

Client feedback system: An enhanced mechanism with results-driven data analytics and generative AI

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Abstract

Aim: This study developed a Client Feedback System (CFS) for Heramil Hospital in Polomolok, South Cotabato, integrating data analytics and generative artificial intelligence, and evaluated its usability, reliability, and user satisfaction. It also examined whether significant differences existed between patients and watchers, and between administrative personnel and healthcare workers, in their system evaluations.

Methodology: A descriptive quantitative research design was employed. Data were collected from 100 respondents using structured questionnaires and analyzed through descriptive statistics and independent-samples *t*-tests.

Results: Findings showed excellent ratings across all dimensions: client-side usability ($M = 4.62$), reliability ($M = 4.53$), and satisfaction ($M = 4.69$); administrator-side usability ($M = 4.66$), reliability ($M = 4.61$), and satisfaction ($M = 4.80$). No significant differences were found between patients and watchers or between administrative personnel and healthcare workers ($\alpha = 0.05$), indicating comparable system acceptance across user groups.

Conclusion: The Client Feedback System demonstrated strong usability, dependable performance, and high user satisfaction, supporting its effectiveness as a digital tool for capturing feedback and informing data-driven service improvements. However, the presence of a ceiling effect suggests the need for long-term evaluation and continuous refinement to enhance decision-support insights.

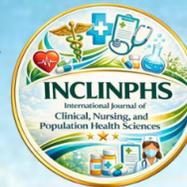
Keywords: *client feedback system, digital patient feedback, data analytics, generative artificial intelligence, healthcare information systems, patient satisfaction*

INTRODUCTION

Assessing patient care quality within healthcare systems remained a multifaceted challenge due to varying definitions of quality and the complexity of global care delivery structures (Guzmán-Leguel & Rodríguez-Lara, 2025). Quality of care was inherently multidimensional, encompassing clinical outcomes, service delivery processes, and patient experiences. Among these dimensions, patient satisfaction surveys provided critical insights into perceived quality; however, they could not function as singular or exhaustive metrics for assessing healthcare performance or infrastructural effectiveness (Alharbi et al., 2022). Instead, patient-reported experiences were viewed as complementary indicators that informed broader quality improvement strategies.

Traditional paper-based surveys required patients to receive and return questionnaires by mail after appointments, whereas electronic surveys were increasingly utilized through email, websites, or mobile applications (Paul, 2024). Despite these benefits, electronic systems raised concerns related to data security, digital literacy, and equitable access among diverse patient populations (Koehle et al., 2022). Empirical studies indicated that patients generally exhibited higher preference and compliance rates with computer-based survey administration, suggesting that digital modalities enhanced response quality and participation (Oliveri et al., 2021).

While effective for quantifying perceptions, these methods were increasingly supplemented by advanced data analytics capable of identifying patterns, trends, and actionable insights from large datasets (Pohl et al., 2022). Recent advances in generative Artificial Intelligence (AI) further expanded these analytical capabilities, offering novel applications in healthcare such as disease detection, clinical decision support, and diagnostic assistance (Lee et al., 2023; Yim et al., 2024). Specifically, AI-driven analysis of patient satisfaction data demonstrated potential in



uncovering key determinants of patient experience, including staff attitudes, communication quality, and interpersonal dynamics (Liu et al., 2020; Dixon et al., 2024).

Within the Philippine healthcare system, efforts to improve healthcare quality, particularly through patient satisfaction and experience, were challenged by persistent measurement and implementation gaps. Despite evidence supporting a reciprocal relationship between positive patient experiences and improved health outcomes, the systematic use of satisfaction data to inform quality improvement remained limited (Dan & Tamayo, 2024). Although AI technologies were globally recognized for their potential to enhance healthcare efficiency and accessibility, their application within the Philippine context was still underexplored. Concerns persisted regarding the possible erosion of doctor-patient relationships, rigid care protocols, and overreliance on AI in critical clinical situations (Choudhury & Asan, 2020; Falcon et al., 2024).

In response to these persistent challenges and gaps, this capstone research established its relevance to both academic inquiry and practical healthcare management by developing a cross-platform, web-based client feedback application integrated with data analytics and AI-generated recommendations. Leveraging the widespread accessibility of mobile devices (Paul, 2024), the system aimed to improve the convenience, efficiency, and responsiveness of feedback collection compared to traditional paper-based approaches, while simultaneously enabling evidence-based quality improvement. The study made a substantive contribution to the discipline by addressing the lack of integrated systems that combine digital feedback collection, analytical processing, and AI-supported interpretation within a real-world hospital environment.

Previous studies largely examined these components in isolation, focusing separately on satisfaction measurement tools, survey-based evaluations, or standalone analytics, without assessing their combined operational value or usability at the institutional level (Weissman, 2025). This fragmentation, often driven by proprietary limitations and institutional hesitancy toward AI-enabled decision support, has restricted the translation of patient feedback into actionable insights (Wang, 2023; Rahman et al., 2024). By clearly identifying this research gap and providing a strong rationale grounded in both empirical evidence and contextual needs, the study introduced a novel, locally grounded approach that distinguished it from prior work and contributed meaningful value to advancing client-centered, data-driven healthcare quality management in the Philippine healthcare context.

Review of Related Literature and Studies

In the early 1980s, research firms were established to quantify patient satisfaction in healthcare through standardized survey instruments, thereby improving the accuracy and reliability of patient satisfaction metrics (Adams et al., 2024). The introduction of electronic data processing and personal computing in the 1980s and 1990s marked the transition to computerized survey systems. Early implementations were typically confined to inpatient settings and focused on specific service areas (Freijser et al., 2023). Subsequent technological advances enabled real-time data capture, automated survey distribution, and tailored questionnaires, significantly improving efficiency and data quality (Giacalone et al., 2025).

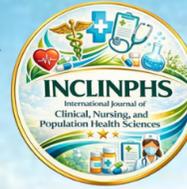
Modern systems have evolved from patient satisfaction tools into comprehensive client feedback systems that assess engagement, experience, and outcomes of care. Integration with electronic health records, multi-channel survey delivery, real-time analytics, and personalized instruments have enhanced their relevance for quality improvement and patient-centered care (Alomar et al., 2024).

Enhanced feedback mechanisms further strengthen these systems by generating actionable insights that inform service improvements, improve patient outcomes, and support quality and safety initiatives (Berger et al., 2020). Data analytics plays a central role by identifying trends, segmenting patient populations, and evaluating the impact of interventions, thereby enabling data-driven decision-making and operational efficiency (Cascini et al., 2021).

More recently, generative Artificial Intelligence (AI) has expanded analytical capabilities by rapidly processing large volumes of unstructured feedback, particularly open-ended responses. Compared to manual coding, AI-driven analysis improves speed, consistency, and depth of insight, while also enabling customized feedback reports and continuous survey refinement (Dwivedi et al., 2023; Yim et al., 2024).

Usability, reliability, and user satisfaction remain critical determinants of system effectiveness. User-friendly design, accessibility, and clear communication improve response rates and data quality, while reliability ensures that findings accurately reflect client experiences and support quality improvement efforts (Middleton, 2024).

As technology advanced, healthcare client feedback systems have become increasingly sophisticated, incorporating real-time analytics to provide actionable insights into patient experiences. These systems allow for the monitoring of care aspects such as communication, wait times, and staff responsiveness, helping organizations identify areas for improvement and measure the success of quality initiatives. The integration of AI and data



analytics holds promise for even greater advancements, with AI potentially identifying hidden trends in feedback data and offering deeper insights into patient behaviors (Williamson & Prybutok, 2024). This could lead to more personalized feedback collection and proactive interventions, ultimately improving client outcomes and creating a more client-centered approach to care.

Theoretical Framework

This study was anchored on Technology Acceptance Model (TAM) (Davis, 1989) to evaluate user perceptions and acceptance of the developed Client Feedback System (CFS), with particular emphasis on its data analytics and generative AI components. The Technology Acceptance Model (TAM) framework was used to examine how key user groups, including administrative personnel and healthcare workers, perceived the system's usefulness, ease of use, and overall functionality, thereby identifying factors that influenced system adoption and continued utilization.

Surveys were the primary method for collecting empirical data, enabling the quantification of subjective user perceptions into measurable constructs aligned with Technology Acceptance Model (TAM). This approach supported statistical analysis to assess the strength of user beliefs and predict adoption behavior (Venkatesh & Davis, 2000). In addition, survey findings facilitated the identification of system strengths and areas for improvement, informing iterative design enhancements to maximize user acceptance (Legris et al., 2002). Overall, the application of Technology Acceptance Model (TAM) provided a structured and evidence-based evaluation of the Client Feedback System's practical viability in supporting client feedback collection and analysis.

Conceptual Framework

This capstone research developed an enhanced Client Feedback System (CFS) guided by an Input–Process–Output (IPO) conceptual framework that integrated data analytics and generative artificial intelligence (AI). The framework structured how these technologies optimized the collection, processing, and interpretation of client feedback to support evidence-based service quality improvements at Heramil Hospital.

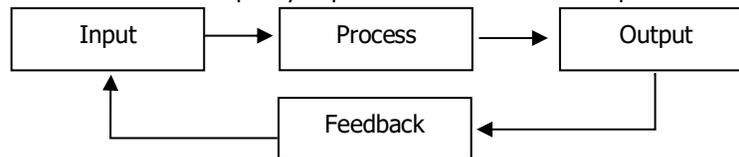
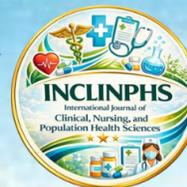


Figure 2: Diagram for Input–Process–Output (IPO) Conceptual Framework

Within the IPO framework, inputs consisted of client feedback data and system requirements, processes involved the application of data analytics and generative AI to analyze and interpret the feedback, and outputs included actionable insights and reports that informed evidence-based service quality improvements at Heramil Hospital.

Statement of the Problem

Despite the recognized value of client feedback in improving healthcare quality, many hospitals still relied on fragmented, manual, or minimally digital systems that limited the efficient collection, analysis, and utilization of patient experience data. These traditional approaches often resulted in delayed processing, underutilized information, and a lack of actionable insights for evidence-based decision-making. Moreover, the limited integration of data analytics and generative artificial intelligence restricted systematic interpretation of feedback, timely identification of service gaps, and strategic quality improvement planning. In the Philippine healthcare context, where resource constraints and increasing patient demands heightened the need for efficient feedback mechanisms, the absence of an integrated, intelligent client feedback system represented a critical operational and decision-support gap. Addressing this need, the present study developed and evaluated a user-friendly client feedback system incorporating data analytics and generative AI to enhance service quality improvement and strengthen client-centered care.



Research Objectives

General Objective

To develop and evaluate a client feedback system incorporating results-driven data analytics and generative artificial intelligence for Heramil Hospital in Polomolok, South Cotabato.

Specific Objectives

1. To evaluate the client-side of the developed client feedback system in terms of usability, reliability, and user satisfaction.
2. To evaluate the administrator-side of the client feedback system with data analytics and generative artificial intelligence in terms of usability, reliability, and user satisfaction.
3. To determine whether a significant difference exists in the evaluation of the client-side system between patients and watchers.
4. To determine whether a significant difference exists in the evaluation of the administrator-side system between administrative personnel and healthcare workers.

Research Questions

1. What is the level of usability, reliability, and user satisfaction of the client-side of the developed client feedback system?
2. What is the level of usability, reliability, and user satisfaction of the administrator-side of the client feedback system enhanced with data analytics and generative artificial intelligence?
3. Is there a significant difference in the evaluation of the client-side system between patients and watchers?
4. Is there a significant difference in the evaluation of the administrator-side system between administrative personnel and healthcare workers?

Hypotheses

The following hypotheses were tested at the 0.05 level of significance:

- **H₀1:** There is no significant difference in the evaluation of the client-side of the client feedback system between patients and watchers.
- **H_a1:** There is a significant difference in the evaluation of the client-side of the client feedback system between patients and watchers.
- **H₀2:** There is no significant difference in the evaluation of the administrator-side of the client feedback system between administrative personnel and healthcare workers.
- **H_a2:** There is a significant difference in the evaluation of the administrator-side of the client feedback system between administrative personnel and healthcare workers.

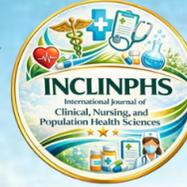
METHODS

Research Design

This study employed a descriptive research design to systematically evaluate the usability, reliability, and user satisfaction of the client feedback system. This approach was selected to capture authentic user perceptions and behavior under real-world conditions without experimental manipulation. Quantitative data were gathered from administrators and clients using standardized questionnaires to identify perceived benefits and limitations. By employing this design, the study ensured consistent measurement and provided statistically analyzable evidence of system performance and user acceptance.

Population and Sampling

The study was conducted at Heramil Hospital in Polomolok, South Cotabato, Philippines. Respondents comprised two groups: the client-side group, consisting of 30 patients and 30 watchers selected via census sampling to capture all available users of the system during the data collection period, thereby ensuring comprehensive representation of client experiences. Conversely, the administrator-side group, comprising 20 administrative staff and 20 healthcare workers selected through convenience sampling, due to the limited number of hospital employees and the researcher's institutional affiliation. All respondents were actual users of the client feedback system and possessed direct experience in evaluating its usability, reliability, and satisfaction.



Instruments

The survey instruments were adapted from Davis (1989) and Garvin (1987), with minor modifications to its contents and constructs to align with the study's objectives. The adapted questionnaire was validated by field experts in Information Technology (IT) and research. A pilot test was then conducted at another hospital with 30 actual users selected from administrative, ancillary, and healthcare personnel, who rated the items on a five-point Likert scale ranging from "Poor" to "Excellent." Following the pilot test, responses were tabulated and reliability was assessed with a qualified statistician using Cronbach's alpha ($\alpha = 0.87$), which indicated high internal consistency. The final instrument was reviewed and approved by the Graduate School, confirming its suitability for the study proper.

Data Collection

The study proper was conducted over a two-month period from March to April 2025 at the designated healthcare facility. The process began with an orientation of administrative and healthcare personnel to facilitate coordination during data gathering. Printed questionnaires were then distributed to the target respondents on-site following a five-day information campaign that introduced the feedback system to patients and their guardians. Data were collected through self-administered questionnaires completed within the facility and subsequently retrieved in person by the researcher to ensure completeness and proper documentation.

Treatment of Data

The collected data were analyzed quantitatively using descriptive and inferential statistics aligned with the study objectives. Descriptive statistics, including means and frequency distributions, were employed to address Objectives 1 and 2 by evaluating the usability, reliability, and user satisfaction of both the client-side and administrator-side client feedback systems. To address Objective 3 and 4, an independent-samples *t*-test was conducted to determine whether significant differences existed between patients and watchers in their evaluation of the client-side system, and administrative personnel and healthcare workers in their assessment of the administrator-side system respectively. All statistical analyses were performed by a qualified statistician using the statistical features of Microsoft Excel 360, with the level of significance set at $\alpha = 0.05$, ensuring objective, valid, and reliable evaluation of perceived system effectiveness and user experience.

Ethical Considerations

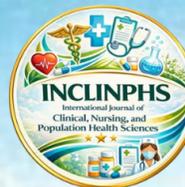
This study adhered to established ethical standards in medical research. Institutional approval was obtained prior to data collection, and informed consent was secured from all respondents. Voluntary participation, confidentiality, and anonymity were strictly upheld. Data were securely stored, analyzed only in aggregated form, and used exclusively for research purposes, ensuring that no individual respondent could be identified.

RESULTS and DISCUSSION

This section presented the study's findings in tabular and narrative form, with each variable analyzed and interpreted in accordance with the research objectives, involving 100 respondents, comprising 40 administrators and 60 clients.

Presented below is the interpretative scale used to evaluate the developed Client Feedback System (CFS) across all survey instruments.

Numerical Rating	Mean Range	Verbal Interpretation
5	4.20-5.00	Excellent
4	3.30-4.19	Very Good
3	2.60-3.29	Satisfactory
2	1.80-2.59	Fair
1	1.00-1.79	Poor



The Level of Usability, Reliability, and User Satisfaction of the Client-Side of the developed Client Feedback System

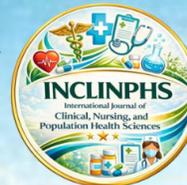
The table below presented the clients' (patients and watchers) perceptions of the client-side of the Client Feedback System in terms of usability, reliability, and user satisfaction.

Table 1. Clients' Ratings of the Client-Side of the Client Feedback System

<i>Items</i>	<i>Mean</i>	<i>SD</i>	<i>Interpretation</i>
Usability			
1. I can easily follow the directions to fill out all of the text fields and choices.	4.52	0.54	Excellent
2. I find it appealing to use emoticons as representation for my answers.	4.63	0.49	Excellent
3. I feel that the background design and color scheme are suitable and visually appealing.	4.67	0.48	Excellent
4. I believe that the font choice and overall text are clear, readable, and visually appealing.	4.63	0.49	Excellent
5. The overall layout of the survey is suitable, readable, and visually appealing.	4.65	0.48	Excellent
Section Mean:	4.62	0.49	Excellent
Reliability			
6. I have not experienced any errors or glitches while using the system.	4.43	0.53	Excellent
7. I feel that each page/module's loading time falls within a reasonable range.	4.57	0.50	Excellent
8. I can access the Client Feedback System when I need to.	4.45	0.57	Excellent
9. The information I enter into the Client Feedback System is stored accurately.	4.53	0.50	Excellent
10. The system responds quickly to my actions.	4.65	0.52	Excellent
Section Mean:	4.53	0.53	Excellent
User Satisfaction			
11. I feel that my feedback is adequately captured by the survey.	4.62	0.49	Excellent
12. I feel comfortable while providing feedback through this Client Feedback System (CFS).	4.63	0.49	Excellent
13. The feedback system meets my expectations.	4.68	0.50	Excellent
14. I will recommend this feedback system to others.	4.75	0.44	Excellent
15. I am satisfied with my overall experience using the Client Feedback System (CFS) survey.	4.78	0.42	Excellent
Section Mean:	4.69	0.47	Excellent
Overall Mean:	4.61	0.50	Excellent

The 60 patients and watchers rated the client feedback system's usability as excellent ($M=4.62$, $SD=0.49$), with consistently high scores across items. The highest ratings were for background design and color scheme ($M=4.67$, $SD=0.48$), emoticon use ($M=4.63$, $SD=0.49$), font clarity ($M=4.63$, $SD=0.49$), overall layout ($M=4.65$, $SD=0.48$), and ease of following directions ($M=4.52$, $SD=0.54$), indicating a visually appealing design that reinforced effective communication, though navigation could be improved. A ceiling effect limited further differentiation, consistent with research showing that clear typography and visual elements enhance usability, and emoticons increase engagement (Poon, 2021; Erle et al., 2021).

System reliability was also rated excellent ($M=4.53$, $SD=0.53$), with responsiveness highest ($M=4.65$, $SD=0.52$) suggesting that users experienced quick system reactions and smooth interaction flows. Recent studies show that timely system responses and fast interaction are central to user satisfaction and perceived system success (Parab, 2025). Other functions, page loading ($M=4.57$, $SD=0.50$) indicated faster loading times which significantly influence positive user experience metrics such as reduced abandonment and higher engagement rates, accessibility ($M=4.45$, $SD=0.57$) indicated the system is broadly user-friendly across diverse groups, underscoring accessibility as a core quality dimension, especially for inclusive design. Ongoing research continues to emphasize its importance in



digital environments (Ara & Sik-Lanyi, 2025), and high data accuracy ratings ($M = 4.53$, $SD = 0.50$) indicated that users perceive the system as reliable and consistent, reinforcing trust and supporting effective decision-making. Research on performance and usability consistently identifies accuracy as a key driver of user confidence (Ghattas et al., 2025), while error-free operation was slightly lower ($M=4.43$, $SD=0.53$), suggests that users experienced minimal technical issues, such as rare glitches or minor faults. Overall, the system demonstrated strong performance and reliable data handling, though accessibility and consistency could be improved, aligning with research emphasizing responsiveness, error prevention, and dependable data in healthcare systems (Chance et al., 2024; Sittig et al., 2018).

Client satisfaction was high ($M=4.69$, $SD=0.47$), with respondents noting effective feedback capture ($M=4.62$, $SD=0.49$), together with comfort in providing feedback ($M=4.63$, $SD=0.49$) suggested that the system successfully created an environment in which users felt comfortable and confident sharing their experiences, fulfillment of expectations ($M=4.68$, $SD=0.50$) further indicates that users perceived the system's performance as meeting or exceeding what they anticipated, while likelihood to recommend ($M=4.75$, $SD=0.44$) and overall satisfaction ($M=4.78$, $SD=0.42$) indicated strong user approval, supporting the system's perceived value, scalability, and potential for wider adoption. These results suggested that the system delivered a highly satisfactory user experience, aligned with patient expectations, and fostered engagement, though some uncertainty remained regarding how feedback was used. Low standard deviations indicated consistent responses, supporting prior research on the value of accessible, secure, and effective feedback systems in promoting patient-centered care and accountability (Guzmán-Leguel & Rodríguez-Lara, 2025; Berger et al., 2020).

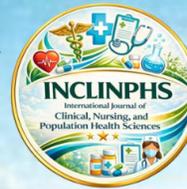
Overall, the high ratings across usability, reliability, and satisfaction reflected the system's effectiveness in meeting user expectations, providing stable performance, and fostering a positive experience, consistent with established principles in successful information system design (Ong et al., 2020; Davis, 1989).

The Level of the Evaluation of the Administrator-Side of the Developed Client Feedback System, Enhanced with Results-Driven Data Analytics and Generative AI, in Terms of Usability, Reliability, and User Satisfaction

The table below presented the administrators' (administrative personnel and healthcare workers) perceptions of the administrator-side of the Client Feedback System with Data Analytics and Generative AI in terms of usability, reliability, and user satisfaction.

Table 2. Administrators' Ratings of the Administrator-Side of the Client Feedback System with Data Analytics and Generative AI

Items	Mean	SD	Interpretation
Usability			
1. I can easily navigate and operate the administrator-side of the Client Feedback System (CFS).	4.48	0.55	Excellent
2. I feel that the background design and color scheme are suitable and visually appealing.	4.83	0.45	Excellent
3. I believe that the font choice and overall text are clear, readable, and visually appealing.	4.80	0.46	Excellent
4. I can easily recognize the buttons, links, images, and other elements.	4.55	0.50	Excellent
5. I believe the icons used have effectively conveyed the functions of the component they represent.	4.65	0.48	Excellent
Section Mean:	4.66	0.49	Excellent
Reliability			
6. I have not encountered system errors, malfunctions, or non-functional components.	4.55	0.50	Excellent
7. I feel that each page/module's loading time falls within a reasonable range.	4.70	0.46	Excellent
8. I think that the data displayed in data analytics' graphs/charts shows the healthcare provider's overall state.	4.6	0.50	Excellent
9. I believe that the conclusions and recommendations generated by AI are reliable, suitable, and actionable.	4.43	0.55	Excellent



10. I can confirm that the administrator-side of the Client Feedback System (CFS) can be accessed from any device connected to the server.	4.78	0.53	Excellent
Section Mean:	4.61	0.51	Excellent
User Satisfaction			
11. I am comfortable with the interface's general design and functions.	4.83	0.38	Excellent
12. I will definitely use the system in collecting survey data.	4.88	0.40	Excellent
13. I am satisfied with the range and precision of the data analytics' graphs/charts.	4.68	0.47	Excellent
14. I am satisfied with generative AI's help in providing actionable recommendations.	4.75	0.44	Excellent
15. I believe that this system will be useful in general for the healthcare provider.	4.88	0.33	Excellent
Section Mean:	4.83	0.38	Excellent
Grand Mean:	4.69	0.49	Excellent

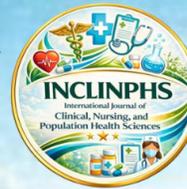
The system achieved an overall usability rating of 4.66 (SD=0.49, "Excellent") as presented in Table 2 indicating that users perceived the interface as highly usable and well designed. The highest-rated aspects, background design and color scheme (M = 4.83, SD = 0.45) and font clarity (M = 4.80, SD = 0.46), reflected strong approval of the system's visuals and readability, consistent with research showing that clear typography and balanced colors reduce cognitive load and enhance efficiency (Ntoa, 2024; Boldt, 2023). Icon effectiveness (M=4.65, SD=0.48) and recognition of interactive elements (M=4.55, SD=0.50) also received excellent ratings suggesting that users were able to quickly identify actionable components and system functions, while ease of navigation scored lowest (M=4.48, SD=0.55), suggesting minor opportunities for improvement, potentially related to menu structure, task flow, or the number of steps required to access certain functions. The administrator interface showed strong usability in design, typography, and functionality, with navigation as a potential improvement. Effective visuals also enhanced user confidence and perceived professionalism, supporting sustained use (Sauer & Sonderegger, 2022).

Regarding reliability, the administrator-side of the system achieved an overall rating of 4.61 (SD=0.51, "Excellent") reflecting a strong user confidence in the system's reliability, with low response variability indicating consistent perceptions of stability and efficiency among users. Accessibility from any device (M = 4.78, SD = 0.53), page loading times (M = 4.70, SD = 0.46), and data visualization accuracy (M = 4.60, SD = 0.50) received the highest scores, indicating that users valued the system's flexibility, responsiveness, and accuracy, consistent with research highlighting the role of accessibility and precise data visualization in reducing errors, enhancing efficiency, and supporting timely organizational decisions (Barari et al., 2024), system stability (M = 4.55, SD = 0.50) was also rated highly, indicating consistent operation with minimal issues, critical for reliability and user trust in data-intensive administrative platforms (Shoabjareh et al., 2024). The reliability of AI-generated recommendations (M=4.43, SD=0.55) was also rated as excellent, though AI outputs emerged as an area for improvement. Overall, the system demonstrated dependable, efficient, and accessible performance, with accurate data and stable operation, aligning with established principles of information system reliability. The findings indicate strong support for administrative tasks while identifying AI-generated insights as a key area for improvement.

User satisfaction was rated excellent (M=4.80, SD=0.41). Highest ratings included perceived usefulness for healthcare providers (M=4.88, SD=0.33) and willingness to use the system for survey collection (M=4.88, SD=0.40), reflecting strong adoption potential. Satisfaction with AI-generated recommendations (M=4.75, SD=0.44), analytics visualizations (M=4.68, SD=0.47), and interface comfort (M=4.83, SD=0.38) was also excellent. Overall, the system was valued for utility, usability, and informed decision-making, with consistent responses indicating broad user confidence. While AI insights and analytics were well received, ongoing refinement was recommended, consistent with research emphasizing user satisfaction as a key factor in system acceptance (Kalankesh et al., 2020).

Determination of Significant Difference in Evaluation of the Client-Side of the Client Feedback System by Patients and Watchers

The data presented addressed the third objective of this study, which was to determine whether a significant difference existed between the thirty (30) patients and thirty (30) watchers who evaluated the client-side of the system. The interpretation of these data provided closure for the first null and alternative hypotheses.

Table 3: Independent Samples *t*-test Results on the Evaluation of Developed Client Feedback between Patients and Watchers

Group	Mean	SD	<i>t</i>	df	p-value	Remarks	Decision
Patient	4.61	0.23	0.15	58	0.89	Not Significant	Accept H ₀₁
Watcher	4.62	0.27					

a = 0.05 level of significance

The comparative analysis showed that patients ($M = 4.61$, $SD = 0.23$) and watchers ($M = 4.62$, $SD = 0.27$) provided nearly identical ratings, $t(58) = 0.15$, $p = 0.89$, indicating no statistically significant difference and supporting the first null hypothesis (H_{01}). This suggests that both groups perceived the system's usability, reliability, satisfaction, and overall quality similarly. Comparable perceptions indicate that the system effectively balances accessibility, clarity, and functionality, allowing primary users and secondary observers to interact without confusion or bias.

These findings align with prior research showing that well-designed digital feedback systems elicit similar ratings across user groups, fostering consistent engagement and reliable service quality assessment (Ong et al., 2020). Uniform experiences also enhance the utility of collected feedback, reducing biases from differences in comprehension or interaction ability and supporting accurate evaluation and continuous improvement (Berger et al., 2020). Overall, the absence of significant differences underscores the system's effectiveness in providing equitable usability and satisfaction, reinforcing its role as a reliable tool for capturing high-quality, actionable feedback from multiple perspectives.

Determination of Significant Difference in the Evaluation of the Administrator-Side of the Client Feedback System by Administrative Personnel and Healthcare Workers

The data presented below addressed the fourth objective of the study, which was to determine whether a significant difference existed between the twenty (20) administrative personnel and twenty (20) healthcare workers who evaluated the administrator-side of the client feedback system. The interpretation of these data provided closure for the second null and alternative hypotheses.

Table 4: Independent Samples *t*-test Results on the Evaluation of Developed Administrator-Side of the Client Feedback System between Administrative Personnel and Healthcare Workers

Group	Mean	SD	<i>t</i>	df	p-value	Remarks	Decision
Administrative Personnel	4.71	0.18	0.51	38	0.61	Not Significant	Accept H ₀₂
Healthcare Workers	4.67	0.21					

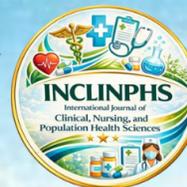
a = 0.05 level of significance

Administrative personnel ($M = 4.706$, $SD = 0.179$) and healthcare workers ($M = 4.675$, $SD = 0.208$) provided high, comparable ratings. Administrative staff showed slightly higher scores and lower variability, possibly reflecting greater system familiarity or interaction frequency. However, the overall convergence demonstrates the system effectively supports both operational and clinical tasks without favoring either group, underscoring broad applicability and potential for widespread adoption in healthcare workflows.

These findings confirm consistent usability and performance across professional roles, aligning with research showing well-designed systems elicit similar perceptions of usability, reliability, and satisfaction across user groups (Baigi et al., 2025; Kurniawan & Arini, 2024).

Conclusion

The findings demonstrated that the client-side and administrator-side components of the Client Feedback System (CFS) achieved high levels of usability, reliability, and user satisfaction among all respondent groups. Both clients and administrators consistently rated the system's design, accessibility, and functionality as excellent, indicating that the system effectively supported user interaction and operational efficiency. The absence of significant differences between user groups suggested that the system provided a uniformly positive experience regardless of role, reinforcing its suitability for broad hospital implementation. Furthermore, the integration of data analytics and



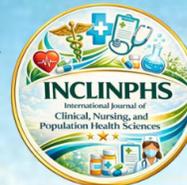
generative artificial intelligence contributed to meaningful insights and decision-support potential. Overall, the study provided empirical evidence that an integrated, user-friendly digital feedback system may strengthen service quality monitoring and promote client-centered healthcare improvement.

Recommendations

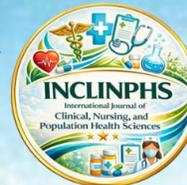
Based on the findings, several directions for future practice and research may be considered. The integration of interactive features such as gamification or immersive technologies may be explored to further enhance user engagement and response rates. Artificial intelligence applications may also be expanded to improve the processing of large feedback datasets and to generate more nuanced decision-support insights. The Client Feedback System may be implemented in other healthcare institutions to examine its adaptability across different operational contexts. Long-term monitoring and comparative evaluations may provide deeper understanding of the system's sustained impact, scalability, and contribution to patient-centered quality improvement.

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