The Role of CRM Systems in Enhancing Customer Engagement and Retention in E-Commerce

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Abstract
This investigation seeks to understand how CRM initiatives, particularly e-CRM strategies, impact customer retention in the e-commerce industry of Jaipur, Rajasthan. The research studied both dimensions of e-CRM-the functional and personal-and the effect each has on the continuation of customer engagement with e-platforms. Another objective was to study the mediating role of perceived customer relationship quality, this perception having both intellectual (rational, trust-based) and emotional (affective, relational) elements, in the formation of consumer loyalty. To gather the necessary information, primary data was solicited from 100 online shoppers residing in Jaipur through a structured online questionnaire. The data was then analyzed statistically in a descriptive and inferential manner to check for relationship dependencies among variables. Interestingly, while factors in the e-CRM landscape on a functional level such as ease of use, response time, and technical efficiency did not retain their association with customer retention on a statistical basis, aspects of a personal nature, especially those concerning the perception of the customer and demographic variables, were deemed to be more significant. Among the many variables, gender proved significant in retention level amongst e-commerce users. This finding constitutes an important contribution to the growing research field of customer relationship strategies in region-specific e-commerce markets and sets the earning impinging on emotional engagement and personalized communications rather than just functional attributes, thus providing practical implications for e-commerce organizations hoping to further enhance customer loyalty and long-term retention in Jaipur's competitive digital marketplace and those with similar regional settings.
Keyword: *CRM, Customer retention, E-commerce*

INTRODUCTION
Research Background
In an intensified and exceedingly turbulent market, companies face decreased chances of gaining new customers and, more importantly, of retaining current ones. Retention and loyalty have emerged as crucial aspects of sustaining business for the long term and for making it profitable. Where the churn rate of customers is high, revenues tend to drop, while marketing expenses and cost of customer acquisition tend to rise. It is therefore evident that in such an ever-evolving environment, CRM systems have come into play, becoming a highly technical strategizing tool with which the business tries to nurture customer loyalty, enhance customer engagement, and ensure repeat business.

Customer Relationship Management is basically a set of strategies, practices, and technologies that businesses employ to manage and analyze customer interactions and data throughout the customer lifecycle, with the aim of improving customer service relationships, aiding customer retention, and driving sales growth (Buttle & Maklan, 2019). The application of CRM has significantly altered the client's interaction with their businesses over the last twenty years, effectively replacing traditional transactional methods with relationship-oriented methods.

One of the major ways in which CRM influences customer retention is by giving the business a holistic and data-driven understanding of their customers. Through CRM software and platforms, companies can collect and organize a diverse range of customer information, including demographic data, communication preferences, purchase history, browsing behaviors, and post-sale surveys or feedback

(Ibrahim et al., 2020). A firm with access to this consolidated database can analyze and study customer data to discern patterns, forecast what customers need, and engage in predictive analyses, all elements that are crucial in creating effective retention strategies.

Once armed with deep insights into their customers, firms can then begin segmenting their customer base into specific clusters. Segmentation affirms that marketing efforts are targeted and customized based on specific needs and expectations of each customer group (Nguyen & Mutum, 2012). A loyal and high-value customer might be targeted with exclusive loyalty rewards, as opposed to first purchasers, who might be taken through onboarding campaigns or given welcome offers. Such a marketing strategy on their part will increase the relevancy of the communication it sends while elevating the perceived value of the customer through which they come into ingrained brand association.

Personalization is at the heart of any CRM initiative. Based on Kaul's research (2017), CRM can forge emotional connections between brands and customers if companies utilize it to send out individualized emails, suggest items relevant to customers, and initiate promotions targeted at them. Customers who think a brand understands and values their preferences will more likely develop an emotional attachment to that brand.

Such emotional connection leads towards long-term consumer loyalty, where customers pledge a positive word of mouth for their brand and have lowered tendencies in disloyalty toward competitors.

It also raises the concept that CRM systems play a crucial role in enhancing customer experience profoundly, which greatly influences the retention of clients. Through CRM, customers' interactions would be treated consistently across time and on touchpoints, whether via online chat, phone support, or even in-store experiences (Chen & Popovich, 2003). For example, when a customer seeks support and past interactions are accessible, the service agent can offer a speedy resolution with more customization. Satisfied customers that have been through a consistent and apt-solving problem will begin to trust the supplier, while trust leads to retention.

Modern CRM systems also enhance decision-making by giving insights into customer behavior, preferences, and life-time value. Companies use it to evaluate which retention initiatives work, which customer segments risk churning, and how to allocate resources effectively. For instance, predictive analytics identifies customers who have not engaged with the brand for some time and could be targets for re-engagement campaigns. Kumar and Reinartz (2016) emphasized the importance of such analytics in creating customer-centric approaches that improve retention and profits.

The system also makes placeholders for better feedback management-Customer Relationship Management assures collecting the insight from dissatisfaction, reviews, and surveys in real time. Immediate attention to dissatisfaction will not only dilute the negative impact of the complaints but also signals that continuous improvement is a priority for that company. It has been proven by the research that customers are more loyal if they acknowledge that feedback has been actively encouraged within the brand and has been given serious consideration by the brand (Rahimi & Kozak, 2017).

Additionally, CRM systems facilitate better customer feedback management, enabling businesses to gather insights from complaints, reviews, and surveys in real time. Addressing grievances promptly not only helps in recovering dissatisfied customers but also signals a company's commitment to continuous improvement. Research has shown that customers are more likely to remain loyal to brands that actively seek and act upon their feedback (Rahimi & Kozak, 2017).

It is also good to know that in customer retention, the discussion goes far beyond functional performance levels whereas it involves relational and emotional engagement as well. Verhoef (2003) argues that, effective CRM practices integrate both transactional data and emotional touchpoints to keep customers in meaningful relationships. Thus, businesses that go beyond the provision of satisfactory products, and aim to build trust, reliability, and empathy as part of their CRM efforts, will find themselves on the better side of building a loyal customer base.

Additionally, CRM promotes the creation of brand communities and supports two-way communication, especially in e-commerce. Social CRM, which combines social media interaction with conventional CRM systems, gives companies the option of monitoring brand mention, responding and engaging customers in real-time to foster community (Trainor et al., 2014). Customers who interact and feel listened to will stay engaged and loyal, turning into brand promoters.

In a nutshell, CRM systems have become an asset for companies that work toward customer retention and building long-lasting relationships in an increasingly crowded market. By correctly applying CRM

technologies, businesses can maximize the retention rate by understanding customer-behavior patterns, personalizing customer experience, and providing consistent service while ensuring that customers are emotionally engaged. In the ever-expanding digital market and with ever-increasing customer expectations, the involvement of CRM in strategic customer handling will certainly gain more relevance.

Research Objectives

- Analysing the impact of age on re-purchase at store.
- To determine the impact of gender on re-purchase at store.
- To evaluate the influence of occupation on re-purchase at store.
- To analyse the impact of CRM factors on customer retention.

Hypothesis:

H_1 – There is significant impact of age on re-purchase at store.

H_2 – There is significant impact of gender on re-purchase at store.

H_3 – There is significant impact of occupation on re-purchase at store.

H_4– There is significant impact of CRM factors on customer retention.

LITERATURE REVIEW

There was a tremendous transformation in how businesses dealt with existing and potential customers following the advent of CRM systems. The e-commerce world keeps changing-and-keeping; loyal customers, while attracting new customers, remains paramount to sustainable growth and competitiveness. Many have attempted to agree on the role CRM plays in providing support toward these ends such as by increasing customer engagement, fostering strategic decision-making, and improving organizational capabilities.

Angamuthu (2015) contended that CRM is pertinent not just for maintaining existing relationships with clients but also in attracting new clientele. Automation systems incorporated within CRM platforms have brought about an evolutionary change in selling and marketing. These marketing automation tools help with the generation of leads, the creation of targeted campaigns, and help nurture prospects through targeted content delivery until conversion occurs into loyal customers. CRM automation tools also help sales teams by automating other repetitive tasks, such as monitoring, setting up meetings, and preparing reports, thus improving sales productivity. This now provides more time for the sales team to build relationships and manage complex customer interactions, which are highly valued in an increasingly personalized e-commerce environment.

Centering against this backdrop, CRM functions as an overlord platform that collects, stores, and manages customer information coming from multiple sources and channels. This data-centric personality of CRM gives businesses actionable insights for strategic decision-making, according to Muchardie et al (2019). With CRM analytics, an organization can measure buying patterns of customers, target markets in an efficient manner, select lucrative groups of customers; and measuring the success of marketing strategies which then give more insight into improvements of retention strategies over time. For example, companies can monitor customer lifetime value, churn probabilities, and engagement metrics to manage risky customers at the initial stage and increase loyalty.

Keramati and Nili (2011) postulate that the financial rationale for CRM lies in its emphasis on the relatively lower costs of retaining existing customers compared to acquiring new ones. Thus, making strong relationships with existing customers to maximize return on investment through CRM is their premise. Keeping a stable pool of loyal customers, though, reduces marketing expenditure and builds brand credibility for the company. Glad customers will likely repurchase, whereas willing to endorse by word-of-mouth-a sort of low-cost propagation channel that can provide very high conversion rates. The underlying strategy of CRM is therefore to move the relationship with the customer out of a functional effort into that of a long-term relational partnership.

The technical features and theoretical approach of CRM systems in the e-com context have been further investigated by Soltani et al. (2018). The study centers on the three dimensions of CRM, focusing on process fit, client data quality, and system support with how these factors interrelate in determining client satisfaction, customer trust, and ultimately, retention. They analyzed e-commerce businesses operating in Pune, India, and discovered that efficient system integration and correct client databases would impact service delivery positively while increasing trust level and, in turn, affecting customer loyalty and business performance. These results serve to strengthen the emphasis placed upon system ease of use, provision of

real-time access to quality data, and methodical system support in enhancing realizations of customer relationships.

Meena and Sahu (2021) identified four specific CRM dimensions relating to postal mailing, human relations, special considerations, and tangible rewards that significantly affect customer retention. The research demonstrated how each of these independent variables contributes to customer satisfaction and loyalty. For example, postal mailings remain classic but effective channels for personalized communication, especially in culturally complicated markets like India. Human relations bring an interpersonal dimension to CRM, which demands that those involved express empathy, hence listen and respond in a manner the customer expects. Special consideration includes value-added services such as a birthday greeting, early sale announcements, or VIP customer service to further build on feelings of belonging and appreciation in a customer. Tangible rewards- loyalty points, or discounts act as extrinsic incentives to somewhat reinforce the behavior of customers. Thus, these dimensions combine to provide a framework for CRM, touching on the emotional and functional ends of engagement.

The electronic experience is a critical CRM success dimension in e-commerce, especially in regional markets like Rajasthan. Mathur and Sharma (2014) examined the performance of CRM in Rajasthan e-commerce enterprises, giving particular attention to e-service quality, usability, customer satisfaction, and ease of use. Findings from the study suggest the quality of e-service and simple navigation appeared to have been the most powerful drivers of CRM system effectiveness. Customers preferred platforms that were easy to use, intuitive, and capable of fulfilling their needs without unnecessary complications. When customers are served seamlessly, satisfaction rises, leading to trust-building and therefore, repeat visits. Therefore, ease of use and service design must be at the forefront of digital CRM initiatives, especially where internet penetration and digital literacy may vary considerably.

Going further from usability, researchers have begun probing how CRM enables personalization through omnichannel integration. Kumar and Reinartz (2016) explained how, when CRM is integrated across all customer touchpoints—be it web, mobile, social media, or physical stores—it forms a consolidated view of the customer journey, improving the real-time delivery of personalized content and services that enhance engagement and retention. For instance, based on customers' browsing and purchase history, CRM applications trigger personalized email communication, product recommendations, and discount offers that make customer interactions more salient.

In addition, CRM builds trust and transparency-the cement that holds together long-lasting relationships in digital spaces. According to Rahimi and Kozak (2017), transparency of communication, immediate responses to complaints, and the ability to manage customers' expectations through CRM tools all contribute greatly to customer satisfaction. When organizations communicate regularly and consistently follow through on their commitments, their level of credibility builds up—the power of an intangible concept.

Another important area of CRM research is that of social CRM which brings social media platforms into traditional CRM frameworks. As emphasized by Trainor et al. (2014), social CRM gives businesses the ability to observe customer feedback on social platforms, engage in real-time dialogue, and collect sentiment scores to assess public perception. At a time when the consumer's voice is amplified through social media, the brand image can be greatly enhanced, and loyalty truly grow by responding quickly and thoughtfully to consumer commentary. Social CRM aids in building a community of which loyal customers share experiences and co-create value, further cementing engagement.

In summation, the existing literature emphasizes CRM systems as multi-dimensional tools that assist retention of customers at different levels through automation, personalization, engagement, and analytics. While earlier studies emphasize CRM's transactional benefits, more recent patterns are keenly examining relational quality, emotional bonding, and customer empowerment. Since automating sales processes (Angamuthu, 2015) to implementing data analytics for strategic business decision-making (Muchardie et al., 2019), from the financial perspective of retention (Keramati & Nili, 2011) to regional-specific drivers of performance (Mathur & Sharma, 2014; Soltani et al., 2018), CRM has ultimately become the strategic imperative in e-commerce.

RESEARCH METHODOLOGY
Research Design
This research followed the design of quantitative research. It sought to analyze the relationship between CRM factors and customer retention in a structured and empirical way. The data consisted of numbers,

collected through a so-called structured online questionnaire to establish patterns, relationships, and differences between variables by statistical means. This research is heartily called cross-sectional since it looks at data mostly gathered at a particular point in time. Thus, it gives a snapshot of customer engagement and re-purchase behaviors in e-commerce settings, focusing on a few CRM practices within the Jaipur area of Rajasthan. Cross-sectional incomes situationally provide the best choice to test hypotheses and calculate correlations, thereby fitting in with the goals of this work.

Sampling

The sample frame included online consumers residing in Jaipur, Rajasthan, who could give testimony of purchasing from e-commerce platforms. Responses were obtained from a total of 100 subjects using non-probability convenience sampling. Using convenience sampling for this study was logical- by virtue of ease and efficiency; the population is digitally active and probably scattered all across the country. The population is assorted-age-wise, with the sample including young adults and middle-aged consumers who can reflect demographic diversity in online consumer behavior profiles.

To validate the questionnaire, two domain experts reviewed and pre-tested it: one was an academic with experience in marketing analytics, and the other was a practicing manager from the e-commerce field. Their comments helped to improve and refine the questionnaire for clarity, relevance, and construct validity of measurement items.

Data Collection Technique

The data were being gathered through an online structured survey created via Google Forms. The instrument of the survey had multiple items about CRM dimensions such as discount offers, customer feedback, and follow-up communication, including special occasion greetings, notifications of product launches, and customer support. Other sections of the questionnaire dealt with behavioral outcomes like the intent to repurchase and included some demographic queries like age.

Being circulated through various digital portals, including social media (WhatsApp, Facebook, Instagram) and email invitations, the survey sought to capture a varied cross-section of online shoppers from Jaipur. Respondents were apprised of the study's scientific aim and were assured of anonymity so that they could be as honest in their responses as possible. Time-wise, using an online self-administered questionnaire was very convenient, as it allowed respondents to fill in the survey at their convenience.

All items in the questionnaire were designed to be measured on a ten-point Likert scale, wherein respondents gave a rating of agreement or experience between 1 (lowest) to 10 (highest) with the statements made on CRM activities. Such a scale was capable of measuring perceptions and behaviors more finely, thereby affording much more granularity to the data submitted to statistical analysis.

Data Analysis Technique

Data obtained from organized sets of variables were subjected to both descriptive and inferential statistical analyses. The descriptive treatment included the calculation of means, standard deviations, skewness, standard error of skewness, minimums, and maximums for the variables. Such statistics give convening preliminary information regarding the shape of the distribution and variation of responses with respect to CRM dimensions and customer behavior indicators.

Conversely, inferential testing involved correlation, regression, and chi-square testing.

• Correlation analysis was employed to determine the strength and direction of the relationship between independent variables (CRM dimensions) and a dependent variable (re-purchase behavior).

• Additionally, the correlations among independent variables were checked for the existence of multicollinearity that could invalidate the regression results.

• The regression analysis was performed at 5% significance level ($p < 0.05$) to reveal the extent of impact on customer retention outcomes by CRM variables.

• Chi-square analysis was conducted to reveal associations between categorical variables such as gender and customer behavior.

SPSS software was used for all statistical analyses, which provided excellent computational and graphical visualization support for the data relations.

Data Overview

The outcomes of descriptive analysis, basically, were summarized based on eight core variables: Customer Age, Discount Offers, Feedback Respond, Follow-Up, Greetings on Special Occasions, Notification on New Product Launches, Customer Support, and Re-purchase at Store.

• The average **age** of responders was 35.09 years (SD = 8.18), with a range of 19 to 49. The **age** variable has a modest negative skewness (-0.184), indicating a tiny bias toward younger responders.

- The mean score for **Discount Offers** was 5.37 (SD = 2.38), indicating that price incentives are somewhat important. Skewness (0.17) indicates a somewhat normal distribution.
- **Feedback** Respond had a lower mean of 3.86 (SD = 1.89), suggesting that businesses may not be responsive enough to consumer feedback.
- **Follow-up communications** had a mean score of 4.57 (SD = 2.14), indicating that post-interaction follow-up is moderately conducted.
- The lowest mean score for **Greetings on Special Occasions** was 2.82 (SD = 1.74), indicating that emotional personalization is neglected in CRM initiatives in the region.
- **Notification of New Product Launches** received a mean score of 4.59 (SD = 2.17), suggesting modest levels of proactive consumer communication.
- The average **Customer Support score** was 3.00 (SD = 1.88), indicating a possible deficit in support services in e-commerce platforms.
- The dependent variable, **re-purchase at Store**, had a high mean of 6.57 (SD = 1.77), indicating that most respondents are willing to continue purchasing from the same platform if CRM interactions are regarded positively.

The data distribution is sufficiently symmetric and suitable for parametric analysis, with skewness values ranging from -0.001 to 0.769 (within acceptable bounds of ±1).

DATA ANALYSIS AND DISCUSSION
Descriptive Analysis
Statistics

	Age	Discount offers	Feedback respond	Follow-up	Greetings on special occasions	Notification on new product launch	Customer support	Re-purchase at store
Mean	35.09	5.37	3.86	4.57	2.82	4.59	3.00	6.57
Std. Deviation	8.180	2.377	1.886	2.143	1.737	2.170	1.875	1.771
Skewness	-.184	.170	.769	.439	.578	.447	.732	-.001
Std. Error of Skewness	.241	.241	.241	.241	.241	.241	.241	.241
Minimum	19	1	1	1	1	1	1	3
Maximum	49	10	8	9	8	9	7	10

The descriptive analysis shows that the mean age of 100 participants is 35.09. The standard deviation of 8.180 signifies that there is less variance within the dataset. The value of Skewness is -0.184, which lies between -0.5 and 0.5. Hence, it can be commented that data of age is normally distributed. The youngest participant has recorded an age of 19 years while the eldest participant has recorded the age of 49 years.

The analysis of discount offers shown that majority of participants have given rating above 5 at 5.37. This shows that most of the respondents are satisfied with discount offers provided by the e-commerce companies. The value of standard deviation is lower than mean value at 2.38. This shows that there is less variance within the discount offers data set. Again, value of skewness lies between 0.5 and -0.5 at 0.170. This evident natural distribution of the dataset. The highest satisfaction level has been recorded at 10 while lowest satisfaction has been recorded at 1.

The descriptive analysis of feedback responds shown that mean value is low at 3.86. This shows that majority of respondents are not satisfied with feedback respond by e-commerce companies. The value of skewness is higher than 0.5 at 0.769. Hence, it can be commented that the dataset is not normally distributed.

The data on follow-up shows the mean value of 4.57. Hence, it can be commented that majority of the participants are not satisfied with follow-up strategy adopted by e-commerce companies. The value of standard deviation is lower than mean at 2.143. The value of Skewness is between 0.5 and -0.5. Thus, data is normally distributed.

The "greetings on special occasions" response shows the mean value of 2.82. The mean value is excessively lower than average value of 5. Hence, it can be commented that e-commerce companies lack the feature

of greetings to customers on special occasions in their customer relationship management (CRM). The value of standard deviation is lower than mean value at 1.737. This indicates that there is less variance within the collected dataset. The value of skewness is above the standard range. Thus, data is not normally distributed.

Other factors such as "notification on new product launch" and "customer support" have also recorded low response from the customer side. This indicates that CRM of e-commerce also lacks these features. Among both features, only "notification on new product launch" data is normally distributed.

The analysis of re-purchases at store (customer retention) shows that majority of participants have re-purchased from the same store (both online and offline platform). The value of standard deviation at 1.771 signifies that there is less variation within the dataset. The value of skewness is neat to zero at -0.001. This shows that data is perfectly symmetrical.

Gender

		Count
Gender	F	44
	M	56

The above table shows that majority of participants are male, which covers around 56% of total participants. On the other hand, there is only 44% participants are females.

Occupation

		Count
Occupation	Free lancer	18
	Govt Emp	28
	Professional	1
	Pvt Emp	29
	Teacher	24

The above table shown that majority of participants are private employees and government employees. On the other hand, there is only 1 professional participant. Total 24 participants have teaching as occupation.

Analytical Analysis

Correlation Analysis

Correlations

	Age	Discount offers	Feedback respond	Follow-up	Greetings on special occasions	Notification product launch	Customer support	Re-purchase at store
Age	1	.252	.183	.250	.126	.239	.157	-.029
Discount offers	.252	1	.836	.940	.373	.909	.737	.002
Feedback respond	.183	.836	1	.885	.532	.892	.894	.030
Follow-up	.250	.940	.885	1	.410	.978	.774	.004
Greetings on special occasions	.126	.373	.532	.410	1	.396	.589	-.088
Notification on new product launch	.239	.909	.892	.978	.396	1	.767	.040
Customer support	.157	.737	.894	.774	.589	.767	1	.064

| Re-purchase at store | -.029 | .002 | .030 | .004 | -.088 | .040 | .064 | 1 |

The correlation matrix enlightens the linear relationships between the selected variables of the study, especially those relating to various Customer Relationship Management (CRM) practices and re-purchase behavior. Correlation coefficients have values between -1 and +1, with those closest to ±1 expressing stronger relationships and those hovering near 0 suggesting weak or no linear relationship.

A key emphasis in this analysis is to ascertain the relationships between the CRM factors, i.e., discount offers, response to feedback, follow-up, greeting on special occasions, notifications on product launch, and customer support, and the dependent variable: re-purchase at store. Paradoxically, the behavior of re-purchase is weakly correlated with all variables pertaining to CRM. The customer support variable has the highest correlation with re-purchase, $r = 0.064$, followed by notification on product launch = 0.04, response to feedback = 0.03, follow-up = 0.004, discount offers = 0.002, and greeting on special occasions = -0.088. Age reveals a slight negative correlation with re-purchase, $r = -0.029$. The coefficients are so minimal that one could say no CRM dimension exhibits a meaningful linear relation with customer re-purchase in this sample. This suggests that, while CRM elements must enhance loyalty in general, they may not translate into actual repeat purchase behavior unless other variables come into play, such as emotional satisfaction or perceived value.

Correlation coefficients among the independent variables themselves are exceptionally high, especially between follow-up and notification on new product launches ($r = 0.978$), follow-up and discount offer ($r = 0.94$), and response to feedback and notification ($r = 0.892$). The strength of these relationships indicates a demographically high multicollinearity among the CRM variables, suggesting that when one CRM activity is conducted, other activities tend to be implemented together. For example, companies that heavily engage in follow-ups with their clients also tend to notify them about new product launches and provide feedback responses. The origins of these strong interrelationships might be embedded in the integrated CRM strategy, in which customer interactions are not managed in vacuum but in concert with other communications and service initiatives.

At 0.978 between follow-up and notification on new product launch, it is the highest correlation in the matrix. This correlation suggests that those customers who receive follow-ups also tend to receive notifications on new products. Feedback response also has a strong positive correlation with follow-up ($r = 0.885$) and customer support ($r = 0.894$), which suggests that these CRM activities are perceived by customers as one social experience. These findings pose problems for multicollinearity, especially in regression analysis, because high correlations among predictor variables can distort estimations concerning individual effects.

Concerning the demographic variables, age has weak to moderate positive correlations with other variables, the highest being discount offers ($r = 0.252$) and follow-up ($r = 0.25$). This might suggest that the older consumers somewhat respond to formal CRM practices. However, age does not influence re-purchase behavior in any meaningful way, as indicated by its nearly nil negative correlation.

Altogether, the CRM variables are internally consistent and correlated positively with each other; however, in this dataset, there appears to be very little direct influence of the variables on re-purchase at the store. This postulates the potential significance of mediating variables, such as satisfaction, trust, or perceived value, through which CRM variables may have a bearing on actual outcomes of customer loyalty and retention. Further regression or path modeling may shed some light on these indirect relationships.

Regression analysis

Since independent variables have shown strong correlation between each other, each factor of CRM has been tested individually.

Independent variables	Significance
Discount offers	0.983
Feedback responds	0.766
Follow-up	0.968
Greetings on special occasions	0.385
Notification on new product launch	0.690

Customer support	0.528
Age	0.777

The above table reflects the result of regression test at 5% significance level. The result shows that all independent variables have failed to show significant impact on customer retention (re-purchase at store). Hence, it can be commented that CRM does not have any significant influence on customer retention. Several potential reasons may explain this lack of significance:

First, customer retention is a complex phenomenon capable of being instantiated by emotional, experiential, and contextual circumstances that constitute a single candidate setting apart from functional CRM practices. While the CRM elements tested in this study cover operational issues such as communication and response to inquiries or complaints, they may not have captured the deeper relational dimensions like trust, satisfaction, emotional bond, or perceived value, which are much stronger variables towards the prediction of customer loyalty. Thus, lack of these mediating variables would tend to render a direct impact of CRM practices on retention statistically insignificant.

Secondly, the limited sample size of 100 respondents could have adversely affected the statistical power of the analysis. Small sample size grows a wider margin of error and reduces a chance to detect any effects that are indeed statistically significant from real associations. This especially works under the assumption that such effects are being judged simultaneously under the scope of multiple predictors in regression.

Thirdly, when raising issues of ever-changing and highly price-sensitive attitudes of customers in the e-commerce domain, factors like product quality, competitive prices, ease of doing things, speed of delivery, or user experience may outweigh the influence of CRM communications when making repurchase decisions. If these would be the main datasets entering the model and were not included, then maybe the observed insignificance of CRM-related variables could be an outcome of omitted variable bias.

Fourth, another explanation could be commonality of responses. If a large percentage of respondents assigned nearly the same ranking to all the CRM practice-based questions, the numerical variations needed to boost the explaining power of the model might be missing. Such commonality could also stem from respondents considering basic CRM service a given among all competing platforms-they see it less as a differentiator influencing loyalty.

Finally, such limitations in measurement may have occurred. An over-reliance on self-reported measures may have one implication: Does it set the cap on how much one can operationalize the success of CRM initiatives to retention in the long run? The study could be improved upon in future studies by adopting longitudinal designs with wider samples, with more psychological and experiential variables being factored in.

Chi-square test

Gender

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.571[a]	7	.042
Likelihood Ratio	16.315	7	.022
N of Valid Cases	100		

a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .44.

In the above table, value of p is below 0.05 ($0.05 > p > 0.042$). Hence, it can be commented that gender has significant impact on customer retention.

Occupation

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.042[a]	28	.679
Likelihood Ratio	27.211	28	.507
N of Valid Cases	100		

a. 33 cells (82.5%) have expected count less than 5. The minimum expected count is .01.

In the above table, value of p is much higher than 0.05 ($0.05 < p < 0.679$). Hence, it can be commented that occupation has no significant impact on customer retention.

CONCLUSION

Customer retention is, nowadays, the core and a strategic priority for businesses in the highly competitive e-commerce industry. Working at the nucleus of retention strategies is the Customer Relationship Management (CRM) that intends to make the processes of customer engagement more explicit and engender longer-term relationships as well as more personalized value propositions. CRM systems permit businesses to keep a tab on customer interactions and service quality while timely responding to customer queries and complaints, thereby resulting in increased customer satisfaction and repeated business transactions. There is ample evidence suggesting that CRM activities like targeted communications, after-sales services, loyalty programs, and customer experiences have binding force in the relationship between brand loyalty and customer retention.

However, the findings of this study provide a more differentiated view: CRM systems were shown to be important in theory and strategy for retaining customers, but the statistical analysis conducted on data from 100 online shoppers in Jaipur, Rajasthan, did not provide strong evidence to support the contention that CRM practices-including discount offers, follow-ups, product notifications, feedback responses, or customer support-have a significant effect on re-purchase behavior. The results thus demonstrate that, in this context, the CRM activities may not directly influence retention outcomes, as has been assumed before. One reason may well be that local consumers in the e-commerce sector consider these CRM practices to be just the price of entry onto their list, or at least not worthy of giving too much thought to. Thus, re-purchase decisions may be driven more by pricing of products, delivery time, trust, or even convenience and usability of the website.

Interestingly, demographic factors, with gender being more pronounced, were found to have an extremely significant influence according to the chi-square analysis. This thus suggests that retention rates between customers and their attitudes toward CRM practices may differ across demographics. Such findings call for a more segmented approach to customer engagement, wherein businesses personalize their respective CRM Strategy with regard to needs, behavior, and expectations of particular customer segments.

Recommendations

Given the inconclusive impact of CRM factors on retention in this study, it is recommended that e-commerce businesses take a more holistic and customer-oriented approach toward relationship management. This could entail:

• Embedding emotional and experiential CRM considerations, from empathy-based customer care to scenarios encouraging community creation.

• Infusing the CRM tool with AI-based personalization to move away from rudimentary communications and towards hyper-targeted offers and content.

• Creating CRM campaigns segmented by gender, age, and frequency of purchase, among other criteria, for better relevancy and effectiveness.

• Setting up feedback loops to track the progress of CRM initiatives based on real-time feedback from users, enhancing and advancing them accordingly.

Managerial Implications

Bringing this to the attention of managers and practitioners in the CRM field, a key implication of these findings is not to rely on CRM systems alone for customer retention. This is because CRM is foremost designed to enhance operational efficiency and communication between a company and its employees, and hence, the focus should be to incorporate it within a bigger picture of value creation, emotional engagement, and trust-building activities. Managers, on their part, should continuously evaluate the CRM objectives against quantitative measurements; merely engagement-based metrics will not be sufficient. An evaluation strategy that ties CRM activities into sales, loyalty, and satisfaction is warranted. Also, considering gender significance found in this study, companies must organize their retention strategies with respect to customer demographics and accordingly customize approaches in messaging, offerings, and support.

Limitations of the Study

Despite its contributions, several limitations need to be addressed while interpreting the results of this study. The first limitation refers to the sample size, which comprised 100 respondents, all from Jaipur city; in fact, this might not have represented the e-commerce consumer base of India at large. The second

limitation stems from the use of cross-sectional data, which restricts the ability to consider how customer behavior changes over time. The variables considered tended to be mainly associated with functional CRM activities, perhaps neglecting some basic psychological and emotional factors that play a significant role in customer loyalty. The last limitation refers to the use of self-reported data, which might have produced response bias and, consequently, impacted the reliability of the study's results.

Directions for Future Research

Future research should aim to bring about other improvements in line with the limitations observed in this study. An increase in size and range of the sample would increase generalizability. The use of a longitudinal research design would prove helpful in tracking the changing retention impact of CRM interventions over time. Researchers should investigate mediators and moderator variables such as customer satisfaction, trust, emotional connection, and perceived value that may intervene between CRM activities and retention. There is also room for exploring how technological advancements such as AI, machine learning, and omnichannel platforms are supporting the metamorphosis of CRM into a digital-age entity.

CRM still stands as the core of strategies for developing relationships with customers, but its direct influence on customer retention could be limited unless it is interwoven with deeper customer understanding and segmentation. Managers must reorient CRM efforts around meeting the evolving expectations of digital consumers to ensure relationship building is not strictly a functional task but an emotional, personalized, and value-driven experience.

REFERENCES

1. Angamuthu, B. (2015). Impact of customer relationship management on customer satisfaction and its role towards customer loyalty and retention practices in the hotel sector. BVIMSR's Journal of Management Research, 7(1).
2. Buttle, F., & Maklan, S. (2019). Customer Relationship Management: Concepts and Technologies (4th ed.). Routledge.
3. Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process and technology. Business Process Management Journal, 9(5), 672–688.
4. Ibrahim, A., Firanisa, A., Sari, R. D., & Audya, M. (2020, May). The Effect of E-Commerce Application Service Quality of Customer Loyalty Using Customer Relationship Management Approach. In Sriwijaya International Conference on Information Technology and Its Applications (SICONIAN 2019) (pp. 680-687). Atlantis Press.
5. Kaul, D. (2017). Customer Relationship Management (CRM), Customer Satisfaction and Customer Lifetime Value (CLV) in Retail. Review of professional management, 15(2).
6. Keramati, A., & Nili, A. (2011). A proposal framework for investigating the impact of customer relationship management on customer retention in e-commerce. human resources, 6(9), 26.
7. Kumar, V., & Reinartz, W. (2016). Creating Enduring Customer Value. Journal of Marketing, 80(6), 36–68.
8. Mathur, M., & Sharma, V. (2014). Evaluating CRM performance in e-commerce enterprises: A case of Rajasthan. International Journal of E-Business Research, 10(2), 14–29.
9. Meena, P., & Sahu, R. (2021). Impact of CRM dimensions on customer retention: Evidence from Indian e-commerce. Journal of Business and Retail Management Research, 15(3), 35–48.
10. Muchardie, B. G., Gunawan, A., & Aditya, B. (2019, August). E-commerce market segmentation based on the antecedents of customer satisfaction and customer retention. In 2019 International Conference on Information Management and Technology (ICIMTech) (Vol. 1, pp. 103-108). IEEE.
11. Nguyen, B., & Mutum, D. (2012). A review of customer relationship management: Successes, advances, pitfalls and futures. Business Process Management Journal, 18(3), 400–419.
12. Rahimi, R., & Kozak, M. (2017). Impact of CRM on customer satisfaction and trust in the hospitality industry. International Journal of Contemporary Hospitality Management, 29(1), 1–23.
13. Soltani, Z., Noor, R., Gharleghi, B., & Zakaria, M. (2018). The impact of CRM dimensions on customer satisfaction and retention: A study on e-commerce firms in Pune. Asian Social Science, 14(2), 119–130.
14. Trainor, K. J., Andzulis, J. M., Rapp, A., & Agnihotri, R. (2014). Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM. Journal of Business Research, 67(6), 1201–1208.
15. Verhoef, P. C. (2003). Understanding the effect of customer relationship management efforts on customer retention and customer share development. Journal of Marketing, 67(4), 30–45.