Volume 7 Issue 2 (2026) Pages 1114 - 1127
Economics and Digital Business Review
ISSN : 2774-2563 (Online)

Green Service Management in Enhancing Customer Satisfaction: A Study of Service Business Operators in Makassar City

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Abstract

The objective of this study is to analyze the implementation of *Green Service Management* in the service sector in Makassar City, with particular attention to customer perceptions, service quality, customer satisfaction, and the supporting and inhibiting factors affecting its implementation in promoting sustainable service delivery. This study employs a qualitative case study approach using interviews, observations, and documentation, with data analyzed using NVivo 12 Plus. The findings indicate that *Green Service Management* (GSM) in Makassar's service sector has begun to integrate sustainability through energy efficiency, waste management, the use of environmentally friendly materials, service digitalization, managerial commitment, and customer engagement, although implementation remains insufficiently systematic in terms of formal policies, institutional arrangements, and customer participation. From the customer perspective, green services generally receive positive responses because they provide greater convenience, accessibility, responsiveness, and improved service experiences; however, challenges remain in ensuring service consistency, building trust, communicating environmental commitments, and strengthening interpersonal relationships with customers. Overall, GSM has the potential to enhance customer satisfaction and loyalty when environmental sustainability is systematically integrated with service quality, technological innovation, customer experience, and customer participation.

Keywords: *Green Service; service quality; customer satisfaction; consumption behavior; service innovation*

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INTRODUCTION

The background of this study is rooted in the growing importance of *Green Service Management* (GSM) in modern business practices, as service providers are increasingly required to deliver high-quality services while maintaining environmental responsibility in response to changing customer preferences and the demands of sustainable development (Tong-On et al., 2025). In Makassar City, service businesses such as hotels, transportation services, restaurants, and retail enterprises have begun to face pressure to adopt green service practices through energy efficiency initiatives

DOI : 10.37531/ecotal.v8i1.4124

(Nasrullah & Hamdy, 2024), waste reduction, service digitalization, and the use of environmentally friendly materials as part of their service quality enhancement strategies (Latanna et al., 2023). However, the implementation of GSM is often suboptimal due to limited understanding, restricted technological investment, and insufficient integration between environmental management and customer satisfaction orientation. Consequently, the potential of GSM to enhance customer satisfaction and promote responsible consumption behavior has not been fully utilized by service businesses in Makassar.

The concept of *Green Service Management* has evolved from the literature on *green marketing* (Mahar et al., 2025), sustainability (Ly & Ly, 2025), and service quality (Ingsih et al., 2025). GSM is defined as a service management approach that integrates the principles of resource efficiency (Bourini et al., 2024), environmental impact reduction (Sofyan et al., 2024), and sustainability values into every service delivery process (Le & Nguyen, 2024). Previous studies have emphasized that green service initiatives, such as the use of environmentally friendly materials, waste management practices, and energy conservation measures, can foster positive perceptions of a company among customers (Afrianti et al., 2024). The growing awareness of environmental issues among global consumers has transformed green service practices from a mere differentiation strategy (Alsharah, 2024), into a necessity for enhancing competitiveness (Xing & Liu, 2023).

Furthermore, customer satisfaction is strongly influenced by perceptions of service quality (Yasin & Zulkifli, 2025), perceived value, and a company's commitment to environmental responsibility. Studies based on the SERVQUAL model indicate that the dimensions of *reliability, responsiveness,* and *assurance* can be extended within the context of green services through environmentally friendly operational policies (Shams & Kadow, 2024). Several studies have concluded that customers tend to exhibit higher levels of satisfaction toward companies that implement sustainability principles because such services are perceived as more socially responsible and value-oriented (Gupta et al., 2023). Green services are also believed to encourage more ethical consumption behavior and foster long-term customer loyalty (Kholaif & Xiao, 2023).

The literature examining the relationship between GSM and customer satisfaction suggests that the consistent implementation of green strategies can enhance corporate image, strengthen trust, and create higher-quality service experiences (Leung et al., 2023). In the service sector, this approach depends not only on operational procedures but also on human resource support, technological capabilities, and managerial commitment. In various countries, GSM implementation has been shown to improve overall service quality because customers perceive additional environmental value in every service interaction (Tanova & Bayighomog, 2022). However, studies at the regional level, particularly within the context of Eastern Indonesia, such as Makassar City, remain limited. Therefore, further investigation is needed to strengthen academic understanding of the effectiveness of GSM in enhancing customer satisfaction across various service sectors.

The problem-solving approach adopted in this study is based on the *Green Service Management* framework, which theoretically emphasizes the integration of

DOI : 10.37531/ecotal.v8i1.4124

service quality, resource efficiency, and environmentally friendly operational practices to enhance customer satisfaction and promote responsible consumption behavior (Kumar & Chakraborty, 2022). Conceptually, this study adopts a *service quality* perspective through the SERVQUAL model as the basis for evaluating *reliability, responsiveness, assurance, empathy,* and *tangibles* (Behdioğlu et al., 2019), which are subsequently transformed within the context of green services. This approach is combined with *consumer behavior* theory, which explains how customers' perceptions of environmental value and sustainability commitment influence their attitudes and satisfaction levels (Eze & Ndubisi, 2013). The problem-solving strategy is implemented by identifying weaknesses in green service implementation, mapping the gap between customer expectations and perceptions, and analyzing the effectiveness of GSM elements in improving service quality.

Although 381 documents discussing customer satisfaction issues within management studies had been published by December 2025, studies that specifically examine customer satisfaction from the perspective of *Green Service Management* remain limited, particularly within local service sectors such as those operating in Makassar City.

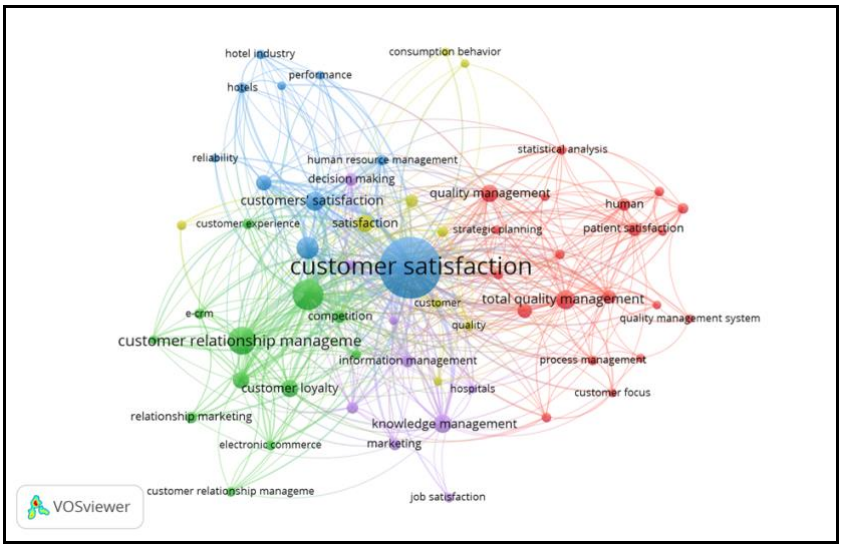


Figure 1. Mapping of Current Research Themes

The advantage of the problem-solving approach proposed in this study lies in the comprehensive integration of *Green Service Management*, *service quality*, and *consumer behavior* as an analytical framework that has rarely been employed simultaneously. The *state of the art* of this research emerges from an in-depth mapping of green service elements that not only evaluate operational efficiency but also examine how customers' perceptions of environmental value influence satisfaction and responsible consumption behavior. Unlike previous studies that have tended to focus separately on either environmental aspects or customer satisfaction, this research offers a holistic approach that examines the interaction between the two within service delivery systems. Accordingly, the novelty of this study lies in its integrative analytical model that simultaneously links green service quality, customer experience, and behavioral responses, thereby generating more

DOI : 10.37531/ecotal.v8i1.4124

contextual, practical, and relevant strategic recommendations for the development of sustainable services in the service sector.

The research problem is formulated through three primary questions: (a) to what extent do service businesses in Makassar City implement *Green Service Management* in their service processes; (b) how do customers perceive and respond to the green service practices implemented by service providers; and (c) how does the implementation of *Green Service Management* influence customer satisfaction levels? The urgency of this study lies in the need for empirical understanding regarding the effectiveness of green services in enhancing service quality and customer satisfaction within the context of a growing urban environment.

This study aims to analyze the implementation of *Green Service Management* within the service sector in Makassar City and to identify customers' perceptions and responses toward green service practices. It also seeks to examine the relationship between green service implementation, service quality, and customer satisfaction. Furthermore, the study identifies the supporting and inhibiting factors affecting the implementation of *Green Service Management* in improving service quality. The findings are expected to provide a foundation for developing sustainable service strategies that are responsive to consumer needs and oriented toward customer satisfaction.

METHODOLOGY

This study employed a qualitative approach with a case study design to analyze the implementation of *Green Service Management* (GSM) in the service sector of Makassar City and to understand how green service practices shape service quality and customer satisfaction. A qualitative approach was selected because the study focuses on gaining an in-depth understanding of the experiences, perceptions, strategies, and practices of service providers in integrating sustainability principles into service delivery processes. The case study was conducted across several relevant service sectors, including hospitality, restaurants, transportation, and retail, taking into consideration the presence of energy-efficiency initiatives, waste management practices, the use of environmentally friendly materials, and service digitalization.

Research informants were selected through purposive sampling and included business owners or managers with knowledge and experience in service management, as well as customers who had utilized services from the businesses selected as research sites. Data were collected through in-depth interviews, observations, and documentation. Interviews were conducted to explore GSM implementation, environmentally friendly service management strategies, customer perceptions, service interaction quality, and customer experiences and satisfaction levels. Observations were used to identify GSM practices directly, while documentation was employed to complement information regarding policies,

DOI : 10.37531/ecotal.v8i1.4124

operational procedures, environmental programs, and service innovations implemented by service providers.

Data analysis was conducted thematically through several stages, including data transcription, *open coding*, code categorization, theme identification, interpretation of relationships among themes, and conclusion drawing. The analysis was supported by NVivo 12 Plus to systematically organize, code, and map data obtained from interviews, observations, and documentation. Data validity was ensured through source and methodological triangulation by comparing information gathered from service providers, customers, observations, and relevant documents. The analysis focused on three main themes: (1) the implementation of *Green Service Management*, (2) service quality and customer experience, and (3) customer perceptions and satisfaction. The relationships among these themes were subsequently examined to generate an understanding of how GSM contributes to the development of sustainable service businesses in Makassar City.

RESULT AND DISCUSSION

Implementation of Green Service Management in the Service Sector in Makassar City

The implementation of *Green Service Management* (GSM) in the service sector in Makassar City demonstrates efforts to integrate environmental sustainability principles into service delivery and business operations. Based on the research findings, GSM practices can be observed through several key aspects, namely energy efficiency, waste management, the use of environmentally friendly materials, service digitalization, management commitment, and customer involvement. These aspects are not only associated with reducing environmental impacts but also form part of business strategies aimed at enhancing operational efficiency and customer experience quality. However, their level of implementation varies across business sectors due to differences in organizational capacity, management commitment, technological availability, investment costs, and human resource understanding of sustainable service practices.

Table 1. Implementation of Green Service Management in the Service Sector in Makassar City

GSM Aspect	Implementation	Description
Energy Efficiency	Use of energy-saving lighting, air-conditioning management, low-power equipment, and reduction of unnecessary electricity consumption	Businesses have begun implementing energy-saving measures as part of operational cost efficiency and efforts to reduce energy consumption
Waste Management	Waste segregation, reduction of single-use plastics, reuse of certain materials, and management of operational waste	Waste reduction and segregation practices have been initiated but have not yet been implemented consistently and comprehensively
Environmentally Friendly Materials	Use of reusable materials, eco-friendly products, and reduction of disposable	Environmentally friendly materials are increasingly introduced, particularly by

DOI : 10.37531/ecotal.v8i1.4124

	materials	businesses concerned with image and environmental responsibility
Service Digitalization	Digital ordering, cashless payments, e-receipts, digital communication, and reduction of paper-based documents	Digitalization is relatively easier to implement because it provides direct benefits in service efficiency and paper reduction
Management Commitment	Development of internal policies, employee guidance, and integration of green practices into operations	Management commitment is a key factor, although not all businesses have formally documented GSM policies
Customer Involvement	Information dissemination regarding green practices and encouraging customers to reduce waste or use digital services	Customer involvement has begun to develop but remains largely informative rather than participatory

Based on Table 1, the implementation of *Green Service Management* (GSM) in Makassar City's service sector indicates that sustainability practices are gradually being integrated into operational and service activities, although their implementation remains uneven. The six identified aspects, namely energy efficiency, waste management, environmentally friendly materials, service digitalization, management commitment, and customer involvement, suggest that GSM has evolved from being merely an environmental concern into a broader service management strategy. Nevertheless, implementation remains relatively partial, as operational practices have progressed while policy, institutional, and customer participation aspects have yet to be fully integrated.

In terms of energy efficiency, businesses have begun implementing energy-saving lighting systems, regulating air conditioner usage, utilizing low-energy equipment, and reducing unnecessary electricity consumption. These practices demonstrate the linkage between environmental objectives and operational cost efficiency. Energy conservation is one of the easiest forms of GSM to implement because businesses can directly experience its benefits through reduced energy consumption. From a service management perspective, such efficiency not only generates ecological benefits but also contributes to business sustainability through lower operational costs.

The waste management aspect presents a more complex situation. Waste sorting, reduction of single-use plastics, material reuse, and operational waste management have been initiated; however, implementation remains inconsistent and insufficiently integrated. This suggests that awareness of environmental management has begun to develop but has not yet been translated into standardized operational systems. Consequently, waste management requires stronger support through clear procedures, defined responsibilities, monitoring mechanisms, and

DOI : 10.37531/ecotal.v8i1.4124

employee involvement to ensure that practices do not depend solely on individual initiatives.

Regarding the use of environmentally friendly materials, businesses have started utilizing reusable materials and reducing disposable products. However, implementation remains relatively limited and is primarily observed in organizations that prioritize corporate image and environmental responsibility. These findings indicate that green materials possess strategic significance because they not only reduce environmental impacts but also shape customers' perceptions of organizational identity and reputation. When customers perceive environmentally friendly materials as a tangible component of service delivery, such practices can become a form of *green value* that differentiates a business from its competitors.

Service digitalization has emerged as one of the more easily implemented aspects of GSM. Digital ordering systems, cashless payment methods, *e-receipts*, digital communication, and reduced reliance on paper-based documents demonstrate that digital transformation can progress alongside sustainability initiatives. Digitalization provides dual benefits by improving service efficiency and reducing paper consumption. This finding highlights that technological innovation functions not only as a tool for operational efficiency but also as an instrument for promoting environmentally sustainable service practices.

Meanwhile, management commitment serves as a crucial factor influencing the sustainability of GSM implementation. The development of internal policies, employee guidance, and integration of green practices into operational activities illustrate that environmental initiatives require managerial support. However, not all service providers have formally documented GSM policies. This reveals a gap between practice and institutionalization, where green initiatives may be undertaken but have not yet been fully established as organizational policies. Without clear commitment and policy frameworks, GSM implementation may remain sporadic and difficult to evaluate over the long term.

Customer involvement also indicates that GSM in Makassar City remains at a developmental stage. Businesses have begun informing customers about green practices and encouraging waste reduction and digital service utilization. However, this involvement remains predominantly informative rather than participatory. In the context of *Green Service Management*, customers are essential participants in value co-creation because their behavior contributes to the success of sustainability practices. Therefore, communication regarding green initiatives should evolve beyond information dissemination toward fostering active participation through education, environmentally friendly service options, and customer experiences that support sustainable behavior.

Overall, the findings indicate that GSM implementation within the service sector in Makassar City has begun moving toward integrating environmental concerns, operational efficiency, and service quality. However, full systematic

DOI : 10.37531/ecotal.v8i1.4124

integration has not yet been achieved. Operational practices such as energy efficiency and service digitalization are more readily developed because they generate immediate benefits for businesses. In contrast, waste management, environmentally friendly materials, policy commitment, and customer involvement require deeper organizational transformation. Therefore, strengthening GSM should focus on integrating these six aspects into a comprehensive service management system, ensuring that green practices become an integral part of service strategies, organizational culture, and customer value creation. These findings reinforce the study's argument that GSM effectiveness should be assessed not only based on the existence of environmentally friendly practices but also on businesses' ability to connect those practices with customer experience quality and satisfaction.

Customer Perceptions and Experiences of Green Service Quality

Customer perceptions and experiences represent critical dimensions for understanding the success of *Green Service Management* (GSM), as green service practices are ultimately evaluated not only through organizational policies and internal practices but also through customers' service experiences. The categorized interview findings indicate that customers generally responded positively to green service practices, particularly concerning the dimensions of *tangibles*, *reliability*, and *responsiveness*. Customers perceived environmentally friendly facilities, technology-enabled services, and responsive service delivery as creating more practical and comfortable service experiences. However, within the dimensions of *assurance* and *empathy*, some customers still demonstrated limited understanding regarding the environmental benefits of the practices implemented by service providers.

Table 2. Customer Perceptions and Experiences of Green Service Quality Based on Sentiment Analysis Using NVivo 12 Plus

Dimension	Main Findings	Positive n (%)	Neutral n (%)	Negative n (%)
Tangibles	Clean facilities, environmentally friendly materials, and comfortable service environments	24 (80.0%)	4 (13.3%)	2 (6.7%)
Reliability	Consistency of service delivery and green practice implementation	22 (73.3%)	6 (20.0%)	2 (6.7%)
Responsiveness	Speed of digital services and responsiveness to customer needs	25 (83.3%)	3 (10.0%)	2 (6.7%)
Assurance	Trust in service quality and organizational environmental commitment	21 (70.0%)	6 (20.0%)	3 (10.0%)
Empathy	Attention to customer needs and environmental concerns	20 (66.7%)	7 (23.3%)	3 (10.0%)
Total		**74.7%**	**17.3%**	**8.0%**

DOI : 10.37531/ecotal.v8i1.4124

Based on Table 2, the results of the sentiment analysis conducted using NVivo 12 Plus indicate that customer perceptions of green service quality generally tend to be positive. Across the five dimensions analyzed, the average positive sentiment reached 74.7%, while neutral and negative sentiments accounted for 17.3% and 8.0%, respectively. These findings suggest that the majority of customers responded favorably to the *Green Service Management* (GSM) practices they encountered during their service experiences. The predominance of positive sentiment indicates that green service practices are increasingly perceived as part of a service experience that provides benefits to customers in terms of convenience, ease of use, and perceptions of corporate environmental responsibility.

The *responsiveness* dimension recorded the highest positive sentiment, with 25 informants (83.3%) expressing positive views, while 10.0% reported neutral sentiment and 6.7% negative sentiment. The high level of positive responses in this dimension suggests that customers derive the greatest benefits from GSM when environmentally friendly practices are directly associated with service speed and convenience. The use of digital ordering systems, cashless payments, digital communication, and the reduction of paper-based procedures contributes to a more practical service process. These findings indicate that environmental innovations are more readily accepted by customers when they simultaneously provide functional benefits through prompt and responsive service delivery.

Within the *tangibles* dimension, 24 informants (80.0%) expressed positive sentiment, while 13.3% and 6.7% demonstrated neutral and negative sentiment, respectively. These findings suggest that tangible aspects represent one of the most visible and easily evaluated elements of GSM. Clean facilities, comfortable service environments, and the use of environmentally friendly materials contribute to positive perceptions of service quality. In this context, green practices become tangible to customers because they can be directly observed within the physical service environment. Therefore, the *tangibles* dimension serves as an important channel through which organizations can communicate their sustainability commitments through customer experiences.

The *reliability* dimension generated positive sentiment from 73.3% of respondents (22 informants), while 20.0% expressed neutral sentiment and 6.7% reported negative sentiment. These percentages suggest that most customers perceive green service practices as being implemented relatively consistently throughout the service process. However, the relatively higher proportion of neutral sentiment compared to *responsiveness* and *tangibles* indicates that some customers have not yet fully recognized the consistency of green practice implementation. This finding implies that GSM should not be limited to selected activities but should be embedded within service procedures on a continuous basis, enabling customers to experience consistent service quality across interactions.

DOI : 10.37531/ecotal.v8i1.4124

In the *assurance* dimension, positive sentiment reached 70.0%, while neutral and negative sentiments accounted for 20.0% and 10.0%, respectively. These findings indicate that most customers trust the quality of services provided and the company's commitment to environmental sustainability. However, the relatively higher proportion of negative sentiment in this dimension suggests that some customers remain unconvinced about the seriousness of organizations in implementing green practices. Therefore, GSM implementation should be accompanied by transparent communication regarding environmental policies, employee competencies, and the benefits associated with green service practices, ensuring that organizational commitments are perceived as credible rather than merely symbolic claims.

Meanwhile, the *empathy* dimension received the lowest positive sentiment, with 66.7% of respondents (20 informants) expressing positive views, while 23.3% and 10.0% reported neutral and negative sentiments, respectively. These findings indicate that interpersonal relationships between companies and customers remain an area requiring further improvement. Customers not only expect businesses to implement environmentally friendly practices but also seek attention to their individual needs. The relatively lower positive sentiment within this dimension suggests that GSM is still perceived more strongly as an operational practice than as a customer-centered service approach. Consequently, organizations should strengthen two-way communication and create opportunities for customers to participate actively in sustainability initiatives.

Differences in sentiment across dimensions further reveal that customer perceptions of green services are not homogeneous. Dimensions that provide direct and observable benefits, such as *responsiveness* and *tangibles*, generated higher levels of positive sentiment. In contrast, dimensions requiring deeper interaction and trust, such as *assurance* and *empathy*, recorded comparatively lower positive responses. This pattern suggests that the success of GSM is determined not only by the existence of environmentally friendly practices but also by the organization's ability to transform those practices into meaningful customer experiences. In other words, environmental value must be combined with functional and relational value in order to strengthen the overall customer experience.

Overall, the NVivo 12 Plus analysis revealed that 74.7% of customer sentiments were positive, 17.3% neutral, and only 8.0% negative. These findings indicate that GSM implementation has been relatively well accepted from the customer perspective; however, opportunities remain for improving consistency, transparency, communication, and customer participation. From the perspective of *Green Service Management*, this condition confirms that green services should extend beyond energy efficiency, waste reduction, and digitalization and be integrated into all dimensions of service quality. Accordingly, GSM can evolve from being merely an environmental strategy into a sustainable customer experience

DOI : 10.37531/ecotal.v8i1.4124

strategy that integrates ecological responsibility, service quality, customer convenience, trust, and perceived value.

The findings further demonstrate that *Green Service Management* (GSM) possesses significant strategic potential to enhance customer satisfaction and loyalty. However, such impacts do not occur automatically simply because a company adopts environmentally friendly practices. Based on the sentiment analysis results, 74.7% of customer perceptions were classified as positive, indicating broad acceptance of green service initiatives. Nevertheless, 17.3% of sentiments remained neutral and 8.0% negative, particularly within the *assurance* and *empathy* dimensions. These findings suggest that GSM should evolve from an approach focused primarily on operational efficiency toward one that places customer experience at the center of sustainability strategies. Green practices contribute to customer satisfaction and loyalty only when customers genuinely perceive benefits in the form of more comfortable, efficient, transparent, and valuable service experiences.

Looking ahead, service providers in Makassar City should integrate GSM across all dimensions of service quality rather than treating it as a stand-alone environmental program. The high positive perceptions recorded for *responsiveness* (83.3%) and *tangibles* (80.0%) indicate that customers respond most favorably to green practices that provide direct and observable benefits. Therefore, service digitalization, environmentally friendly facilities, energy-efficiency initiatives, and reductions in single-use materials should be incorporated into customer experience design. This strategy is crucial because customer loyalty is not built solely through a green corporate image but through consistently positive experiences across every customer touchpoint.

Particular attention should be directed toward strengthening trust and interpersonal relationships with customers. The relatively low positive sentiment within the *empathy* (66.7%) and *assurance* (70.0%) dimensions indicates that customers do not yet fully perceive the concern and assurance associated with implemented green service practices. Therefore, organizations should improve communication regarding the rationale, benefits, and impacts of environmental policies while equipping employees with the skills necessary to explain and apply green service principles during direct customer interactions. Such an approach can reduce the perception that GSM is merely a *green image* strategy and transform it into an authentic sustainability experience, thereby fostering customer trust, satisfaction, and long-term loyalty.

A further recommendation is to position customers as active participants in the creation of green services rather than merely as beneficiaries. Customers should be provided with options and opportunities to participate, such as through paperless services, reductions in single-use plastics, incentive programs for environmentally responsible behavior, and mechanisms for providing feedback on green service innovations. This participatory approach can strengthen *customer engagement* while

DOI : 10.37531/ecotal.v8i1.4124

simultaneously creating emotional connections between customers and organizations. In the long term, customers who perceive themselves as contributors to sustainability practices are more likely to reuse services, recommend the company to others, and maintain long-term relationships with the organization.

Accordingly, the principal recommendation of this study is the development of a GSM model oriented toward customer experience and loyalty by integrating environmental sustainability, service quality, technology, human resource capacity, and customer participation within a comprehensive management system. Organizations should establish evaluation indicators that measure not only energy savings and waste reduction but also customer satisfaction, trust, *customer engagement*, service reuse, and customer recommendations. Such an approach would make GSM more measurable and sustainable while preventing green practices from remaining merely symbolic or operational activities. In the context of Makassar City, a GSM approach founded on these principles has the potential to serve as a differentiation strategy that strengthens customer satisfaction, customer loyalty, business competitiveness, and environmental sustainability simultaneously.

CONCLUSION

The findings of this study indicate that the implementation of *Green Service Management* (GSM) within the service sector in Makassar City has begun to integrate sustainability principles into operational and service processes through energy efficiency, waste management, the use of environmentally friendly materials, service digitalization, management commitment, and customer involvement. However, its implementation has not yet been fully systematic, as operational practices are relatively more developed than formal policy, institutional, and customer participation aspects. This condition suggests that GSM is gradually evolving from merely an environmental impact reduction practice into a strategic approach for enhancing operational efficiency and creating value in service delivery.

From the customer perspective, the study demonstrates that green service practices generally receive positive responses, particularly when they provide direct benefits in terms of convenience, ease of use, speed, and overall service experience quality. Nevertheless, challenges remain in building service consistency, customer trust, environmental communication, and interpersonal relationships with customers. These findings confirm that GSM has considerable potential to strengthen customer satisfaction and loyalty when sustainability practices extend beyond environmental efficiency and are integrated with service quality and customer engagement. Therefore, future GSM development should be directed toward a service model that more comprehensively integrates environmental sustainability, technological innovation, customer experience quality, and customer participation.

ACKNOWLEDGMENTS

DOI : 10.37531/ecotal.v8i1.4124

The authors would like to express their sincere gratitude to the **Directorate of Research and Community Service (DPPM/DRTPM), Ministry of Higher Education, Science, and Technology of the Republic of Indonesia (Kemdiktisaintek RI)** for supporting this research.

Referensi:

Afrianti, C., Widiarti, N. M., Akbar, I. Z., Rachmanto, E. P., Hanif, M. F., Amin, R. A., Kaswanto, K., Wiyoga, H., & Mosyaftiani, A. (2024). An Assessment of Urban Forest Landscape Services for Green Space Management Improvement in Bandung City, West Java, Indonesia. In W. A. Putri, D. S. Priyono, F. Pa'ee, Y. Yano, R. L. Daniel, P. Alam, & H. W. Yen (Eds.), *BIO Web of Conferences* (Vol. 94). EDP Sciences. https://doi.org/10.1051/bioconf/20249404006

Alsharah, A. (2024). The Role of Green Human Resources Management In Promoting Sustainable Development In The Jordanian Service Companies Listed on the Amman Stock Exchange. *International Journal of Industrial Engineering and Production Research*, *35*(1). https://doi.org/10.22068/ijiepr.35.1.1946

Behdioğlu, S., Acar, E., & Burhan, H. A. (2019). Evaluating service quality by fuzzy SERVQUAL: a case study in a physiotherapy and rehabilitation hospital. *Total Quality Management and Business Excellence*, *30*(3–4), 301–319. https://doi.org/10.1080/14783363.2017.1302796

Bourini, I., Khassawneh, O., & Mohammad, T. (2024). Towards sustainability in the services industry: Does green top management support stimulate an organization's green operational performance? A moderated mediation model. *Business Strategy and the Environment*, *33*(8), 7788–7799. https://doi.org/10.1002/bse.3897

Eze, U. C., & Ndubisi, N. O. (2013). Green Buyer Behavior: Evidence from Asia Consumers. *Journal of Asian and African Studies*, *48*(4), 413–426. https://doi.org/10.1177/0021909613493602

Gupta, M., Sharma, V., & Jangir, K. (2023). *An analysis of service quality measurement of the green payment service in India: A SERVQUAL model* (pp. 205–219). Nova Science Publishers, Inc. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85183524110&partnerID=40&md5=00cdd49879c85e455526dab3070a82b4

Ingsih, K., Riyanto, F., & Pamungkas, I. D. (2025). Green Human Resource Management, Digital Service Innovation, and Organizational Performance in Indonesian Public Service Organizations. *Montenegrin Journal of Economics*, *21*(2), 45–55. https://doi.org/10.14254/1800-5845/2025.21-2.4

Kholaif, M. M. N. H. K., & Xiao, M. (2023). Is it an opportunity? COVID-19's effect on the green supply chains, and perceived service's quality (SERVQUAL): the moderate effect of big data analytics in the healthcare sector. *Environmental Science and Pollution Research*, *30*(6), 14365–14384. https://doi.org/10.1007/s11356-022-23173-8

Kumar, P., & Chakraborty, S. (2022). Green service production and environmental performance in healthcare emergencies: role of big-data management and green HRM practices. *International Journal of Logistics Management*, *33*(4), 1524–1548. https://doi.org/10.1108/IJLM-02-2021-0075

Latanna, M. D., Gunawan, B., Franco-García, M. L., & Bressers, H. (2023).

Governance Assessment of Community-Based Waste Reduction Program in Makassar. *Sustainability*, *15*, 14371. https://doi.org/https://doi.org/10.3390/su151914371 Academic

Le, P. L., & Nguyen, D. T. (2024). Investigating the effects of green operations management on sustainability performance of manufacturing and service firms: The mediating role of green customer integration in Vietnam. *Journal of Cleaner Production*, *466*. https://doi.org/10.1016/j.jclepro.2024.142894

Leung, T. C. H., Guan, J., & Lau, Y.-Y. (2023). Exploring environmental sustainability and green management practices: evidence from logistics service providers. *Sustainability Accounting, Management and Policy Journal*, *14*(3), 461–489. https://doi.org/10.1108/SAMPJ-03-2022-0133

Ly, B., & Ly, R. (2025). From Motivation to Action: The Role of Green Human Resource Management and Public Service Motivation in Promoting a Circular Economy in Cambodia. *Journal of the Knowledge Economy*, *16*(3), 12764–12785. https://doi.org/10.1007/s13132-024-02395-w

Mahar, A. S., Zhang, Y., Sadiq, B., & Gul, R. F. (2025). Sustainability Transformation Through Green Supply Chain Management Practices and Green Innovations in Pakistan's Manufacturing and Service Industries. *Sustainability (Switzerland)*, *17*(5). https://doi.org/10.3390/su17052204

Nasrullah, N., & Hamdy, M. A. (2024). Air Conditioning Energy Efficiency and Thermal Comfort in Hotel Buildings in Hot and Humid Tropical Climates: The Case Study of Makassar City Coastal Area Hotel, South Sulawesi, Indonesia. *Engineering, Technology & Applied Science Research*, *14*(6), 18290–18299. https://doi.org/https://doi.org/10.48084/etasr.8463

Shams, K., & Kadow, A. (2024). Determinants of consumer satisfaction with green e-marketing of international fast foods chains using service quality dimensions and happiness approach: a case study from urban Pakistan. *Asia-Pacific Journal of Regional Science*, *8*(3), 833–857. https://doi.org/10.1007/s41685-024-00349-3

Sofyan, J., Sudyana, I. N., Berkat, n., Santoso, M., Adji, F. F., Alpian, u., & Lautt, B. S. (2024). Enhancing urban ecosystem services: A stakeholder-centric analysis of green supply chain management and urban forest management quality in Palangka Raya. *Uncertain Supply Chain Management*, *12*(4), 2839–2854. https://doi.org/10.5267/j.uscm.2024.4.018

Tanova, C., & Bayighomog, S. W. (2022). Green human resource management in service industries: the construct, antecedents, consequences, and outlook. *Service Industries Journal*, *42*(5–6), 412–452. https://doi.org/10.1080/02642069.2022.2045279

Tong-On, S., Jadesadalug, V., & Tagontong, N. (2025). Green Service Quality Management Strategy of Hotel Business in Thailand. *Asian Journal of Human Services*, *29*, 510–527. https://doi.org/10.14391/ajhs.29.510

Xing, Y., & Liu, Y. (2023). Integrating product-service innovation into green supply chain management from a life cycle perspective: A systematic review and future research directions. *Technovation*, *126*. https://doi.org/10.1016/j.technovation.2023.102825

Yasin, M. S., & Zulkifli, M. (2025). Analisis Tingkat Kualitas Pelayanan Terhadap Kepuasan Pelanggan di PT PLN (Persero) ULP Malili. *Indonesian Journal of Intellectual Publication (IJI Publication)*, *5*(3), 368–372.

https://doi.org/https://doi.org/10.51577/ijipublication.v5i3.765