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ANALYSING THE IMPACT OF FACILITY MANAGEMENT SERVICES ON CUSTOMER RETENTION WITH MEDIATING EFFECTIVE CUSTOMER SATISFACTION

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Abstract: Facility management services play a pivotal role in upholding and enhancing the operational efficiency, safety, and comfort of the organizational environments. These service lines have grown out of the traditional physical maintenance of facilities to services and other offerings that have direct effects on customer satisfaction and retention. This study seeks to establish the association between facility management services and consumer retention, focusing on the intervening role of consumer satisfaction. It aims at understanding high quality FM services as a retention factor through customer satisfaction, which would give important insights for businesses wishing to increase customer loyalty and long-term commitment. Retention of customers is one of the major interests for organizations because it costs less to retain than to add new customers. The current study not only benefits the practicing facility manager and business but also adds to the pool of academic literature by furthering the understanding of where facility management and customer relationship management intersect with its comprehensive frame of reference for analyzing service quality and customer loyalty in facility management scenarios. This study concludes how facility management services are essential to improving customer satisfaction, which, in turn, serves as a mediator for the influence on customer retention. The derived knowledge from this study will aid organizations in developing better strategies for retaining customers while optimizing their FM services to create long-term value for clients.

Keywords: Service Quality, Customer Retention, Customer Satisfaction, Customer Loyalty, Mediation Analysis, Customer Expectations.

I. INTRODUCTION

Within a very competitive service-oriented world today, organizations have become aware that facility management (FM) services are strategic in providing customer experience differentiations and ensuring long-lasting loyalty. Facility management includes maintenance, cleanliness, security, infrastructure support, and others. Therefore, all types of facility management services have a direct bearing on not only the quality of service environments but also the efficiency with which organizations operate. Organizations have to ensure that FM services play a strong influence on customer retention. Traditionally, customer retention has been studied mostly within the realms of marketing or customer relationship management. The present study, however, places the FM services in the center of the customer retention process. Moreover, customer satisfaction is seen as a mediating variable that links FM quality and retention behavior. A satisfied customer will most likely establish trust, create an emotional bond, and, ultimately, remain loyal. Therefore, the future of this study lies in the exploration of how effective FM could create an avenue towards satisfaction, leading to improved customer retention. Using a combination of service management and customer behavior frameworks, the primary objective of this research is to set up active recommendations for service-oriented organizations in FM strategy optimization and creation of sustainable customer relationships. The advancements from this study will contribute to both academic and practical considerations.

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II. REVIEW OF LITERATURE

Peter Barrett (2000): "Achieving strategic facilities management through strong relationships" The purpose of the study says that facilities management (FM) has changed from a reactive, maintenance-oriented, and in-house kind of thing into something strategic, something that goes with the grain of organizational goal structures. For the digital revolution, workplaces are virtually new and require FM the more to run the productivity machines of collaboration for innovation. The modern-day facilities managers spearhead an operational brief, albeit bearing a long-vision perspective that forges integration of flexible workspaces with technology. Partnering well with all the stakeholders is key to sourcing the right modus operandi for aligning FM with business strategy. Facilities Management today, therefore, is beyond technical knowledge; it entails project management, change management, and data-driven decision-making for optimized use of facilities, cost reduction, and support for evolving workplace needs.

Bordass et al. (2001) titled "Assessing Building Performance FM in Use" The purpose of the study is focused in evaluating the user and the building with regard to its performance. According to the authors, lifecycle assessment of building performance is vital as considerations of user satisfaction, degradation of the environment, and energy consumed hugely influences facility management. Performance indicators are elaborated on both subjective and objective grounds and further argue that better facility management would lead towards better efficiency, sustainability, and even the user experience itself. The authors hold that a wider gamut of building performance evaluation becomes essential to improve the long-term quality of facilities and to elaborate the strategy effectiveness in enforcement facility management. Within this context, the facility management would thus encompass monitoring building conditions, user demands from time to time, and environmental impacts to ensure sustained efficiency and satisfaction. The authors have pointed out sustainability and energy efficiency as two imperatives of modern facility management and charge that feedback and evaluation must be continuous to drive continuous improvement within a building.

Barrett and Baldry (2003): "Stakeholder Engagement in FM" The purpose of the study Stakeholder engagement is becoming more critical in Facilities Management (FM), which is evolving from a technical function to a strategic process. This paper indicates group collaboration with a diverse range of stakeholders, such as technical staff, senior managers, HR, IT, and external providers, as critical for aligning FM to organizational goals. The handbook cites the simultaneous drivers of change in the workplace, including technology and new structures, as the factors competing with FM in its quest for providing comfort for the employees versus cost efficiency. There will, therefore, be continuous conversations and negotiations to deliver services. Barrett and Baldry (2003) stress stakeholder engagement as a condition for FM to flourish; thus, FM must drive business value and strategic alignment.

Peter McLennan (2004): "Service operations management as a conceptual framework for facility management" The purpose of this study is indeed the economic growth and market development of facility management (FM) for the past decade, emphasizing that FM employs more people than any other service sector. This study suggests that the field of FM must align more closely with mainstream management disciplines so as to establish a clearer identity and gain wider recognition. FM embraces an extensive array of sectors-property, catering, security, and engineering, but with no singular theoretical construct underneath it would often be misunderstood in the business community. To augment its strengths and build strategic value, FM will need, thus, to merge with established management theories, effectively declare the impacts of FM, and gain the necessary recognition and resources for further growth and innovation.

Sarich Chotipanich (2004): "Positioning Facility Management" The purpose of the study highlights some discrepancies in contemporary views about the aims, scope, and priorities of facilities management (FM), while also identifying some key factors that influence its theoretical positioning. An extensive literature review examines the linkages of FM with organizations and environments, bringing to light notable gaps in such knowledge. In the course of ongoing PhD research at University College London, this study will develop a theoretical framework to assist in the positioning, decision-making, and practice of FM within organizations.

Preiser and Vischer (2005): "Post-Occupancy Evaluations (POE) for Feedback in the field of FM" The purpose of the study data from post-occupancy evaluations (POE) are utilized for the management of space and the evaluation of facilities. That is to say, this feed furnishes occupants giving facilities managers a mechanism for identifying deficiencies and areas for improvement in design, though operation and functionality of the building in the technical aspect. In other words, POE is important because although a building may be technologically well functioning, it may still not meet the needs of the users or occupants, and that further entails the linkage between user environment. Preiser and Vischer (2005) argued that POE does not only improve the individual facilities but is also a measure to broad organizational goal, which is culture, collaboration, and productivity. Therefore, creating well-being-efficiency-sustaining success environments through holistic and systematic feedback collection is what facilities managers intend to do.

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Christopher P. Hodges (2005): "A facility manager's approach to sustainability" The purpose of the study says the sustainability in facility management provides numerous benefits, such as energy savings, productivity increases, and waste reduction. While economic benefits take time to come, considering sustainability along the dimensions of life cycle cost (LCC) and total cost of ownership (TCO) gives an enriched perspective. The facility managers look at the entire building lifecycle and can serve as the catalyst for promoting and applying sustainable practices. When armed with the right financial instruments and strategic tools, facility managers can leverage long term value by incorporating green building initiatives into facility operations.

Lindholm and Levanen (2006): "FM's Role in Design Optimization" The purpose of the study says the Facilities management (FM) is very crucial when it comes to the design, functioning, and viability of buildings over the long term. FM professionals involve themselves during the design and construction phases, beyond their contributions to post-construction-they ensure that spaces will be efficient, adaptable, and cost-effective. Finally, their active participation at the beginning provides seamless integration of smart systems, renewable energy, and sustainability practices, thereby reducing the environmental footprint while minimizing operating costs. As organizations develop and evolve over time, so does FM; ensuring that buildings still function the way they used to and still maintaining efficacy so that user experience and long-term performance might be optimized.

Sarel Lavy (2008): "Facility management practices in higher education buildings" The purpose of the Facility management (FM) has really changed from a technical aspect to become an important strategic avenue for a business practically to survive. It involves not just the upkeep of tangible assets, but also space allocation, energy management, sustainability, safety, and risk management. There are many demands on a facility manager on the operational side, and these must be balanced with the cost of things like budgeting, vendor relationships, and personnel. The encouraging side is the fact that FM does influence business strategy by enhancing space, environment, and sustainability for employee well-being, thus bringing about cost reductions and improved productivity. In return for money, good FM delivers happier employees and good workplaces, thereby supporting its critical strategic role in present-day organizations.

Zehra Waheed, Scott Fernie (2009): "Knowledge based facilities management" This paper examines the evolving role of facilities management (FM) in value creation within organizations, drawing from management models like Porter's. Despite growing recognition of FM's contributions to sustainability, employee well-being, and space optimization, its strategic impact remains unclear. Often seen as a reactive, cost-driven function, FM struggles to position itself as a proactive value enabler. The paper argues for a shift in perspective, advocating for FM as a strategic partner aligned with organizational goals. By adopting systems thinking and integrating operational efficiency with broader business objectives, FM can bridge the gap between support functions and strategic value creation.

Pitt et.al (2009): "Feedback Mechanisms in Sustainable FM" The purpose of the study investigates feedback mechanisms that are critical in sustainable facilities management-improving the building in terms of performance, efficiency, and sustainability-is what the research concludes. FM is beyond cost reduction and mitigation of environmental impacts by continuous feedback loops to refine strategies. Resident input, sensors of the environment, energy data consumption, and waste indicators into account are some sources of feedback. Made use of this way enables facility managers to optimize energy use, improve indoor environmental quality, and improve user acceptance. Feedback-based facility management establishes long-term sustainability by making buildings much more efficient, environmentally responsible, and user-friendly.

Glenda Mayo (2015): "Nongeometric Building Information Needs Assessment for Facilities Management" This research study looks at how Building Information Modelling (BIM) assists facility management (FM) by providing timely and accurate information. BIM has transformed processes in the architecture, engineering, and construction (AEC) industry to allow for decisions made earlier with more precise data. Consequently, owners now have an active role in articulating what information they require. However, they still seem to depend on generalities regarding what information to collect. Therefore, this study used a Delphi panel comprised of university FM staff from across 18 states in identifying the most basic building information required for operations and maintenance (O&M). The findings establish areas of core product information and formats through which owners can integrate BIM in FM practices.

Marzouk and Zaher (2015): "Artificial exploitation in facility management using deep learning" This study states the classification and localization of MEP components for facility managers are to simplify complicated systems. Image classification using pre-trained Convolutional Neural Networks and SVM under supervised learning would be done with the help of AI and deep learning. An expert system under Android and Bluetooth tracking would enable identification and predictive maintenance of the assets. The proposed system is useful for FM efficiency improvements while minimizing maintenance costs. The current study is based on fire protection systems; however, research is expected to expand to

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include other structural and architectural systems. This work has greatly helped in decreasing the MEP maintenance knowledge requirements and life cycle costs from the facility management perspective.

Manish dixit, Culp, Jose Fernandez Solis Sarel Lavy (2016): "Reducing carbon footprint of facilities using a facility management approach" The purpose of the study Argues for life-cycle thinking in the domain of facilities management to lower carbon footprints, and proposes a comprehensive energy and carbon reduction concept. By following a literature-driven discovery path, this study analyzes energy use data from 95 case studies worldwide. Energy-efficient buildings indeed reduce operational energy but not the amount of embodied energy. The analyzed buildings are almost 10% of carbon emissions in the U. S. Although case studies differ from location and material usage, the proposed method provides practical approaches to sustainable FM practice. This emphasizes the importance of FM in global carbon emissions reduction.

Jensen and van der Voordt (2017): "Human-Centered FM Feedback Approaches" The purpose of the study states the One of the basic conclusions this research study has made is that facility management (FM) strategies should integrate with the needs of the users and its parameters should be confined to comfort, productivity, and well-being. One would emphasize the systematic feedback mechanisms for ensuring continuous monitoring and improvement. Effective FM also has to involve its users, with the knowledge that different departments and functions may have different requirements. An integrated user-focused FM model is sanctioned by Jensen and van der Voordt to encourage flexibility and responsiveness to changing needs.

Asadi et al. (2019): "AI-Driven FM Feedback Systems" This research offers an insight into the prospective transformation of facility management (FM) with AI-driven feedback systems in addressing inefficiencies associated with conventional manual surveys. The automated collection of data, its real-time processing, and generation of useful insights through machine learning and predictive analytics is the crux of AI. The analysis of multiple data sources enables AI to determine the patterns, foresee problems, and facilitate proactive decision-making, which definitely enhances efficiency and user satisfaction. These systems are flexible enough to bring integration of numerous data streams and to build up with technology. However, operationalization and actualization of the full benefit of AI in FM will give rise to challenges such as data integrity, user trust, and system interoperability, all of which need to be addressed.

SCOPE OF THE STUDY:

- This research refers to the ability of quality and efficiency of FM services to customer loyalty and promote repeat business.
- The study analyzes the mediating role of customer satisfaction on FM service quality and customer retention.
- The study takes into account of several sectors (e.g., hospitality, healthcare, commercial real estate) in which FM services represent an important customer touchpoint.

NEED OF THE STUDY:

- To study increasingly competitive service environment makes retaining customers less expensive than acquiring new ones.
- To analyse the Facility management is seen increasingly as a value-adding service that affects customer experience.
- To study the Limited existing research examines the direct and indirect (mediated) effects of FM services on customer loyalty.
- To study the Aids in bridging the gap between operational support functions and strategic customer-oriented outcomes.

OBJECTIVES OF STUDY

- To Evaluate the relationship between facility management services and customer retention.
- To Assess the role of customer satisfaction as a mediator between facility management services and customer retention.
- To Identify those aspects of facility management that have the most significant impact on customer satisfaction.
- To Provide strategic recommendations for organizations on the optimization of facility management to better customer retention results.

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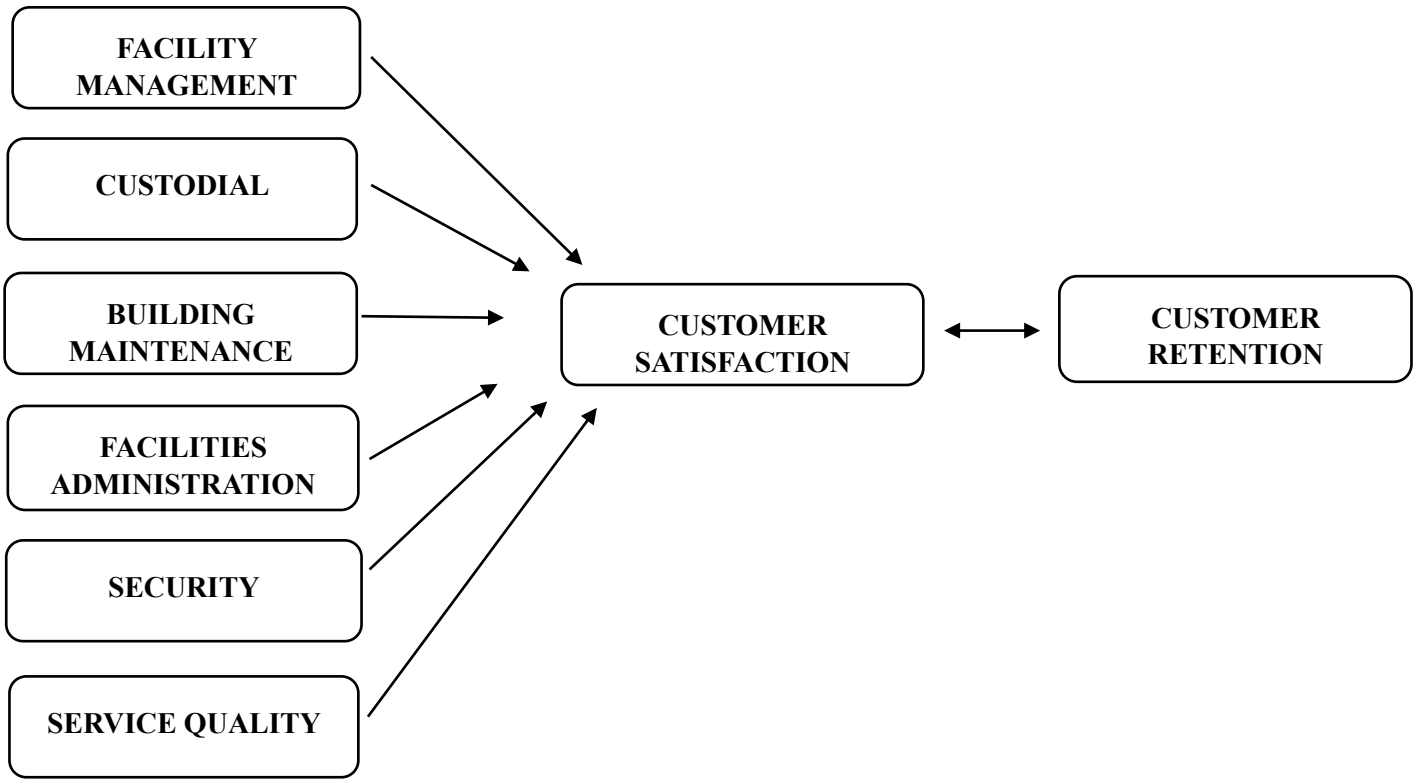
III. RESEARCH METHODOLOGY

The research methodology followed in the study named "Analysing the Impact of Facility Management Services on Customer Retention with Mediating Customer Satisfaction" is applying a quantitative research design-based structured survey, which collects primary data from customers who have availed facility management services. The study adopts a descriptive and an explanatory approach for the exploration of the linkages between facility management services (an independent variable), customer satisfaction (a mediating variable), and customer retention (a dependent variable). The purposive sampling technique is used to sample respondents based on their relevant experience. Statistical techniques such as regression analysis and structural equation modeling (SEM) are used to test hypotheses and evaluate mediation effects. Reliability and validity are expected through pilot testing of the questionnaire and through established measurement scales. This is in order to conduct a robust analysis of the performance quality, responsiveness, and efficiency of facility management concerning how customer satisfaction, in turn, affects customer loyalty and retention over the long term.

CONCEPTUAL FRAMEWORK



ANALYSIS&INTERPRETATION:

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CORRELATION:

Descriptive Statistics

	Mean	Std. Deviation	N
CUSTODIAL	9.827	2.2391	162
FACILITIES	9.568	1.9746	162
RETENTION	7.093	3.0458	162

Correlations

		CUSTODIAL	FACILITIES	RETENTION
CUSTODIAL	Pearson Correlation	1	.632**	-.012
	Sig. (2tailed)		.000	.877
	N	162	162	162
FACILITIES	Pearson Correlation	.632**	1	-.013
	Sig. (2tailed)	.000		.870
	N	162	162	162
RETENTION	Pearson Correlation	-.012	-.013	1
	Sig. (2tailed)	.877	.870	
	N	162	162	162

**. Correlation is significant at the 0.01 level (2-tailed).

RESULT:

There is a significant positive correlation between perceptions of custodial services and facilities quality, suggesting that improvements in one may be associated with better perceptions of the other. However, neither custodial services nor facilities show a statistically significant relationship with retention, indicating these factors may not directly influence retention in this dataset.

ONE-WAY ANOVA:

ANOVA

RETENTION

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	155.606	11	14.146	1.586	.108
Within Groups	1338.006	150	8.920		
Total	1493.611	161			

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RESULT:

The p-value = .108 is greater than the significance level of 0.05, indicating that the differences in RETENTION_MEAN across the 12 groups are not statistically significant.

Therefore, we fail to reject the null hypothesis, suggesting that there is no significant difference in retention means among the different groups.

FINDINGS:

According to the findings from the study, facility management services are vital in enhancing customer retention, mainly due to possible mediation effects on customer satisfaction. High quality facility services such as cleanliness, safety, maintenance, and support are directly experienced by customers to offer an enjoyable experience. This implies that services have great potential for drivers towards loyalty retention effects. For instance, the findings show that customers are more able to return and maintain a relationship with a business that constantly has reliability and efficiency in their facility management. Furthermore, the study indicates that although facility services alone have a direct relationship with customer retention, the strength of this relationship increases significantly with customer satisfaction as a mediator. Thus, it can be concluded that satisfaction does not only act as a mediator: it could also potentiate the relationship between service quality and loyalty. The study concludes that facility management is not merely a PR function, but basically a strategic driver of customer loyalty via satisfaction.

IV. CONCLUSIONS

The analysis in question significantly reveals the effect of facility management services on customer retention, with customer satisfaction as an intervening variable, regarding service quality and customer loyalty. Facility management services, such as cleanliness, safety, maintenance, and responsiveness, greatly contribute to the quality of the customer experience. The improvement caused by service quality is reflected positively on customer satisfaction. Then, clients with higher levels of satisfaction develop trust and emotional orientation towards that service provider, which has a great impact on their decision to remain loyal. This study implies that even if facility management is one of the pivotal points in a fact, when customer satisfaction is achieved, it has the most profound effect on retaining customers. In conclusion, the management of facilities in a manner conducive to customer retention constitutes an essential aspect of the overall process of longer-term retention of customers. However, it is the mediation effect of customer satisfaction that shifts operational performance into sustainable loyalty. Thus, companies should be investing in infrastructure and customer engagement for best retention results.

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