A Web-Based Customer Satisfaction Survey System for Local Government Unit: Design, Implementation, and ISO/IEC 25010 Quality Evaluation

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ABSTRACT

Measuring customer satisfaction is important for assessing local government units (LGUs) public service performances, including rural health services, environmental and natural resource management, and municipal engineering and infrastructure operations. Old paper-based feedback techniques can be ineffective and limit immediate examination. Using the Basic Chevron Process model, this project creates a web-based Customer Satisfaction Survey System (CSSS) for the Municipality of Madridejos. Survey management, data visualization dashboards, and mobile accessibility are features included in the Customer Satisfaction Survey System. Three intentionally chosen information technology (IT) professionals assessed the system. The USE questionnaire (Usefulness, Satisfaction, and Ease of Use/Learning), the ISO/IEC 25010 Software Quality Model for software properties, and a system functionality survey in line with the study's goals were among the evaluation tools. Mean (M) ratings were calculated using descriptive statistics. Both informed consent and ethical approval were acquired. According to expert review, the CSSS is very functional; all functioning indicators received an average value of 5.0 (Excellent). High performance was demonstrated by ISO/IEC 25010 quality qualities M=4.20 (Very Satisfactory), with Reliability receiving the highest score M=4.50 (Very Satisfactory), Strong usability M=4.30 (Very Satisfactory), and the best score in Ease of Learning M=4.60 (Very Satisfactory) were reported by the USE questionnaire. The technology was found by the experts to be effective at showing survey data, responsive, and available online. Strong usability and functional performance were displayed by the CSSS, suggesting that it is appropriate for processing LGU customer feedback. The results point to increasing covered departments, improving security features, and adding advanced analytics for wider governmental deployment as the main areas of future development.

Keywords: *Customer satisfaction, E-governance, Survey system, Usability evaluation, ISO 25010, Web application, Local government unit, Municipality of Madridejos*

INTRODUCTION

Assessing customer satisfaction has emerged as the main measurement tool for evaluating performance in both the public sector and the private sector (Ghazali & Abd Wahab, 2017; de Menezes et al., 2022). Data like this provide information about service responsiveness, accessibility, and perceived quality in government services (Špaček & Špačková, 2025). Well-organized feedback from customers is essential for ongoing improvement since municipal and local government units (LGUs) communicate with the public and provide essential services. Compliance, trust, and service utilization all depend on satisfaction, which highlights the need for organized feedback systems in public administration (Development Academy of the Philippines, Productivity and Development Center; Ghazali & Abd Wahab, 2017).

Some LGUs continue to rely on separated, manual, or informal feedback processes even though the importance of customer satisfaction is acknowledged. These techniques restrict data visibility, timeliness, and accuracy while possibly limiting government responsiveness (Banawa & De Jesus, 2025). A web-based survey platform with real-time visualization capabilities is required in the Madridejos LGU setting since the lack of a centralized digital feedback tool limits the timely aggregation of citizens' responses (Ye, et.al., 2023).

The Municipality of Madridejos has expressed or signaled a need for customer feedback process improvements, particularly for the Municipal Environment and Natural Resources Office (MENRO), Rural Health Unit (RHU), and Municipal Engineering Office (MEO). So, to address this gap, this study developed and evaluated a Customer Satisfaction Survey System (CSSS) designed to support data management, online survey administration, and dashboard-based analytics.

Objectives

This study aimed to develop and evaluate a web-based Customer Satisfaction Survey System (CSSS) for use by the Municipality of Madridejos. Specifically, it aims to:

1. Develop a functional web-based customer satisfaction survey system that supports:

    a. Online survey administrator;
    b. Centralized data storage and management; and
    c. Dashboard-based visualization of survey results.

2. Evaluate the developed system in terms of:

    a. System functionality based on development objectives.
    b. Software quality characteristics using the ISO/IEC 25010
       Software Quality Model.

    c.   Usability, including usefulness, ease of use, ease of learning, and satisfaction, using the USE questionnaire.

METHODS

Research Design

This study employed a system development design integrating descriptive evaluation. The system was developed using a web-based architecture and subsequently evaluated by domain experts using standardized instruments, consistent with established software development and evaluation practices in information systems research (Alshamrani & Bahattab, 2019).

System Development Approach

Development was guided by the six stages of the Basic Chevron Process (BCP) model. Which is the requirements collection, system design, implementation, testing, deployment, and maintenance. These structured development stages align with standard Software Development Life Cycle (SDLC) models commonly used in system development research (Alshamrani & Bahattab, 2019). Real-time dashboards, online accessibility, mobile compatibility, survey generation, and CRUD (create, read, update, and delete) operations for department and customer data were some of the system's capabilities.
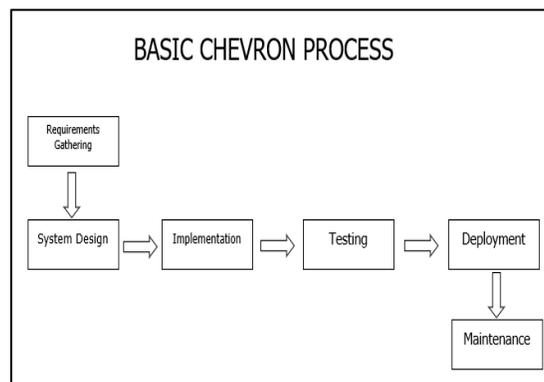

Fig.1: *Basic Chevron Process Model*

The Basic Chevron Process, also known as the Chevron diagram or Chevron Process Flow, is a graphical representation of a sequential, linear process with a series of steps or stages. It provides a clear and intuitive visualization of the steps involved in a process, making it easier to understand and communicate the flow of activities. The Basic Chevron Process diagram is a simple and effective way to represent a linear or sequential process, and it can be easily customized and adapted to suit specific requirements.

Participants

The study was participated in by the local government unit officers, department heads, staff, and the three IT specialists. Then later assessed the quality and functionality of the developed system. This study uses purposive sampling in gathering for usability and functionality feedback from the LGU employees.

Instruments

Three evaluation instruments were utilized:

a. *System Functionality Survey* aligned with development objectives.
b. *ISO/IEC 25010 Software Quality Model*, assessing functionality, performance efficiency, compatibility, reliability, and security.
c. *USE Questionnaire*, assessing usefulness, ease of use, ease of learning, and satisfaction.

All instruments used Likert-type scales and generated mean scores for interpretation.

Data Collection Procedures

Experts were given access to both web and mobile interfaces, they were given instruction on how to use the system and requested to complete particular tasks related to system modules. The responses were manually entered and tallied for examination.
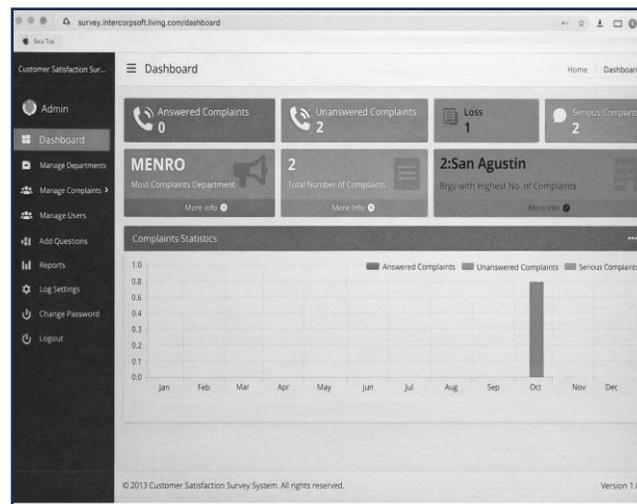

Fig.2: *Administrator Dashboard*

Figure 2 shows a part of the system where the progress bars, the system admin dashboards, and system graphs, are presented. The answered survey, unanswered survey, satisfied, dissatisfied, most surveyed departments, the total number of surveys, and the barangay with the highest number of surveys.

RESULTS

System Functionality Evaluation

All functionality criteria achieved a mean score of 5.00 (Excellent).

Table 1. *Functionality Evaluation of the CSSS (n = 3)*

Criteria	Mean	Interpretation
Dashboard visualization	5.00	Excellent
CRUD operations	5.00	Excellent
Online accessibility	5.00	Excellent
Mobile responsiveness	5.00	Excellent
Overall user-friendliness	5.00	Excellent
Overall Mean	**5.0**	**Excellent**

Table 1 presents that all system functionality criteria received a mean score of 5.00 *(Excellent)*. This shows that the developed Customer Satisfaction Survey System fully met its intended functions. The evaluators found that the dashboard visualization, CRUD (Create, Read, Update, Delete) operations, online accessibility, and mobile responsiveness were all functional and user-friendly.

ISO/IEC 25010 Software Quality Evaluation

ISO-based evaluation indicated very satisfactory performance across all attributes.

Table 2. *ISO/IEC 25010 Evaluation Results (n = 3)*

Attribute	Mean	Interpretation
Functional suitability	4.00	Very Satisfactory
Performance efficiency	4.20	Very Satisfactory
Compatibility	4.20	Very Satisfactory
Reliability	4.50	Very Satisfactory
Security	4.30	Very Satisfactory
Overall Mean	**4.20**	**Very Satisfactory**

Table 2 shows the ISO/IEC 25010 software quality evaluation results, with an overall mean of 4.20 *(Very Satisfactory)*, indicating that the system meets recognized software quality standards in terms of functional suitability, performance efficiency, compatibility, reliability, and security. The high reliability score suggests consistent system performance, which is important for government applications.

USE Questionnaire Results

Usability evaluation also indicated very satisfactory performance.

Table 3. *USE Questionnaire Results (n = 3)*

Dimension	Mean	Interpretation
Usefulness	4.00	Very Satisfactory
Ease of Use	4.40	Very Satisfactory
Ease of Learning	4.60	Very Satisfactory
Satisfaction	4.20	Very Satisfactory
Overall Mean	**4.30**	**Very Satisfactory**

Table 3 shows that the system achieved an overall mean score of 4.30 *(Very Satisfactory)* in usability evaluation, with ease of learning receiving the highest rating, indicating that users can quickly understand and operate the system. High scores in usefulness, ease of use, and satisfaction suggest that the system provides a positive user experience and can be easily adopted by LGU staff with varying levels of technical skills.

DISCUSSION

A web-based customer satisfaction survey system specifically designed for LGU service feedback was created as a result of this study. Excellent functionality was shown by expert evaluation, especially in the parts of data visualization, mobile accessibility, and fundamental CRUD operations. The high functionality evaluations are in parallel with earlier studies that highlight how important task efficiency and simple interaction are in determining system acceptance (Davis, 1989).

Reliability received the highest rating in the ISO/IEC 25010 results, showing that the system satisfies normal quality requirements. In governmental settings, where data consistency and uptime affect trust and operational continuity, reliability is especially crucial. Studies assessing public sector management systems have reported similar results (Shankar, et.al., 2024; Development Academy of the Philippines, Productivity and Development Center).

Usability findings are consistent with the larger body of research showing that systems with straightforward user interfaces and a low learning curve are more likely to be accepted (Venkatesh, et.al. 2003; Nielsen, 2012). The user's ability to swiftly adjust to system features is demonstrated by the high ease-of learning score, which is important in settings with a wide range of user skill levels (Davis, 1989).

CONCLUSION

Based on expert review, the developed Customer Satisfaction Survey System showed excellent functionalities and highly satisfying software qualities and usability. The system's usefulness for allowing structured consumer input in LGUs is supported by these findings. The platform can be used as a scalable e-governance tool to improve public service responsiveness and accountability with additional development and wider testing (Špaček & Špačková, 2025; Ye, et.al., 2023; Davis, 1989; Shankar, et.al., 2024; Nielsen, 2012).

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