Impact of AI on Customer Relationship Management for a Sustainable Future – A Comparative Study between Retail Industry and E-Commerce Industry in India

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I. ABSTRACT

Artificial intelligence is the most effective tool organizations employ today to improve their business operations. With the integration of AI in recent years, customer relationship management has undergone significant changes. With the development of artificial intelligence, management is currently utilising technology to uphold wholesome and solid relationships with customers, engage them correctly, comprehend their demands, and communicate information with management so that they can make wise selections. This paper highlights the challenges and major developments to make customer interaction seamless using secondary research from published sources. Peer-reviewed research papers published between 2017 and 2023 were analysed using bibliometric research techniques and qualitative research. This study offers a systematic assessment of the area, highlighting research gaps and outlining interesting future approaches. A comparative study of the effects of AI in CRM systems on the retail and e-commerce industries has been conducted using various methods. The study contrasts how consumers are engaged based on their inquiries and the information they require, questions are efficiently answered, and customer loyalty is increased in retail and e-commerce organisations in India that have implemented artificial intelligence for CRM automation. The study provides valuable insights for scholars, policy makers and corporate organizations.

Keywords: Artificial Intelligence, Customer Relationship Management, E-Commerce, Marketing, Retail, Sustainability

II. INTRODUCTION

Artificial Intelligence (AI) has advanced rapidly in recent years, making significant contributions to a variety of industries. Customer Relationship Management is one of the areas where AI is increasingly being used (CRM). AI is changing the way businesses manage their customer relationships by enabling new levels of personalization, automation, and efficiency. However, as AI becomes more prevalent in CRM, it is critical to understand its impact on customer experience and the retail industry's long-term viability.

Sustainability is not a new concept in business, but the need for it has become more pressing in recent years. The goal of sustainable development is to fulfil present needs without endangering the capacity of future generations to fulfil their own. Sustainable development's economic, social, and environmental facets are all heavily impacted by the retail sector. Because of this, evaluating the effect of AI on CRM is essential for the long-term growth of India's retail and e-commerce sectors.

The goal of this study is to conduct a comparative analysis of the effect of AI on CRM for the long-term future of India's retail and e-commerce industries. AI has the potential to speed up growth by enhancing customer experience, streamlining processes, and reducing costs in the retail sector in India, which has seen substantial growth in recent years. However, to ensure that AI in CRM aligns with long-term development goals, it must be evaluated for potential risks and benefits.

<h1 style="text-align:center">Conceptual Framework</h1>

Artificial Intelligence

One of the exciting and all-encompassing areas of computer science with a bright future is artificial intelligence. The words "artificial" and "intelligence" are the building blocks of artificial intelligence; "artificial" denotes something that is "man-made," while "intelligent" denotes something that has "thinking power." It is an area of computer science that enables the development of intelligent machines that can think and act like people.

Sustainability

Sustainability is the ability to continually support or maintain a process over time. Sustainability attempts to halt the depletion of natural or physical resources in business and policy contexts so that they will be usable in the long run. Sustainability is commonly referred to as having three pillars: the economic, the environmental, and the social, also known as profits, planet, and people.

Customer Relationship Management

Customer relationship management (CRM) refers to the ideas, practises, and principles that a business follows when interacting with its customers. From the organisation's perspective, this total connection entails all interactions with customers, including sales and service-related processes, forecasting, and research into consumer trends and behaviours. Enhancing the whole customer experience is CRM's ultimate objective.

Indian Retail Industry

Several new businesses have entered the Indian retail market, making it one of the most dynamic and fast-paced sectors. Over 10% of the country's GDP and about 8% of all jobs are produced by it. In terms of size, India has the fifth-largest global retail market. The 2019 Business-to-Consumer (B2C) E-commerce Index released by the United Nations Conference on Trade and Development ranked India 73rd. According to the World Bank's Doing Business 2020 report, India is the fifth-largest retail market in the world.

Indian E-Commerce Industry

The rising usage of technology and shifting customer behavior have both contributed to the tremendous expansion of the e-commerce sector in India in recent years. With a population of more than 1.3 billion, India offers a sizable market for e-commerce companies. The Indian e-commerce sector was estimated to be worth $38.5 billion in 2020, and by 2025, Statista projects that it would be worth $128.9 billion.

India's retail and e-commerce sectors have grown significantly as a result of rising technology use and shifting consumer preferences. Due to the growth of e-commerce, online retailers are fiercely competing with traditional retailers. Retailers are utilizing AI-powered CRM, as a result, to set themselves apart from their rivals and improve the consumer experience. On the other side, e-commerce businesses are utilizing AI to better understand client behavior and preferences, customize their services, and increase customer engagement.

CRM powered by AI is revolutionizing how companies communicate with their clients. Large amounts of client data can be analysed by AI algorithms to get important insights into customer behavior, preferences, and needs. This helps companies to offer tailored experiences, increase consumer satisfaction, and customize their offers. Businesses utilize AI-powered chatbots to provide 24/7 customer assistance, answer questions, and make tailored recommendations. This helps organizations enhance productivity and lower expenses while also enhancing customer happiness.

The study's findings will provide insights into how AI can be effectively used in CRM to create a sustainable future for India's retail and e-commerce industry. It enables organizations to acquire significant insights into customer behavior, preferences, and needs. This helps companies to offer tailored experiences, increase consumer satisfaction, and customize their offers. Second, AI-driven chatbots let companies offer 24/7 customer service, answer questions, and make tailored recommendations. This helps organizations enhance productivity and lower expenses while also enhancing customer happiness. Lastly, by offering clients individualized recommendations, AI-powered recommendation engines assist organizations to boost sales and revenue.

To summarise, AI-powered CRM has become a key tool for organizations in India to successfully manage their customer relationships and achieve sustainable growth. CRM has been significantly impacted by AI in India's retail and e-commerce sectors. CRM powered by AI has made it possible for organizations to better understand consumer behavior, preferences, and needs in order to customize experiences and increase customer satisfaction. Businesses can now offer personalized recommendations, 24/7 customer service, and query resolution thanks to AI-powered chatbots and recommendation engines, which also help them boost sales and revenue.
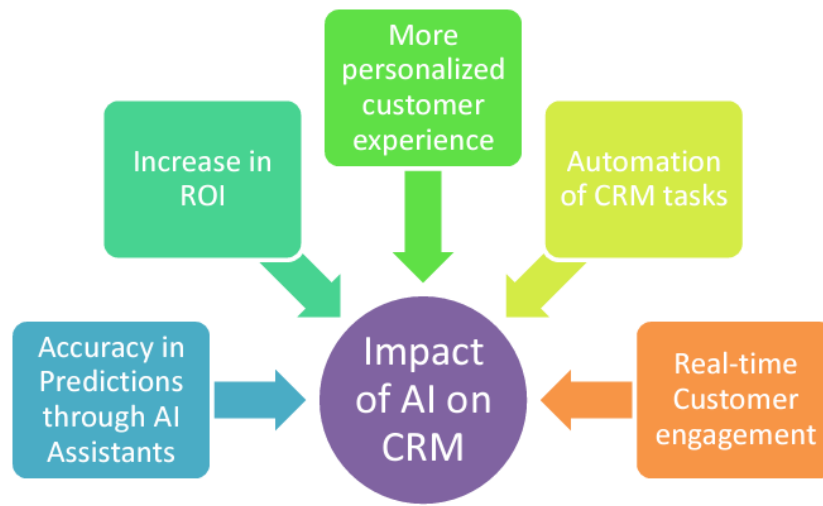
Figure 1 – Impact of AI on CRM

III. LITERATURE REVIEW

This section is dedicated to analyzing the background information significant to this review. In this study, the authors have used bibliometric research and quantitative research technique using keywords to identify relevant papers for the study. 22 peer-reviewed papers published between 2017-2022 were taken into consideration for this study. Based on available studies and research, the authors have summarized the findings by various authors to study the impact of AI on CRM.

According to **Thiraviyam (2018),** in comparison to humans, artificial intelligence can analyse data exponentially faster and more accurately, both for organised and unstructured data. Businesses that want to present their client data in an understandable style should be very interested in this field. Marketers are utilising machine learning's ability to correlate data fragments in order to gain insights about their consumer base. These algorithms can analyse data to predict the future, interpret spoken language to identify emotions, and create visual representations of social media trends. (1.)

Mahalakshmi and Meena (2021), in their study, found that businesses have automated customer relationship management (CRM), where customers are engaged based on their inquiries and the information they require. As a result, customers are more loyal to firms, and questions are answered quickly. The argument has been made that the role of AI is expected to expand more in the future because its primary objectives are to help management engage with customers effectively, analyse the overall needs and requirements of the customers, and prepare reports for the management so that they can make informed decisions. CRM is one of the most crucial elements of marketing, and keeping up a successful relationship with customers takes time and work. By encouraging more engaging interactions with customers and assisting the company round-the-clock, AI aids management and enhances customer service. (2.)

Ramesh and Rao (2019), in their study, explored that consumer's expanding requirements and wants, rise in disposable income, and changing lifestyle all contribute to the developing trend and need for retail establishments. India's retail sector faces a number of challenges, the most notable of which is fierce competition. Increased demand and growing innovation are two additional challenges. The market has changed from being producer-centric in the past, where people were compelled to buy from what was on offer, to becoming customer-centric in the present as a result of greater competition. Here, the customer is king, and goods and services are developed to satisfy their needs and preferences. Businesses can only be guaranteed to last a long time with better customer relationship management and the creation of lasting, healthy relationships with customers. (3.)

Chatterjee et. al. (2022), opined that CRM is a strategic macro process. In terms of client relationships with the businesses, it aims to ensure the development and management of a portfolio that maximises profits. Although explicit research on CRM is still being developed in the context of business-to-consumer relationships, it has been widely published. B2B CRM activities support customer needs analysis by assessing the various client data sources. Matrix Marketing, Ampliz Salesbuddy, Easy Leadz, Leadspace, and others are a few of the massive databases for such B2B relationship management. Businesses use these B2B databases for effective vendor and partner collaboration, cross-channel integration, and precise and quick targeting options. Analysing this much client data is difficult for humans. hence effectively utilising technology like artificial intelligence. (4.)

According to **Almahairah et. al. (2022),** the AI strategy emphasises the urgent need for technical experts to be more specific in identifying the sources of data collection and providing scientific techniques to change fundamental presumptions. Applications of AI, especially those that emphasise knowledge creation, may actually facilitate rather than obstruct the need for a thorough understanding of consumer behaviour. Using self-generated, self-organised data and experience, AI can offer high-order learning independent of human knowledge. It helps merchants make judgements about pricing, where to put products, and how to estimate demand more precisely. Customers therefore connect with the ideal products at the ideal time and location. Using predictive analytics, you may order the proper quantity of goods for stores, preventing them from having an excess or shortage of inventory. (5.)

According to **Kaul (2017),** in the Indian Retail Industry, the word Customer Relationship Management (CRM) has become a popular expression. There are many factors that, together with the shifting customer perspective and organized retailers, have made CRM a reality marvel. Retailers in India today look at CRM and loyalty as crucial factors as attracting and maintaining consumers is the largest problem. CRM programs that aimed to better serve customers and develop customer connections have frequently fallen short due to a lack of focus, poorly thought-out initiatives, and unreasonable expectations. Retailers must continuously come up with fresh strategies for luring in new clients and keeping the ones they already have. (6.)

Ledro and Nosella (2022), explored that in the era of digitalization, the growth of artificial intelligence (AI) approaches has been one of the technological advances brought about by the volume, velocity, and variety of data as well as their processing power. AI describes a system's capacity to accurately read a huge amount of data, learn from that data, and use that learning to complete specific tasks and goals. (7.)

According to **Seranmadevi and Kumar (2022),** the entire retail industry is making an effort to change in order to keep up with rapidly changing customer shopping preferences, and it is prioritising migrating traditional trading to the internet. According to a 2017 Infosys report, the retail industry has increased spending on web-centric supply chains, robotics, logistics automation, data analytics, and self-service technologies in an effort to become more competitive, customer-focused, and responsive to demand and opportunity. According to Amrita Nair-Ghaswalla (2018), a few additional firms are allegedly modernising their retail industries through technological breakthroughs at a much faster rate than retail behemoths like Amazon, Walmart, and Starbucks. Augmented reality, facial recognition, staffless trading, and virtual apps are just a few of the techniques these businesses are utilising to expand their market. (8.)

According to **Kaur et. al. (2020),** the retail industry is growing rapidly, so retailers must reassess what they are doing, how they are doing it, and how they are producing goods. Shopping centres are implementing technology to become smarter in the age of artificial intelligence and big data in order to provide happier customers, better service, a quicker response to consumer requests, and better supply. AI can absorb vast amounts of descriptive data from large sources, as well as images, videos, and data on customer behaviour and responses, whether it is collected online or offline. Consequently, a vast amount of data, or "big data," is generated from numerous sources with various patterns. This enables us to capture the facial expressions of buyers and sellers and to develop a semantic process that has the potential to radically alter the business. (9.)

Muzulu et. al. (2022) opined that There is fierce rivalry on online shopping platforms, as the majority of online shops sell the same or comparable product categories. Internet retailers need to adopt the right strategy in order to retain their customers' business. Marketing connections are rooted in relationship quality, which explains a company's efforts to establish long-lasting and profitable relationships with its clients. Relationships between the company and its customers are essential. The strength of the relationship that the business has with its customers is a reflection of how close they are. The variables cited as having the greatest impact on the quality of consumer interactions are trust, commitment, and contentment. Therefore, in this study, relationship quality was created using the concepts of trust, contentment, and loyalty. (10.)

Rahman et. al. (2022), found that customer preferences and tastes change quickly in this constantly evolving environment, which presents enormous challenges for businesses. In order to please customers, it is necessary to alter the operating procedure and introduce novel products and services as a result of changing consumer behaviour. As a result, businesses must develop technology capabilities to create AI enabled CRM capabilities that can adapt to the changing business environment. (11.)

According to **Bilgeri (2022),** by using typical CRM systems, businesses run into a number of issues. For instance, while salespeople are expected to focus on productive activities, the majority of them actually spend a lot of time recording data. The effective management of information necessary to meet customers. Artificial intelligence can be seen as a little more notable system that combines big data, AI, and AI. For instance, Amazon sellers continually gather clergymen, examine data, and use artificial intelligence to make crucial decisions. To benefit from the data and make wise decisions, a class of models known as AI models is undeniably crucial. care demands present another problem for businesses in this regard. However other company areas, such as Customer Service, SCM, and HR, would be able to profit from the same advantages brought about by integrated data flows, so CRM is not simply beneficial for Marketing and Sales. By managing the cross-channel information flow, CRM aims to provide a comprehensive perspective of Marketing, Sales, Service, and other areas. (12.)

Nayak et. al. (2022), opined that the basic objective of management is to put together a group or tactics that can attract customers, understand their needs and desires, and deliver vital data to management for accurate and timely decisions. However, with the use of AI, businesses are increasingly utilising this technology for stable and healthy customer interactions, appropriately involving customers, recognising their needs, and collecting information from them to help the firm make decisions. AI has consistently been a strong motivation for management to shift from rule-based to customer expectations. AI shows a variety of past data and snapshots, including geography, demographics, online activities, and behaviour, to help management and business decide what customers will wish to buy. (13.)

Chatterjee (2022), opined that automated decision-making is facilitated by AI-integrated CRM systems, which also improve B2C relationships and firms' overall performance. How much information is transferred between enterprises and customers is the main concern in B2C relationship management. CRM solutions with AI integration are anticipated to automate repetitive processes and assist a business in properly customizing, prioritizing, and segmenting the customer data collected to boost performance by strengthening the bond between the organization and its potential clients. (14.)

According to **Khanna (2022),** CRM is necessary for all types of businesses, whether they operate online or in brick-and-mortar locations. One of the key pillars of the commercial sector has historically been retail companies. Maintaining a positive connection with customers is much simpler for retail stores that operate as a single entity. CRM methods come in a variety of forms, so it is important to carefully analyse each one and implement it in your business as necessary. Businesses use a variety of marketing techniques to gain market share, and CRM adapts to the circumstances and needs of each tactic. Proper CRM implementation is essential for organizations nowadays to ensure stability in the long run. (15.)

Estevez and Chalmeta (2022), in their study, found that Sustainable CRM is the process of developing long-lasting, profitable client relationships while considering the social, economic, and environmental consequences. Additionally, SCRM aims to involve customers who are concerned about sustainability and increase consumer awareness of corporate sustainability issues. Sustainability is portrayed by CRM as an uncoordinated, disjointed concept. Furthermore, sustainable CRM frequently ignores other CRM elements, such as sales or post-sales, in favour of a restricted focus on marketing. Therefore, additional research is needed in this area. Because of the growing interest among consumers and businesses in sustainability, CRM has evolved into "sustainable CRM. This adjustment was made to both attract and keep clients who are concerned about sustainability by better meeting their needs. (16.)

Iqbal and Khan (2021), in their study, opined that Without AI, the marketing role would not exist. Businesses that have included AI in their customer relationship management (CRM) and marketing initiatives have seen a considerable improvement in their growth in terms of customer loyalty and profitability. AI is continuously transforming the marketing sector, and this transformation isn't just having an impact on how organisations promote; it's also having an impact on how marketing managers evaluate data and make decisions. AI is a simple tool that business organisations may use to assess customer behaviour towards products and services and gain a deeper understanding of their clients. Making well-informed decisions is also easier if you have access to all the necessary data on your target market. Marketing managers are better equipped to concentrate on innovation and look for patterns that help create newer ideas to meet even the most basic wants of customers and, in turn, provide value and long-term development for the firm when CRM is AI-enabled. (17.)

According to **Kaur et. al. (2022),** The effectiveness of a company's marketing programme must be increased if it is to succeed and surpass its rivals. Customer retention, customer profiling, customer stratification, and customer behaviour analysis are important factors in boosting an organisation's efficiency. Industry 4.0 technologies, such as the Internet of Things (IoT), cloud computing, artificial intelligence (AI) and machine learning (ML), big data, blockchain, robots, digital twins, and the metaverse, play a crucial role in this context, just as they have in other research fields with their real-time monitoring, predictive analytics, intelligent analytics, virtual representation, secured transactions, digital ecosystem, etc. Customers have different buying habits, so different marketing is needed to persuade them to buy a specific product or service. Social media and cloud computing have improved customer experiences, which has resulted in a higher level of consumer involvement for a company. (18.)

Chatterjee (2021), explored in their study that the combination of artificial intelligence and customer relationship management (CRM) systems has completely changed how businesses analyse the vast amounts of client data they collect. In many firms, AI is being used to improve the current CRM system. Google has already mastered artificial intelligence (AI) in order to correctly predict what is being searched for and to autocomplete the search field. In order to attract customers, Amazon products are being customised with the help of an AI system. According to studies, CRM is essential in helping a business become more customer-centric, which necessitates an examination of client behaviour. (19.)

Nimbalkar and Pabalkar (2020), in their study, found that artificial intelligence can be seen as a little more notable system that combines big data, AI, and AI. For instance, Amazon sellers continually gather clergymen, examine data, and use artificial intelligence to make crucial decisions. As a result of their decisions, their customers' coordinated efforts are fueled by more data, which is then captured, sorted, and divided for additional decisions. Different options like these are dynamically accelerated. The example of appropriate data grouping, evaluation, judgment, and further data diversity will continue to expand in the future as data volumes increase. Computer simulations and computations are performed for these models. To benefit from the data and make wise decisions, a class of models known as AI models is undeniably crucial. (20.)

Sharma (2021), in their study, opined that Managers use e-commerce and AI together to boost sales since AI incorporates human intelligence into computers and computer systems. Electronic transactions are now primarily valued by our younger generation to save time, and artificial intelligence (AI) supports the provision of ever-increasing consumer amenities. AI supports the adoption of efficient and cost-effective processes for the production of high-quality goods. (21.)

According to **Ogunmala et. al. (2020),** india's retail industry often differs from that of other nations. The online market in India, which has more than 800 million internet users, is different from that in China. China's e-retail sector is propelled by a sharp rise in consumer spending power combined with a highly personalized online retail shopping experience; in contrast, India, which has 500 million internet users, is home to a thriving online retail sector that is fueled by its diverse culture, technological advancements, and changing millennial consumer habits. (22.)

IV. OBJECTIVES OF THE STUDY
1. To analyse and compare the growth trends of Indian Retail and Indian E-Commerce Industry.
2. To study the trending use of AI in Indian Retail and Indian E-Commerce Industry.
3. To understand the future prospects of AI in Indian Retail and E-Commerce Industry.

V. RESEARCH METHODOLOGY

Secondary research was carried out from verified published resources. Authentic reports such as research papers were used. Bibliometric analysis using quantitative data were used to carry out a comparative study between Indian Retail and E-Commerce. Data was extracted from Statista covering the market size of both the industries from the years 2014 to 2025.

VI. ANALYSIS AND DISCUSSIONS

Findings and Analysis for Objective 1:

Following data has been extracted from Statista for the analysis purpose. In the given table 1 below, it is observed how the market size of Indian Retail Industry and Indian E-Commerce Industry from the year 2014 has changed till date and what are the predictions for the coming years. The market size of both the industries for the year 2026 and 2027 are predicted through linear forecasting function.

Year	Market Size (In Billion U.S. Dollars)	
	Indian Retail Industry	Indian E-Commerce Industry
2014	534	14
2015	608	20
2016	682	26
2017	795	39
2018	950	21
2019	1022	34
2020	883	30
2021	1200	84
2022	1294	74
2023	1395	74
2024	1300	99
2025	1000	188
2026	1750	134
2027	1585	145

Table 1 – Market Size of Indian Retail and E-Commerce Industry (2014-27)

Figure 2 – Growth in Market Size of Indian Retail and E-Commerce Industry (2014-27)

According to figure 1, both the retail and e-commerce sectors in India have shown consistent growth over the past few years, while the e-commerce sector has expanded far more quickly than the retail sector.

The Indian retail market increased from $534 billion in 2014 to $1022 billion in 2019, growing at a Compound Annual Growth Rate (CAGR) of 13.9% throughout this time. The Indian e-commerce market, meanwhile, increased by 35.7% CAGR from $14 billion in 2014 to $84 billion in 2021.

The growth rates did, however, vary a little bit in some years. For instance, the COVID-19 pandemic probably had an impact on the Indian retail business, which suffered a decrease in market size in 2020 before rebounding to surpass $1200 billion in 2021. Contrarily, the e-commerce sector experienced slower development in 2021 compared to the preceding years, increasing by only $6 billion over the course of the year, maybe as a result of pandemic-related interruptions.

Overall, the data indicates that despite difficulties like economic slowdowns and the COVID-19 epidemic, the Indian retail and e-commerce industries have shown tenacity and have kept expanding. The data demonstrates that despite the e-commerce sector's slower growth than in prior years, both the retail and e-commerce sectors in India have continued to expand in recent years.

Particularly, the Indian retail sector saw a significant comeback in 2021, increasing by 35.9% from $883 billion in 2020 to $1200 billion in 2021. The removal of COVID-19 restrictions and the gradual restoration of consumer confidence were probably responsible for this development.

The Indian e-commerce market shrank by 11.9% from $84 billion in 2021 to $74 billion in 2022. It's possible that the pandemic-related supply chain interruptions, market saturation, and rising rivalry are to blame for the decrease in growth. Nevertheless, according to the research, the industry is anticipated to keep expanding and reach a market size of $188 billion by 2025.

Overall, the data indicates that while the retail sector has recovered strongly in recent years, the e-commerce sector has encountered some difficulties and has seen its growth slow down. Nonetheless, it is anticipated that both businesses will grow even more over the next several years due to reasons like escalating consumer demand, a rise in the adoption of digital technology, and government policies to encourage the development of the retail and e-commerce sectors.

Both the Indian retail and e-commerce sectors are anticipated to increase over the coming years; however, the e-commerce sector's development pace might be a little slower than in past years. According to the data, the Indian retail market is anticipated to grow at a CAGR of 11.7% from 2023 to 2026, reaching a market value of $1750 billion. Its expansion is anticipated to be fueled by elements including rising consumer spending, rising urbanization, and the development of modern retail formats

The Indian e-commerce market is anticipated to grow at a CAGR of 20.7% from 2023 to 2025, reaching a market value of $188 billion. It is anticipated that factors including expanding internet usage, rising disposable incomes, and shifting consumer tastes would fuel this expansion.

Yet, it's important to keep in mind that the e-commerce sector's growth rate may be lower than in prior years as the sector ages and encounters difficulties like market saturation, escalating rivalry, and regulatory obstacles.

Overall, the data points to ongoing expansion in the Indian retail and e-commerce businesses in the next years, though the rates of growth may differ between the two sectors. Government regulations, shifting customer preferences, and technological developments all have the potential to have a significant impact on how these businesses develop in the future.

The following conclusions on customer behaviour and variations in demand in the Indian retail and e-commerce industries may be drawn from the data provided:

- **Overall Market Growth:** The size of the Indian retail market increased noticeably between 2014 and 2021, peaking at 1200 billion US dollars. The industry has been growing steadily throughout the years. The market size is anticipated to decrease in 2024 and 2025 before increasing once more in 2026.
- **E-Commerce Industry Growth:** In India, the e-commerce sector has expanded significantly over the years and at a faster rate than the retail sector. With a predicted growth rate of 134% in 2026, the e-commerce industry's market size climbed from 14 billion dollars in 2014 to 84 billion dollars in 2021.
- During the COVID-19 epidemic, there has been an increased demand for internet shopping as more people choose to avoid visiting physical establishments. According to data from 2020, the e-commerce industry's market size significantly increased while the retail industry's market size slightly decreased.
- A change in consumer behaviour has also been observed in the e-commerce sector, with customers increasingly choosing online marketplaces and aggregators over conventional e-commerce platforms. The market size of the e-commerce sector increased dramatically in 2021, whereas the market size of the retail industry remained largely unchanged.
- Macroeconomic variables like inflation, exchange rates, and economic development can cause changes in the demand for retail products and e-commerce. This is evident in the 2018 data, which showed that the retail industry's market size significantly increased while the e-commerce industry's market size slightly decreased.

Overall, the data indicates that a range of factors, such as macroeconomic circumstances, technology improvements, and shifting consumer preferences, affect consumer behaviour and demand for retail items and e-commerce in India.

Findings and Analysis for Objective 2:

By using the customer relationship management framework, it is possible to indicate to management that the operations can be divided into a few key phases, such as luring new customers, keeping existing ones, and maximising their worth.

The management is constantly prepared to draw clients to the business by providing the essential goods and services, keep them there, and then provide additional value to them. This will make it possible to satisfy consumer needs and demands and improve relationships between customers and management. Customers who are really engaged with the brand will help it grow and expand sustainably. One of the management's key goals is to assemble a team of individuals who will interact with customers, ascertain their needs and demands, and offer information to the top management so it can act swiftly.

But, with the development of AI, management is now utilising the technology to uphold a solid relationship with the clients, engage them effectively, comprehend their needs, and communicate that information to the top management so that they may make well-informed decisions.

In India's retail sector, customer relationship management (CRM) is also increasingly using artificial intelligence (AI). The retail sector in India uses AI in CRM in the following ways:

- **Personalization:** To generate individualised product or service suggestions, AI systems examine client data. Retailers in India are utilising artificial intelligence (AI)-powered product recommendation engines that may examine consumer behaviour, tastes, purchase history, and other information to produce tailored product recommendations. Retailers can use this to offer personalised product recommendations and promotions that are more likely to result in sales.
- **Chat Bots:** Chatbots with AI are being used to offer customer service around-the-clock. These chatbots can respond to a variety of customer inquiries and can speed up customer service response times for retailers. Retailers in India are automating customer service chores like responding to frequently asked questions, managing customer complaints, and delivering product information through chatbots. Retailers can lower operating costs and offer better customer service thanks to this.
- **Inventory Management:** In order to forecast demand and manage inventories more effectively, AI algorithms are being deployed. Retailers in India are utilising demand forecasting systems driven by AI that can examine past sales data, industry patterns, and other data to forecast future demand. This aids retailers in preventing stockouts and minimising overstocking, which may enhance sales and decrease waste.
- **Price Optimization:** To monitor pricing trends and optimise rates for goods or services, AI algorithms are being deployed. Retailers in India are employing dynamic pricing systems powered by AI, which can change prices in real-time based on variables like demand, competition, and inventory levels. Retailers can maintain competition and increase earnings thanks to this.
- **Fraud Detection:** Online transaction fraud is being identified and prevented by AI systems. Retailers in India are utilising AI-driven fraud detection systems that can examine transaction data, user activity, and other data to find fraudulent actions. This aids merchants in safeguarding their clients and minimising fraud-related losses.

Artificial intelligence (AI) has the potential to revolutionize customer relationship management (CRM) in the e-commerce industry in India. Here are some ways AI is being used in e-commerce CRM in India:

- **Customer Segmentation:** Artificial intelligence (AI) algorithms can examine consumer data to find trends and divide customers into various categories according to their behaviour, preferences, and demographics. Companies may target clients with specialised marketing campaigns thanks to this segmentation, which helps them better understand their customers.
- **Predictive Analytics:** In order to forecast future behaviour, such as which products customers are likely to purchase next, AI systems can evaluate customer data. With this data, Indian e-commerce businesses can more efficiently organise their inventory and marketing initiatives.
- **Voice Assistants:** E-commerce businesses in India are utilising AI-powered voice assistants to aid clients in making purchases due to the rising popularity of smart speakers and voice assistants. These voice assistants can respond to inquiries about the products and make tailored suggestions based on previous interactions with the customer.
- **Sentiment Analysis:** Social media data can be analysed by AI algorithms to determine how consumers feel about a given business or product. This can assist Indian e-commerce businesses in identifying areas for development and rapidly responding to unfavourable criticism.
- **Visual Search:** Customers in India can use image analysis-based visual search technologies to identify products that suit their tastes. Consumers can take a photo of a product they want, and an AI system will examine it to locate like items.
- **Voice Search:** E-commerce businesses in India are integrating voice search features that enable users to search for products using voice commands as a result of the rising popularity of voice assistants.
- **Customer Retention:** AI algorithms can examine consumer data to locate clients who may be departing and provide them with tailored incentives to keep them. This includes tailored marketing, personalised incentives, and awards for loyalty.

Findings and Analysis for Objective 3:

AI has the potential to transform the Indian Retail and E-Commerce industry in many ways. Here are some of the future prospects of AI:

- **Personalized Customer Experiences:** Artificial intelligence (AI) can assist Indian retailers and e-commerce platforms in better understanding their customers and offering them tailored suggestions and services. AI can make suggestions based on customer preferences, purchase history, and behavior by analyzing customer data to find patterns.
- **Improved Supply Chain Management:** AI can assist Indian retailers and e-commerce sites in optimizing their supply chains, from inventory management to logistics for deliveries. AI can evaluate data on customer locations, delivery times, and product demand to assist retailers and e-commerce businesses in making better logistics and inventory choices.
- **Enhanced Fraud Detection:** With the rise in online transactions, fraud has emerged as a major issue for Indian merchants and e-commerce sites. By examining transaction data and finding patterns that point to fraudulent activity, artificial intelligence (AI) can assist in the detection and prevention of fraud.

- **Increased Efficiency:** AI can automate a variety of routine tasks, including order processing, inventory management, and customer service queries, which increases efficiency and lowers costs.
- **Improved Decision-Making:** AI has the potential to help Indian merchants and e-commerce platforms make smarter choices regarding pricing, promotions, and marketing by analyzing massive amounts of data.

Overall, the future of AI in the Indian retail and e-commerce industries is very bright. We can anticipate that AI will become more crucial to these sectors as technology develops, allowing Indian retailers and e-commerce businesses to improve customer experiences, operational efficiency, and decision-making.

VII. CONCLUSION AND RECOMMENDATIONS

To conclude, both the retail and e-commerce sectors in India will significantly benefit from AI's impact on customer relationship management (CRM). It has been demonstrated that AI-powered CRM systems improve customer engagement, loyalty, and retention. This is because AI can quickly and accurately process enormous volumes of data to give clients individualised recommendations and support.

But nevertheless, while implementing AI-powered CRM solutions, privacy and ethical issues must be carefully taken into account. AI systems must use client data in a transparent manner and in accordance with applicable data protection laws. A vulnerable group, such as those with little access to technology, shouldn't be excluded as a result of the application of AI.

According to a comparison study between the retail and e-commerce sectors, e-commerce has a higher acceptance rate for AI in CRM. This is probably because e-commerce is intrinsically digital, which makes it simpler to incorporate AI into CRM systems. Yet, the Indian retail sector has also demonstrated a rising interest in AI-powered CRM, with a number of significant merchants putting such systems in place.

In the end, the integration of AI into CRM has the potential to support a viable future for both sectors. AI can increase customer happiness and retention by delivering individualised and effective customer care, which reduces waste and boosts revenue.

Recommendations:

1. By offering individualised and immediate assistance, AI significantly improves the customer experience in both sectors. As a result, customer engagement and retention are improved. As a result, it is recommended that AI should be used in discovering customer preferences, behaviour patterns, and pain spots.
2. Compared to e-commerce, which has embraced AI in a variety of applications like chatbots, voice assistants, and recommendation engines, the retail sector has been slower to incorporate AI technology. But it is also important for both businesses to make sure that automation doesn't completely replace human connections and strikes a balance between them and customisation.
3. By strengthening supply chain efficiency, lowering waste, and improving inventory management, AI can support sustainable business practises. The authors recommend that in order to enhance product quality and lessen the impact on the environment, AI can also be improvised to track and analyse customer feedback.

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