

Customer Relationship Management (CRM) in Modern Retail: A Bibliometric Study

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Article Info	ABSTRACT
<p>Article history:</p> <p>Received September, 2025 Revised September, 2025 Accepted September, 2025</p> <hr/> <p>Keywords:</p> <p>Customer Relationship Management (CRM); Modern Retail; Bibliometric Analysis; Customer Loyalty</p>	<p>Customer Relationship Management (CRM) has emerged as a strategic cornerstone for modern retail, driven by the dual forces of customer-centric business models and digital transformation. This study conducts a bibliometric analysis to map the intellectual structure, research trends, and thematic evolution of CRM in the retail sector. Using the Scopus database, publications from 2000 to 2025 were retrieved and analyzed with VOSviewer, producing co-authorship, co-citation, and keyword co-occurrence visualizations. The findings reveal that traditional themes such as customer satisfaction, loyalty, and public relations remain central to CRM research, while newer areas such as artificial intelligence, machine learning, big data, and e-commerce have emerged as critical enablers of CRM innovation. The analysis further highlights the dominance of the United States, the United Kingdom, and India as major contributors, alongside strong collaborations across Europe and Asia. Theoretically, this study consolidates fragmented insights across marketing, management, and information systems, situating CRM within the broader paradigm of digital business ecosystems. Practically, it provides retailers with guidance on aligning relationship-building strategies with data-driven technologies to achieve competitive advantage. While limited by database coverage and language scope, the study offers valuable directions for future research, emphasizing interdisciplinary collaboration and the integration of advanced analytics into CRM practices.</p> <p><i>This is an open access article under the CC BY-SA license.</i></p> <div></div>
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<p>1. INTRODUCTION</p> <p>Customer Relationship Management (CRM) has become a cornerstone of business strategy in the retail sector, where competition, consumer expectations, and digital transformation converge. In modern retail, CRM extends beyond a mere technological tool; it is a comprehensive approach that integrates marketing, sales,</p>	<p>service, and analytics to foster stronger relationships with customers. The growing availability of big data, mobile applications, and artificial intelligence has transformed CRM from a transactional system into a predictive and personalized platform [1]. This evolution is particularly crucial in retail, where customer loyalty is fragile, and switching costs are low. By effectively</p>
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managing customer data and preferences, retailers can enhance customer experiences, improve retention, and achieve sustainable growth [2].

The retail industry, especially in its modern forms such as supermarkets, e-commerce, and omni-channel platforms, thrives on the ability to understand and anticipate customer needs. CRM enables retailers to track customer behavior, design personalized promotions, and establish long-term loyalty programs [3]. This transformation is driven by the global shift toward customer-centric business models, where the success of a retailer is increasingly measured not only by sales figures but also by the quality of customer relationships. The emergence of data-driven decision-making has elevated CRM's role in providing insights for product assortment, pricing strategies, and marketing communication [4].

At the same time, technological advances and digital ecosystems have expanded the scope of CRM in retail. The integration of machine learning, social media analytics, and mobile loyalty platforms has enabled retailers to deliver real-time engagement and predictive personalization [5]. For instance, social CRM allows retailers to monitor conversations on digital platforms, identify customer sentiments, and respond proactively to issues. Similarly, loyalty programs linked to mobile apps and payment systems create seamless customer experiences that strengthen the bond between consumers and retailers [6]. In this way, CRM has evolved from an operational system to a strategic asset in modern retail management.

Globally, research on CRM in retail has produced diverse findings, ranging from its impact on financial performance to its role in customer satisfaction, innovation, and competitive advantage. Several studies highlight that CRM enhances customer engagement and retention, thereby improving organizational profitability [7]. Others underline its importance in fostering brand trust and advocacy, which are critical in markets saturated with competing retailers [2]. In emerging economies, CRM adoption also faces unique challenges such as resource

constraints, lack of technological infrastructure, and cultural differences in customer behavior [3]. Understanding these dynamics is essential to contextualize how CRM strategies adapt to different retail environments.

Given this diversity of perspectives, a bibliometric approach becomes highly relevant to map the intellectual structure and research trajectory of CRM in the modern retail context. Bibliometric analysis enables the systematic examination of publications, authors, and thematic trends, providing a scientific overview of the knowledge domain [8]. It identifies influential works, leading scholars, and emerging topics that shape the academic and practical understanding of CRM. Such a study is particularly timely, as the retail industry continues to experience digital disruption, shifting consumer preferences, and heightened competition. By consolidating research insights, bibliometrics offers a comprehensive lens through which CRM's evolution and future directions can be understood.

Despite the growing body of literature on CRM in retail, there is limited synthesis of how the field has evolved, what themes dominate scholarly attention, and which gaps remain underexplored. Much of the research is fragmented across disciplines such as marketing, information systems, and management, leading to scattered insights without a unified picture. Furthermore, while practical applications of CRM in modern retail have expanded rapidly through digital tools, the academic discourse has not always kept pace with these developments. As a result, there is a pressing need for a systematic bibliometric study that maps the landscape of CRM in modern retail, identifies key contributors and themes, and highlights future research opportunities. This study aims to conduct a bibliometric analysis of Customer Relationship Management (CRM) research in the context of modern retail.

2. METHODS

This study employed a bibliometric analysis approach to systematically examine

the research landscape of Customer Relationship Management (CRM) in the context of modern retail. Bibliometric analysis provides an evidence-based method to identify publication trends, influential authors, highly cited works, and the intellectual structure of a field [8]. Given the multidisciplinary nature of CRM, which intersects marketing, management, and information systems, bibliometric methods are particularly suitable for consolidating fragmented studies and visualizing knowledge development over time. The data for this study were collected from the Scopus database, chosen for its comprehensive coverage of peer-reviewed journals and global scholarly output. A structured search was conducted using the keywords “Customer Relationship Management” OR “CRM” combined with “retail” in titles, abstracts, and keywords. The search period was limited to 2000–2025 to capture the modern evolution of CRM, particularly as digital transformation and e-commerce have shaped retail practices in recent decades. To ensure data consistency, only English-language publications were included. The retrieved records were exported in CSV format, which contained bibliographic information such as authors, titles, keywords, citations, and sources for subsequent analysis.

The bibliometric analysis was carried out using VOSviewer, a software tool widely applied in science mapping and network visualization [9]. VOSviewer was used to construct and visualize bibliometric networks, including co-authorship, co-citation, and keyword co-occurrence maps. These visualizations allowed the identification of influential authors, journals, and thematic clusters that dominate CRM research in modern retail. The software’s clustering technique facilitated the detection of emerging themes and knowledge gaps, thereby offering insights into both the historical trajectory and future directions of CRM scholarship in the retail sector.

3. RESULTS AND DISCUSSION

Co-Authorship Analysis



Figure 1. Author Visualization

Source: Data Analysis

Figure 1 illustrates a co-authorship network among scholars researching Customer Relationship Management (CRM) and related topics in retail. The network is divided into three distinct clusters, each represented by different colors. The green cluster centers on Andrew P. Fearne, who collaborates closely with Dan A. Petrovici and Bryn Walton, indicating a strong research group with shared interests in retail and consumer studies. The blue cluster connects Susan A. Hornibrook and Rachel S. Duffy, who act as bridging authors between Fearne’s group and another set of researchers, suggesting their role in linking different intellectual communities. The red cluster is anchored by Andrea Reid and Karise Hutchinson, who have strong collaborative ties with Lisa Victoria Donnell and Audrey Gilmore. These tight-knit links suggest a well-established research stream focusing on marketing strategies, consumer engagement, and retail management.

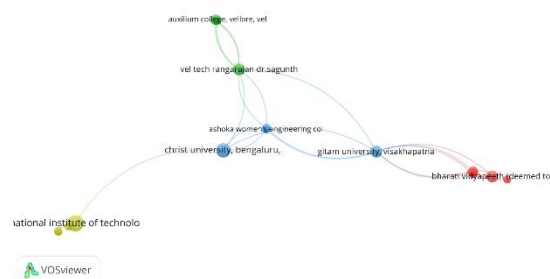


Figure 2. Affiliation Visualization

Source: Data Analysis

Figure 2 represents a collaboration network among academic institutions engaged in CRM and retail-related research. The network shows several clusters, each reflecting strong intra-institutional and inter-institutional ties. The green cluster highlights close cooperation between Auxilium College, Vellore Institute of Technology (VIT), and VIT Tech Ranga Reddy. The blue cluster includes Ashoka Women's Engineering College, Christ University, Bengaluru, and G. Ramakrishna University. The red cluster includes Bharan Vignesh and Geem to. These clusters indicate strong intra-institutional and inter-institutional ties, suggesting a well-established research stream focusing on marketing strategies, consumer engagement, and retail management.

Vellore and Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, suggesting a localized research hub. The blue cluster connects Ashoka Women's Engineering College, Christ University, Bengaluru, and Gitam University, Visakhapatnam, indicating a broader collaborative bridge that links multiple institutions across regions. The red cluster revolves around Bharati Vidyapeeth (Deemed University), showing concentrated internal collaboration. Meanwhile, the yellow cluster is centered on the National Institute of Technology, which, though somewhat peripheral, establishes important links to the wider network, suggesting it plays a bridging role between isolated and central clusters.

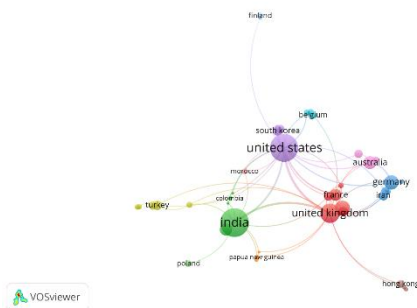


Figure 3. Country Visualization
Source: Data Analysis

Figure 3 depicts a country-level collaboration map in CRM and retail research, highlighting the major hubs and their international linkages. The United States appears as the largest and most central node, signifying its dominance and extensive partnerships with countries like the United Kingdom, France, Germany, South Korea, and India. The United Kingdom also stands out as a strong connector, linking European partners and extending collaborations to Australia and Hong Kong. India forms another significant hub, with active ties to Turkey, Colombia, Poland, and Papua New Guinea, reflecting both regional strength and growing global engagement. Smaller nodes such as Finland, Morocco, and Iran contribute to the diversity of the network, though their collaborations remain more limited.

Citation Analysis

Keyword Co-Occurrence Analysis

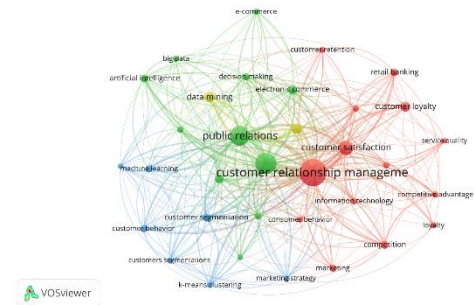


Figure 4. Network Visualization
Source: Data Analysis

Figure 4 presents a keyword co-occurrence map that highlights the main research themes and clusters in the field of Customer Relationship Management (CRM) within the retail and business context. At the center of the map, the term customer relationship management stands out as the most influential node, signifying its centrality in this body of literature. Surrounding it are clusters of related concepts such as public relations, customer satisfaction, customer loyalty, data mining, and artificial intelligence, reflecting the multifaceted nature of CRM research. The size of each node indicates the frequency of keyword occurrence, while the proximity and connections between terms reveal the degree of their co-relation in published studies.

The green cluster revolves around themes such as public relations, big data, decision making, and e-commerce. This indicates a strong focus on how digital transformation and data-driven decision-making are reshaping CRM strategies in retail and marketing. Public relations plays a vital role here, as firms rely on communication strategies and reputation management to build trust and enhance relationships with customers. The inclusion of e-commerce and electronic commerce further underscores the increasing role of online platforms in shaping consumer engagement and digital CRM practices. The red cluster emphasizes customer satisfaction, customer loyalty, service quality, and competitive advantage. This reflects a stream of research focusing on the outcomes of CRM implementation and its

strategic importance for businesses. Customer loyalty and retention are often studied as critical success indicators of CRM, while service quality and satisfaction serve as mediating factors influencing long-term relationships. The linkages with information technology and retail banking suggest that technology adoption and sector-specific applications are crucial in enhancing customer-centric strategies. This cluster represents the practical, outcome-oriented side of CRM scholarship.

The blue cluster is primarily associated with customer behavior, customer segmentation, machine learning, and clustering techniques such as k-means. This reveals a methodological and analytical orientation within CRM research, where scholars explore how advanced data analytics and artificial intelligence can be leveraged to understand consumer patterns and segment markets more effectively. By incorporating machine learning and behavioral analysis, researchers highlight the transition of CRM from traditional record-keeping to predictive, intelligent systems capable of customizing offers and improving personalization strategies. The network as a whole demonstrates the interconnectedness of CRM research across technological, strategic, and behavioral dimensions. The overlap between clusters shows that CRM is not confined to one disciplinary perspective but rather integrates marketing, information systems, and data science. For example, artificial intelligence and big data connect strongly with both customer satisfaction and segmentation, indicating that technological advancements are simultaneously enabling better analytical capabilities and enhancing service quality.

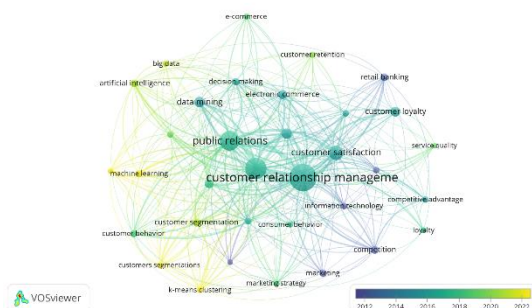


Figure 5. Overlay Visualization

Source: Data Analysis

Figure 5 highlights the temporal evolution of research themes in Customer Relationship Management (CRM) within retail and related domains. At the center, customer relationship management remains the dominant keyword, closely connected with public relations, customer satisfaction, and customer loyalty, which represent the enduring focus of CRM studies over the years. Earlier research (depicted in blue and purple shades, between 2012–2015) emphasized foundational aspects such as marketing strategy, competition, and service quality, showing that initial studies were more oriented toward managerial strategies and competitive advantage. As research advanced (2016–2019, shown in green), the focus shifted toward technology-enabled CRM practices. Keywords like data mining, customer behavior, customer segmentation, and information technology gained prominence, reflecting the growing role of analytics and digital tools in understanding and managing customer relationships. During this period, studies began integrating consumer insights and data-driven approaches to enhance personalization and decision-making, positioning CRM as not just a management philosophy but also as a technological system. More recently (2020–2022, shown in yellow), the map reveals a surge in technologically advanced themes such as artificial intelligence, machine learning, big data, and e-commerce. This indicates a clear transition of CRM research into the digital transformation era, where predictive analytics, AI-driven personalization, and online retailing have become central to both academic inquiry and practical application.

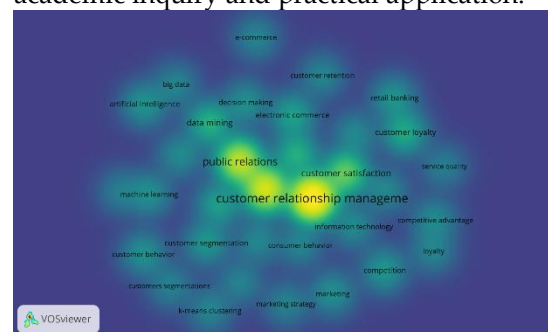


Figure 6. Density Visualization

Source: Data Analysis

Figure 6 highlights the most frequently occurring and central research themes in Customer Relationship Management (CRM) within the retail and business context. The areas in bright yellow, particularly around customer relationship management, customer satisfaction, and public relations, indicate the highest intensity of scholarly attention, reflecting these as the core pillars of CRM research. Closely linked to these central themes are customer loyalty, information technology, and consumer behavior, which together form the foundation of CRM's strategic and operational applications. The clustering suggests that much of the academic discourse revolves around how CRM impacts customer experiences, builds loyalty, and drives satisfaction as a key outcome.

Moving outward from the core, the green to blue areas highlight emerging yet growing research themes such as artificial intelligence, big data, machine learning, customer segmentation, and e-commerce. These topics, while less dominant than the central themes, represent the expanding frontier of CRM research in the era of digital transformation. Their increasing presence suggests that scholars are progressively integrating advanced technologies and data-driven methods into CRM frameworks, positioning them as critical enablers of personalization, predictive analytics, and competitive advantage. This indicates that while traditional topics like satisfaction and loyalty remain at the heart of CRM, the research field is rapidly evolving toward technology-driven innovation and digital integration.

Practical Implication

The findings of this bibliometric study provide several actionable insights for practitioners in the modern retail sector. First, the centrality of customer satisfaction, loyalty, and public relations as dominant research themes underscores the importance of building long-term relationships through trust, service quality, and consistent engagement strategies. Retail managers can

leverage these insights to design customer-centric strategies that prioritize loyalty programs, personalized promotions, and responsive service delivery. Second, the emergence of keywords such as artificial intelligence, machine learning, big data, and e-commerce highlights the growing role of technology in CRM. Retailers should therefore invest in advanced analytics, predictive models, and AI-driven personalization tools to enhance decision-making and customer targeting. Third, the visualization of collaboration networks suggests that interdisciplinary approaches yield stronger results; thus, retailers may benefit from combining marketing, IT, and data science expertise when developing CRM systems. Overall, this study provides practitioners with a roadmap to align CRM strategies with both traditional customer-focused values and cutting-edge technological innovations.

Theoretical Contribution

This study contributes to the academic discourse on CRM in several important ways. First, by employing bibliometric analysis, it consolidates fragmented literature across marketing, management, and information systems, offering a systematic overview of how CRM research in modern retail has evolved over time. The identification of key clusters adds to the theoretical understanding of CRM as a multidimensional construct that integrates strategic, technological, and behavioral perspectives. Second, the temporal analysis reveals the transition from early CRM studies focused on service quality and competition to recent emphasis on AI, big data, and digital transformation. This evolution contributes to theory-building by situating CRM within the broader paradigm of digital business ecosystems. Third, the mapping of influential authors, institutions, and countries provides an intellectual structure that can guide future research collaborations, expanding theoretical dialogue across regions and disciplines. In doing so, this study reinforces CRM's role not only as a managerial tool but also as a theoretical framework for understanding

customer–firm interactions in an increasingly digital retail landscape.

Limitation

Despite its contributions, this study is not without limitations. First, the analysis relies exclusively on the Scopus database, which, while comprehensive, may not capture all relevant publications indexed in other repositories such as Web of Science or Google Scholar. This may result in partial coverage of the CRM research domain. Second, the study limits its scope to publications in English, potentially excluding valuable insights from non-English literature, particularly in regions where retail markets and CRM practices are rapidly expanding. Third, bibliometric methods emphasize publication patterns, co-occurrences, and citation networks, but they do not assess the quality, depth, or context of the individual studies. This means that while trends and clusters are identified, interpretative depth regarding methodological rigor or empirical findings remains limited. Finally, as bibliometric data are dynamic and constantly evolving, the findings of this study should be interpreted as a snapshot rather than a definitive or permanent representation of CRM research in modern retail.

4. CONCLUSION

This bibliometric study provides a comprehensive overview of the intellectual structure, thematic evolution, and emerging frontiers of Customer Relationship Management (CRM) research in the modern retail context. The analysis highlights that traditional theme such as customer satisfaction, loyalty, and public relations remain central, while recent scholarship increasingly incorporates advanced technologies such as artificial intelligence, machine learning, big data, and e-commerce as key enablers of CRM innovation. The findings underscore the dual trajectory of CRM scholarship—anchored in long-standing principles of relationship building yet dynamically evolving toward technology-driven personalization and predictive analytics. By mapping influential authors, institutions, and countries, the study also identifies the collaborative networks that shape the global discourse on CRM. While limited by database coverage and language scope, the study offers valuable theoretical and practical insights, establishing CRM as both a managerial strategy and a scholarly framework crucial for navigating customer engagement in the era of digital transformation.

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