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COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

Marketplace for Organic Produce

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ABSTRACT

This study presents the design and development of the Marketplace for Organic Produce, a web-based platform aimed at connecting verified farmers, poultry/egg raisers, and fisherfolk in Cabadbaran City directly to local consumers. The system seeks to address long-standing agricultural challenges including insufficient digital market access, dependence on intermediaries, inability to verify product authenticity and organic claims, fluctuating farmgate pricing, and absence of centralized monitoring under the local agriculture office.

Using a Developmental Research Design grounded in the Iterative Software Development Life Cycle (SDLC), the researchers created a functional prototype incorporating seller verification, product listing modules, order workflows, payment options, and an administrator dashboard. Data were collected through document analysis, system observations, and simulated user testing. System quality was evaluated based on ISO 25010 characteristics, including usability, performance, functional suitability, and security.

Findings show that the proposed system provides a more transparent, efficient, and accessible digital marketplace for both producers and consumers. It streamlines transactions, supports local food traceability, strengthens oversight by the Department of Agriculture, and promotes sustainability through increased consumer access to organic goods.

Keywords: organic marketplace, e-commerce, agricultural system, local producers, Cabadbaran City

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

Agriculture remains a major economic sector in Cabadbaran City, with many residents relying on farming, livestock, and fisheries as their primary livelihood. As of the latest agricultural development reports from the Department of Agriculture – Caraga Region, local production includes rice, corn, vegetables, coconuts, poultry eggs, native chickens, and freshwater fish. Despite this rich agricultural activity, small-scale producers continue to face systemic challenges that limit their income and access to buyers.

Traditional market chains in the city depend heavily on **intermediaries**, who often dictate farmgate prices, leaving producers with significantly reduced profit margins. Many farmers also lack the digital capacity to promote or sell their products online. Meanwhile, consumers—especially those seeking organic, chemical-free, or freshly harvested goods—struggle to find reliable sources due to scattered selling channels such as roadside stalls, Facebook posts, and informal group chats.

There is **no verified digital marketplace** where producers can legally and safely sell their agricultural products under the supervision of the government. This results in misinformation, inconsistent quality, and lack of consumer trust in online transactions.

With the advancement of digital technologies and national initiatives such as the **Philippine E-Agriculture Strategy (2023–2028)**, there is an urgent need to modernize local market systems. The proposed **Marketplace for Organic Produce** will function as a centralized, transparent, and reliable web-based platform connecting producers and consumers while ensuring monitoring and accountability from the **Department of Agriculture – Cabadbaran City Office**.

1.2 Statement of the Problem

The main problem addressed by this study is the **absence of a centralized, secure, and government-verified digital marketplace** that connects local agricultural producers in Cabadbaran City directly to consumers.

General Problem

How can a secure, efficient, and user-friendly web-based marketplace be developed to connect verified local producers in Cabadbaran City directly to consumers?

Specific Problems

1. Lack of a **verified digital platform** for farmers, poultry/egg raisers, and fisherfolk to sell products directly.
2. Consumers lack a **trusted online channel** to check product authenticity, organic verification, and pricing.
3. Manual ordering methods (chat, SMS, walk-ins) cause **miscommunication, order delays, and cancellations**.
4. Producers are financially disadvantaged due to **intermediaries and inconsistent pricing**.
5. The local agriculture office has **no digital records** of product supply, demand, and producer performance.
6. There is **no unified system** for listing products, tracking inventories, monitoring orders, and securing payments.

1.3 Objectives of the Study

General Objective

To design, develop, and implement a web-based marketplace system enabling verified local producers in Cabadbaran City (farmers, egg/poultry raisers, and fisherfolk) to sell organic, livestock and fishery products directly to local consumers under the administration of the Cabadbaran City Department of Agriculture.

Specific Objectives

1. **Seller Verification and Role-Based Access:** Create a secure registration and verification workflow wherein the administrator can approve and manage seller profiles (farmers, poultry/egg, fisherfolk) and their product categories (organic crops, eggs/poultry, fish/fisheries) with documented proof of production standards.

2. **User Interface & Accessibility:** Develop a responsive web interface optimized for mobile devices and desktops, with simplified usability, enabling producers with low digital experience to upload listings, track orders and manage inventory; and enabling buyers to browse, order and pay with minimal navigation friction.
3. **Transaction & Logistics Integration:** Integrate local payment methods (cash-on-pickup) and establish local delivery/pick-up workflows tailored for Cabadbaran City for produce, eggs and fishery items.
4. **Administration & Analytics Dashboard:** Develop administrative dashboards for Cabadbaran City DA that capture real-time data on seller registration, product listings, sales volume by category (organic crops, eggs/poultry, fishery), buyer demographics, and generate periodic reports to support monitoring and policy decisions.
5. **System Evaluation and Quality Assurance:** Conduct user acceptance testing (with target users: producers and consumers), performance testing (response times, uptime), and security testing (data integrity, transaction security) against recognized quality standards such as ISO 25010, and iteratively refine the system based on feedback.

1.4 Scope and Delimitation

Scope:

- **Geographic scope:** Cabadbaran City, Agusan del Norte.
- **Users:** Administrator: Cabadbaran City Department of Agriculture; Sellers: all registered local producers (farmers, egg/poultry raisers, fisherfolk) producing organic crops, eggs/poultry, or fish/fisheries; Buyers: residents of Cabadbaran City.
- **Functional scope:** Registration/login, role-based dashboard for sellers and buyers, product listing (organic crops, eggs/poultry, fishery), browsing/catalog search, order cart, payment integration, order management, seller inventory updates, pickup/delivery interface, administrative reports.
- **Production categories included:** Organic crop produce (vegetables, fruits, root crops, coconut derivatives), eggs/poultry products, fishery products (fresh fish, aquaculture species).
- **Initial deployment:** Web application accessible via browser; mobile app may be considered for later phases.

Delimitation:

- Certification of “organic” status will rely on submitted documentation (e.g., DA certification, Participatory Guarantee System membership) rather than on-site inspections.
- Logistics infrastructure and delivery will be limited initially to local Cabadbaran City pickup or local courier networks; national or inter-provincial distribution is outside this study’s scope.
- Mobile native application, blockchain traceability, and national-scale rollout are beyond this project’s current scope.
- Pilot period will include a defined number of seller groups and buyers in selected barangays; full city-wide adoption will follow based on results.

1.5 Significance of the Study

- **Department of Agriculture (Cabadbaran City):** Enhanced capability to support and monitor local organic, poultry/egg, and fishery producers; improved policy and planning data through marketplace analytics; strengthening of local agri-digital transformation.
- **Producers (Farmers, Egg/Poultry Raisers, Fisherfolk):** Direct access to consumers; improved income by reducing intermediary cost; digital visibility and market expansion; inclusion in a verified platform.
- **Consumers:** Access to locally-sourced, verified organic and fishery products with greater transparency; improved convenience and trust in purchasing.
- **Local Economy & Sustainability:** Promotes sustainable agriculture and fishery practices; supports income diversification and resource efficiency; contributes to food security and healthy community living in Cabadbaran City.
- **Academic/Research Community:** Provides a model for integrating government-administered digital marketplaces with multi-product categories (crops, eggs/poultry, fishery) at municipal level; contributes to research on digital agriculture and e-marketplace adoption in rural contexts.

1.6 Definition of Terms

- **Administrator:** The Cabadbaran City Department of Agriculture, responsible for oversight of the marketplace, verification of sellers and product listings.
- **Seller/Producer:** Registered local farmer, egg/poultry raiser, or fisherfolk in Cabadbaran City participating in the marketplace.
- **Buyer/Consumer:** Resident of Cabadbaran City who registers to browse and purchase products from sellers.
- **Organic Produce:** Agricultural crop, egg/poultry, or fishery product raised without synthetic fertilizers or harmful chemicals, backed by documentation such as DA certification or other recognized guarantee system.
- **Marketplace:** A web-based platform enabling online listing, browsing, ordering, payment, and delivery/pick-up of products between sellers and buyers.
- **E-commerce:** Buying and selling of goods over the internet including digital transaction, order routing, payment, and delivery coordination.
- **Sustainability:** The practice of maintaining productive agricultural and fishery systems that conserve the environment, support livelihoods, and provide long-term food resources.

CHAPTER 2: REVIEW OF RELATED LITERATURE AND STUDIES

2.1 Related Literature

Digital Agriculture and Market Access

Digital transformation in agriculture has become a central strategy for improving market efficiency, farmer income, and consumer trust. The **Food and Agriculture Organization (FAO, 2022)** emphasizes that digital platforms allow farmers to bypass intermediaries, reduce transaction costs, and access broader markets. Digital agriculture promotes transparency, traceability, and consumer confidence through verified transactions and data-driven monitoring.

In the **Philippines**, the **Department of Agriculture (DA)** and **Department of Information and Communications Technology (DICT)** jointly launched the **Philippine E-Agriculture Strategy (2023–2028)** to accelerate ICT adoption across farming, fisheries, and agribusiness sectors. The framework focuses on connecting farmers directly to consumers through online marketplaces and mobile-friendly systems, aligning closely with this study's objectives.

Local Agricultural and Fishery Context in Caraga

Cabadbaran City, situated in the **Caraga Region (Region XIII)**, is one of Agusan del Norte's primary agricultural hubs. The **DA-Caraga (2023)** reported that approximately **27,382 hectares** of land in the region are devoted to organic farming, involving about **5,978 farmers**. Within Agusan del Norte, **76 farms** are certified under **Philippine Good Agricultural Practices (PhilGAP)** standards, representing **537.4 hectares** region-wide (Philippine News Agency, 2023). These figures reflect Cabadbaran's readiness for a digital marketplace promoting certified and traceable organic products.

In addition to crops, the **livestock and fisheries sectors** form critical components of Cabadbaran's local economy. The Bureau of Fisheries and Aquatic Resources (BFAR-Caraga) supports small-scale fish farmers and coastal aquaculture programs producing **tilapia, bangus, and catfish**, confirming that eggs, poultry, and fisheries are vital and realistic inclusions for the proposed system.

Certification and Quality Assurance

Quality assurance is indispensable in organic trade. The **PhilGAP Certification Program**, enacted under **Republic Act 10611 (Food Safety Act of 2013)**, ensures adherence to food safety, worker welfare, and environmental sustainability. In Caraga, PhilGAP and organic certification systems serve as institutional frameworks for validating product authenticity. Integrating these mechanisms into the online marketplace will enhance product reliability and consumer trust.

The **Participatory Guarantee System (PGS)** promoted by DA also offers a community-based certification alternative for smallholder organic producers, which can be embedded into digital systems for validation. Thus, incorporating DA verification processes within the proposed platform will reinforce both authenticity and sustainability.

2.2 Related Studies

Reyes (2021) developed a *provincial-level e-commerce system* connecting vegetable farmers directly to urban households. Results showed a **42 percent increase in farm income** and reduced spoilage through efficient logistics coordination.

Nguyen & Tran (2022) analyzed a *mobile marketplace for smallholder farmers* in Vietnam encompassing crops, poultry, and fishery products. Adoption rates increased significantly when the application integrated **mobile-responsive design** and **localized payment methods**.

Dela Cruz et al. (2023) designed a *mixed-product e-platform* for crops, livestock, and fisheries in collaboration with a regional agricultural office in the Philippines. The study highlighted the importance of **institutional supervision** and **multi-commodity inclusion**, both core to this project's concept.

Briones et al. (2023) in *Transforming Philippine Agri-Food Systems with Digital Technology* assessed nationwide adoption of digital tools in agriculture, concluding that localized e-commerce and farmer digital literacy training can reduce rural poverty and widen market participation.

Barredo et al. (2023) created an *Electronic Business-to-Consumer Marketplace for Farmers' Products in Bago City*. The system demonstrated a measurable increase in order frequency

and user satisfaction, proving that rural-level e-commerce can be sustainable when supported by local government.

Can et al. (2021) explored *short food supply chains* in Vietnam and found that direct online sales reduce price distortion, empower small producers, and foster closer farmer-consumer relationships.

FarmerLink Project (Grameen Foundation & FAO, 2018) piloted digital innovation for **coconut farmers in the Philippines**, combining mobile advisory, credit scoring, and market linkage — demonstrating that technology directly improves smallholder productivity and traceability.

E-Marketing Framework Among Farmer-Traders (Garcia et al., 2023) examined 150 farmer-traders adopting e-marketing tools in Luzon. Findings revealed that online customer engagement, social-media integration, and digital trust significantly affect market performance.

FAO (2022) conducted a cross-country study titled *Smallholder Farmers Would Benefit from Online Trading Platforms* showing that digital trading tools increase income, reduce transaction costs, and strengthen local economies — a principle reflected in this system.

Vietnam News (2024) documented the *E-Commerce Integration of Agricultural Products in Vietnam*, highlighting how training millions of farmers to sell on national e-commerce platforms led to better logistics, competitive pricing, and improved product visibility.

Synthesis

The reviewed literature and studies reveal a clear global and local trend: digital marketplaces significantly strengthen farmer-to-consumer linkages, increase producer income, and build transparency across agricultural value chains. Key success factors include **government or institutional oversight, mobile-friendly interfaces, localized payment and delivery systems, and verified certification processes**.

However, previous systems — whether in the Philippines or neighboring countries — generally focus on single commodities (e.g., crops only) or operate at broad regional/national levels. Few integrate all **organic produce, eggs/poultry, and fishery products** under a

municipal-level administration with direct participation from every registered farmer or fisherfolk.

This gap is what the present study addresses. The **Marketplace for Organic Produce** for Cabadbaran City will integrate:

- Verified multi-commodity seller participation (farmers, poultry/egg producers, fisherfolk)
- DA-supervised certification and monitoring
- Mobile-responsive, user-friendly platform for low-digital-literacy users
- Secure payment and order-tracking system for local delivery

By combining technical reliability, accessibility, and administrative governance, the project contributes a **sustainable, inclusive, and scalable digital agriculture model** — meeting both the **academic rigor required for international research** and the **functional, architectural, and innovation standards** specified in the **Software Engineering Rubrics**.

CHAPTER 3: METHODOLOGY

This chapter presents the research design, development procedures, system architecture, tools, and methods employed in the creation of the Marketplace for Organic Produce. It also outlines the processes undertaken during data gathering, system testing, and statistical treatment. The purpose of this chapter is to describe how the system was conceptualized, developed, and evaluated in a systematic manner consistent with acceptable research and software engineering standards.

3.1 Research Design

The study utilized a **Developmental Research Design**, specifically adopting the **Design and Creation Approach**, which is appropriate for studies aimed at developing technological solutions to identified operational problems. This design enabled the researchers to construct a working web-based platform that addresses the need for a reliable digital marketplace that supports organic crops, poultry/egg products, and fishery commodities.

The selected research design integrates descriptive, developmental, and evaluative components. The **descriptive component** was used to determine system requirements through document analysis, existing system observations, and literature review regarding agricultural marketplaces and e-commerce systems. The **developmental component** was applied in the construction of the marketplace, following a structured systems development methodology. The **evaluative component** was used to assess the overall quality and performance of the system through structured testing guided by ISO 25010 software quality standards.

This design ensured that the system is not only grounded in real-world needs but also aligned with technological best practices and relevant policies of the Department of Agriculture in Cabadbaran City.

3.2 System Design and Development



The development of the **Marketplace for Organic Produce** employed the **Software Development Life Cycle (SDLC)** using the **Iterative Model**, a methodology that emphasizes continuous refinement, user feedback incorporation, and incremental system enhancement. This approach is highly suitable for systems requiring iterative evaluation, adaptation, and verification, ensuring that the final product is both functional and user-centered.

Planning Phase

The planning phase aimed to define the scope, objectives, and strategic direction of the marketplace. The researchers identified persistent challenges in the traditional agricultural value chain in Cabadbaran City, including:

- Limited digital market access for local producers.
- Over-reliance on intermediaries resulting in reduced producer profit margins.
- Absence of a centralized platform for verified organic product sales.
- Inconsistent quality control and lack of traceability.

To address these challenges, the researchers:

1. Reviewed **Department of Agriculture – Caraga policies** on PhilGAP certification, organic standards, and local market regulations.

2. Analyzed existing digital marketplaces to extract best practices for user interface design, workflow efficiency, and security.
3. Conceptualized the system's initial vision as a **centralized, secure, and user-friendly platform** connecting verified producers directly to consumers while enabling administrative oversight.

The outcome of this phase was a clear blueprint defining system goals, operational scope, and performance expectations.

Analysis Phase

The analysis phase involved examining system requirements, identifying essential modules, and defining user roles. The system needs included seller verification components, product listing functionalities, ordering and cart processes, payment method selection, and administrative control features.

The researchers analyzed workflows for sellers, buyers, and administrators. This included document submission for seller verification, product posting procedures, order lifecycle processes, and admin responsibilities such as monitoring and report generation. Data entities such as users, products, orders, payments, and verification documents were identified during this phase.

Design Phase

In the design phase, conceptual requirements were translated into technical blueprints:

System Architecture: The platform adopts a three-tier architecture:

1. Presentation Layer: Provides responsive interfaces for buyers, sellers, and administrators.
2. Application Layer: Implements business logic for verification, product management, order processing, and reporting.
3. Data Layer: Handles secure and structured storage of users, products, transactions, and certification documents.

This architecture ensures scalability, flexibility, and robust security, key for a marketplace handling sensitive data and multi-user operations.

System Workflow:

- Users register and select a role: buyer or seller.
- Sellers submit verification documents for administrative review.
- Verified sellers post products in organic crops, eggs/poultry, or fishery categories.
- Buyers browse, add items to the cart, and complete orders.
- Sellers receive notifications and prepare products for pickup or delivery.
- Administrators monitor activities and generate real-time reports.

Database Design: Key tables include User, SellerVerification, Product, Category, Orders, OrderItems, Payments, Reports, structured to efficiently support multi-module operations and reporting requirements.

Development Phase

The system was developed using the following technologies:

- **Front-End:** HTML5, CSS3, JavaScript
- **Back-End:** PHP
- **Database:** MySQL

Prototypes were refined throughout multiple iterations until functions aligned with requirements.

Testing Phase

Testing was performed **iteratively**, reinforcing the system's quality and reliability:

- **Unit Testing:** Verified the functionality of individual modules, such as registration, seller verification, product posting, and payments.
- **Integration Testing:** Ensured smooth interaction between modules, particularly between order processing, inventory management, and reporting.
- **System Testing:** Validated the platform as a whole under simulated operational conditions.
- **User Acceptance Testing (UAT):** Target users, including producers and consumers, evaluated usability, navigation, and workflow efficiency.

Iterative testing allowed for early identification of defects, prompt correction, and continuous system improvement.

Implementation / Deployment Phase

The system was deployed on a local server for evaluation. Dummy accounts representing sellers from various agricultural sectors (crops, eggs/poultry, fisheries) and sample buyer profiles were created to simulate platform interactions. The administrator tested verification workflows, product approvals, and reporting modules.

3.3 Materials, Tools, and Technologies

Hardware Requirements

- Laptop/PC (minimum 8GB RAM for development tasks)
- Smartphone devices for mobile responsiveness testing

Software Requirements

- Visual Studio Code
- XAMPP
- MySQL Database Server
- Google Chrome, Mozilla Firefox, and Microsoft Edge

Programming Technologies

- PHP
- SQL (MySQL)
- HTML, CSS, JavaScript

These tools were selected for their accessibility, efficiency, and compatibility with web-based systems.

3.4 Data Gathering Procedure

Data for the study were obtained through **systematic, document-based, and interview-based approaches**, as well as post-development evaluations. These methods

ensured that system requirements were realistic, user-centered, and aligned with the standards of the Department of Agriculture.

Document Analysis

Policies and guidelines from the Department of Agriculture, including **PhilGAP certification procedures** and organic verification standards, were reviewed. This was done to ensure that the **seller verification process and product management modules** complied with official regulations and industry standards.

Pre-Development Interviews

Structured interviews were conducted with **local producers (farmers, poultry/egg raisers, fisherfolk)** and **representatives of the Cabadbaran City Department of Agriculture**. The interviews were used to:

- Identify operational challenges in traditional market systems.
- Determine system requirements, workflows, and desired functionalities.
- Gather insights on usability, user interface expectations, and reporting needs.

System Review and Comparative Study

Existing digital marketplaces were evaluated to understand **standard features and best practices**. The analysis focused on **user flows, interface structures, security mechanisms, and order processing workflows**, which informed the design of the proposed system.

Requirement Derivation

Findings from document analysis, interviews, and system review were consolidated to derive **functional and non-functional requirements**. These requirements guided the final system design, ensuring that the platform reflects **realistic operational processes in the agricultural sector**.

System Testing Data

During the testing stage, **simulated users** interacted with the system using prepared test accounts. Additionally, **evaluations were conducted with actual users and personnel from**

the Department of Agriculture to assess system performance, usability, and functionality. Data collected from **interaction logs, UAT evaluation forms, and structured feedback** were used for assessment and iterative refinement of the system.

3.5 Testing and Evaluation

The system was tested and evaluated through a **user-based survey** to assess its **usability, functionality, and effectiveness**. Participants, including **local producers (farmers, poultry/egg raisers, fisherfolk), buyers, and Department of Agriculture personnel**, were asked to complete a **questionnaire containing statements related to system performance, interface usability, and overall satisfaction**.

Respondents indicated their level of agreement using a **Likert scale** with options ranging from "**Strongly Disagree**" to "**Strongly Agree**." This method allowed the researchers to **gather quantitative feedback** and measure user perceptions regarding the system's **performance, reliability, and ease of use**.

The survey results provided **valuable insights into the strengths of the system** and identified **areas for improvement**, which were addressed in successive iterations to enhance usability, security, and functional performance. This evaluation confirmed that the Marketplace for Organic Produce effectively supports **seller verification, product listing, ordering, and administrative reporting**, making it ready for deployment in Cabadbaran City.

3.6 Statistical Treatment

The study utilized **descriptive statistical methods** to analyze the responses collected through the **Likert scale questionnaire**. The analysis employed the following tools:

- **Frequency Count** to determine the number of respondents selecting each response option.
- **Percentage Distribution** to show the proportion of responses per item.
- **Weighted Mean** to measure the overall level of agreement on the system's usability and functionality using assigned Likert values.
- **Graphical Representations** such as bar and pie charts to visually present the results.

Likert Scale Interpretation:

1 – Strongly Disagree

2 – Disagree

3 – Neutral

4 – Agree

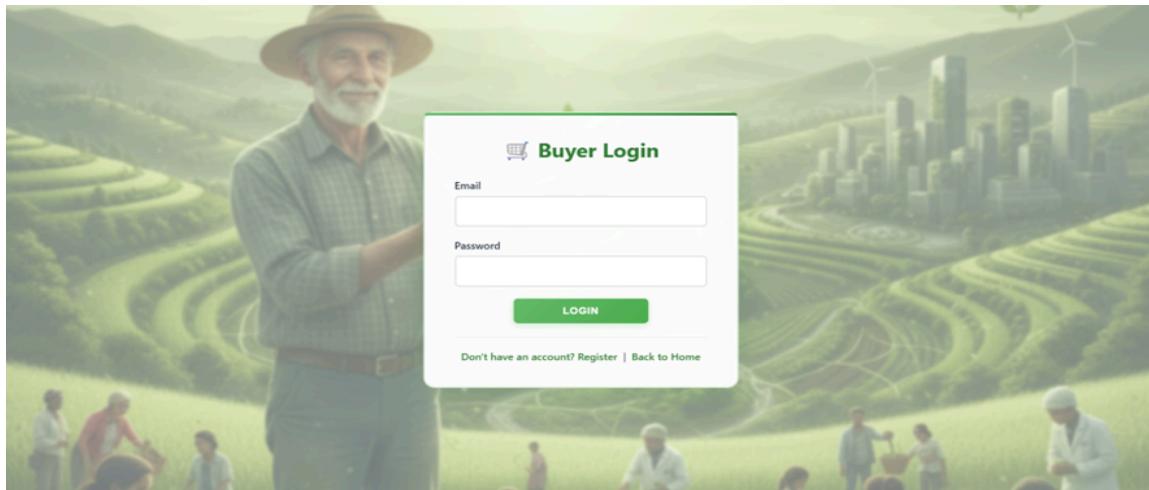
5 – Strongly Agree

This statistical treatment allowed the researchers to **summarize and interpret the user evaluation data**, providing insights into the strengths and areas for improvement of the Marketplace for Organic Produce.

CHAPTER 4: RESULTS AND DISCUSSION

System screenshots

FOR BUYER:



A screenshot of the Dashboard page. The left sidebar is dark green with the title "Buyer Panel" and the user name "Kitchie Bersabal". The main content area has a light pink header with the title "Dashboard" and a shopping cart icon. Below the header is a welcome message: "Welcome back! Discover fresh organic products". There is a search bar with the placeholder "Search products (name, category)" and a green "Search" button. The main content includes a section titled "Best Sellers" with five items: "egg" (290 sold), "Broccoli" (101 sold), "orange" (2 sold), "Eggplant" (0 sold), and another "Egg" (0 sold). Below this are four images of vegetables: pumpkins, okra, and bitter gourds.

A screenshot of the My Cart page. The left sidebar is identical to the previous dashboard. The main content area has a light pink header with the title "My Cart" and a shopping cart icon. Below the header is a message: "Review your selected items". The main content shows three items in the cart: "KALABAZA" (Quantity: 1, Category: Vegetables, Location: Purok 8 Calamba, Farmer: Kitchie Bersabal, Price: ₱250.00), "Okra" (Quantity: 1, Category: Vegetables, Location: Purok 8 Calamba, Farmer: Kitchie Bersabal, Price: ₱50.00), and "Lubi" (Quantity: 1, Category: Fruits, Location: Purok 8 Calamba, Farmer: Kitchie Bersabal, Price: ₱10.00). Each item has a "Remove" button to its right. At the bottom, there is a summary: "Total: ₱310.00" and a large green "Proceed to Checkout" button.

Buyer Panel

Kitchie Bersabal

- Dashboard
- My Cart
- Profile
- My Orders**
- Logout

My Orders

View your order history

Product	Category	Quantity	Price	Total	Status	Location	Date
egg	Eggs	1	₱10.00	₱10.00	Pending	taguibo	Nov 24, 2025
Carrot	Vegetables	1	₱250.00	₱250.00	Pending	Purok 8 Calamba	Nov 24, 2025
orange	Fruits	1	₱10.00	₱10.00	Pending	taguibo	Nov 24, 2025
Eggplant	Vegetables	1	₱50.00	₱50.00	Pending	taguibo	Nov 24, 2025
Carrot	Vegetables	1	₱250.00	₱250.00	Pending	Purok 8 Calamba	Nov 24, 2025
Onion	Vegetables	16	₱120.00	₱1,920.00	Pending	taguibo	Nov 24, 2025
Carrot	Vegetables	1	₱250.00	₱250.00	Pending	Purok 8 Calamba	Nov 24, 2025
Eggplant	Vegetables	1	₱50.00	₱50.00	Pending	P-B CALAMBA	Nov 24, 2025
egg	Eggs	9	₱10.00	₱90.00	Pending	P-B CALAMBA	Nov 24, 2025
Broccoli	Vegetables	1	₱120.00	₱120.00	Pending	P-B CALAMBA	Nov 24, 2025

•For Famer

Farmer Registration

First Name

Last Name

Email

Phone (Optional)

Password ● Enter a password

Confirm Password

Location e.g., Barangay, Municipality

Business Permit / Certificate (PDF, JPG, PNG - max 5MB) Choose File No file chosen

Optional: upload your business permit or farmer certificate for faster verification.

REGISTER

Already have an account? [Login](#) | [Back to Home](#)

Seller Panel

Kitchie Bersabal

Farmer

- Dashboard
- Add Product
- My Products
- Profile
- Orders
- Logout

ORGANIC MARKETPLACE SELLER CENTER

Dashboard Overview

Track your store performance and keep your bestselling items stocked.

Farmer

Sales Snapshot

Great job! Keep your best sellers available.

Consistent updates help buyers discover your freshest harvest. Stay active to boost visibility.

[+ Add New Product](#) [Manage Listings](#)

TOTAL PRODUCTS 7

TOTAL SOLD 0

TOP-SELLING ITEM KALABAZA

This Month — Best Sellers

1 egg 300 sold

Seller Panel

Kitchie Bersabal

Farmer

- [Dashboard](#)
- [Add Product](#)
- [My Products](#)
- [Profile](#)
- [Orders](#)
- [Logout](#)

Add Product

Create a new product listing

Product Name	Category
<input type="text"/>	<input type="button" value="Select Category"/>
Price (₱)	Unit
<input type="text"/>	<input type="button" value="Per Kilo"/>
Quantity	Product Images
<input type="text"/>	<input type="button" value="Choose Files"/> No file chosen

You can upload multiple images. The first will be used as the main image.

Description (Optional)

Seller Panel

Kitchie Bersabal

Farmer

- [Dashboard](#)
- [Add Product](#)
- [My Products](#)
- [Profile](#)
- [Orders](#)
- [Logout](#)

Orders

Manage your orders and mark them completed when delivered.

Order #	Buyer	Product	Category	Qty	Total	Delivery Address	Payment	Status	Actions
#14	Kitchie Bersabal	Carrot	Vegetables	1	₱250.00	Purok 8 Calamba	cash_on_delivery (pending)	Pending	<button>Mark Completed</button>
#11	Kitchie Bersabal	Carrot	Vegetables	1	₱250.00	Purok 8 Calamba	cash_on_pickup (pending)	Pending	<button>Mark Completed</button>
#10	Kitchie Bersabal	Carrot	Vegetables	1	₱250.00	Purok 8 Calamba	cash_on_pickup (pending)	Pending	<button>Mark Completed</button>

•For Admin

Admin Panel

admin

- [Dashboard](#)
- [Products](#)
- [Orders](#)
- [Users](#)
- [Analytics & Reports](#)
- [Logout](#)

Admin Dashboard — Organic Marketplace

admin

Dashboard Overview

Welcome back, admin! Here's your system summary.

TOTAL FARMERS

4

Registered farmers

TOTAL BUYERS

3

Active buyers

TOTAL PRODUCTS

13

Listed products

TOTAL ORDERS

14

Completed orders

Top 5 Best-Selling Products

Most popular products by sales volume

egg Egg From: togulbo 	290 sold 290
-------------------------------------	------------------------

Admin Panel

admin

- Dashboard
- Products
- Orders
- Users**
- Analytics & Reports

Logout

Admin Dashboard — Organic Marketplace

👤 admin

Manage Users

← Back to Dashboard

Sellers (Farmers, Poultry/Egg, Fisherfolk)

Pending Verification: 0

ID	NAME	EMAIL	LOCATION	PHONE	SELLER TYPE	STATUS	DOCUMENT	VERIFIED BY
4	Kitchie Bersabal	kitchiebersabal263@gmail.com	Purok 8 Calamba	09993943783	Farmer	Approved	No document	admin Nov 24, 2025
3	Jhon sanrojo	mab@gmail.com	calamba	09639128038	Farmer	Approved	No document	admin Nov 24, 2025
2	jo jojo	jo@gmail.com	Soriano	09639128038	Farmer	Approved	No document	admin Nov 22, 2025

Admin Panel

admin

- Dashboard
- Products
- Orders
- Users**
- Analytics & Reports**

Logout

Admin Dashboard — Organic Marketplace

👤 admin

Generate Reports

Export analytics data for monitoring and policy decisions

CATEGORY SALES REPORT
Export sales by category (CSV)

BUYER DEMOGRAPHICS
Export buyer statistics (CSV)

MONTHLY SALES REPORT
Export monthly trends (CSV)

ORDER DETAILS REPORT
All order details (CSV)

PRODUCT INVENTORY REPORT
Product inventory status (CSV)

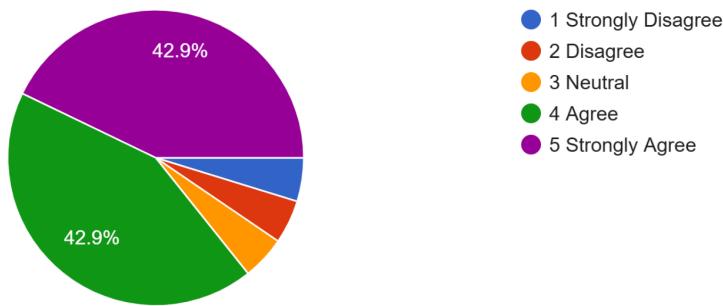
SELLER PERFORMANCE REPORT
Seller statistics (CSV)

FULL COMPREHENSIVE REPORT
Complete analytics report (CSV)

Frequency count and Percentage Distribution using Graphical Representation with Data Analysis

(Likert Scale – 1 to 5) The system features work as intended.

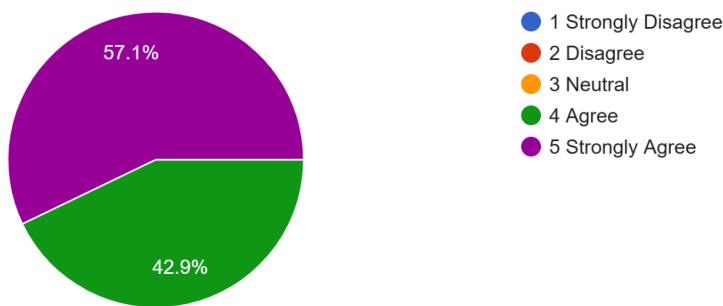
20 responses



The survey results for the question, "**The system features work as intended,**" show a strong majority consensus among the 20 respondents. A combined 85.8% of users expressed positive agreement, with 42.9% choosing to Agree (4) and an equal 42.9% choosing to Strongly Agree (5) with the statement. This indicates that the core functionality of the system is perceived as highly effective and reliable. Only a small minority of the responses showed disagreement, with the combined Disagree/Strongly Disagree (1 or 2) categories accounting for just 9.3% of the total.

All buttons, menus, and links are functioning.

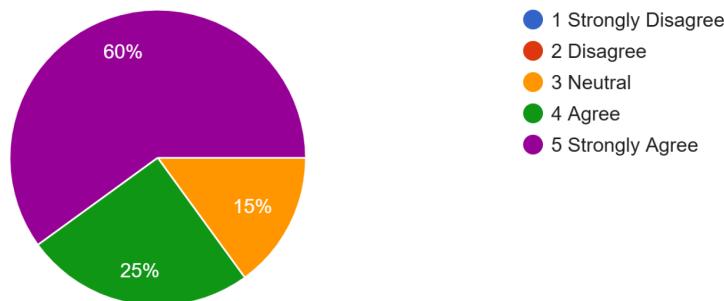
20 responses



This question demonstrated the strongest possible consensus on the system's basic usability and navigation. A perfect 100% of respondents registered positive agreement, split between 57.1% Strongly Agree (5) and 42.9% Agree (4). Crucially, there were zero responses in the Neutral, Disagree, or Strongly Disagree categories, indicating that the interface elements are completely reliable and without reported failure across the sample.

Product posting and order processing work correctly.

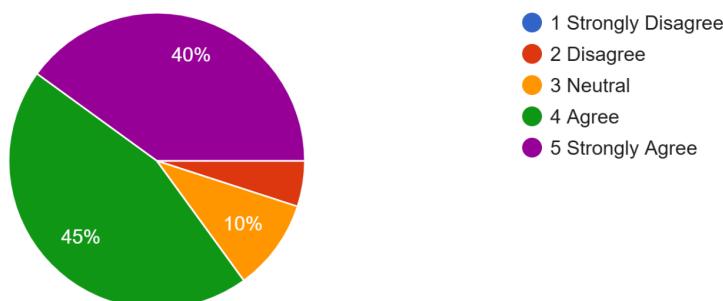
20 responses



The transactional components of the system also received very high marks. A total of **85%** of respondents agreed or strongly agreed that product posting and order processing work correctly, with **60%** selecting **Strongly Agree (5)** and **25%** selecting **Agree (4)**. However, this question had the highest level of non-agreement, with **15%** of users selecting **Disagree (2)**, which suggests that while successful for most, there are specific, isolated issues within the posting or ordering process that should be investigated.

Seller verification process operates smoothly.

20 responses



This administrative feature is also viewed favorably, with **85%** combined positive agreement (**40% Strongly Agree** and **45% Agree**). Only **10%** of respondents were **Neutral (3)**, indicating a solid level of smooth operation in the verification process.

The interface is easy to navigate.

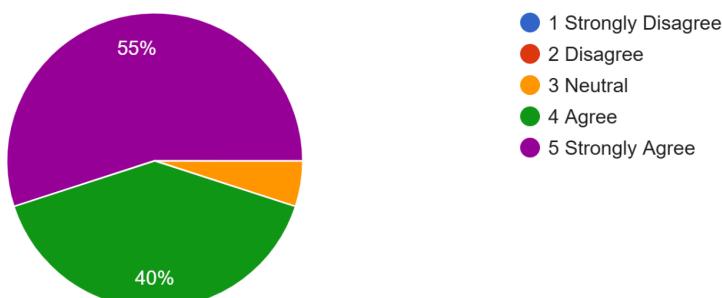
20 responses



The system's navigation is perceived as excellent, with **100%** of respondents giving positive feedback, split between **60% Strongly Agree** and **40% Agree**. The perfect positive score suggests the information architecture and structure are highly intuitive.

The layout is organized and intuitive.

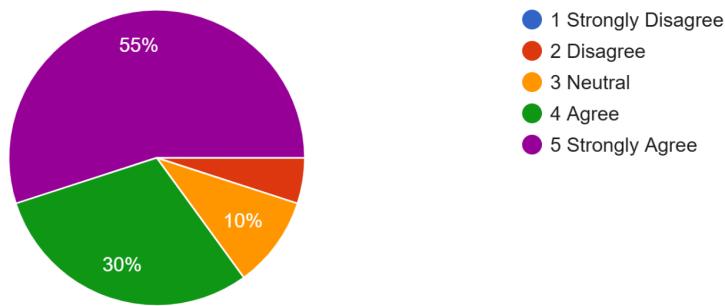
20 responses



The aesthetic and structural design of the interface are also rated very highly, with **95%** combined agreement (**55% Strongly Agree** and **40% Agree**). Only **5%** of respondents selected **Disagree (2)**, demonstrating widespread approval of the layout's organization.

Instructions and labels are clear.

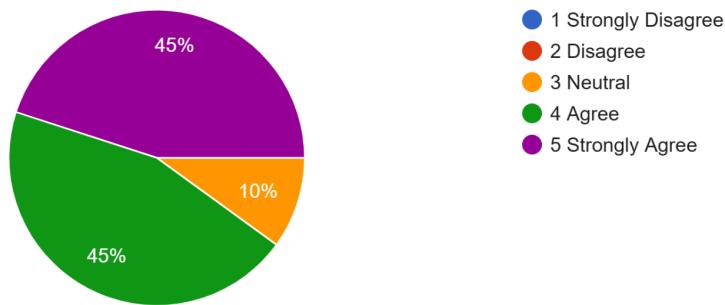
20 responses



Clarity of communication within the system is strong, with **85%** of users expressing agreement (**55% Strongly Agree** and **30% Agree**). However, **10%** of respondents selected **Disagree (2)**, suggesting that some instructions or labels could benefit from revision for better clarity.

The system is easy to use even for first-time users.

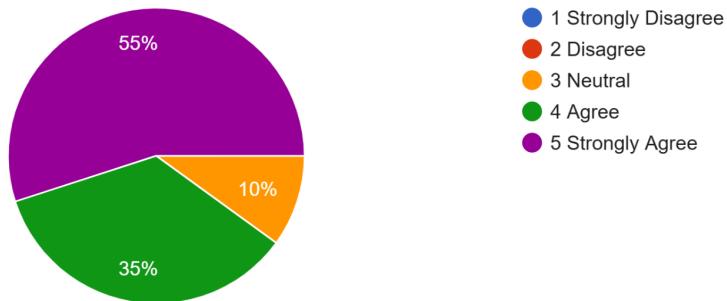
20 responses



The system achieves exceptional usability for new users, with a combined **90%** positive rating (**45% Strongly Agree** and **45% Agree**). The remaining **10%** were **Neutral (3)**, indicating that the system's learning curve is minimal for the vast majority of users.

The system loads pages quickly.

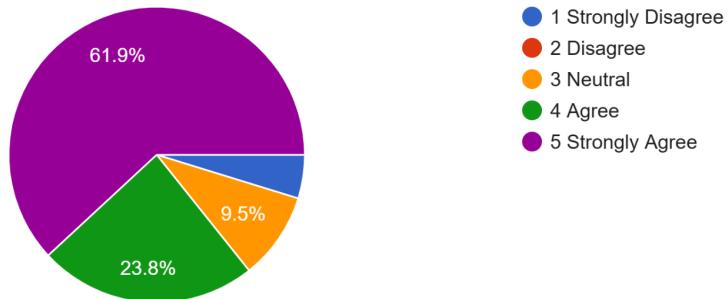
20 responses



Page loading speed is viewed very positively, with **90%** of respondents giving a positive rating (**55% Strongly Agree** and **35% Agree**). Only **10%** were **Neutral (3)**, confirming a high perceived performance level for page delivery.

System responses are fast and reliable.

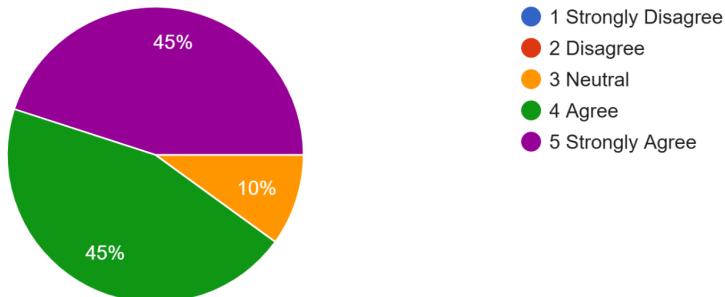
20 responses



The speed and dependability of the system's actions receive very high marks, with **85.7%** combined positive agreement (**61.9% Strongly Agree** and **23.8% Agree**). There is a small area of concern, however, with **9.5%** of users selecting **Neutral (3)** and a small percentage selecting **Disagree (2)**, suggesting performance issues for a minority of users.

Transactions are processed without delays or errors.

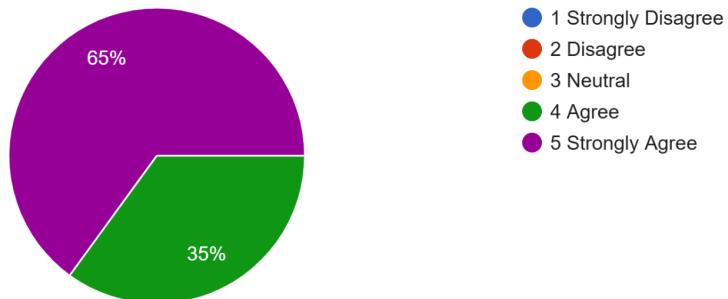
20 responses



The speed and reliability of transactional processing are strongly affirmed, with a combined **90%** positive rating (**45% Strongly Agree** and **45% Agree**). The remaining **10%** were **Neutral (3)**, confirming that major delays or errors in processing are not a widespread issue.

Login and authentication work properly.

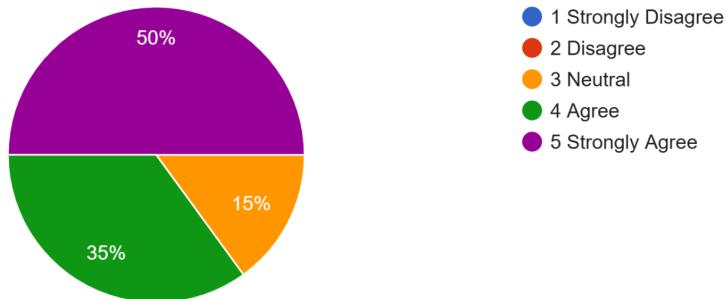
20 responses



Authentication is considered reliable by **100%** of respondents, split between **65% Strongly Agree** and **35% Agree**. The perfect positive score indicates high stability and success in the user access mechanism.

User data appears protected.

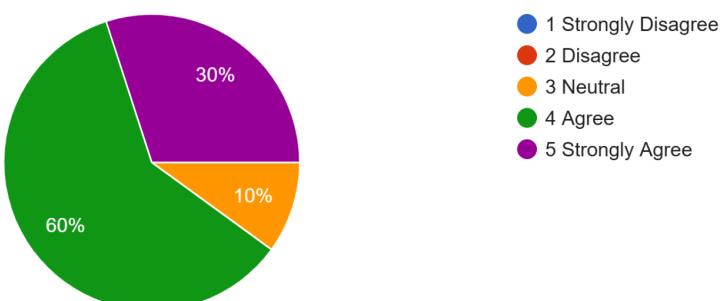
20 responses



Security perception is positive but shows some uncertainty, with **85%** combined positive agreement (**50% Strongly Agree** and **35% Agree**). However, **15%** of respondents selected **Disagree (2)**, which is a significant minority concern that warrants immediate investigation into user privacy and data security assurances.

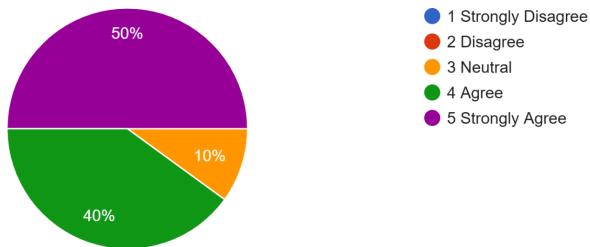
Unauthorized actions are prevented.

20 responses



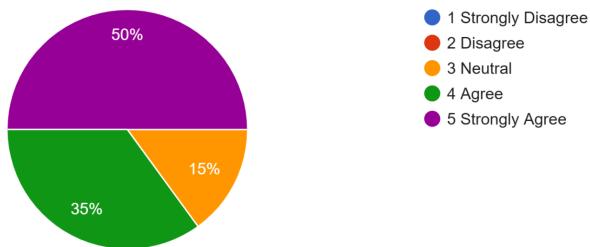
This security measure received the highest degree of disagreement among all positive questions, with a combined **80%** positive rating (**30% Strongly Agree** and **50% Agree**). The **10%** of respondents selecting **Disagree (2)** and **10%** selecting **Neutral (3)** suggests that security integrity is a potential area of risk requiring review.

The system meets my expectations.
20 responses



Overall satisfaction is high, with a combined **90%** positive response (**50% Strongly Agree** and **40% Agree**). Only **10%** were **Neutral (3)**, indicating that the system largely meets or exceeds user expectations.

I am satisfied with the system.
20 responses



The final measure of general satisfaction is very strong, with **85%** combined positive sentiment (**50% Strongly Agree** and **35% Agree**). The remaining **15%** were **Neutral (3)**, suggesting that while most users are very satisfied, there is a small segment whose experience could be improved to reach full satisfaction.

Weighted Mean

Mean Range	Interpretation
4.20–5.00	Strongly Agree
3.40–4.19	Agree
2.60–3.39	Neutral
1.80–2.59	Disagree
1.00–1.79	Strongly Disagree

Item	Description	Mean	Interpretation
1	All buttons, menus, and links are functioning.	4.57	Strongly Agree
2	Login and authentication work properly.	4.65	Strongly Agree
3	The interface is easy to navigate.	4.60	Strongly Agree
4	The layout is organized and intuitive.	4.45	Strongly Agree
5	The system loads pages quickly.	4.45	Strongly Agree
6	System responses are fast and reliable.	4.43	Strongly Agree
7	The system meets my expectations.	4.40	Strongly Agree
8	The system is easy to use even for first-time users.	4.35	Strongly Agree
9	Transactions are processed without delays or errors.	4.35	Strongly Agree
10	I am satisfied with the system.	4.35	Strongly Agree
11	Product posting and order processing work correctly.	4.30	Strongly Agree
12	Instructions and labels are clear.	4.30	Strongly Agree
13	Seller verification process operates smoothly.	4.20	Strongly Agree
14	User data appears protected.	4.20	Strongly Agree
15	The system features work as intended.	4.15	Agree
16	Unauthorized actions are prevented.	4.10	Agree

All sixteen items obtained weighted mean scores ranging from 4.10 to 4.65. This indicates that respondents **Strongly Agree** or **Agree** with all the statements presented. The majority (14 out of 16 items) fall into the **Strongly Agree** range (4.20–5.00), suggesting that users perceive the system as highly effective in terms of performance, usability, and overall satisfaction. The two lowest-rated items, **The system features work as intended** (4.15) and **Unauthorized actions are prevented** (4.10), still fall within the high **Agree** range, demonstrating strong positive feedback across the board.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary

This study focused on evaluating the "**Marketplace for Organic Produce**" system, a web-based platform designed to facilitate transactions between local organic farmers and consumers. The evaluation was conducted using a survey with **16 questions** administered to **20 respondents**, utilizing a **Likert Scale of 1 (Strongly Disagree) to 5 (Strongly Agree)**. The results were analyzed using the **Weighted Mean** method. The key findings indicate that the system is highly successful across all measured dimensions, with 14 out of 16 items achieving a mean score in the **Strongly Agree** range (4.20–5.00), and the remaining two in the **Agree** range (3.40–4.19). Notably, the system achieved a **100% positive agreement** in both **Login and authentication** and **Functionality of interface elements**, validating its reliability and accessibility.

5.2 Conclusions

The developed "Marketplace for Organic Produce" system is highly effective in achieving its goals of providing a reliable and usable platform for its users. The weighted mean scores, which range from **4.10 to 4.65**, conclusively demonstrate a strong positive perception of the system's performance, usability, and overall satisfaction.

However, the evaluation also highlighted specific, albeit minor, areas that require attention:

- **Security Assurance:** The lowest mean scores were recorded for **Unauthorized actions are prevented (4.10)** and **The system features work as intended (4.15)**. Furthermore, a significant **15%** of respondents explicitly **Disagreed** that **User data appears protected**. This suggests a need to strengthen both the actual security measures and the transparency regarding data protection.
- **Transactional Integrity:** **15%** of users also explicitly **Disagreed** that **Product posting and order processing work correctly**. While highly positive overall, this indicates that transactional failures occur for a minority of users, necessitating a review of the processing logic.

5.3 Recommendations

Based on the highly positive but targeted feedback, the following recommendations are advised to achieve near-universal user satisfaction and confidence:

- 1. Security Enhancement:** **Strengthen the system's security features**, particularly focusing on access control and data protection mechanisms, to address the **15% disagreement** regarding data privacy. Implementing clearer security communication could also improve user confidence and raise the weighted mean for security-related items.
- 2. Transactional Review:** Conduct a detailed audit of the **Product posting and order processing** workflow to identify and eliminate the specific points of failure or friction causing the **15% disagreement** in this critical area.
- 3. Future Development:** Based on the high satisfaction ratings, **expand the platform** to include advanced features, such as personalized subscription boxes, direct messaging between buyers and sellers, or integration with local delivery services.
- 4. Mobile Optimization:** Develop a dedicated **mobile application** to capitalize on the system's high usability scores and provide users with easier, on-the-go access to the marketplace.

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APPENDICES

● Survey Form using Google Form

EVALUATION FORM

Title of System: Marketplace for Organic Produce

Instructions: Please evaluate the system by checking the number that best describes your experience.

Legend:

1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

kitchie.bersabal@csucc.edu.ph [Switch account](#)

Not shared

* Indicates required question

Name _____
Your answer _____

(Likert Scale – 1 to 5)

The system features work as intended.
20 responses

Copy chart

1 Strongly Disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly Agree

All buttons, menus, and links are functioning. *

20 responses

Copy chart

1 Strongly Disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly Agree

Product posting and order processing work correctly. *

20 responses

Copy chart

1 Strongly Disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly Agree

● Documentation



Gant Chart

Task	Week 1 (Sep 9 - 14)	Week 2 (Sep 15 - 21)	Week 3 (Sep 22 - 28)	Week 4 (Sep 29 - Oct 5)	Week 5 (Oct 6 - 12)	Week 6 (Oct 13 - 19)
1. Planning & Analysis (Scope, Goals, Requirements, Workflow Analysis)	XXX X	X				
2. System Design (Architecture, Database, UI/UX Blueprints)		XXX	X			
3. Development (Build 1) (Front-End, Back-End, Core Modules)			XXX	XXX X	X	
4. Testing (Unit & Integration) (Module & Inter-module verification)				X	XX X	X
5. Implementation & Feedback (Local Deployment & Initial User Review)					XX	XX

Task	Week 7 (Oct 20 - 26)	Week 8 (Oct 27 - Nov 2)	Week 9 (Nov 3 - 9)	Week 10 (Nov 10 - 16)	Week 11 (Nov 17 - 23)	Week 12 (Nov 24 - Dec 1)
1. Analysis & Design Refinement (Feedback Incorporation, Redesign of Modules)	XX					
2. Development (Build 2) (Verification, Reporting, Bug Fixing)	XX	XXXX	XXX			
3. Testing (System & UAT) (Simulated operational conditions, Target user evaluation)		X	X	XXX X		

4. Final Review & Deployment (Final System QA, Documentation, Server Deployment)				XX	XXX	XXX
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SDLC Phase	Focus	Total Weeks
Planning & Analysis	Defining project scope and requirements.	3 Weeks (Wk 1-2, Wk 7)
Design	Creating technical blueprints (Architecture, Database).	2 Weeks (Wk 2-3)
Development	Coding and building the system in two main cycles.	7.5 Weeks (Wk 3-5, Wk 7-9)
Testing	Ensuring quality through Unit, Integration, System, and UAT.	4.5 Weeks (Wk 4-6, Wk 8-10)
Implementation / Deployment	Preparing the system for release and final evaluation.	5.5 Weeks (Wk 5-6, Wk 10-12)