

A Study on Factors Influencing Customer Relationship Management on Consumer Durable Goods

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Abstract- The study aimed to examine the factors influencing customer relationship management on consumer durable goods. The study includes 400 customers purchasing and using consumer durable goods. The study utilized questionnaire for collection of data from the customers. Data is analysed using simple percentage analysis, chi-square test, factor analysis, multiple linear regression test and t-test. Findings showed that awareness levels differ significantly across demographic groups, indicating that age, education, occupation, income, and residential background play a vital role in forming customers' knowledge of durable products. Factor analysis highlighted customer engagement, relationship development, technological support, organizational backing, customer value, and service recovery as major contributors to CRM effectiveness. Results confirmed that CRM activities strongly influence satisfaction, as customers appreciate responsive service, accessible support, smooth warranty procedures, and reliable installation. To sum up, CRM practices significantly strengthen satisfaction and customer relationships.

Keywords: Customer Relationship Management, Durable Goods, Consumer, Satisfaction, Awareness.

I. INTRODUCTION

Customer Relationship Management (CRM) has become a main strategy used in many industries to improve relationships between businesses and their clients. CRM is centered on methodical attempts to draw in, keep, and develop clients through value-driven engagement, consistent service quality, and meaningful connection. It is an organized framework that brings together communication, service processes, technology support, and customer-centric tactics to achieve long-term happiness and loyalty. In the current competitive market, clients want rapid support, transparent communication, and dependable service delivery. Stronger client attachment, repeat business, and positive word-of-mouth are frequently experienced by companies who engage with their customers on a regular basis and clearly answer their expectations. CRM therefore serves as a strategic foundation for developing trust, boosting service delivery, and preserving the whole customer experience.

Consumer durable goods such as refrigerators, washing machines, air conditioners, televisions, and household appliances, remain in use for several years and require annual maintenance, after-sales service, and timely assistance. Customers invest considerable amounts in durable items and naturally demand reliability, performance, and constant service throughout the product's existence. Longer decision-making cycles, thorough analysis, brand comparison, and post-purchase interactions are all associated with consumer durable products. Customer interactions are crucial in this industry because of the necessity for installation, warranty claims, maintenance, spare parts, and service center visits.

Businesses must maintain active communication, effective service methods, and prompt problem solving since customers continue to engage with the business long after the purchase. As a result, CRM becomes crucial for enhancing customer satisfaction, building trust, and maintaining long-term relationships in the durable goods industry.

CRM in consumer durable goods is influenced by a variety of organizational, service, and interaction factors. Customer engagement is a main factor since regular contact, responsiveness, and transparency, which impact the customers' realization about the organization. Throughout the course of their purchase and service journey, effective engagement guarantees that consumers feel appreciated, connected, and supported.

Relationship development also plays a vital part in this industry. Long-term engagement, dependability, reciprocal value creation, and emotional connection help businesses stand out in a crowded market and keep clients. As lasting goods require continual service, solid relationships contribute directly to loyalty. Technological support constitutes another essential factor influencing CRM in this area. Efficient CRM software, correct data management, digital integration, online service booking, automated updates, and secure communication channels boost service accuracy and speed. The rising adoption of digital platforms, clients expect quick responses, easy tracking, and seamless interaction.

CRM effectiveness is also influenced by organizational support. Smooth service delivery is facilitated by competent staff, clear service policies, departmental coordination, and a customer-centric workplace culture. Strong internal systems help personnel to handle service requests confidently, enhancing overall customer satisfaction. CRM performance in durable goods is also influenced by customer value. Consumers assess if the product serves long-term demands, offers consistent benefits, and justifies the price. Fair pricing, added service advantages, and value-driven solutions build satisfaction and confidence. Lastly, service recovery is an important consideration.

Customers of durable items frequently deal with problems like delayed installations, broken parts, or warranty claims. Quick corrective steps, fair solutions, and supporting service recovery efforts create trust and restore confidence after service failures. Effective engagement, relationship building, technology efficiency, organizational preparedness, customer value generation, and robust service

recovery mechanisms are all critical components of CRM in consumer durable goods. These characteristics jointly affect how well organizations develop lasting relationships and create a great client experience.

II. STATEMENT OF THE PROBLEM

Customer relationship management in the consumer durable goods sector faces increasing challenges due to rising customer expectations, intensified competition, and the long-term nature of product usage. Customers of durable goods depend on companies not only for product quality but also for reliable installation, service responsiveness, warranty clarity, and post-purchase communication. However, many customers still experience inconsistent support, slow complaint resolution, limited service accessibility, and unclear information related to maintenance and replacement. These gaps weaken trust and interrupt sustained engagement, which is essential for products that require continuous interaction throughout their lifespan.

At the same time, firms struggle to identify which aspects of customer relationship practices influence satisfaction and loyalty most strongly. Short of clear visions, organizations may fail to strengthen relationships effectively. Therefore, an intensive study is required to examine the factors influencing customer relationship management in the consumer durable goods sector and to highlight the main elements that form customer experience and long-term association.

III. REVIEW OF LITERATURE

Customer relationship practices in the consumer durable goods sector stresses the growing importance of sustained engagement between firms and buyers. CRM in durable goods differs from fast-moving products because customers interact with brands for a longer period due to after-sales requirements, warranty services, product maintenance, and replacement decisions (Pachua and Jyotikumar, 2023). The extended relationship demands consistent communication, service quality, and value based interaction. The effective CRM in

durable goods is influenced through several elements(Sakkariya, 2020). Service responsiveness is frequently discussed as a main factor because customers expect quick attention during installation, repair, and complaint handling (Narayana and Durga, 2018). Timely service creates confidence and increases trust in the brand. Product reliability is also emphasized, as durable goods involve high financial commitment; therefore, customers prefer brands that offer dependable performance and easy service support (Nilashi et al., 2023).

The relevance of personalized communication. Customers often require guidance on product use, upgrades, and maintenance schedules. Firms that provide tailored communication through service points, digital platforms, and customer support channels tend to build stronger connections with buyers (Kannapiran and Megala, 2021). Convenience in service access such as doorstep repair, flexible visit scheduling, and clear service tracking also emerges as an important factor.Firms that maintain interaction after the sale, through feedback systems, loyalty programs, and periodic updates on new models, strengthen long-term relationships (Dhir et al., 2024).

Positive engagement supports repeat purchase decisions in categories such as home appliances, electronics, and kitchen equipment. The role of brand assurance and transparency. Clear warranty terms, honest information, and fair service charges enhance customer perception and reduce dissatisfaction (Ashu and Kumar, 2025). Competitive pricing, combined with reliable after-sales service, contributes to relationship success.CRM in the consumer durable goods sector is shaped through service quality, communication clarity, engagement practices, product reliability, and trust-building efforts, all of which collectively influence customer satisfaction and future buying preferences (Alagar, 2020).

IV. RESEARCH OBJECTIVES

The study is commenced with the following objectives.

1. To analyse the demography profile of consumers purchasing durable goods in Erode district.
2. To test the effect of demographic profile of customers on customer awareness.
3. To examine the factors influencing customer relationship management on consumer durable goods.
4. To analyse the effect of customer relationship management on customer satisfaction.

V. RESEARCH METHODOLOGY

The study planned to assess the factors influencing customer relationship management on consumer durable goods industry in Erode district, Tamilnadu. The study is descriptive in nature. The sample for the study includes 400 customers purchasing and using consumer durable goods in various retail outlets in the study area. The study is conducted with presenting structured questionnaire among the different customer segments. The data for the study is directed collected from the customers. The ensuing statistical tools are applied to get the reliable inferences, that is, simple percentage analysis, chi-square test, factor analysis, multiple linear regression test and t- test.

VI. RESULTS AND DISCUSSION

Effect of Demographic Profile on Customer Awareness

The demographic profile of customers purchasing consumer durable goods are analysed as per their demographic profile. Moreover, the relationship between demographic profile and awareness on consumer durable goods are tested using chi-square test. The null hypothesis states that demographic profile of customers have significant effect on customer awareness towards consumer durable goods. The results are furnished in table 1.

Table 1: Analysis of Demographic Profile

S. NO	DEMOGRAPHIC PROFILE		FREQUENCY		CHI-SQUARE		
			N	%	VALUE	DF	SIG.
1.	GENDER	MALE	214	53.50	4.569	2	0.000
		FEMALE	186	46.50			
2.	AGE	LESS THAN 25 YEARS	98	24.50	14.685	6	0.000
		25 – 40 YEARS	128	32.00			
		41 – 55 YEARS	105	26.25			
		MORE THAN 55 YEARS	69	17.25			
3.	EDUCATIONAL QUALIFICATION	SCHOOL EDUCATION	76	19.00	9.542	4	0.000
		DEGREE/ DIPLOMA	221	55.25			
		PG/ PROFESSIONAL	103	25.75			
4.	OCCUPATION	AGRICULTURE	112	28.00	9.167	4	0.000
		BUSINESS	124	31.00			
		EMPLOYED	164	41.00			
5.	MONTHLY INCOME	LESS THAN RS.30,000	132	33.00	10.324	4	0.000
		RS.30,000 – 60,000	127	31.75			
		MORE THAN RS.60,000	141	35.25			
6.	RESIDENTIAL AREA	RURAL	107	26.75	8.431	4	0.000
		SEMI-URBAN	153	38.25			
		URBAN	140	35.00			

Source: Primary Data

Table 1 presents the demographic profile of customers purchasing consumer durable goods. The customer awareness is collected in the form of fully aware, partially aware and not aware. The results show that gender consists of 53.5% of male and 46.5% of female customers. Age includes 24.5% of less than 25 years, 32.0% of 25 – 40 years, 26.25% of 41 – 55 years, and 17.25% of more than 55 years. Educational qualification shows 19.0% of school education customers, 55.25% of degree holders, and 25.75% of post graduates. Occupation reveals that 28.0% of customers are involved in agriculture, 31.0% of customers are engaged in business and 41.0% of customers are employed in private or government organizations. Monthly income reveals that 33.0% of customers' monthly income is less than Rs.30,000, monthly income of Rs.30,000 – 60,000 is to 31.75% of customers, and monthly income of 35.25% is to 35.25 of customers. Residential area shows that 26.75% of customers residing rural areas, 38.25% of customers residing rural areas and 35.0%

of customers residing rural areas. The results of chi-square test show that the computed values are significant at 1% level, null hypothesis is rejected. Therefore, demographic profile of customers has significant effect on customer awareness towards consumer durable goods. The customer awareness of consumer durable goods is significantly influenced by their demographic profile.

Factors Influencing Customer Relationship Management

The customer relationship management is mainly relied several aspects, it can be connected with customer engagement, relationship development, technological support, organizational support, customer value, and service recovery. In this manner, these aspects are taken into accounts and its influence on customer relationship management in consumer durable goods industry is analysed through factor analysis. The internal consistency of survey questionnaire is tested with reliability analysis. The reliability test is performed to assess how the variables are strongly related to each other.

The reliability estimate of Cronbach's alpha for these aspects are 0.876 for customer engagement, 0.885 for relationship development, 0.814 for technological support, 0.863 for organizational support, 0.841 for customer value, and 0.829 for service recovery, it confirms a high degree of reliability. Furthermore, the data validity for factor analysis is evaluated through the use of Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity. The KMO measure of sampling adequacy (0.878) and (0.000) significance level of chi-square assures the data validity to perform factor analysis. The factors and its variables are depicted in table 2.

Table 2: Factor Analysis

Factors	Variables	Factor Loadings	Eigen Value	% of Variance
Customer Engagement	Quality of customer communication	0.843	9.253	24.364
	Responsiveness to customer queries	0.811		
	Personalization of service	0.798		
	Timeliness of problem resolution	0.823		
	Trust in company interactions	0.785		
	Transparency in information sharing	0.776		
	Consistency in service delivery	0.788		
	Customer participation in feedback	0.721		
Relationship Development	Mutual value creation	0.805	7.449	19.521
	Strength of emotional connection	0.787		
	Long-term interaction quality	0.782		
	Clarity of service expectations	0.787		
	Customer confidence in the brand	0.798		
	Reliability of relationship commitments	0.822		
	Frequency of service updates	0.814		
Technological Support	Efficiency of CRM software	0.824	5.355	14.203
	Accuracy of customer data handling	0.783		
	Ease of using online service platforms	0.792		
	Integration of digital communication	0.787		
	Automation of routine service processes	0.812		
	Security of customer information	0.783		
Organizational Support	Employee training for CRM activities	0.817	4.113	10.542
	Support for customer-focused actions	0.821		
	Interdepartmental coordination	0.775		
	Employee competency in customer handling	0.744		
	Quality of service policies	0.765		
Customer Value	Perceived fairness in pricing	0.795	3.234	7.126
	Satisfaction with service benefits	0.783		
	Value for money in offerings	0.767		
	Long-term purchase satisfaction	0.768		
Service Recovery	Effectiveness of complaint handling	0.794	2.463	4.052
	Compensation for service failures	0.788		
	Speed of corrective actions	0.751		

Source: Primary Data

Table 2 reveals that the factors and its variables have strong impact on customer relationship management on consumer durable goods. The factor explains the cumulative variance of 79.808 percent. The most important dimension is customer engagement since it explains 24.364% of variance with Eigen value of 9.253. High loadings across variables like communication quality, responsiveness, personalization, problem-resolution timeliness, transparency, trust, consistency and feedback participation suggest that active and meaningful engagement strongly forms customer experience. It proves the important role of continuous interaction and service delivery standards in forming customer engagement. Relationship development contributes 19.521% of the variance with an Eigen value of 7.449, it reflects the importance of long-term relational aspects. Strong emotional connection, mutual value creation, clear expectations, brand confidence, commitment reliability, and frequent service updates collectively emphasise that enduring relationships significantly determine customer loyalty and satisfaction.

Technological support explains 14.203% of the variance with an Eigen value of 5.355. High loading on efficiency of CRM software, accuracy of data handling, platform usability, digital integration, automation, and information security indicates that technology-driven processes strongly increase CRM effectiveness. Reliable digital systems appear to be a main driver of positive customer engagement.

Organizational support accounts for 10.542% of the variance with an Eigen value of 4.113. The variables point toward the internal environment, employee training, customer focussed support, interdepartmental coordination, employee competency, and service policy quality.

Strong loadings show that organizational readiness and employee capability influence CRM success. Customer value explains 7.126% of the variance, it captures customer perception on fairness in pricing, benefits, value for money, and long-term satisfaction. It shows that customer assess whether the offering justify the price and deliver lasting value. Eventually, service recovery explains 4.052% of the variance, it highlights effectiveness in resolving complaints, offering compensation, and ensuring quick corrective measures. Strong loadings reflect that efficient recovery actions can restore customer confidence after service failures. The six extracted factors together provide a comprehensive view of the main dimensions influencing CRM effectiveness.

The factors influencing customer relationship management described in factor analysis is further tested through multiple regression analysis. Therefore, the six underlying aspects are considered as independent variables and customer relationship management is assumed as dependent variables, which are depicted in table 3.

Table 3: Multiple Linear Regression Analysis

Independent Variables	Dependent Variable	Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
		Beta	Std. Error			
Constant	Customer Relationship Management	0.833	0.611		3.532	0.003
Customer Engagement		0.445	0.085	0.461	7.875	0.000
Relationship Development		0.278	0.092	0.184	6.679	0.000
Technological Support		0.253	0.077	0.173	2.954	0.013
Organizational Support		0.191	0.066	0.145	6.845	0.000
Customer Value		0.183	0.068	0.138	7.624	0.000
Service Recovery		0.152	0.073	0.117	2.568	0.019
R				0.821		
R ²				0.674		
Adjusted R ²				0.668		
F Value				25.436		

Source: Primary Data

Table 3 reveals that all six variables are perfectly connected with the customer relationship management of consumer durable goods. It also reveals the value of R2 and adjusted R2 as 0.674 and 0.668 respectively, which indicates that 67.4% of variation on customer relationship management, explained by six underlying factors. Customer engagement highest beta coefficient 0.445 and t-value 7.875 is statistically significant at 1% level. It indicates that the strong influence on the customer relationship management. Technical support and service recovery are statistically significant at 5% level. Relationship development, organizational support, and customer value are significant at 1%

level. It is evident that these aspects have significant influence on customer relationship management of consumer durable goods.

Effect of CRM on Customer Satisfaction

The customer relationship management activities render main role in forming customer satisfaction. The customers are approached to rate their satisfaction on customer relationship management activities of firms. The One Sample t-test is executed with the above variables in customer relationship management activities, it is performed with assigning test value 3 to the variables taken in to account. The results are furnished in table 4.

Table 4: One-Sample t-test

Variables	Test Value = 3					
	T	df	Sig.	Mean difference	5% Confidence interval of the difference	
					Lower	Upper
After-sales service responsiveness	21.874	399	0	0.934	0.881	1.062
Service centre accessibility	20.416	399	0	0.892	0.811	1.064
Warranty service effectiveness	22.157	399	0	0.847	0.826	1.132
Digital communication & customer support	19.684	399	0	0.756	0.641	0.807
Online service booking convenience	18.927	399	0	0.718	0.603	0.792
Installation support performance	21.264	399	0	0.823	0.754	0.975
Complaint handling efficiency	18.342	399	0	0.804	0.716	0.908
Product delivery accuracy and timeliness	17.986	399	0	0.763	0.701	0.826

Source: Primary Data

Table 4 indicates that all CRM-related variables record t-values far above the test value of 3, with significance at the 5% level. It confirms that customers rate every CRM activity in the consumer durable goods sector positively and well above the average benchmark. Higher t- values for after-sales service responsiveness, service centre accessibility, warranty service effectiveness, and installation support performance show that these areas strongly contribute to customer satisfaction. Customers clearly value timely service, accessible support centres, smooth warranty processes, and dependable installation. Moderate but meaningful effects are noted for digital communication, online service booking, complaint handling efficiency, and

product delivery accuracy. These factors enhance convenience and strengthen service reliability. It proves that CRM activities play a significant role in improving customer satisfaction across the consumer durable goods industry.

VII. CONCLUSION

The study proves that demographic characteristics have a decisive influence on customer awareness of consumer durable goods. Differences in age, educational background, occupation, income level, and residential area shape how customers gather, process, and apply information about durable products. It confirms the need for companies to customize their communication and outreach strategies according to varied customer groups. It

establishes that CRM effectiveness is driven mainly through customer engagement, relationship development, technological support, organizational commitment, customer value, and service recovery.

These dimensions collectively illustrate that positive interactions, transparent service processes, skilled employees, and dependable digital systems are essential for building strong relationships. Regression results reinforce that these factors significantly contribute to overall CRM performance in the durable goods sector. The evaluation of CRM-related activities shows that customers value responsive after-sales service, accessible support facilities, seamless warranty handling, and efficient installation. The service aspects, which includes digital communication, online booking, complaint handling, and delivery accuracy, also strengthen satisfaction. It was concluded that well-structured CRM practices greatly enhance customer confidence, loyalty, and satisfaction in the consumer durable goods industry.

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