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CleanGo: A Mobile Web-Based Booking and Scheduling System for On-Demand Cleaning Services

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ABSTRACT: The growing demand for on-demand cleaning services in the CarCanMadCarLan area revealed inefficiencies in traditional booking and scheduling practices. This study developed CleanGo, a mobile web-based booking and scheduling system designed to streamline service transactions between clients and cleaning service providers. The system was developed using the Agile methodology and evaluated using the ISO/IEC 25010 software quality model. Results showed high user satisfaction with an overall mean rating of 4.41, interpreted as Very Highly Acceptable. CleanGo improved scheduling efficiency, communication, and service accessibility, supporting digital transformation in local service management.

KEYWORDS: CleanGo; Booking and Scheduling System; On-Demand Cleaning Services; Mobile Web-Based System; ISO/IEC 25010.

I. INTRODUCTION

Digital platforms have significantly transformed service-based industries by improving accessibility, efficiency, and user convenience. However, many local communities still rely on manual or fragmented processes when booking cleaning services, resulting in scheduling conflicts, delayed communication, and poor record management. In the CarCanMadCarLan area of Surigao del Sur, these challenges highlighted the need for a centralized and reliable digital solution.

This study presents CleanGo, a mobile web-based booking and scheduling system developed to address inefficiencies in traditional cleaning service transactions. The system allows clients to book services online, view schedules, and provide feedback, while enabling service providers and administrators to manage bookings efficiently. CleanGo aims to enhance transparency, reliability, and overall service quality in the local cleaning industry.

II. LITERATURE REVIEW

An analytical review of existing literature on on-demand service platforms, booking and scheduling systems, and cleaning service management applications is necessary to situate the CleanGo system within the modern, technology-driven service industry. As the demand for convenient and reliable household services continues to rise, many service providers are shifting from traditional manual booking methods to web-based and mobile-enabled platforms. In areas such as the CarCanMadCarLan region of Surigao del Sur, manual scheduling through phone calls and social media messaging often results in booking conflicts, delayed responses, and inefficient service coordination. An effective system must therefore prioritize real-time scheduling, accessibility, and operational efficiency.
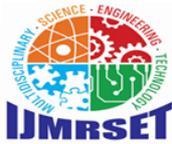
Recent studies highlight the importance of integrated booking and scheduling systems in improving service delivery. Bekker et al. (2023) emphasized that automated scheduling solutions enhance time management, reduce conflicts, and increase customer satisfaction. These systems allow service providers to efficiently allocate resources while offering clients transparency and convenience. Such findings support the core functionality of CleanGo, which focuses on real-time appointment booking and schedule management.

Workforce scheduling has also been identified as a critical factor in service-based platforms. Demiray et al. (2023) noted that structured workforce scheduling systems improve task assignment accuracy and operational efficiency. In cleaning service operations, where multiple service providers handle varying tasks, intelligent scheduling plays a significant role in ensuring timely service delivery and minimizing operational errors.

The adoption of cloud-based and mobile web applications has further improved accessibility and system reliability. Giuffrida et al. (2021) reported that cloud-supported booking platforms enhance data availability, scalability, and transaction management. These advantages are particularly relevant to CleanGo, which is designed as a mobile web-based system to allow users to book services anytime and anywhere using internet-enabled devices.

Local studies also emphasize the growing demand for professional cleaning services and digital service platforms. Dalapag et al. (2022) found that convenience, reliability, and service availability strongly influence customer preference for cleaning services. Meanwhile, Israel et al. (2023) highlighted the importance of user feedback and service provider verification in building trust within on-demand service applications. These findings reinforce the inclusion of rating, feedback, and administrative monitoring features in the CleanGo system.

Overall, the reviewed literature indicates that effective booking and scheduling systems must be user-friendly, reliable, secure, and efficient. While existing systems address specific aspects of service management, a localized solution tailored to the needs of small communities remains limited. This gap supports the development of CleanGo as a mobile web-based platform designed to improve access, coordination, and management of on-demand cleaning services.

Table1. Summary of Relevant Literatures

No.	Paper Title	Author Name	Key Points	Remark
1	Integrated Routing and Appointment Scheduling Systems.	Bekker et al. (2023)	Automated scheduling improves efficiency and customer satisfaction.	Supports CleanGo's real-time booking and scheduling feature.
2	Workforce Scheduling Optimization in Service Platforms.	Demiray et al. (2023)	Structured scheduling enhances task allocation and service reliability.	Validates CleanGo's service provider scheduling module.
3	Cloud-Based Booking and Transaction Platforms	Giuffrida et al. (2021)	Cloud systems improve accessibility and data management.	Supports CleanGo's mobile web-based architecture.
4	Feasibility Study of Cleaning Service Businesses.	Dalapag et al. (2022)	High demand for convenient and professional cleaning services.	Justifies the development of CleanGo.
5	HomeWorks: A Mobile Application for Household Services.	Israel et al. (2023)	User ratings and feedback improve trust and service quality.	Supports CleanGo's feedback and rating functionality.

In summary, existing studies confirm that digital booking and scheduling platforms significantly enhance service accessibility, efficiency, and customer satisfaction. Key factors influencing system acceptance include usability, reliability, scheduling accuracy, and trust mechanisms such as feedback and service monitoring. Despite these advancements, there remains a need for a localized, mobile web-based solution tailored to small communities. These findings justify the development of CleanGo, which aims to address operational inefficiencies and improve the delivery of on-demand cleaning services.

III. METHODOLOGY

Research Design

This study employed a descriptive-developmental research design to design, develop, and evaluate the CleanGo system. The developmental aspect focused on building a mobile web-based booking and scheduling platform using the Agile methodology, which allowed iterative development and continuous improvement based on user feedback. The descriptive aspect assessed the system's effectiveness, usability, and overall quality based on user evaluation. This design was suitable for identifying system performance and determining its acceptability among users.

Instrument

The primary research instrument used in this study was a structured survey questionnaire based on the ISO/IEC 25010 Software Quality Model. The questionnaire measured system acceptability in terms of Functional Suitability, Performance Efficiency, Usability, Reliability, Security, Portability, and Overall Quality. Responses were gathered using a five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5). The instrument was validated by IT practitioners to ensure clarity, relevance, and reliability.

Data Collection and Participants

Data were collected from a total of 50 respondents composed of two groups: 40 residents and service users from the CarCanMadCarLan area (Carrascal, Cantilan, Madrid, Carmen, and Lanuza) and 10 IT practitioners, including faculty members and external specialists. Participants were asked to use or explore the CleanGo system before answering the questionnaire. Data collection was conducted through survey distribution and guided system demonstrations to ensure accurate and informed responses.

Data Analysis

The data collected from surveys, interviews, and system evaluations were processed using statistical and analytical methods, with the following treatments applied:

1. Descriptive Statistics – Frequency counts, percentages, and mean scores were computed to summarize respondents' perceptions of the system's functionality, usability, performance, and overall quality.
2. Weighted Mean Analysis – The weighted mean was used to determine the acceptability level of each evaluation criterion based on the ISO/IEC 25010 quality characteristics.
3. Likert Scale Interpretation – A five-point Likert scale was used to translate numerical results into verbal interpretations, allowing clearer assessment of user satisfaction and system acceptability.
4. Qualitative Analysis – Responses from interviews and open-ended feedback were analyzed thematically to identify common issues, user experiences, and recommendations for system improvement.

These analytical treatments provided a comprehensive evaluation of the CleanGo system's effectiveness, reliability, and user acceptance.

IV. RESULTS AND DISCUSSION

System Features

CleanGo successfully digitized the booking and scheduling process for on-demand cleaning services in the CarCanMadCarLan area. The system includes secure user registration and role-based access control to ensure proper authorization for clients, staff, and administrators. It provides real-time booking and scheduling to prevent double bookings and allow efficient appointment management. Additional features include service management, payment tracking, automated notifications, and client feedback and rating modules to support service quality monitoring. An administrative dashboard and calendar view enable effective system monitoring, scheduling oversight, and data management, ensuring a streamlined and transparent cleaning service operation.

Performance Evaluation

The CleanGo system received a Very Highly Acceptable (VHA) overall rating with an average mean score of 4.60. Among the evaluated software quality characteristics based on the ISO/IEC 25010 model, Reliability obtained the highest mean score of 4.65, indicating stable and dependable system performance. Other quality attributes, including Functional Suitability, Usability, Performance Efficiency, Security, Portability, and Overall Quality, also achieved high acceptability ratings. These results reflect the system's effectiveness, user-friendliness, and strong operational performance.

Table2. Performance Evaluation System Tabulation

Table	Quality Characteristic	Mean	Verbal Interpretation
1	Functional Suitability	4.46	Very Highly Acceptable (VHA)
2	Perfrormance Efficiency	4.43	Very Highly Acceptable (VHA)
3	Compatability	4.41	Very Highly Acceptable (VHA)
4	Usability	4.65	Very Highly Acceptable (VHA)
5	Reliability	4.42	Very Highly Acceptable (VHA)
6	Security	4.44	Very Highly Acceptable (VHA)
7	Portability	4.44	Very Highly Acceptable (VHA)
	Over - All Mean	**4.60**	**Very Highly Acceptable (VHA)**

V. CONCLUSION

This study developed and evaluated CleanGo, a mobile web-based booking and scheduling system for on-demand cleaning services. The results confirm that the system effectively improves service accessibility, scheduling efficiency, and user satisfaction. CleanGo contributes to the digital transformation of local service industries and provides a reliable platform for managing cleaning services. Future enhancements may include automated payment gateways, advanced analytics, and native mobile application support.

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