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Demographic Determinants of CRM Dimensions: Evidence from Indian Hospitality and the 3D-CRM Model

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Abstract

This study investigates how demographic variables shape customer relationship management (CRM) perceptions in the Indian hospitality sector. A structured survey of 572 hotel patrons, gathered through convenience and snowball sampling, measured three empirically derived CRM dimensions—customer connectivity, promotional appeal and responsiveness. Exploratory factor analysis confirmed the robustness of these constructs, while ANOVA with post-hoc tests revealed that profession and income exert the strongest influence on all three dimensions, underscoring the heterogeneous nature of guest expectations. Building on these findings, the paper proposes the original 3D-CRM Model (Demographic Driven Dimensions of CRM), which positions demographic characteristics not as passive descriptors but as active determinants of how travelers evaluate service experiences. The model highlights the strategic imperative for hospitality firms to customize CRM initiatives to distinct socio-economic profiles, thereby deepening engagement and fostering long-term loyalty. In an increasingly segmented and experience led marketplace, demographic based personalization offers hotel managers a tangible route to competitive advantage.

Keywords: *Customer Relationship Management (CRM), Customer Connectivity, Demographic Influence, Hospitality Sector, Customer Engagement*

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Introduction

Customer Relationship Management (CRM) has emerged as a critical strategic framework in contemporary business environments, particularly for organizations operating in competitive and service-intensive sectors. At its core, CRM focuses on developing and sustaining long-term, profitable relationships with customers, thereby enhancing loyalty, improving customer retention, and generating sustained business value. Organizations with higher customer retention rates benefit from improved market segmentation, better access to quality customer data, and increased sales volumes, ultimately resulting in a stronger competitive position.

While substantial research has examined the role of CRM in sectors such as banking, telecommunications, and healthcare, its application and effectiveness within the hospitality industry—particularly in the Indian context—remain underexplored. Existing literature acknowledges the potential of CRM to enhance customer loyalty in hospitality settings, yet empirical studies focused on this sector are relatively limited (Dimitriadis & Stevens, 2008). Moreover, the evolving expectations of hotel guests and the increasing emphasis on personalized service experiences necessitate a closer examination of CRM practices tailored to hospitality consumers.A particularly under-researched dimension in this context is customer connectivity—the emotional and service-based bond that guests form with hospitality brands. While promotional strategies are widely used to attract customers, their long-term impact on loyalty is often limited without a corresponding emphasis on connectivity and engagement. This study addresses this gap by exploring how CRM-driven elements such as promotional appeal and customer connectivity influence loyalty outcomes in the Indian hospitality sector.

The research aims to determine whether CRM can serve not merely as a technological solution but as a strategic tool for building lasting customer relationships in a dynamic, experience-driven industry. By examining the demographic drivers of CRM effectiveness, the study contributes to a more nuanced understanding of consumer behaviour and offers actionable

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insights for hospitality managers seeking to enhance guest loyalty through personalized relationship management.

Literature Review

Theoretical Foundation of CRM in Hospitality

Customer Relationship Management (CRM) is a strategic framework for managing customer interactions and gaining a competitive advantage. Evolving from a purely technological tool, it is now seen as a holistic approach integrating people, processes, and data. Its theoretical basis stems from relationship marketing, which focuses on building long-term, mutually beneficial engagements rather than one-off transactions (Dutu & Halmajan, 2011).

Key to effective CRM is the completeness and accuracy of customer data (Brohman et al., 2003), and its integration into core hotel operations to improve strategic outcomes (Sigala, 2005). The successful implementation of CRM technology is dependent on organizational commitment, staff training, and a customer-centric culture.

CRM literature also leverages established frameworks like the Balanced Scorecard (Kaplan & Norton, 1996) and the Technology Acceptance Model (Davis, 1989). These models provide a multidimensional view, helping to evaluate CRM's impact beyond just financial metrics by considering factors like customer satisfaction, process alignment, and organizational readiness.

Empirical Review: Thematic Perspectives

1. CRM and Customer Satisfaction & Retention:

Studies consistently show that CRM initiatives improve customer satisfaction by enabling personalized service and consistent interactions (Dimitriadis & Stevens, 2008). In the hospitality sector, loyalty programs, staff responsiveness, and efficient service processes are critical drivers of guest satisfaction (Gupta & Vohra, 2019). Beyond satisfaction, CRM is also a core driver of customer retention. Scholars emphasize that service quality and emotional engagement foster long-term loyalty (Kandampully & Suhartanto, 2003). The shift from transactional to relational

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engagement, enabled by CRM, significantly contributes to customer lifetime value and retention, particularly in experience-driven sectors like hospitality (Wu & Li, 2011).

2. Technology Integration and Knowledge Sharing:

The effectiveness of CRM is heavily tied to technology and organizational learning. Integrated customer knowledge systems improve operational consistency (Lo et al., 2010), while cross-functional knowledge sharing ensures consistent service quality across all customer touchpoints (Fan & Ku, 2010). However, a key caution is to avoid over-reliance on automation, which can diminish the crucial human element in hospitality. Dowling (2002) advises a balanced approach where technology supports, but does not replace, personalized service.

3. Organizational Readiness and Strategic Alignment:

The success of CRM implementation hinges on internal preparedness, leadership support, cultural alignment, and system compatibility (Hung et al., 2010). This "CRM readiness" is a precondition for success (Dutu & Halmajan, 2011). In hospitality, where multiple departments are involved in service delivery, top management support and strategic integration across all functions—from the front desk to housekeeping—are vital for a seamless guest experience (Eid, 2007).

4. CRM as a Strategic Tool for Innovation:

CRM is increasingly recognized as a strategic tool for innovation and competitive advantage, not just an operational one. Customer-centric strategies help hotels adapt to dynamic market conditions (Dev & Olsen, 2000). With the integration of AI and machine learning, CRM systems can enable hyper-personalization and predictive analytics, allowing hotels to anticipate guest needs proactively. Ultimately, an organization's capacity to convert customer data into actionable insights determines its ability to innovate and stay competitive (Verdugo et al., 2009).

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Summary and Research Gap

The literature consistently presents Customer Relationship Management (CRM) as a multifaceted strategy that, when implemented effectively, boosts customer satisfaction, fosters loyalty, and improves overall organizational performance in the hospitality industry.

Despite a wealth of empirical research, there are two key gaps in the current literature:

A significant need exists for context-specific studies that examine how demographic factors (age, gender, education, and income) influence CRM effectiveness, particularly within the diverse hospitality landscape of India. Few studies have explored the interplay between internal organizational readiness (such as leadership support and cultural alignment) and external customer expectations to determine CRM outcomes, especially in emerging economies.

Table 1

Author(s) & Year	Context / Sector	Focus Area / Variables Studied	Key Findings	Specific Research Gap Identified
Dimitriadis & Stevens (2008)	Service industries (general)	Internal-external service quality alignment	Internal service quality influences customer satisfaction	Did not examine demographic variability or CRM impact in hospitality settings
Sigala (2005)	European hotel sector	Technology-driven CRM integration	CRM systems enhance operational efficiency	Lacks behavioural linkage between CRM components and loyalty across segments
Fan & Ku (2010)	CRM across sectors	Customer focus, process fit, knowledge sharing	Knowledge sharing improves CRM outcomes	No empirical analysis in hospitality sector, especially with customer engagement as outcome
Gupta & Vohra (2019)	Indian hotels	Loyalty programs, staff responsiveness	Found loyalty programs influence repeat visits	Did not explore moderating role of income or profession in CRM effectiveness
Verdugo et al. (2009)	Hotel industry	Employee-customer interaction	Internal culture affects guest experience	Overlooks CRM as a structured multi-dimensional construct (e.g., connectivity, appeal)
Srivastava (2021)	Urban hospitality, India	CRM effectiveness, customer loyalty	Identified general CRM impact on retention	No construct-level analysis of CRM dimensions like responsiveness or connectivity
Present	Indian	CRM dimensions	Profession and income	Fills the gap by empirically linking

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Author(s) & Year	Context / Sector	Focus Area / Variables Studied	Key Findings	Specific Research Gap Identified
Study	hospitality sector	(connectivity, appeal, responsiveness), demographics	significantly influence CRM constructs; connectivity mediates loyalty	demographic variables to specific CRM dimensions in hospitality; introduces customer connectivity as a distinct construct

Research Methodology

Research Design

This study adopts a descriptive, cross-sectional research design to examine the effectiveness of Customer Relationship Management (CRM) practices within the Indian hospitality industry. The approach is quantitative and deductive in nature, aiming to test predefined hypotheses using statistical analysis of primary data collected from hotel customers.

Research Philosophy

Given the study's emphasis on measurable outcomes and hypothesis testing, it aligns with a positivist research paradigm. This paradigm supports the use of structured instruments, statistical analysis, and objectivity in understanding observable phenomena, making it suitable for evaluating CRM dimensions and their relationship with customer experience outcomes.

Table 2

PARAMETERS	BRIEF NOTE
Type of Research	Descriptive Cross-Sectional Design
Data Collection Method	Primary & Secondary (Mixed Method)
Data Collection Time	December 2024 to February 2025
Research Instrument	Survey Questionnaire
Survey Administration	Google Form
Sampling Type	Convenience & Snowball Sampling
Sampling Size	572
Statistical Analysis	Reliability test, Factor Analysis, KMO Bartlet
Hypothesis Testing	ANOVA, Tukey's Test, Welch test, Brown & Forsythe test
Software Tools	IBM SPSS Version 23.0

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Data Collection

The research is based on both primary and secondary data sources. Primary data were collected using a structured survey administered online via Google Forms. Secondary data, including academic literature and industry reports, were used to support conceptual development and instrument design. The data collection took place over a three-month period, from December 2024 to February 2025**.**

Sampling Technique and Respondent Profile

A non-probability sampling method was employed, combining convenience sampling and snowball sampling techniques. These approaches were chosen due to the accessibility constraints associated with identifying a diverse pool of hotel customers across different regions of India. A total of 572 valid responses were collected and used for analysis.

Research Instrument

The primary data collection tool was a structured questionnaire, developed based on constructs identified in prior CRM and hospitality studies. The questionnaire comprised 17 items designed to capture respondents' perceptions of CRM dimensions such as service quality, personalization, loyalty programs, staff responsiveness, and technological integration.

All items were measured using a five-point Likert scale ranging from 1 = *Strongly Disagree* to 5= *Strongly Agree*. The instrument was pre-tested for clarity and reliability before full-scale deployment. Internal consistency was assessed using Cronbach's alpha, which exceeded the acceptable threshold ($\alpha > 0.7$), indicating strong reliability.

A detailed list of survey items is included in the Appendix B

Data Analysis and Statistical Tools

The collected data were analysed using **IBM SPSS Version 23.0**. The analytical process involved the following steps:

- **Reliability Analysis**: To assess internal consistency of the measurement scale.

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- **Descriptive Statistics**: To summarise respondent demographics and item-level responses.
- **Exploratory Factor Analysis (EFA)**: Including KMO and Bartlett's tests to assess sampling adequacy and factor structure.
- **Hypothesis Testing**: Conducted using **ANOVA**, **Tukey'sTest**, **Welch Test**, and **Brown & Forsythe Test** to examine group-level differences and multivariate relationships.

These statistical methods were selected based on the data characteristics and the need to test for differences across demographic segments and CRM-related dimensions.

Research Objectives

To explore how key demographic variables influence customer perceptions of CRM practices in the Indian hospitality sector, and to identify the underlying dimensions of customer relationship management.

DATA ANALYSIS

Reliability Test

Table 3

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.792	.790	13

As per above table 3, the Cronbach's Alpha value for the 13-item CRM scale is **0.792**, indicating a good level of internal consistency among the items used in the questionnaire. This suggests that the items reliably measure a coherent underlying construct — in this case, various aspects of Customer Relationship Management (CRM) in the hospitality sector.

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Key Takeaways

- **Threshold**: A Cronbach's Alpha value above **0.70** is generally considered acceptable; **0.792** indicates good reliability.
- The standardized alpha (0.790) is very close to the unstandardized one, suggesting uniform item behaviour.
- With 13 items, the scale is sufficiently comprehensive without compromising reliability.

Implication for Research

The reliability statistic affirms that the survey instrument used for assessing CRM dimensions such as customer connectivity, promotional appeal, responsiveness, and engagement is statistically sound and appropriate for further analysis like factor analysis, correlation, or regression.

ANOVA with Tukey's Test for Nonadditivity

Implications for the Research

Table 4

ANOVA with Tukey's Test for Nonadditivity							
			Sum of Squares	df	Mean Square	F	Sig
Between People			2409.805	571	4.220		
Within People	Between Items		611.915	12	50.993	58.003	.000
	Residual	Nonadditivity	43.248[a]	1	43.248	49.541	.000
		Balance	5980.684	6851	.873		
		Total	6023.931	6852	.879		
	Total		6635.846	6864	.967		
Total			9045.651	7435	1.217		
Grand Mean = 3.5709							
a. Tukey's estimate of power to which observations must be raised to achieve additivity = -.668.							

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To assess the suitability of the data for factor analysis, Tukey's Test for Nonadditivity was first conducted.as per table 4 the test was significant **(**$F = 49.541$, $p < 0.001$**),** indicating that item responses do not follow a strictly additive pattern. This supports the decision to use Exploratory Factor Analysis (EFA) to identify latent CRM dimensions.

KMO Bartlet Test

Table 5

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.749
Bartlett's Test of Sphericity	Approx. Chi-Square	2026.195
	df	91
	Sig.	.000

The results of the KMO and Bartlett's Test shown in table 5confirm the suitability of the dataset for factor analysis. The Kaiser-Meyer-Olkin (KMO) value of 0.749 indicates a moderate to good level of sampling adequacy, suggesting that the variables share enough common variance to justify the use of factor analysis. Additionally, Bartlett's Test of Sphericityis highly significant (Chi-Square = 2026.195, df = 91, $p < 0.001$), indicating that the correlation matrix is not an identity matrix and that sufficient correlations exist among the variables. Together, these results validate that the dataset is appropriate for uncovering meaningful and distinct underlying factors through factor analysis.

Factor Analysis

Table 6

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Influence of Reservation System in Hotel Selection	.734	.004	.205	.006

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Influence of Speed Of Guest Service in Hotel Selection	.830	.050	.031	-.023
Influence of Loyalty Programs (Loyalty Points) in hotel selection	-.079	.767	-.030	.216
Influence of other people opinion in hotel selection	.168	.647	.246	.022
Staff should be friendly towards guest	.246	.614	.234	-.188
Hotel should reply promptly	.381	.462	.309	-.079
Staff should be trustable	.575	.071	.375	.266
Staff should put their guest first	.678	.337	-.081	.179
24hrs communication facility required	.424	.046	.772	.070
Staff should understand english as well as hindi	-.110	.297	.752	.032
Customer giving instructions to staff should be followed	.521	.443	-.026	.004
Hotel should send seasons greeting to customers	.068	-.210	.223	.731
Any Discount and special offers can be a factor for reselecting hotel	.093	.370	-.146	.748
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 9 iterations.				

As per Table 6 factor analysis was conducted using Principal Component Analysis (PCA) with Varimax rotation to identify the underlying dimensions that shape customer perceptions of CRM in the hospitality sector. The objective was to reduce a set of interrelated items into a smaller, interpretable structure. Based on eigenvalues greater than one and supported by the scree plot (Figure 1), a three-factor solution was retained. These factors—Customer Connectivity**,** Promotional Appeal, and Responsiveness—collectively explain a substantial proportion of the variance and represent key CRM dimensions as perceived by hotel

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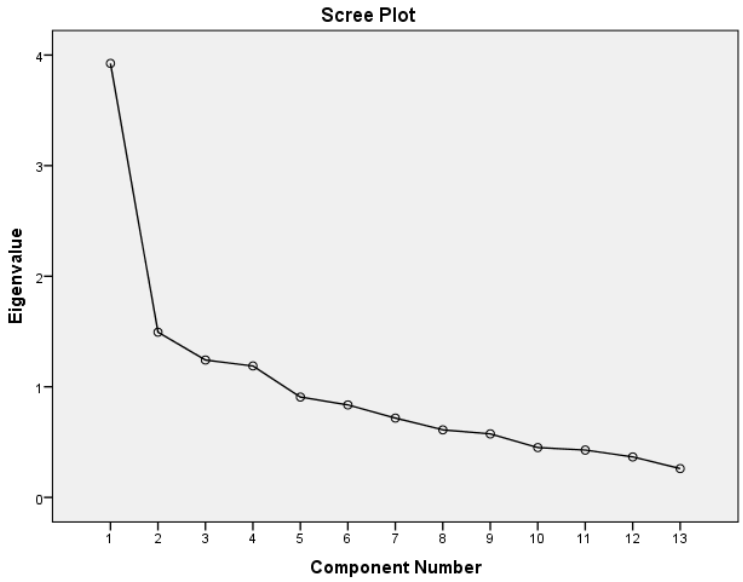
customers. The rotation converged in 9 iterations, and the resulting solution was both stable and theoretically meaningful. This factor structure provides the empirical foundation for the proposed 3D-CRM Model and informs subsequent hypothesis testing.

Although a fourth factor emerged with a marginal eigenvalue above 1, it was not retained in the final structure due to its relatively low explanatory power, limited interpretability, and weaker loading consistency. Since this component did not contribute meaningfully to the construct clarity or the conceptual development of the proposed model, it was excluded from further analysis. The rotation converged in 9 iterations, confirming the stability of the three-factor solution, which served as the empirical foundation for the development of the 3D-CRM Model introduced in this research.

Fig 1



The scree plot (Fig 1) displays a clear inflection point after the third component, supporting the retention of three factors based on the eigenvalue-greater-than-one rule and the elbow criterion. The steep decline between Components 1 and 3, followed by a gradual flattening

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of the curve, indicates that the first three components explain the most significant variance in the dataset. This three-factor solution aligns with the CRM dimensions identified through exploratory factor analysis—namely, Customer Connectivity**,** Promotional Appeal**, and** Responsiveness—and forms the empirical foundation for the proposed **3D-CRM Model**.

Table 7

Component	Top Variables	Suggested Name
Component 1	Speed of service, reservation system, guest-first attitude, trust	Responsiveness
Component 2	24/7 communication, bilingual staff	Customer Connectivity
Component 3	Greetings, discounts/offers	Promotional Appeal

Based on the rotated component matrix, three distinct and interpretable components were retained for further analysis, as presented in Table 7. Each factor was labelled according to the top-loading variables:Customer Connectivity (M=3.88) was followed by Responsiveness (M = 3.67), which reflects operational efficiency and service reliability. Promotional Appeal (M = 3.39) emerged as the third component, suggesting a moderate but relevant influence of offers, greetings, and loyalty-oriented incentives on hotel selection. These three dimensions collectively form the basis of the proposed **3D-CRM Model**, with the fourth component, originally linked to peer influence and loyalty schemes, excluded due to its lower explanatory strength and thematic overlap.

Table 8

Ranking of Identified Components post factor analysis Mean Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Customer	572	2.00	5.00	3.8846	.72531

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Connectivity					
Responsiveness	572	1.00	5.00	3.6696	.98904
Promotional Appeal	572	1.00	5.00	3.3951	.87853

Hypothesis Development

In order to assess how demographic characteristics shape customer perceptions of CRM-particularly the dimension of customer connectivity—a series of null hypotheses were formulated. The decision to focus on connectivity was guided by the results of the exploratory factor analysis, which identified it as a distinct and meaningful dimension of CRM perception. Given that earlier studies (e.g., Wu & Li, 2011; Sigala, 2005) have highlighted demographic influence on CRM engagement, it was important to empirically test these associations within the hospitality context.

Table 9

Hypothesis Code	Null Hypothesis (H_0)
$H_{0\ 1}$	There is no significant difference in customer connectivity across different age groups in the hospitality sector.
$H_{0\ 2}$	Gender has no significant effect on customer connectivity in the hospitality sector.
$H_{0\ 3}$	There is no significant relationship between educational qualification and customer connectivity.
$H_{0\ 4}$	Income level does not significantly influence customer connectivity in the hospitality sector.
$H_{0\ 5}$	Frequency of visit has no significant impact on the level of customer connectivity.

Accordingly, five null hypotheses were developed to examine whether factors such as age, gender, education, income, and frequency of hotel visits significantly impact customer connectivity. These are presented in table 9, with each hypothesis corresponding to a specific

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demographic variable. These hypotheses focus exclusively on the customer connectivity dimension, which emerged as the most influential component based on factor analysis (see Table 8), and was therefore selected for further demographic-based hypothesis testing.

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Testing of Hypothesis-Demographic Variable with Connectivity component

Table 10

Demographic variable & Customer Connectivity						
		Mean	Std. Deviation	ANOVA	Welch Test	Brown & Forsythe
Gender	0 to 10 times	1.2819	.45113	0.000	0.000	0.000
	10 to 20 times	1.6012	.49112			
	20 to 30 times	1.3373	.47568			
	30 or more times	1.2923	.45836			
	Total	1.3988	.49014			
Age	0 to 10 times	1.5372	.90376	0.000	0.000	0.000
	10 to 20 times	1.9167	1.12360			
	20 to 30 times	2.1446	.98936			
	30 or more times	1.8462	.97196			
	Total	1.8036	1.02606			
Marital Status	0 to 10 times	1.6383	.48178	0.000	0.000	0.000
	10 to 20 times	1.4464	.49861			
	20 to 30 times	1.3614	.48334			
	30 or more times	1.5538	.50096			
	Total	1.5179	.50018			
Qualification	0 to 10 times	1.7128	.90893	0.000	0.000	0.000
	10 to 20 times	2.0833	.82198			
	20 to 30 times	2.0843	.81457			
	30 or more times	1.6000	.63246			
	Total	1.8829	.85545			
Occupation	0 to 10 times	4.3883	1.33776	0.000	0.000	0.000
	10 to 20 times	4.1786	1.51370			
	20 to 30 times	3.6024	1.32462			
	30 or more times	4.3077	1.23647			
	Total	4.1786	1.40712			
Annual Income	0 to 10 times	1.2340	.48343	0.000	0.000	0.000
	10 to 20 times	1.5476	.74069			
	20 to 30 times	2.2169	.71650			
	30 or more times	2.4000	.84410			
	Total	1.6508	.79828			

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Table 10 presented the hypothesis under examination tests whether customer connectivity differs significantly across various demographic categories-specifically, gender, age, educational qualification, profession, and income. Based on the ANOVA, Welch, and Brown-Forsythe test results (all p-values < 0.05 for each demographic factor), the null hypothesis is rejected in all cases. This indicates a statistically significant relationship between demographic characteristics and customer connectivity, suggesting that how customers connect with hotels is meaningfully influenced by their age, gender, education, income level, and profession. Hotels must therefore design segmented engagement strategies based on demographic profiling to better align with customer expectations and behaviour.

Tabular Summary of Major Findings

Table 11

Demographic Variable	Significant Difference in Customer Connectivity?	Key Statistical Indicators	Interpretation
Age	Yes	ANOVA: F = 3.279, p = 0.012Welch: p = 0.004Brown & Forsythe: p = 0.006	Age groups differ significantly in how they perceive and value connectivity.
Gender	No	ANOVA: F = 0.182, p = 0.670	No meaningful difference between male and female guests in connectivity ratings.
Education	Yes	ANOVA: F = 5.393, p = 0.001Welch: p = 0.000Brown & Forsythe: p = 0.000	Educational background influences how customers perceive hotel connectivity.
Income	Yes	ANOVA: F = 4.839, p = 0.000Welch: p = 0.000Brown & Forsythe: p = 0.000	Income groups show significant differences in expectations of customer connectivity.
Occupation	Yes	ANOVA: F = 3.183, p = 0.002Welch: p = 0.001Brown & Forsythe: p =	Occupational category affects perception of connectivity services.

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Demographic Variable	Significant Difference in Customer Connectivity?	Key Statistical Indicators	Interpretation
		0.002	
Marital Status	Yes	ANOVA: F = 4.160, p = 0.042Welch: p = 0.030Brown & Forsythe: p = 0.034	Marital status plays a minor but statistically valid role in connectivity views.

Data presented in table 11 suggest that the mean scores reflect average customer connectivity levels across different demographic sub-groups, while standard deviations indicate variability in responses within each group. For instance, younger customers or those with frequent visits may show higher mean connectivity, while groups with higher standard deviation values (e.g., certain professions or income brackets) suggest more diverse customer experiences or expectations. This variability highlights the need for customized service deliveryandtargeted loyalty efforts, especially among groups showing higher dispersion.

Discussion

The findings of this study offer meaningful insights into how demographic variables influence customer perceptions of CRM dimensions in the Indian hospitality context. Specifically, the results reveal that profession and income significantly affect all three core CRM dimensions: customer connectivity**,** promotional appeal**,** and responsiveness. These outcomes support the view that CRM effectiveness is not uniform across customer groups but is shaped by socioeconomic characteristics. The observed significance of customer profession in shaping CRM perceptions aligns with prior research highlighting occupational differences in service expectations and responsiveness to loyalty initiatives. For instance, Wu and Li (2011) emphasized that customer lifetime value is driven by perceived relationship quality, which can differ by occupational role. Similarly, the role of income in influencing responsiveness and

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connectivity reflects findings by Gupta and Vohra (2019), who noted that loyalty programs tend to be more effective among customers with higher purchasing power and repeat potential.

The strong differentiation observed in customer connectivity across demographics further reinforces the emerging recognition of emotional and experiential bonds in hospitality CRM. As suggested by Sigala (2005), successful CRM implementation requires not just technological systems but also service personalization that resonates with diverse customer profiles. The present study adds to this by identifying connectivity as a distinct factor, supporting recent scholarship that advocates for deeper, relationship-driven engagement strategies. The dimension of promotional appeal, while widely used as a marketing tactic, showed varying impact across income and professional categories. This echoes the caution raised by Dowling (2002), who warned that over-reliance on generic promotions can undermine long-term relationship building, especially if not supported by tailored engagement.

Interestingly, age and education did not consistently influence CRM perceptions, diverging from findings in some prior service-sector studies (Dimitriadis & Stevens, 2008), suggesting that in the Indian hospitality sector, transactional variables like profession and income may play a more decisive role than demographic traits traditionally considered stable predictors. These findings collectively indicate that CRM strategies in hospitality must move beyond a one-size-fits-all approach. As Fan and Ku (2010) argued, cross-functional knowledge sharing is critical to aligning CRM processes with customer needs. The present study underscores the importance of using demographic insights to inform such alignment, thereby enhancing guest loyalty and satisfaction.

In summary, this study reinforces the multidimensional nature of CRM and its differential effectiveness across demographic groups. It highlights the strategic need for Indian hospitality businesses to integrate data-driven profiling into their CRM frameworks—not just to

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optimize outreach, but to strengthen emotional bonds and responsiveness, particularly among professionally and economically diverse customer segments

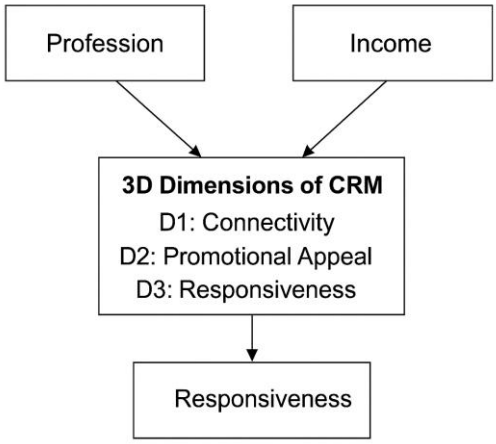
Proposed Conceptual Model

3D-CRM Model: Demographic-Driven Dimensions of Customer Relationship Management

To the best of the authors' knowledge, the 3D-CRM Model proposed in this study is original in both formulation and empirical grounding. No prior research has conceptualised a CRM perception framework that simultaneously captures the dimensions of customer connectivity, promotional appeal, and responsiveness—derived through factor analysis—and links them explicitly to demographic variables such as profession and income within the Indian hospitality sector. This model has been exclusively developed from the findings of this study and offers a novel, context-specific contribution to CRM theory, moving beyond technology-centric approaches toward a perception-driven and demographically informed understanding of customer relationship management.

Fig 1

The 3D–CRM Model



The 3D-CRM Model (Demographic-Driven Dimensions of Customer Relationship Management) is an original framework proposed in this study to conceptualise how customer perceptions of

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CRM practices are shaped by demographic profiles within the Indian hospitality context. Derived through exploratory factor analysis, the model identifies three key dimensions of CRM as experienced by customers: customer connectivity, promotional appeal, and responsiveness. These dimensions reflect how individuals engage with service quality, communication, staff interactions, and loyalty initiatives.Among these, customer connectivity was found to be significantly influenced by demographic variables—specifically profession and income—suggesting that emotional and communicative ties with hospitality brands are shaped by socio-economic background. Although promotional appeal and responsiveness did not exhibit significant variation across demographics in this dataset, they remain theoretically relevant and empirically validated CRM constructs.

The 3D-CRM Model offers a structured understanding of CRM perception, moving beyond a technology-led view to a more customer-centric and demographically informed perspective. It provides a basis for both strategic CRM customisation in practice and future empirical research aimed at uncovering behavioural outcomes such as customer loyalty and satisfaction. This model also opens avenues for further exploration of each CRM dimension as an independent driver of service effectiveness.

Conclusion

This study investigated how key demographic factors-gender, age, education, profession, and income-relate to three core customer experience dimensions: connectivity, responsiveness, and engagement. The findings confirm that demographics significantly shape how customers perceive and interact with service-oriented businesses.

Of all the variables, profession and income proved to be the most influential, consistently affecting perceptions across all three dimensions. The research's most significant contribution is the development of the 3D-CRM Model, a new framework that empirically links customer perceptions of CRM with specific demographic characteristics within the Indian hospitality

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sector. This model is a valuable tool for creating more personalized and inclusive CRM strategies in experience-driven industries.

In summary, the results show that demographics are not just static descriptors; they are active drivers of customer behaviour, expectations, and loyalty. By understanding and responding to these differences, hospitality businesses can build stronger customer relationships, boost engagement, and improve long-term retention.

Managerial Implications Based on the 3D-CRM Model

1. **Adopt a Demographic-Sensitive CRM Strategy** -The 3D-CRM Model highlights the influence of profession and income on CRM perception. Hospitality organisations should develop segmented CRM strategies, customising service experiences and loyalty offerings to align with the socio-economic profiles of their target customers.
2. **Enhance Connectivity Through Tailored Communication** - Since customer connectivity is significantly shaped by demographic profiles, especially profession, personalised communication strategies—via email, in-app messaging, or staff interactions—should be adapted to the needs, preferences, and communication styles of different customer groups.
3. **Invest in CRM Analytics for Profile-Based Engagement** - Integrating customer analytics tools that go beyond surface-level demographics can improve real-time responsiveness. This includes tracking behavioural trends across income groups and professions to optimise service delivery and campaign targeting.
4. **Train Staff to Engage by Profile, Not Just Protocol** - Responsiveness and frontline interaction should be guided by an understanding of demographic cues. Training customer-facing staff to identify and respond to varying expectations across professional or income groups can improve service satisfaction and perceived CRM value.

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Future Scope of Research

1. **Incorporate Psychographic and Behavioural Dimensions** -Building on the 3D-CRM framework, future studies could integrate psychographic traits (e.g., lifestyle, digital habits, personality) to better predict how different customer profiles interpret CRM efforts.
2. **Test the 3D-CRM Model Across Industries** -While developed within the Indian hospitality context, the 3D-CRM Model could be tested and refined in other service sectors like retail, healthcare, or fintech to assess its generalisability and adaptability.
3. **Use Longitudinal and Behavioural Tracking** -A longitudinal study design could reveal how the impact of demographics on CRM perceptions evolves over time—particularly in response to technological adoption, post-COVID behaviours, or generational shifts.
4. **Explore CRM Technology Interfaces Across Demographics** - Future research may examine how CRM touchpoints such as chatbots, apps, websites, or self-service kiosks interact with profession- and income-based customer profiles, particularly in shaping perceived responsiveness and connectivity.

Limitations of the Study

1. **Demographic Constraints**: The study is limited to primary demographic variables and does not account for psychographic or attitudinal factors, which could further influence customer behaviour.
2. **Geographical or Contextual Bias**: If the data was collected from a specific region or market segment, the findings may not be fully generalizable to a broader population.
3. **Cross-Sectional Design**: Being a snapshot in time, the study doesn't capture how customer connectivity, engagement, or responsiveness change over time or due to specific interventions.

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4. **Self-Reported Data**: Responses are based on perception, which may carry **social desirability bias or subjectivity**, possibly influencing the accuracy of measured associations.

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Appendix A: Demographic Profile of Respondents (N = 572)

Variable	Category	Frequency	Valid Percent
Gender	Male	349	61.0%
	Female	223	39.0%
Age Group	18–30	315	55.1%
	31–40	125	21.9%
	41–50	95	16.6%
	51–60	26	4.5%
	60 & above	11	1.9%
Marital Status	Married	263	46.0%
	Unmarried	309	54.0%
Education	Undergraduate	232	40.6%
	Postgraduate	216	37.8%
	Graduate	98	17.1%
	Other	26	4.5%
Occupation	Government Employee	18	3.1%
	Private Sector Employee	68	11.9%
	Business	93	16.3%
	Housewife/Husband	76	13.3%
	Student	243	42.5%
	Professional	62	10.8%
	Other	12	2.1%
Annual Income	Less than □ 5 lakh	320	55.9%
	□ 5 lakh to □ 10 lakh	137	24.0%
	More than □ 10 lakh	115	20.1%

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Appendix B: Summary of Survey Items and Variable Constructs

Each item was rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), unless otherwise specified.

A. Demographic Variables

Variable	Response Options
Gender	Male, Female
Age Group	18–30, 31–40, 41–50, 51–60, 60+
Marital Status	Married, Unmarried
Educational Qualification	Undergraduate, Graduate, Postgraduate, Other
Occupation	Govt. Employee, Private Employee, Business, Housewife/Husband, Student, Professional, Other
Annual Income	Less than ₹ 5 lakh, ₹5–10 lakh, More than ₹ 10 lakh
Hotel Usage Frequency (per year)	0–10 times, 11–20 times, More than 20

B. CRM-Related Items by Construct

Construct	Item Statement
Responsiveness	Influence of reservation system in hotel selection
	Influence of speed of guest service in hotel selection
	Staff should be friendly towards guests
	Hotel should reply promptly
	Staff should be trustable
	Staff should put their guest first
Customer Connectivity	24-hour communication facility required
	Staff should understand both English and Hindi
	Customer instructions should be followed by staff
Promotional Appeal	Hotel should send seasonal greetings to customers
	Discounts and special offers influence hotel reselection
	Loyalty programmes (loyalty points) influence hotel selection

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Construct	Item Statement
	Influence of others' opinions in hotel selection