# Standardized Pricing

## Model Specifications & Product Requirement Document

## Introduction:

In the Nigerian market, unpredictable and often unfair pricing for everyday goods creates real problems for shoppers. Standardized pricing is a digital platform built to bring transparency and reliability to commodity prices, starting with essentials like rice and eggs.

Our mission is to empower users with accurate, real-time price information to help avoid price gouging and make the market more competitive and fair for everyone. By providing a single, trusted source for prices across different markets, standardized pricing aims to become the go-to app for every shopper. This system will not only display prices but will also serve as a repository of structured, authenticated data, leveraging both on-the-ground intelligence and AI-powered data management.

## Core Functionality & System Requirements

The system is composed of a user-facing web application and a robust backend infrastructure for data management.

**User-Facing Application**

- **Price Dashboard:** A clean, intuitive interface where users can view prices of commodities.
    - **Search & Filter:** Users must be able to search for a specific commodity (e.g., "Basmati Rice," "Crate of Eggs").
    - **Location-Based Filtering:** Users can filter prices by major cities (Lagos, Abuja, Port Harcourt), their sub-locations, and specific markets.
    - **Comparison View:** The interface will allow for easy comparison of prices for the same item across different markets within a selected location.
- **Commodity Detail Page:** Clicking on an item will lead to a page with:
    - **Price History:** A simple chart showing the price trend over the last 30 days.
    - **Market Information:** Name of the market, its address, and type (e.g., local market, supermarket).
    - **Product Reviews & Ratings:** Authenticated users can leave a review and a star rating (1-5) on the product they purchased from a specific market, commenting on quality and the accuracy of the listed price.
- **User Authentication:** A simple user registration and login system to enable product reviews and ratings.

**Backend & Data Infrastructure**

- **Data Capture & Storage:**
  - **Structured Database:** A primary database (e.g., PostgreSQL) will store all structured data, including commodities, prices, locations, markets, users, and reviews.
  - **Data Extraction Interface:** An internal-facing interface for data entry. Our field agents will use this to input collected price data. The form will have mandatory fields for commodity type, SKU (e.g., 50kg bag), price, market name, and date of collection.
- **AI-Powered Data Management:**
  - **Data Validation & Cleaning:** An AI model will be integrated to perform real-time checks on incoming data. It will flag entries that are statistical outliers (e.g., a price that is 200% above the 7-day average for that specific location) for manual review. This ensures the integrity and accuracy of the data.
  - **Data Sorting & Organization:** The AI will assist in categorizing new commodity entries and ensuring consistency in naming conventions (e.g., standardizing "Dangote Cement" and "DANGOTE CEMENT").
  - **Automated Scraping:** The architecture will be designed to eventually incorporate AI-powered scrapers to pull data from approved online sources (supermarket websites, PDF circulars) to supplement manual data collection.

## Non-Functional Requirements (Technical Gap)

These requirements define the system's quality attributes and performance standards, ensuring a robust and trustworthy user experience.

- **Performance:** The application must be fast and responsive, especially given the variable network conditions in Nigeria.
  - **Requirement:** Page load times must be under 3 seconds on a standard 4G connection to maintain user engagement.
  - **Requirement:** Server response time, or Time to First Byte (TTFB), should be under 800ms to ensure the application feels instantaneous.
- **Scalability:** The system must be designed to handle growth in users, data volume, and geographic expansion without degradation in performance.
  - **Requirement:** The architecture must support horizontal scaling, allowing for the addition of more servers to handle increased load. This implies using cloud technologies (e.g., AWS, Azure) and designing for a modular or microservices architecture for future flexibility.
- **Availability and Reliability:** The platform must be consistently operational and trustworthy.
  - **Requirement:** The system must maintain a minimum uptime of 99.9%, which translates to no more than 43 minutes of unplanned downtime per month.
  - **Requirement:** Automated daily backups of the database must be implemented with a clear disaster recovery plan to ensure data integrity and quick restoration in case of failure.

- **Security:** As a platform handling user data and aiming to be an authoritative source, security is foundational.
  - **Requirement:** The application must be developed by OWASP Top 10 security best practices to protect against common vulnerabilities like SQL injection, Cross-Site Scripting (XSS), and broken access control.
  - **Requirement:** All data transmission between the client and server must be encrypted using SSL/TLS (HTTPS). User authentication systems must enforce strong password policies and include measures like rate limiting to prevent brute-force attacks.
  - **Requirement:** The platform must be designed to be compliant with the Nigerian Data Protection Act (NDPA), ensuring user data is handled responsibly.

**Standardized SKUs to Track:**

- **Rice:** Price per 50kg Bag (brand specified where possible), Price per Paint Bucket, Price per Derica.
- **Eggs:** Price per Crate (30 eggs), Price per half-crate (15 eggs).

## User Flow & Story

**User Persona:** Zainab, a working mother in Abuja.

**User Story:**

"As a budget-conscious shopper, I want to find the best price for a 25kg bag of Royal Stallion rice and a crate of eggs before I go shopping this weekend. I want to compare the prices between **Wuse Market** and the **Shoprite at Jabi Lake Mall** so I can decide where to go to save money and time."

**User Flow:**

1. Zainab opens the web application.
2. She selects her city: **Abuja**.
3. On the main dashboard, she types "Royal Stallion Rice 25kg" into the search bar.
4. The results show the price for this item at various markets in Abuja. She sees the price at Wuse Market, Garki Model Market, and Shoprite Jabi Lake Mall.
5. She then searches for "Crate of Eggs" and sees the comparative prices.
6. Zainab notes that while the rice is slightly cheaper at Wuse Market, the eggs are significantly less expensive at Shoprite. She also sees a recent user review mentioning a "buy one, get one free" promo on another item at the Jabi Lake Mall.
7. Based on the comprehensive information, she decides to go to Shoprite to make her purchases.

# Market and Location Intelligence

The initial launch will focus on Nigeria's three most significant urban centers. These cities are chosen for their high population density, economic importance, and diverse market structures, which collectively provide a robust and representative pilot environment for the platform.

## Lagos Metropolis

Lagos is a megacity composed of distinct economic zones, and pricing dynamics vary significantly between the Island (e.g., Victoria Island, Lekki) and the Mainland (e.g., Ikeja, Surulere). A user in Lekki is more likely to frequent a modern supermarket, while a resident of Ketu is near the wholesale food hub of Mile 12. The data collection strategy must therefore capture this diversity by targeting a mix of market types in each key sub-location. The following table provides the tactical execution plan for field agent deployment in Lagos.

### Lagos - Key Sub-locations and Target Markets for Data Collection

| Sub-location (LGA/Area) | Market Type | Target Market 1 | Target Market 2 | Target Market 3 | Justification & Sources |
|---|---|---|---|---|---|
| **Lagos Island** | Local/Wholesale | Balogun Market | Eko Market | Oke-Arin Market | The historic commercial heart of Lagos, crucial for baseline wholesale pricing of general goods, fabrics, and imported groceries.[19] |

| Ikeja | Tech/Local/Supermarket | Computer Village | Alade Market | Shoprite (Ikeja City Mall) | A key administrative and commercial hub, offering a blend of high-tech commerce, local market activity, and a major formal retail destination.[19] |
|---|---|---|---|---|---|
| **Ketu** | Wholesale (Perishables) | Mile 12 Market | - | - | The single most important market for fresh and perishable food distribution in Lagos. Essential for understanding food supply chain pricing.[19] |

| Surulere | Local/Supermarket | Aguda Market | Lawanson Market | Shoprite (Adeniran Ogunsanya Mall) | Represents a typical, densely populated mainland residential area with a mix of formal and informal retail options.[24] |
|---|---|---|---|---|---|
| **Lekki/VI** | Supermarket/Boutique | Lekki Market | SPAR (VI) / Prince Ebeano | The 9 to 7 Supermarket (VI) | Represents the affluent, formal retail sector, providing a vital price comparison point against traditional markets.[26] |
| **Ojo** | Electronics/Local | Alaba Int'l Market | Iyana-Iba Market | - | A major hub for electronics and general goods, important for future commodity expansion and understanding pricing in the city's western corridor. |

## Abuja FCT

Abuja's highly planned structure means that pricing and commerce are strongly correlated with the city's developmental phases. Phase 1 districts (Maitama, Asokoro, Wuse) are expected to have higher prices in formal supermarkets, while markets in developing phases or suburbs (Gwarinpa, Nyanya) will likely offer lower prices. The data collection strategy must capture this clear socio-economic gradient.

### Abuja - Key Districts and Target Markets for Data Collection

| District (Phase) | Market Type | Target Market 1 | Target Market 2 | Target Market 3 | Justification & Sources |
|---|---|---|---|---|---|
| **Wuse (Phase 1)** | Major Local/Supermarket | Wuse Market | Exclusive Stores | Novare Central (Shoprite) | The primary commercial and social hub of Abuja. Wuse Market is a critical data source for the entire Federal Capital Territory. |
| **Garki (Phase 1)** | Major Local/Supermarket | Garki Ultra Modern Market | Cherries Hypermarket | - | A key administrative and residential district featuring a large, well-known market that serves a significant population. |

| | | | | | |
|---|---|---|---|---|---|
| **Maitama (Phase 1)** | Upscale/Local | Farmers Market (Maitama) | Mulby Mart Supermarket | - | An affluent residential and diplomatic district; its markets provide data on premium and fresh produce pricing trends. |
| **Asokoro (Phase 1)** | Upscale/Local | Asokoro Shopping Mall | Global Supermarket | - | The presidential and diplomatic zone; its retail outlets reflect high-end consumer patterns and provide an upper-bound price benchmark. |
| **Jabi (Phase 2)** | Major Mall | Jabi Lake Mall (Shoprite) | - | - | Represents the modern, mall-based retail experience in a popular and developing district, home to many international brands. |

| Gwarinpa (Phase 3) | Estate/Local | Gwarinpa Estate Market | Tipper Garage Market | Big Ideas Supermarket | One of the largest housing estates in West Africa, its markets serve a massive and diverse residential population. |
| --- | --- | --- | --- | --- | --- |

## Port Harcourt

Port Harcourt's economy is uniquely shaped by the oil and gas industry and its riverine geography. Key residential areas like the Government Residential Area (GRA) and Peter Odili Road are commercially distinct from more traditional, high-density areas like Diobu. To provide a useful service, the platform must capture prices from markets serving both the affluent/expatriate communities and the general populace.

## Port Harcourt - Key Neighborhoods and Target Markets for Data Collection

| Neighborhood/ Area | Market Type | Target Market 1 | Target Market 2 | Target Market 3 | Justification & Sources |
| --- | --- | --- | --- | --- | --- |
| GRA (Phase 1 & 2) | Supermarket/Upscale | Everyday Supermarket | Next Time Supermarket | Port Harcourt Mall (SPAR) | The city's administrative, corporate, and nightlife hub, home to affluent residents and expatriates, sets the high-end price |

| | | | | | benchmark.[45] |
|---|---|---|---|---|---|
| **Diobu** | Major Local | Mile 1 Market | Rumuokoro Market | Chanrais Supermarket | A densely populated, core residential and commercial area containing major traditional markets that serve a large portion of the city's residents.[48] |
| **Trans-Amadi / Peter Odili Rd** | Industrial/Residential | Oil Mill Market | Market Square | Well done Supermarket | A fast-developing corridor that mixes industrial zones with modern residential estates, reflecting the city's ongoing expansion.[46] |

## Compliance & Regulatory Alignment

To establish Standardized pricing as an authoritative and trusted platform, we will align with the consumer protection mandates of the Nigerian government.

- **Federal Competition and Consumer Protection Commission (FCCPC):** While Standardized pricing is not a price control entity, it directly supports the FCCPC's mandate by promoting transparency and combating misleading and deceptive pricing (a violation under Section 115 of the FCCPC Act).
  - **Actionable Step:** We will establish a formal communication channel with the FCCPC to provide them with access to our anonymized data trends, which can help them identify potential market manipulation or widespread price gouging. Our platform will also feature a prominent disclaimer clarifying that we are an information service and not a regulatory body.
  - **Incorporating Government Directives:** Should the government, through a revived Commodity Board or the FCCPC, announce indicative or stabilized prices for certain essential items, our system will be equipped to display these official prices alongside the market prices we collect. This will be labeled clearly as "Govt. Indicative Price" to provide consumers with a complete picture.

### Functionality:

1. When a government-mandated price for a tracked commodity is officially published (e.g., "The official price of a bag of BUA cement is set at N3,500"), the system will ingest this benchmark price.
2. On the relevant commodity display page, this official price will be prominently displayed for all users to see.
3. The system will then automatically compare all captured market prices against this benchmark. Any price point that exceeds the mandated price will be flagged with a clear "Non-Compliant" or "Above Official Price" tag.

This single feature makes the platform immediately valuable to regulatory bodies and transforms it into the de facto public instrument for monitoring compliance, directly fulfilling the objective to "become the go-to application when people are trying to find the price for commodities."

## Product Roadmap

This roadmap outlines the strategic, phased rollout of the platform, transforming the feature list into an executable plan.

- **Phase 1: Minimum Viable Product (MVP) - The Foundation of Trust (Launch: 0-6 Months)**
  - **Goal:** Establish core credibility and user trust with a focused, high-quality initial offering.
  - **Features:**

- ■ Manual data capture via the Field Agent mobile application.
      - ■ Backend system for manual data ingestion, AI-powered standardization, and outlier detection.
      - ■ Public-facing website with core search, filter, and price comparison functionality.
      - ■ Initial commodity focus: Rice and Eggs.
      - ■ Initial geographic focus: Lagos, Abuja, and Port Harcourt.
- ● **Phase 2: Expansion and Engagement - Scaling Intelligence (6-18 Months)**
  - ○ **Goal:** Broaden the platform's data sources, commodity coverage, and user interaction features.
  - ○ **Features:**
      - ■ Activation of the automated web scraping module for major online supermarkets.
      - ■ Expansion of the commodity list to include other staples (e.g., Flour, Sugar, Palm Oil).
      - ■ Launch of the moderated User Review and Rating system to build community trust.
      - ■ Introduction of the "Commodity Detail Page" with price history charts.
- ● **Phase 3: Advanced Analytics and Value Creation (18+ Months)**
  - ○ **Goal:** Solidify the platform as the definitive market authority and explore advanced data-driven features.
  - ○ **Features:**
      - ■ Launch of a B2B data portal offering anonymized, aggregated data via a subscription API for businesses and analysts.
      - ■ Introduction of a public API to allow third-party developers to build innovative tools on the platform's data, fostering an ecosystem.
      - ■ Development of a consumer-facing mobile app (iOS and Android) for enhanced accessibility.
      - ■ Implementation of advanced features like personalized price drop alerts and predictive trend analysis.