which suggested that it was more expensive compared to the mean of E1,390.81. The standard deviation of E287.22 indicated that there was a slight variation in the price from the average.
- The most expensive 127 mm vertical blinds had an average cost of E3,850.87 under group 3 (D2500).
- For curtains, the common use items were divided into two categories: fabric with block out and lace with embroidery, each with five different codes. The highest arithmetic mean is E414.25 for fabric with block out, code 213(e) in the Manzini region. This means that, on average, this specific type of curtain material is the most expensive among all the items listed in the Table. It is also interesting to note that the prices for this specific item vary greatly between regions, with the Hhohho region having an arithmetic mean of E350.03, while the average for this item is E380.58 with a standard deviation of E93.70. This indicates that there is significant variation in the prices for this specific item across different regions in the country. Additionally, the confidence interval at 95% for this item is relatively wide, ranging from E109.94 to E651.22, which suggests that the true mean price for this item may not be accurately represented by the sample mean.
- Under curtaining accessories, the highest arithmetic mean was for the 2500 double-track heavy-duty curtains, which cost E359.88. This is followed closely by the 2500 single-track heavy-duty curtains, which cost E286.92. These are both significantly more expensive than the other curtains, with the next highest mean being E535.83 for the 4000 double-track heavy-duty curtains. This suggests that the 2500 double- and single-track curtains may be considered more premium products, perhaps due to the extra strength and durability of the double-track or the larger size of the 2500 curtains. The 1000 single-track light-duty curtains have the lowest arithmetic mean of E97.63. This is followed closely by the 1000 double-track light-duty curtains, which cost E111.14. These are both significantly cheaper than the other curtains listed, with the next lowest mean being E135.83 for the 2000 curtain rods. This suggests that the 1000 single and double-track light-duty curtains may be considered more budget-friendly products, perhaps suitable for smaller or less formal spaces. The standard deviation gives an idea of how much the actual prices may vary from the mean, while the confidence interval gives a range in which we can be 95% certain that the true population means lies. For example, the E135.80 mean for the 1000 single-track heavy-duty curtains has a standard deviation of E52.49, indicating that prices may vary by as much as +/- E52.49 from the mean.

5.6. Petroleum Gas




- There were only 8 items collected under the petroleum gas category. These items fall under 8 sub-categories namely 3kg cylinder, 6kg cylinder, 9kg cylinder, 11kg cylinder, 19kg cylinder, 45kg cylinder, and 48kg cylinder.
- The petroleum gas items were fairly distributed across the four regions. The region with the highest mean price for most cylinder sizes appears to be Manzini, while the region with the lowest mean price for most cylinder sizes appears to be Shiselweni. However, it's worth noting that the 11kg cylinder price is only reported for two regions, and the 45kg cylinder price is only reported for one region. To get a better sense of the overall pricing trends in Eswatini, one can look at the average mean prices. Across all cylinder sizes, the average price ranges from a low of E29.99 per kg for the 3kg cylinder to a high of E1,462.50 per cylinder for the 45kg cylinder.
- Overall, the average prices for the different cylinder sizes fall within a relatively narrow range, with the highest average price (for the 45kg cylinder) being only about 5 times higher than the lowest average price (for the 3kg cylinder). For smaller cylinder sizes (3kg, 6kg, and 9kg), the standard deviations are relatively low, ranging from E31.14 per kg for the 6kg cylinder to E35.28 per kg for the 9kg cylinder. This suggests that prices for these cylinder sizes are relatively consistent across regions. For larger cylinder sizes (14kg, 19kg, 45kg, and 48kg), the standard deviations are higher, ranging from E50.16 per kg for the 14kg cylinder to E181.32 per kg for the 48kg cylinder. This suggests that prices for the larger gas cylinder are more variable across regions. The Manzini region appears to have the highest arithmetic mean prices for most cylinder sizes (which suggests that natural gas is expensive in the Manzini region), while the Shiselweni region appears to have the lowest arithmetic mean prices for most cylinder sizes..

5.7. Cleaning Material and Chemicals




- There were 215 items under cleaning material and chemicals. These items fall into eleven (11) categories namely water treatment chemicals; floor maintenance chemicals; floor coating (including sealer waxes and polymer coating); polymer coating; concrete sealers; floor strippers; extra heavy-duty stripper 25L; pot scourers; Pot and pan decarbonizer 5L; Stain remover (cups & dishes) 25L; Textile Hygiene Products (Laundry); starch 25kg and Aluminium Spring clip mop holder.
- Water treatment chemicals were only collected at the Manzini and Hhohho regions. The Manzini region has a higher arithmetic mean price for all five water treatment chemicals compared to Hhohho region. Specifically, for Aluminium sulphate granular 50kg, the Manzini region has an arithmetic mean price of E883.69 compared to the Hhohho region's arithmetic mean price of E777.86. The average prices range from a low of E785.42 per 50kg for aluminium sulfate granular to a high of E1,459.90 per 68kg for chlorine gas cylinders. The higher standard deviations suggest that prices for some chemicals are more variable across regions than others. For example, the standard deviation for chlorine gas cylinders is relatively low compared to other chemicals, suggesting more consistency in prices across regions
- Under the floor maintenance chemicals, the items were collected mainly at Hhohho and Manzini region with the Black disinfectant (JEYES)10L; Jeyes fluid 25L; Mop & shine 5kg; and Mop & shine 25kg collected at the Shiselweni region. Worth noting is that prices collected from the Shiselweni region all had a higher arithmetic mean price as compared to those under the Hhohho and Manzini region. The average prices range from a low of E219.15 per 5kg of spray buff to a high of E845.97 per 25 kg of mop & shine. Floor-coating items were mostly collected at Hhohho and Manzini regions with only wax floor polish (white) 20L collected at the Shiselweni region. The Manzini region has a higher arithmetic mean price for almost all the items under the floor coating category. For example, for liquid wax floor polish

per 25L, the Manzini region has an arithmetic mean price of E1,145.46 compared to the Hhohho region's arithmetic mean of E795.32. The average prices range from a low of E219.12 for wax floor polish (white) per 5L to a high of E900.36 per 25L of Liquid wax floor polish. This indicates that there is significant variation in the prices for this specific item across different regions in the country. Additionally, the confidence interval at 95% for this item is relatively wide, ranging from E109.94 to E651.22, which suggests that the true mean price for this item may not be accurately represented by the sample mean.

5.8. Office Stationery

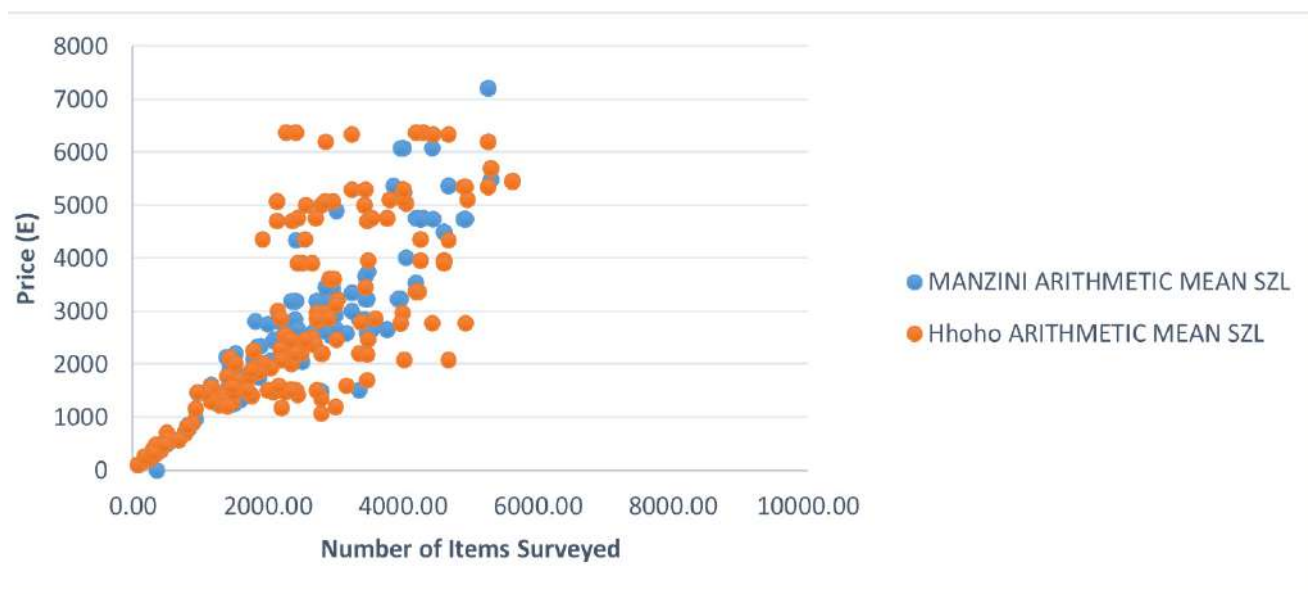
-  There were 524 items collected under the office stationery category. These items fall into various categories namely (files; transparencies; exercise books and pads; charts; photocopying paper; computer paper; letter trays; envelopes; calculators; fax machine rolls etc.).
-  Under the file category, the A4 file folder (desk pads inside) had the highest mean price of E203.29 in the Hhohho region and E270.00 in the Manzini region. This suggests that the price of these items varies significantly depending on the region. The average price for HP trans-PREMIUM is E395.95, which is the highest among all the items. This indicates that HP trans-PREMIUM is the most expensive item on average across all regions. The standard deviation of prices ranges from a low of E1.57 for file divider 10 per tip to a high of E140.73 for leather files. It appears that prices of office stationery items vary significantly depending on the region, with some items significantly more expensive than others. The high standard deviation in prices supports this observation on the significant variability in prices for different types of items.
-  Under the photocopying category, the items were collected from the four regions, however, A3 Nashua white paper per box of reams was not found in the Shiselweni and Lubombo regions. The highest mean price of E1,400.00 was observed for A3 Nashua white paper per box of reams in the Shiselweni region, which is the highest among all the other regions. The average price for A3 Nashua white paper per box of reams is E1,088.35, which is higher than the mean prices for the other items. The standard deviation ranges from E9.83 for A4 Nashua ream bond paper per 80g to E161.52 for A3 Nashua white paper per box of reams. This indicates that there is greater variability in the prices for A3 Nashua white paper per box of reams than for the other items. In other words, there is a wider range of prices for this item, which may make it more difficult to predict its cost and plan for purchases. Lastly, it seems that A3 Nashua white paper per box of reams is the most expensive item in the category, with the highest mean price and the highest average price.

5.9. Computer Consumables

-  There were 1,443 items under the computer consumables category. These items were collected according to their 7-brand name specification namely (Brothers, Kyocera, OKI, Xerox, and Panasonic; HP cartridge; Lexmark inkjet; Epson hardware; canon inkjet; Samsung toner; and Verb CD's Flash).
-  Most of the computer consumables items were largely collected in Hhohho and Manzini regions. It is also worth noting that no prices were collected in the Lubombo region because there were no suppliers available in those regions. This may be because the items were simply not supplied by the vendors or no vendors in the region supplied that specific item.
-  Some vendors indicated that items such as (OKI 01-09-5501 C5250/5450/5500 5 000 PAGES YELLOW TONER; OKI 01-09-5502 C5250/5450/5500 5 000 PAGES MAGENTA TONER; XEROX 3100MFP STANDARD CAPACITY TONER CARTRIDGE 2 200 PAGES; PANASONIC KXA136-KXF1010/KXFP101/303/KXFM131/FP303 2 X 100P; and BROTHER DS-600 MOBILE A4 SCANNER 600DPI 6PPMMONO 3PPM COLOUR) were outdated, hence no price were collected across the regions.

- The prices for items under the Brothers, Kyocera, OKI, Xerox, and Panasonic brands show a certain degree of stability between the Hhohho and Manzini regions (see Figure 12). However, there are notable differences in prices for specific items across regions. For example, the XEROX 5400 PRINT CARTRIDGE per 20,000 PAGES, which was only collected in the Hhohho region, has an average price of E9,256.00, making it the most expensive item under this brand specification. In fact, the average price for this item is also the highest among all items collected. On the other end of the price spectrum, the PANASONIC KXP3200/KXP181 RIBBON has an average price of E185.86, making it the cheapest item collected.

/// Figure 12: The average price for the Brothers, Kyocera, OKI, Xerox, and Panasonic brand per region



- The standard deviation of the price range for these items is quite wide, ranging from E185.86 to E1,056.91 for the OKI TONER 7300 PAGES C801/C821 7 per 300 PAGES YELLOW TONER. This indicates that there is significant variation in prices for specific items across different regions in the country. Additionally, some items such as the OKI 01-09-5501 C5250/5450/5500 5 000 PAGES YELLOW TONER and XEROX 3100MFP STANDARD CAPACITY TONER CARTRIDGE 2 per 200 PAGES were outdated and hence had no prices listed across all regions. This suggests that it is important for vendors to regularly update their stock and prices to ensure accurate and up-to-date market data.

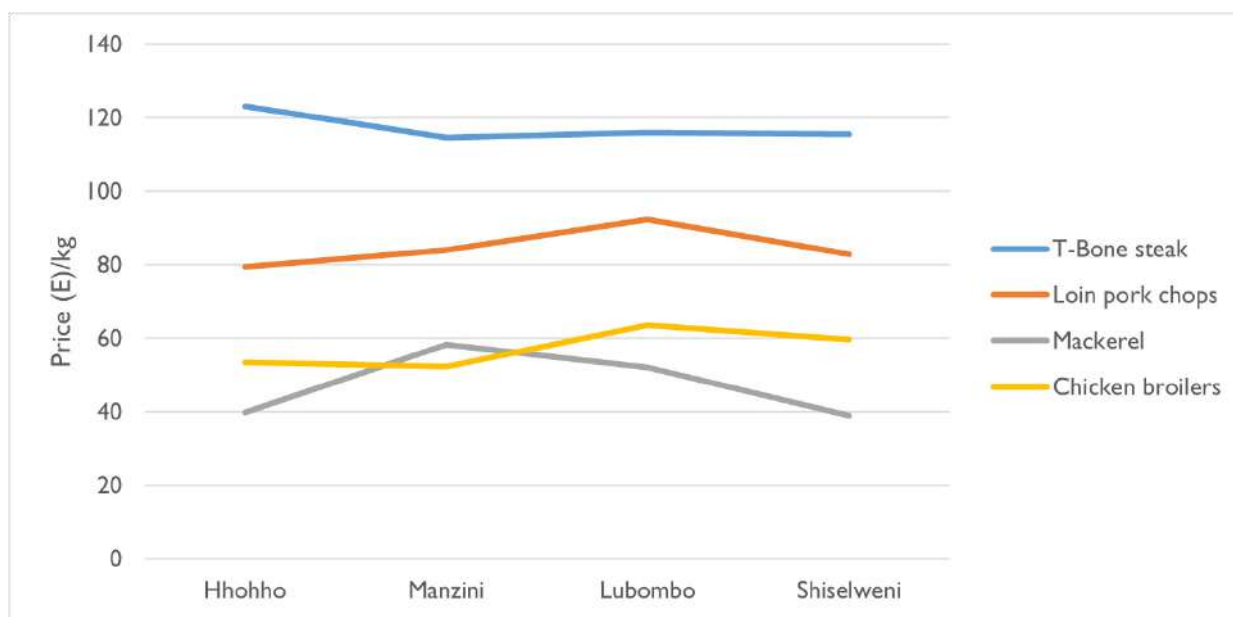
+ 5.10. Meat and Meat Products

There were 55 meat and meat products for which prices were collected, which were further divided into two sections: meat and meat products from retailers, and meat and meat products from wholesale.

- Under the retail section, the items were grouped into different sub-groups, namely beef, lamb, pork, frozen fish, and whole chicken. **The most expensive beef product across all regions is the fillet, with an average price of E140.81 per kg, while the least expensive beef product is ox lungs, with an average price of E31.06 per kg.** In the Manzini region, the most expensive beef product is strip loin with an average price of E136.49/kg, while the cheapest is ox lungs with an average price of E29.81/kg. It is worth noting that the prices of some beef products show significant variation across regions, which could be attributed to factors such as transportation costs, availability, and demand. For example, the mean price of sirloin in the Lubombo region is significantly lower than its price in other regions, suggesting that the Lubombo region may be a more affordable region to procure beef products. The mean price for beef is E106.37 per kg, with a standard deviation of E26.45, indicating low variability in beef product prices across the country. Lamb was only collected in the Hhohho region, with its price being E195.00/kg for products under the lamb section. For pork products, the mean value of E100 was highest in the Lubombo region for mince-meat, while the mean value for French polony was lowest at E35.74/kg

- **Under the wholesale section, the most expensive beef products are the T-Bone steak per 1.5 kg at E200.00 in the Lubombo region and the Forequarter per 5 kg at E485.00 in both the Manzini and Lubombo regions.** The cheapest beef products are the beef liver per 1.5 kg at E80.00 in the Lubombo region and the soup meat per 1.5 kg at E144.00 in the Manzini region. For the pork category, the most expensive product is the loin pork chops per 2 kg at E250.00 in the Lubombo region, while the cheapest is the French polony per 2 kg at SZL 61.00 in the Manzini region.
- **For lamb products, the most expensive is the leg of lamb at E275.00 in all regions, while the cheapest is the stewing lamb at E60.00 in the Lubombo region.**
- **For the frozen fish category, all products have the same mean price of E110.00 per 5 kg.** The data shows that price for certain frozen fish products, such as hake medium, and hake large, were not available in all four regions because they were not in stock at the time data was collected. However, it was observed that the Yankee clippers had the highest mean value of E110.00 in both the Manzini and Shiselweni regions for the frozen fish products that were available.
- For whole chicken products, the chicken broilers have a mean price of E65.00 in all regions, while the chicken roasting in the Manzini region is the most expensive at E480.00 for a dozen of chickens.
- **Overall, the prices of stewing beef and mince-meat have the largest standard deviation at E81.32 and E17.68, respectively, indicating a wide range of prices for these products.**

/// Figure 13: Price of different meats in the four regions in Emalangen



- **Only one supplier was identified for lamb and lamb products. However, the prices for the other kinds of meat and products are variable, especially beef and fish which had price ranges of E31 – E141 and E40 – E139 respectively (see Table 3).** The wide price range for beef is the result of the product having a lot of different cuts that sell at various prices which widens the overall price gap for beef products. However, the price of pork and pork related products or cuts are relatively stable because all four regions since most of the products have a E10 price range (at 95% confidence interval) as seen with the Leg of Pork (E73 – E82). This means that in the data collected 95% of the time, the price of a Pork leg falls between E73 and E82 across the four regions.








Table 3: Price ranges of products classified by Lots for Retailers in Emalangeni

Lot	Price range of products
1 – Beef and beef products	E31.06 – E140.81
2 – Lamb and lamb products	E195.00
3 – Pork and pork products	E43.32 – E94.99
4 – Fish and fish products	E40.07 – E139.06
5 – Chicken	E55.47 – E62.36

5.11. ICT

Results of the survey indicate that suppliers of products are mostly found in the Manzini and Hhohho regions, and a few are found in the Shiselweni region (suppliers of 39 out of 140 products).

-  The list of a total of 300 ICT prices includes a diverse range of computer hardware and networking equipment, spanning from desktop and laptop computers, monitors, printers, scanners, projectors, servers, hard drives, UPS, to networking devices like switches, routers, wireless access points, and media converters. Accessories such as carry bags, projector screens, network cabinets, and network toolkits are also listed. Moreover, the list also features products related to optic fibre installation and repair, including dome joints, splicing boxes, and trays. The brands on offer include Samsung and HP, and some items come in combos, such as networking combos and optic fibre repair combos.
-  For the high-end desktop computer with an Intel i7 processor, 1TB HDD, and 8GB DDR4 RAM, the mean price is higher in the Hhohho region at E25,293.13 compared to the Manzini region at E21,635.25. The mean price is E24,073.83, which is closer to the price in the Manzini region. For the middle-level desktop computer with an Intel i5 processor, 500GB HDD, and 8GB DDR4 RAM, the mean price is lower in the Manzini region at E18,022.00 compared to the Hhohho region at E21,145.83. The mean price is E19,896.30. The mean price of a 20" LED monitor is lower in the Manzini region at E2,670.25 compared to the Hhohho region at E 3,662.70. The mean price is E3,379.14. The mean price of the 23" LED monitor is higher in the Hhohho region at E5,884.63 compared to the Manzini region at E4,361.00.
-  High-end laptops are generally more expensive than entry-level laptops, regardless of the screen size. Among the high-end laptops, the 17" laptop is consistently the most expensive, with an average price of E53,567.90, followed by the 15.6" laptop with an average price of E33,420.28, and then the 12.5" laptop with an average price of E24,679.96. Among the entry-level laptops, the 15.6" laptop is consistently the most expensive, with an average price of E22,469.19, followed by the 17" laptop with an average price of E32,546.75, and then the 12.5" laptop with an average price of E23,371.95. The all-in-one computer is generally less expensive than any of the laptops, with an average price of E27,678.99.
-  It is worth noting that there are some regional differences in prices, with the Hhohho region generally having slightly higher prices than the Manzini region. However, this difference is not very significant and may not be a major factor in consumers choosing where to purchase their laptops. Overall, the data suggests that consumers in Eswatini can expect to pay more for high-end laptops and larger screen sizes and that there may be more variability in pricing for high-end laptops compared to entry-level laptops.
-  For projectors, the prices are significantly higher in Manzini compared to Hhohho, with a difference of over E800 in some cases. This may be due to higher demand or supply chain differences between the two regions.

- For hard drives, desktop and laptop hard drives are generally cheaper in Hhohho compared to Manzini, with the difference ranging from E50 to E250 depending on the capacity. The prices of external hard drives vary greatly depending on the capacity and interface. In some cases, the price difference between 1TB and 2TB is less than E100, while in other cases, it is over E500.
- The cost of installing a network system increases with the number of network points and complexity of the system. The 12U wall mount swing frame packages are comparatively less expensive than the 25U free-standing frame packages. The 25U free-standing frame packages have a fixed base price of E10,500 for 25 network points, which suggests that the cost of adding more network points is relatively low. It is worth noting that the 25U free-standing frame package with 35 network points has a lower price than the package with fewer network points, which could be due to a pricing error or a promotion. Moreover, the most expensive product is the wireless access point combo, which costs an average of E69,000. This is followed by the server rack screen, which costs an average of E35,000. The least expensive product is the KVM adapter, which costs an average of E600. There are variations in prices across different products and regions. For example, the outdoor antenna for 2.4 GHz is more expensive in Hhohho, with an average price of E3,200, compared to Manzini where it costs E2,920 on average.
- There are variations in prices across different products and regions. For example, the outdoor antenna for 2.4 GHz is more expensive in Manzini, with an average price of E2,920, compared to Hhohho where it costs E3,200 on average. Similarly, the LMR400 cable is more expensive in Manzini, with an average price of E820.80 per meter, compared to Hhohho where it costs E760.40 per meter on average.
- The mean prices of some products are higher in Hhohho than in Manzini, while for other products, the mean prices are higher in Manzini. For example, the Dome Joint 4-way and Splicing box Fiber splicing box have the same mean prices in both regions, which is E1890 and E657.50, respectively. On the other hand, the prices for Splicing Tray 12 port, Fiber Gibic 1000MB LX Single mode, UTP Cable Roll 500m CAT6 cable, Surface mount Box 50 x Cat6 surface mount box, RJ45 connectors 100 x RJ45 connectors, and Network Toolkit 12 Piece Network Toolkit are higher in Hhohho than in Manzini. Meanwhile, the prices for Fiber pigtails, UTP Cable Roll 500m CAT6 cable, RJ45 Boots 100 x RJ45 Boots, and Network Toolkit 12 Piece Network Toolkit are higher in Manzini than in Hhohho.
- On average, the most expensive digital camera on the list costs E26,759.78, while the cheapest costs E3,240.22.
- The 60-inch LED TV with HD Ready Features is the most expensive TV with an average cost of E14,928.59, while the 42-inch LED with HD Ready features is the most affordable, averaging E7,392.30.
- The skewness in the availability of products by region is influenced by suppliers of ICT products are concentrated in the economically vibrant regions of the country, that is Mbabane-Manzini corridor. Furthermore, prices of commodities in the ICT products do not differ drastically for small ticket items such as flash-drives but do for big ticket items such as hard-drives, laptops, etc. (see Figure 14).
- Product pricing in the ICT category has been observed to differ according to equipment specification whereby the high-end products have higher prices (see Table 4). The price difference with product specification is consistent with the notion that more advanced products (capacity, brand, processing speed, etc.,) cost more in the market. For example, prices range from E14.36 (fly lead, molex cat6 (3m)) to E38,113.06 (switch, C9200L-24T/P-4G) based on the size and complexity of the product, whereby the bigger and more complex, the more expensive it is. Product complexity means the level of advancement of the product. For a high-end Desktop computer, the data provides that 95% of the time, the price lies between E20,073.83 and E27,233.50, whereas, for the low-end computers the price lies between E15,343.03 and E21,398.77.

/// Table 4: Price of products at different specifications

Product	Average Product Price	
	High End	Low End
Desktop	E22,420.16 (Intel i7)	E18,370.90 (Intel i5)
CPU	E22,931.66 (Intel i7)	E15,661.92 (Intel i5)
Printer (Laser jet)	E15,943.69 (colour)	E8,746.33 (all in one)
Laptop Hard Drive	E2,412.50 (2 TB)	E1,098.57 (500 GB)
TV Screens	E14,067.00 (LED 60')	E6,711.80 (LED 42')
Projector screen	E3,500.00 (Tripod 85')	E1,050.00 (Manual 85')
UPS	E16,000.00 (5kVA)	E9,480.69 (3kVA)

+ 5.12. GROCERIES

The Grocery category has 195 items listed in small quantities ranging from 55g to 900g, 100ml to 750ml to bigger quantities such as per case (e.g., 6x1kg), 3kg, per 5kg, per 10 kg, per 12.5 kg, and per 25kg.

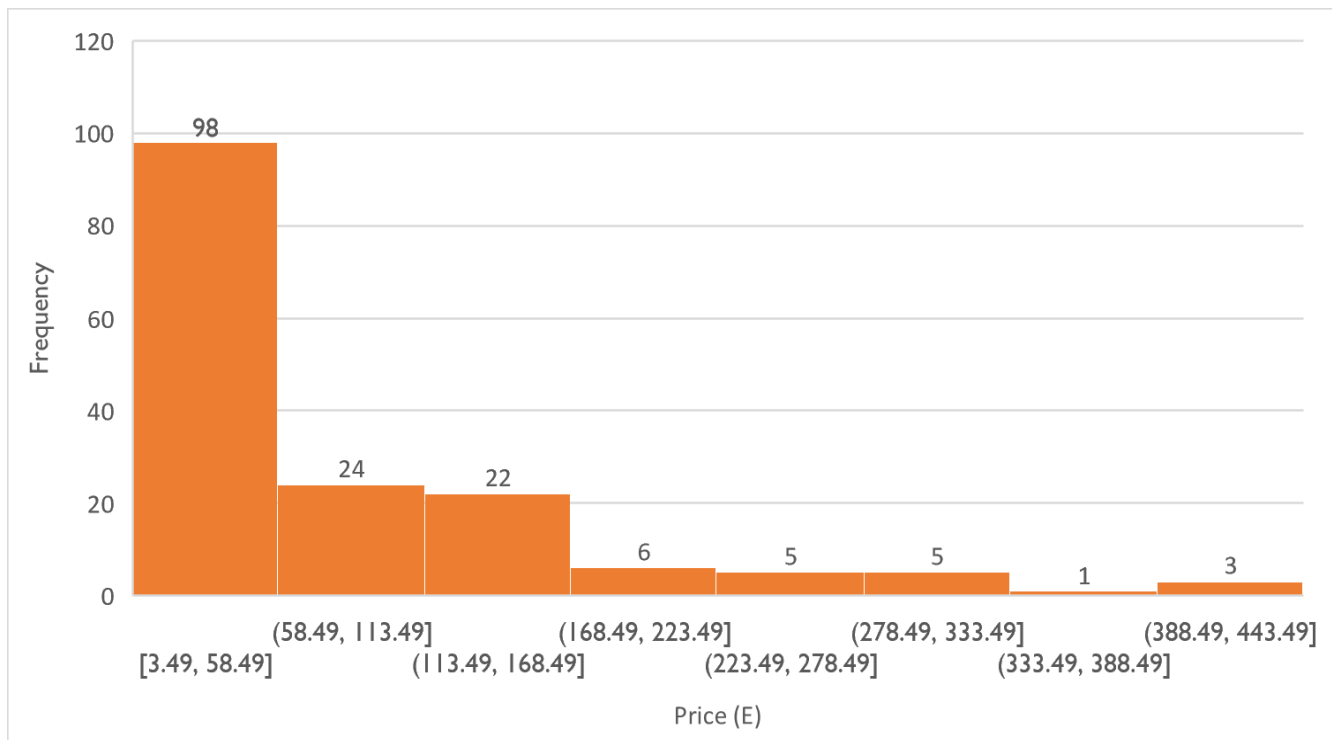
- The items listed include branded powdered milk, honey, white and brown sugar, branded tea bags, branded coffee, branded biscuits, white and brown bread, oats, cornflakes, weetbix, white and brown rice, cooking oil, flour, mealie meal, aromt, spices, steel wool, canned beef, canned fish, spaghetti, jam, mayonnaise, soup, peanut butter, vinegar, juice, salt, creams, sauces, mixed fruit salad, margarine, and eggs.
- Grocery prices vary depending on the quantity and brand. Table 5 displays a variety of items with varying quantities and prices. A 900g Klim powdered milk costs more than the same amount of Lactogen powdered milk. Klim powdered milk costs E160.80 on average, while Lactogen powdered milk costs E149.99. This shows that price can be determined by the brand despite quantities being the same. Furthermore, the average price for 1kg of Milo is E139.99, while the price for 2kg of Milo is E263.32. This demonstrates that price is also determined by quantity regardless of same brand.

/// Table 5: Prices of selected items

Product description	Average price (SZL)
Klim powdered milk price per 900g	160.80
Lactogen powdered milk per 900g	149.99
White Sugar price per 10kg	163.61
Brown Sugar price per 10kg	156.45
Milo price per 1kg	139.99
Milo price per 2kg	263.32
Blue Label Biscuits price per 200g	15.81
Marie Biscuits price price per 200g	10.71

- Figure 15 below shows that the average prices of groceries are not normally distributed and are positively skewed. The majority of the prices are within the price range E3.49 and E58.49. The second most observed prices are between E58.49 and E113.49. The most expensive items were mealie meal Ligugu price per bag of 50kg (E419.99), Marmalade jam price per 6 x A10 (E395.94), and Nan powdered milk price per 1.8kg (E389.13).

Figure 15: Distribution of Prices Groceries



+ 5.13. BATTERIES

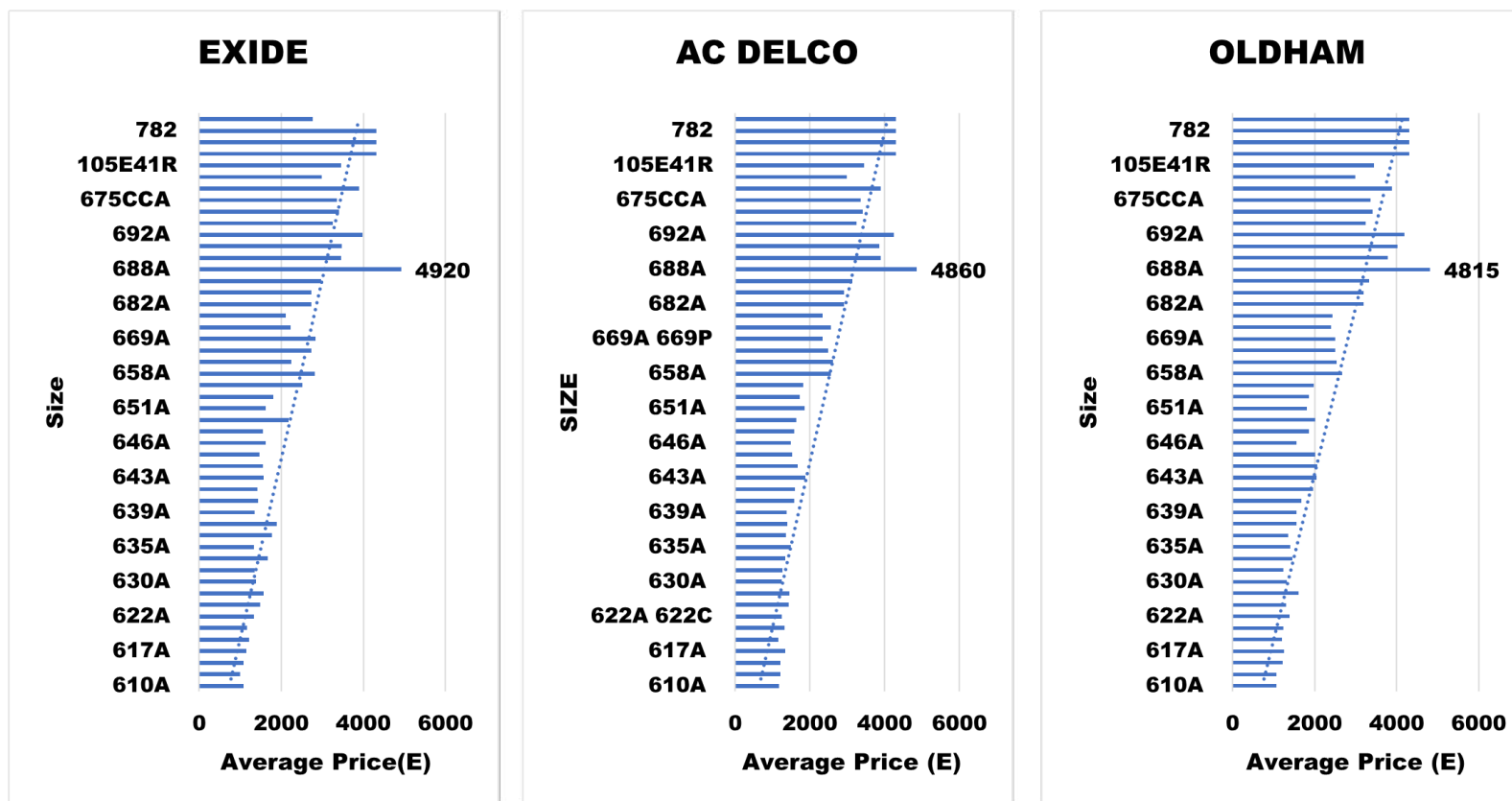
The data collected provides information on the prices of batteries for all class vehicles from ten (10) commonly used brands, including Exide, AC Delco, Oldham, Willards, Sabat, Grandprix, TQM, Raylite, and Autozone. The prices are according to battery size, with larger batteries costing more (see Figure 16 for a sample of the brands).

- A notable pattern that emerges from this data is that the prices of batteries from these common brands tend to increase as the size of the battery increases. Moreover, it is interesting to note that there is significant variability in prices within each brand, with standard deviations ranging from E1.00 to E1,021.00. This suggests that there may be some factors, such as region or supplier that influence battery prices within each brand. Furthermore, the most expensive battery size across the selected brands is the 688A battery, which costs over E4,800 on average.
- The data reveals that the Exide brand has an average price ranging from E1,003.00 to E4,920.00, while its standard deviation ranges from E1.00 to E1,021.00. On the other hand, the AC Delco brand has an average price ranging from E1,154.00 to E4,860.00, with a standard deviation ranging from E23.00 to E1,075.00.

- The data on batteries further includes information on common battery accessories. In terms of the accessories, there is a clear price difference between acid and distilled water products, with the latter being significantly more expensive. This is reflected in the average prices of the 25L and 20L containers, as well as in the wider confidence intervals for distilled water. The standard deviations for both products are relatively high, indicating that there is a lot of variability in the prices of these products. This suggests that the prices of acid and distilled water are influenced by multiple factors, such as supply and demand, production costs, and market competition. As a result, buyers may experience price fluctuations and should be mindful of these fluctuations when making purchasing decisions. It is also worth noting that there is a larger confidence interval for the 25L containers of distilled water compared to the 20L containers. This indicates that the price variability for the larger containers is greater than that of the smaller ones.
- By region, the prices are significantly higher in the Manzini region for the 20L and 25L distilled water costing E585.00 and E731.00 on average. Prices for acids on the other hand cost less on average in the Manzini region (E181.00 and E227.00 for the 20L and 25L, respectively).








Figure 16: Average price of vehicle batteries by size





5.14. LUBES, OILS, GREASES

20 litres Products

For engine oils, the data is split into six categories: Engine Oils, Gear-Oils and Diff, Hydraulic Oils, Transmission, Supportive and Greases. Each category has multiple products with their corresponding specifications, and the data provides information such as the national arithmetic mean, as well as the standard deviation, the lower and upper limits, and the confidence interval at 95%.

-  For Lot 1, which includes engine oils, it can be observed that the Hhohho and the Manzini averages are generally close to each other, indicating consistency in the pricing of these products in the two regions. The CESSG 15W40 SI-4AP oil has the highest average in the Hhohho region (E1,130.24) and the second-highest average in the Manzini region (E1,136.00). The anti-freeze product has the largest range between the Hhohho and Manzini arithmetic averages, with a difference of E332.22. This product also has the largest standard deviation of E305.50, indicating high variability in the pricing of this product.
-  For Lot 2, which comprises gear oils and differential oils, the Hhohho and Manzini regions are again quite close to each other in pricing of products. The SAE80W90 GL-4 oil has the highest price on average in the Hhohho region with a mean of E966.35, while the SAE80 oil has the lowest Hhohho and Manzini arithmetic means of E935.59 and E1,280, respectively. The AGRI-FLUID oil has the largest range between the Hhohho and Manzini arithmetic means, with a difference of E94.15.
-  Lot 3 consists of hydraulic oils, and once again, the Hhohho and Manzini means are generally close to each other. The HD 68/T 68 oil has the highest Hhohho mean of E1,075.36, while the HD32 oil has the lowest Hhohho arithmetic mean of E821.13. The AUTO DX11 oil has the smallest range between the Hhohho and Manzini arithmetic means, with a difference of only E15.91.
-  Lot 4, which includes supportive oils, shows a similar trend in which the Hhohho and Manzini arithmetic means are close to each other. The BRAKE FLUID DOT 3 and DOT 4 oils have identical Hhohho and Manzini arithmetic means, indicating no difference in their performance. The MINERAL OIL has the lowest HHOHHO arithmetic mean of E1,065.61, while the BRAKE FLUID DOT 3 and DOT 4 oils have the largest range between the Hhohho and Manzini arithmetic means, with a difference of E117.03.
-  Lot 5 contains greases, and the MULTI-PURPOSE GREASE and MULTI GRADE oils have identical Hhohho and Manzini arithmetic means, indicating their similar performance. The LITHIUM EP 2B oil has the highest Hhohho arithmetic mean of E3,893.05, while the MULTI-PURPOSE GREASE has the largest range between the HHOHHO and Manzini arithmetic means, with a difference of E1,058.47.

210 Litres

-  Lot 1 consists of different engine oils and an anti-freeze of 25L capacity. The prices of different oils vary significantly within the same specification, as evidenced by the wide range between the lower and upper limits of the confidence intervals. For instance, the price of SAE 15W40 SG/CF4 oil ranges from E8,686.37 to E11,084.60, which is a difference of more than E2,000. This indicates that there may be significant differences in the quality of oils within the same specification.
-  Lot 2 contains gear oils and differential fluids. The prices of different oils in this lot also vary significantly, as seen from the wide range of confidence intervals. For example, the price of 85W140 GL-5 oil ranges from E10,078.17 to E12,503.83, which is a difference of more than E 2,000. This suggests that there may be differences in the quality of oils within the same specification.

- Lot 3 contains hydraulic oils, transmission oils, and auto fluids. The prices of different oils in this lot show relatively lower variation compared to the previous two lots. However, the price of HD 32 ISO VG 32 oil has the lowest mean price and the narrowest confidence interval among all the products, indicating that it is the least expensive and most consistent product in this lot.
- Lot 4 consists of brake fluids and mineral oil. The price of mineral oil SF/CC is significantly lower than the other products in this lot, which could be due to differences in quality or brand. The confidence intervals for the two brake fluids are relatively narrow, indicating that their prices are more consistent compared to other products in the previous lots.
- Lot 5 includes different types of greases. The prices of all the products in this lot show relatively high variation, with multi-purpose grease EP2MP having the highest mean price and confidence interval. The price range of this product is from E10,579.52 to E13,116.62.
- Lot 6 includes only one product, which is DEXOS 2 engine oil. Its price is significantly higher than any other product in the dataset, indicating that it is likely a premium product with superior quality.

Overall, the data shows that the prices of oils, greases, and fluids in the market vary significantly within the same specification, indicating differences in quality, brand, and other factors.

+ 5.15. ELETRICAL MATERIAL

This category consists of a list of different types of electrical equipment such as meter boxes, distribution boards, PVC trunking material, busbars, and terminal blocks, along with their corresponding prices. The prices for the equipment vary depending on the type, size, and complexity of the equipment. Some items have a relatively consistent price across different types and sizes of equipment, while others have a significant variation in cost. It is important to note that all materials and parts must meet certain quality standards to ensure safety and performance in electrical systems. The prices for some items vary depending on the number of zones or doors, and larger sizes and more complex shapes are generally more expensive. Additionally, some items have no listed price, indicating that they may be less commonly used or require a custom quote.

- The prices for the meter boxes range from E 1049,00 to E 1,599,95 depending on the type and size of the box on average. Specifically, the 3-phase hot-dip galvanized reef-type meter box is the most expensive at E1,049,00 on average, while the 3-phase hot-dip galvanized meter box is the priciest at E1,599,95 on average. On the other hand, the 1-phase hot-dip galvanized meter box is priced at E1,330,00 on average.
- For distribution boards, the prices also vary depending on the size and type of the board. For instance, the 8-way flush distribution board is the cheapest at E215,47, while the 24-way flush distribution board is the most expensive at E646,09 on average. The 32-way flush distribution board has the same mean and standard deviation as its price, suggesting that the price is stable and does not fluctuate much.
- It is worth noting that the means and standard deviations vary considerably across the different types and sizes of equipment. For example, the mean price of the 3-phase hot-dip galvanized reef-type meter box is much lower than that of the 3-phase hot-dip galvanized meter box, but its standard deviation is also much lower. This suggests that the prices of the 3-phase hot-dip galvanized reef-type meter box are more consistent and less variable than the 3-phase hot-dip galvanized meter box. The meter boxes listed are all lockable with an inspection hatch and come in surface or semi-flush mount options. Each box has a different number of circuit breakers and flush boxes range from 8 to 32 ways, while surface boxes range from 8 to 32 ways. The prices of the boxes are relatively consistent with small differences in cost for boxes with the same number of ways.

➤ The prices for some items (such as meter boxes and fire detection equipment) vary depending on the number of zones or doors, indicating that the cost increases with the size and complexity of the equipment. The prices for PVC trunking material vary based on the size and type of trunking, with larger sizes and more complex shapes being more expensive. The prices for some items (such as BUSBARS AND TERMINAL BLOCKS) are relatively consistent across the different types and sizes of equipment. The prices for some items (such as 100 x 100mm gem boxes) are relatively consistent across different materials (galvanized, PVC, and fibreglass), suggesting that the choice of material does not have a significant impact on the cost. The prices for some items (such as the 220V fire alarm siren and 0.8mm² 2core fire alarm cable per 100m) are significantly higher than the prices for other items, suggesting that these items may be more specialized or require more expensive materials. There are some items (such as Double door as YBK 4 and Double door as YBK 16) that have no listed price, indicating that they may be less commonly used or may require a custom quote.

➤ 5.16. Protective Clothing and Uniform

Protective Clothing and Uniform items are described and classified according to the profession and department that uses them. The different professions include drivers, Gardeners and groundsman, night-watchmen, industrial labourers, cleaners, storemen, welders, and messengers. The items listed are but not limited to coats, boots, gumboots, boiler suits, overalls, trousers, tunics, gloves, neck ties, safety goggles, ear protectors, cardigans, shoes, socks, and aprons.

➤ Prices were obtained in all four regions of the country; however, only prices of 14 items were collected from the Shiselweni region. Tridalia all colours price per box and lace price per metre (curtain) were the only items that did not have a price countrywide.

➤ The Figure below presents the average price of selected items. The most expensive items in the list are Black suits (E1,979.50) and Cream white suits (E1,961.33) for male and female managers. Home Economics materials are the least expensive items including sewing thread (E7.00) price per small reel, bias binding (E26.17) price per reel, and fasco material (E41.25). The Figure also shows that most of the prices fluctuate within the E500 mark, with fewer items reaching a price point of over E1,000.00.



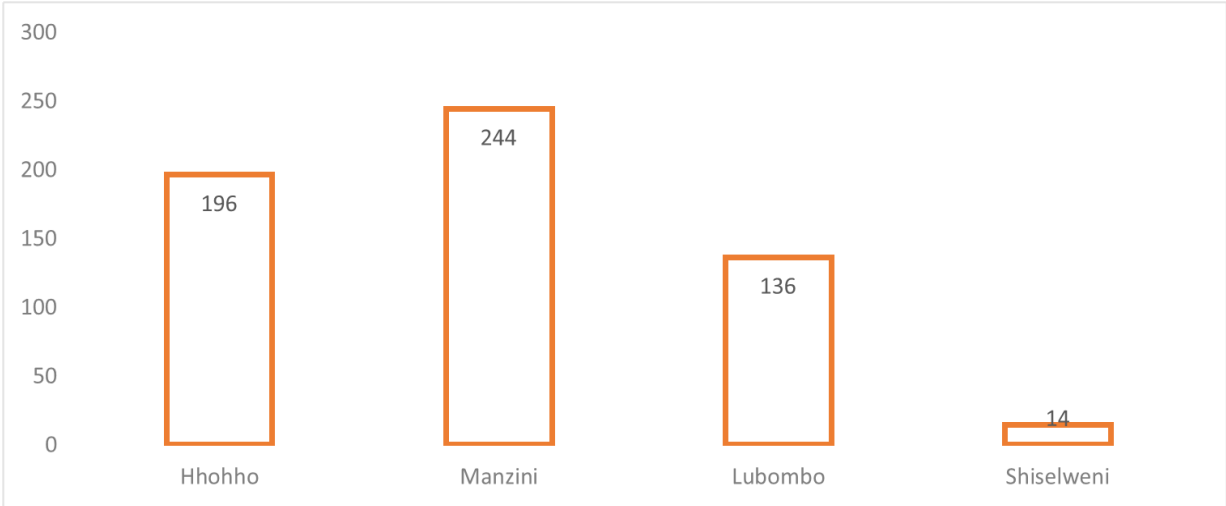


Figure 17: Prices of Selected Protective Clothing and Uniform



➤ Generally, the prices of products in the category are normally distributed since there are no outliers in the price of products under the observed professions. The normal distribution means that there are no prices that are abnormally high or low and this renders the whole data of prices in the category stable. The availability of suppliers is skewed towards the Hhohho and Manzini regions and the skewness is consistent with the notion that suppliers are located in vibrant business areas, which happen to be in the Manzini and Hhohho regions (see Figure 18 below).

/// Figure 18: Number of suppliers in the four regions



6. Conclusion

The Survey of Market Prices for Common Use Items is a positive step towards implementing procurement reforms in Eswatini. The survey's goal was to collect prices for common use items from at least three suppliers in each of the country's four regions and create an e-Catalogue with average prices of the common use items. The e-Catalogue reflects current market prices and provides an accurate picture of the prevailing prices of commonly used items in Eswatini. The creation of the e-Catalogue is necessary to guide procuring entities in making procurement decisions. It also serves as a reference point for suppliers when quoting prices for government tenders. The use of the e-Catalogue by both the procuring entities and suppliers will ensure that value for money is achieved in Eswatini public procurement.

The e-Catalogue will be updated and adjusted every two years to reflect changes in the number of items, preferences, and prices per category. The successful development and implementation of the e-Catalogue will necessitate buy-in from all stakeholders involved in the public procurement of the country. Widespread and coherent participation of all stakeholders will improve data availability.



The creation of the e-Catalogue is necessary to guide procuring entities in making procurement decisions.



7. Recommendations

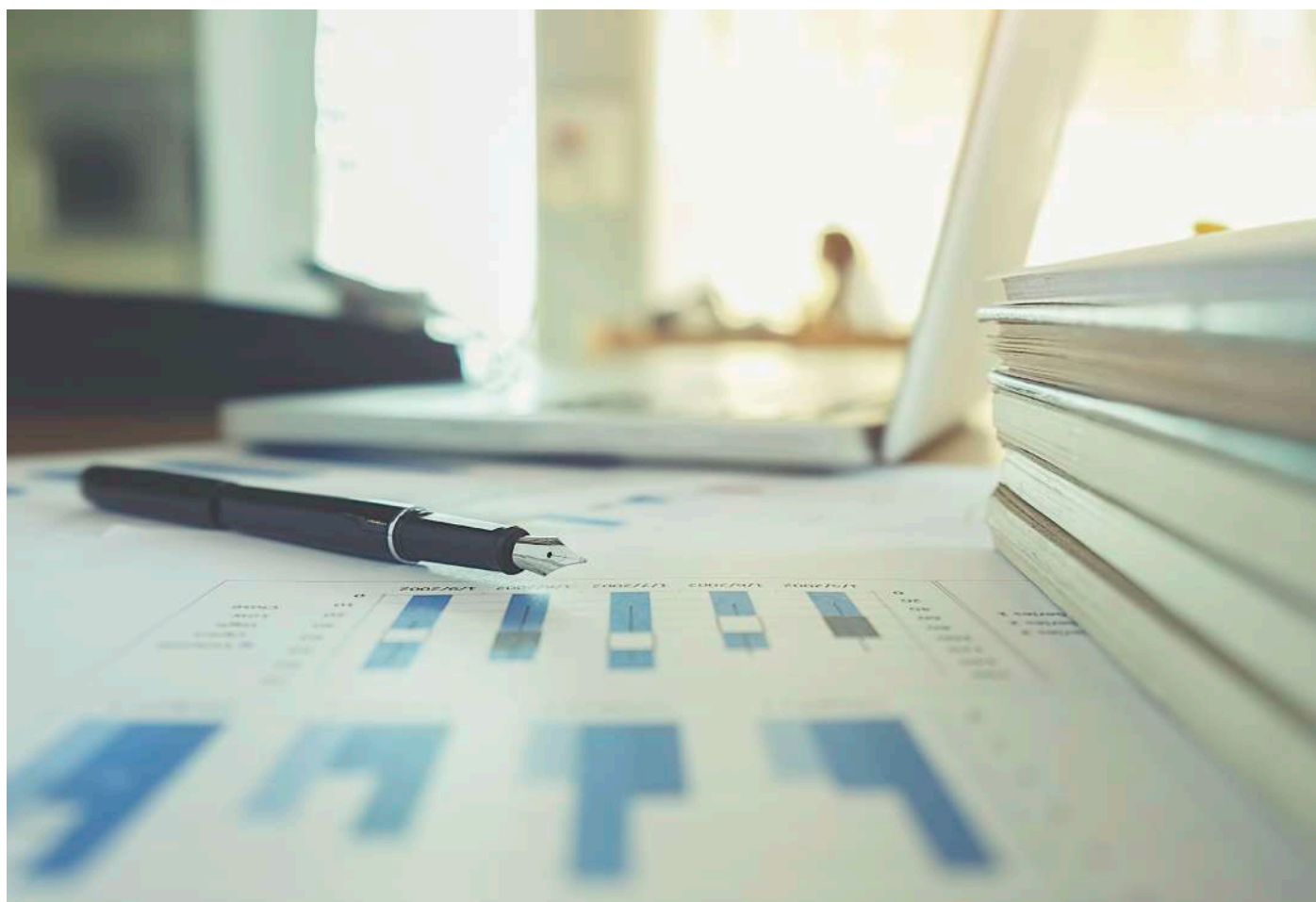
Based on the observations and findings of the study, the following recommendations are forwarded:

1. The Pricing Guide should be updated and adjusted every two years to reflect changes in the number of items, preferences, and prices per category. Inflationary adjustments may be used in-between.
2. The ESPPRA together with procuring entities should strengthen approaches to attract new suppliers to ensure sufficient competition for tenders. This could be achieved through nationwide awareness campaigns, with a particular emphasis on enlisting the participation of suppliers in the Lubombo and Shiselweni regions. Procuring entities should treat suppliers as collaborators whose relationship should be carefully managed. Furthermore, procuring entities and the ESPPRA could use the various media platforms to provide sufficient information about tender opportunities and improve communication with suppliers.
3. Implement regional procurement restrictions to ensure that procuring entities only procure in their region to increase economic activity in the Lubombo and Shiselweni regions.
4. The public procurement system of Eswatini should consider adopting the United Nations Standard Products and Services Code (UNSPSC) to improve classification of common use items. The UNSPSC enables efficient and accurate classification of products and services for purchase and sale in the global marketplace. Many countries around the world use the UNSPSC to report procurement activities. It is a solution to the problem of inconsistent classification of common use items. Without a standard way to group and organise the common use items, ensuring that the prices captured in the e-Catalogue are correct, consistent, and complete will be a difficult task for all parties involved in the public procurement system. It should be noted that the UNSPSC is not for product identification. It only provides a way to categorise rather than define products in detail.
5. In the long run, the e-Catalogue should serve as a system for the classification, registration, and management of information related to common used items that are classified according to the UNSPSC or codes that may be created by ESPPRA based on local requirements or needs. The functionality of the e-Catalogue should allow users to search for goods and services to be purchased by procuring entities and the vendors or suppliers of these products or services.



The ESPPRA together with procuring entities should strengthen approaches to attract new suppliers to ensure sufficient competition for tenders.

6. The ESPPRA should create an online registration platform for all suppliers and procuring entities.
7. The ESPPRA should ensure the use of the e-Catalogue by tackling resistance to change via dedicated campaigns that include a wide range of stakeholders such as procuring entities, vendors, and policymakers.
8. The ESPPRA should also develop the rules and regulations to enforce the use of the e-Catalogue by procuring entities when making procurement decisions and use the pricing guide to monitor and audit public procurement in the country.
9. The functionalities and user-friendliness of the e-Catalogue should be continuously improved by soliciting user feedback.
10. The list of common used items should be reviewed and updated because some items were discovered to be outdated in terms of description (e.g. Building Material) specification (e.g., ICT) and quantity (e.g., Groceries).
11. Vendors or suppliers of common use items need to be sensitised and made aware of the Market Survey via targeted awareness campaigns on social media, radio, newspapers, Television.



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Prepared By:

Eswatini Economic Policy Analysis
and Research Centre (ESEPARC)

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