



A Study Of Artificial Intelligence (Ai) In Commerce: Opportunities, Challenges And Future In India

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Abstract

This research proposal looks into the impact of AI on Indian businesses, focusing on its applications, benefits, challenges, and future potential. It analyses 10 studies on AI adoption across sectors like e-commerce, banking, manufacturing, and hospitality and identifies key themes such as AI's role in enhancing operational efficiency, the challenges of infrastructure and skills shortages, and the opportunities for growth in AI-driven industries. A comparative analysis depicts the contrast of AI adoption in various sectors. It reveals that banking and e-commerce lead, while others like education take a longer time in adopting due to infrastructural and resource limitations. It provides a good source for businesses planning to incorporate AI into their processes. The analysis proposes that AI integration is the practice in banking and e-commerce, while all other sectors are somehow still behind in line due to infrastructural and resource constraints. Future advancements in AI, together with the intersection of AI and many other growing technologies such as blockchain and IoT, are promising enough to transform the Indian industries. However, an organized effort involving government and the private sector in approaching issues on how to overcome the barriers and arrange robust digital infrastructure is very important. This research highlights essential sector-specific AI applications, thereby enabling industries to make informed decisions and optimize their processes to secure a competitive advantage in the changing digital front.

Keywords : Artificial Intelligence, India, E-commerce, Banking, Manufacturing, Hospitality, AI Adoption, Operational Efficiency, Challenges, Future Potential.

1. Introduction

1.1 Background

Across many industries, artificial intelligence (AI) is transforming ordinary business procedures and fostering previously unheard-of levels of creativity and efficiency (Zhai *et al.* 2021). In commerce, AI applications like customized customer experiences, optimized supply chains, predictive analytics, and automated customer support are increasingly popular. Businesses around the world have widely used AI technologies to improve decision-making, simplify operations, and gain a competitive advantage.

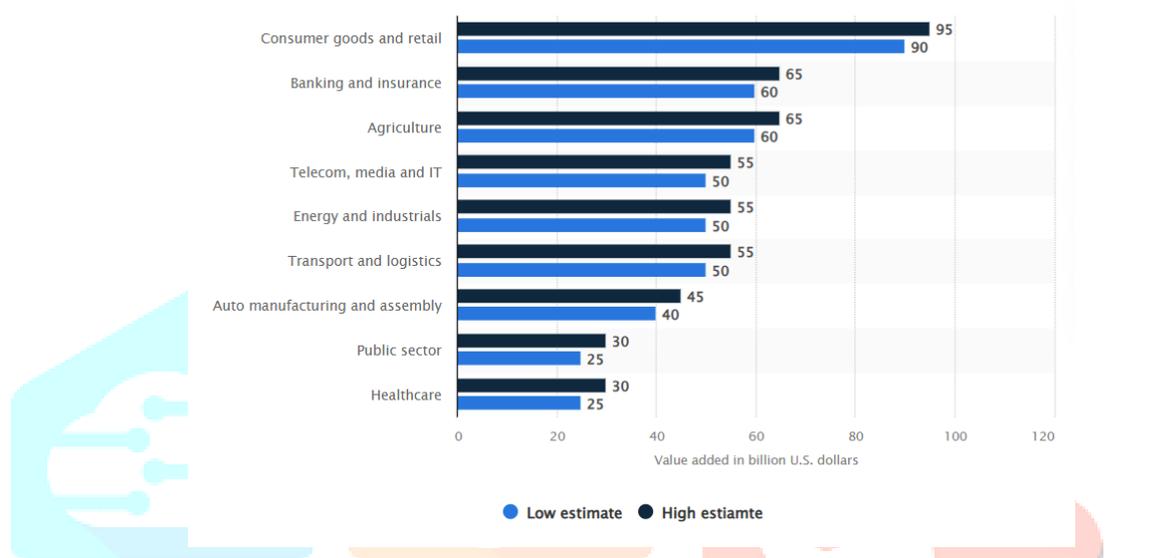


Figure 1: Data as well as economic value of AI in India

(Source: Statista, 2021)

Given its economic growth, India will present a fantastic opportunity for AI-integration in commerce. Its growing digital infrastructure, increased internet penetration, and burgeoning e-commerce space will make it a hub for AI-driven commerce. Issues of an inadequate infrastructure, lack of requisite skill sets, and ethical concerns related to data privacy and algorithmic bias form a continental elephant in the room that needs to be addressed (Lari *et al.* 2022). The Indian government and corporate sector are actively investing in AI initiatives despite these obstacles, and it is important to have a full understanding of the prospects, difficulties, and emerging trends of AI in the Indian business environment.

1.2 Rationale and problem statement

The motivation for this study arises from the dual reality of AI in Indian commerce -- it holds enormous potential, but hurdles to adoption are persistent. While Indian businesses increasingly seek to transform their commercial profile using AI, there is still little academic research that comments on the specific issues in India. Most existing research reports global trends, thereby failing to account for the unique challenges and opportunities that India creates, such as its diversified consumer base, fragmented market, and infrastructural constraints (Suresh and Rani, 2020). This research bridges a key gap in understanding how AI can reshape

commerce in India, with its opportunities balanced against the realities of implementation. Without strategic insight, Indian businesses will fall behind their global counterparts in exploiting capabilities offered by AI.

1.3 Aim and Objectives

Aim:

Analyse the current role of Artificial Intelligence in commerce for India regarding opportunities, challenges, and future prospects.

Objectives:

- **To assess** the current applications and adoption of AI in Indian commerce.
- **To explore** the opportunities AI presents for enhancing efficiency, competitiveness, and customer engagement in Indian businesses.
- **To evaluate** the challenges hindering AI adoption, including infrastructure, ethical concerns, and workforce readiness.
- **To find** actionable strategies for overcoming barriers and leveraging AI to its full potential in the Indian commercial context.

1.4 Research Question

- What are the primary applications and current trends of AI in Indian trade?
- How can AI be used to generate scope for Indian enterprises?
- What are the limitations or constraints that are limiting AI in its widespread use in Indian trade?
- How can these limitations be tackled, and how can the AI system be implemented effectively?

1.5 Research hypothesis

- **Null Hypothesis (H₀):** AI does not substantially contribute to the growth and competitiveness of the Indian trading sector.
- **Alternative Hypothesis (H₁):** Artificial Intelligence has a significant impact on the growth and competitiveness of the Indian commercial sector.

1.6 Scope of this research

This paper explores applications, challenges, and future opportunities for AI in the Indian commercial sector, particularly for the retail, e-commerce, and supply chain management sectors. Business lines have ranged from small startups to large corporates, looking at AI adoption strategies and challenges. It excluded technical development aspects of AI and its application in other than commercial sectors like health care and education.

The findings would be relevant to business leaders, policymakers, and technology providers trying to take advantage of the capabilities of AI while addressing some specific challenges posed by the Indian market.

2. Literature review

2.1 Applications of AI in Indian Commerce

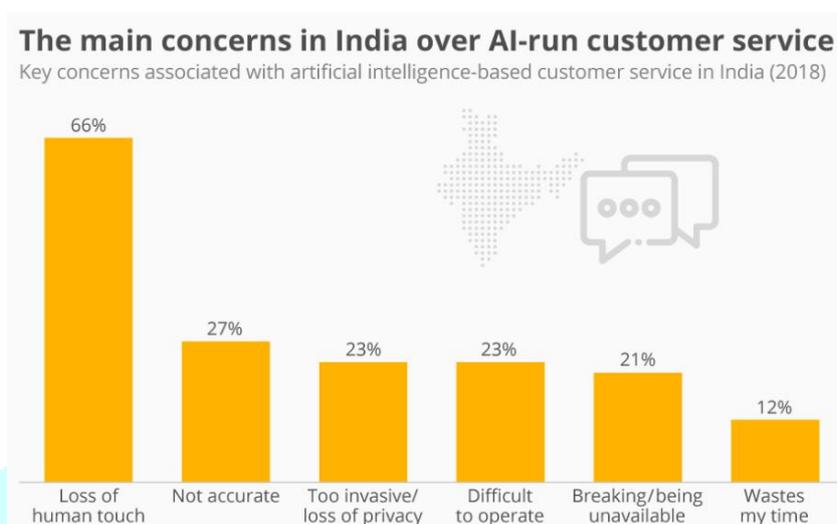


Figure 2: AI run customer service in India

(Source: Statista, 2018)

Indian commerce has seen a significant increase in the use of AI in different sectors, such as retail, e-commerce, and supply chain management (Joseph, 2023). Retailers have been using AI to create personalized recommendations and dynamic pricing models for enhancing customer experiences. E-commerce companies like Flipkart and Amazon India have utilized AI for predicting consumer behavior, product recommendation, and logistics optimization. Artificially intelligent chatbots and virtual assistants are also instrumental in providing customer support by automatically processing routine inquiries and expediting response times. Inventory management systems are also evolving due to AI, minimizing waste and optimizing stock. Applications through these systems improve efficiency while bringing light into the customer's preference in marketing and delivery of customized services (Rana *et al.* 2021). In AI, while large corporations embrace the technology, it's finding its ground in small and medium-sized enterprises (SMEs), which also use AI for targeted marketing and customer engagement. It is promising growth in AI usage in commerce, but most potential still lies untapped in India in relation to various limitations such as shortages of infrastructures and talent. Thus, the far-reaching penetration of AI could then afford transformative possibilities for businesses across India.

2.2 Challenges in AI Adoption in Indian Commerce

Despite these evident benefits, AI adoption in Indian commerce faces several challenges such as infrastructural inadequacies, skill gaps in the workforce, and ethical concerns (Singh, 2021). The digital infrastructure of India is rapidly improving but still lags in some areas, particularly in rural and semi-urban regions, making it difficult for businesses to implement AI solutions effectively. Lack of high-speed internet, reliable power supply are big impediments for AI adoption. Moreover, availability of AI and machine learning experts is a concern in smaller organizations, which is one of the impediments for the adaptation of AI technologies. Workforce limitation constrains the growth of Indian businesses to build, implement, and operate AI systems at scale. Ethical issues in data privacy, algorithmic bias, and transparency are growing issues (Bhushan, 2021). The Indian government has also introduced data protection laws, but questions regarding enforcement and compliance remain unresolved. Businesses are increasingly looking to strike a balance between innovation with AI and responsibility, especially in the business-to-consumer sectors such as e-commerce, where extensive customer data is utilized to personalize services. These challenges, coupled with the fear of technological obsolescence, create tremendous barriers to the widespread use of AI in Indian commerce.

2.3 Future Trends and Opportunities of AI in Indian Commerce

The development of artificial intelligence (AI) in robotics, machine learning, and natural language processing presents significant opportunities for Indian trade (Kumar and Ayodeji, 2021). For instance, there is increased use of AI for predictive analytics, which allows businesses to predict market trends, pricing optimization, and better targeting of customers. As the Indians are getting more mobile phones and internet, AI-driven mobile applications will also increase and attract business to engage with their customers in real time. Retail will be transformed with technologies such as smart shelves, automated checkout systems, and augmented reality. AI automation will change supply chains and introduce autonomous delivery systems and robotic warehousing solutions. Additionally, the large and diverse Indian consumer base provides an opportunity for AI to offer highly customized services and products, opening up new business expansion and growth opportunities. In the long run, AI combined with other technologies such as blockchain and IoT will lead to the development of more secure and efficient business models (Malali and Gopalakrishnan, 2020). But this potential is only possible if the discussed challenges of investment in infrastructure, skills development, and ethical governance are addressed. If these can be addressed, AI would provide the Indian commercial sector an opportunity to enter a new era of growth and innovation.

2.4 Related theories

2.4.1 Technology Acceptance Model (TAM)

Davis (1989) created the well-known Technology Acceptance Model, which describes how people accept and then embrace new technology. TAM postulates that two major factors affect the use of technology which are perceived ease of use. This perspective can be used to analyse the adoption of the technologies using AI by businesses in Indian commerce (Mustafa and Garcia, 2021). In this context, the adoption of AI technologies by Indian businesses depends on the extent to which Indian firms view the technology as easy to integrate and useful in improving operational efficiency, customer engagement, or competitiveness. The TAM framework helps to understand the critical factors influencing businesses' willingness to invest in AI technologies and that overcoming challenges in ease of use, such as infrastructure, training, and usefulness, such as clear ROI and business outcomes, is essential for driving AI adoption in India.

2.4.2 Diffusion of Innovations Theory

The Diffusion of Innovations (DOI) depends on Rogers' explanation of how, why, and how quickly new ideas and technologies spread across cultural boundaries (Bharadwaj & Deka, 2021). There exist five adopter categories in this argument such as early adopters, laggards, innovators, late majority, and early majority. This theory holds relevance to the adoption of AI in Indian commerce because businesses in India may fall into different adopter categories. Early adopters, such as large corporations, will take to the new AI technology faster than small businesses categorized as late majority or laggards. Understanding adoption stages can help businesses and policymakers strategize in the encouragement of AI on the business spectrum such as from startups to corporate giants. The DOI theory highlights the role of communication channels, social systems, and perceived innovation characteristics in AI adoption is necessary for widespread integration within the Indian context.

2.4.3 Resource-Based View (RBV)

According to Barney's (1991) resource-based view, a company gains a competitive edge by having special resources and competencies that are rare, precious, non-replaceable, and inimitable. In the situation of AI adoption in Indian commerce, RBV can assist in explaining how AI technologies serve as a strategic resource that assists firms to differentiate themselves (Lubis, 2022). Companies possessing the resources capable of effectively implementing AI—such as access to big data, skilled personnel, and infrastructure—are more likely to gain a competitive advantage. The RBV focuses on the fact that value in AI is created through the ways businesses use it to build unique capabilities, such as superior customer insights, better decision-making, and greater operational efficiency. In India, businesses that invest in AI as a strategic resource are better positioned to navigate the complexities of a dynamic market and achieve long-term success.

2.5 Literature gap

There is little scholarship that specifically addresses the use and adoption of AI in Indian commerce and meets the needs of unique aspects of Indian business. Most research focused on the global scenario leaves out how AI could be inducted into India's complex and diverse commercial scenario.

3. Methods

3.1 Research Design

This research will take a positivism philosophy, where objective, quantifiable data will be used to understand the impact of AI on Indian commerce. A deductive approach will be taken by beginning with established theories and hypotheses that will be tested against real-world data (Niaz *et al.* 2023). The research will be descriptive in nature, seeking to provide an overview of the applications, challenges, and opportunities that AI brings to the Indian commercial sector. Secondary data collection will be used. Insights into the adoption of AI, its barriers, and future trends will be obtained from reports, academic articles, government publications, and industry surveys in India's commerce ecosystem.

3.2 Inclusion and exclusion criteria

Eligibility Criteria	Inclusion Criteria	Exclusion Criteria
Geographical Location	Businesses within India or whose activities have a significant influence on the Indian commercial sector.	Businesses outside India or that have no significant presence or influence in the Indian market.
Industry	Retail, e-commerce, and supply chain sectors where AI has been or is being implemented.	Other industries that are not commercial in nature (healthcare, education) or those where AI adoption is minimal or non-existent.
Data Type	Secondary data, which includes reports, publications, government documents, and industry surveys from 2015 to present.	Primary data (e.g., surveys, interviews) and sources older than 2015.
AI Adoption Stage	Any Company at any stage of AI adoption, ranging from early adopters to established users of AI technologies.	Companies that have not yet considered or planned to implement AI technologies in their operations.

Eligibility Criteria	Inclusion Criteria	Exclusion Criteria
Language	Secondary data sources will be based on English and Hindi language materials.	Data in languages other than English or Hindi will be excluded unless translated.

Table 1: Inclusion and exclusion criteria

(Source: self-developed)

3.3 Searching Strategy

3.3.1 Boolean Operators

The search will apply Boolean operators like AND, OR, and NOT to combine or exclude specific terms for refining results. For instance, AI AND commerce AND India will provide results on the impact of AI on Indian commerce.

3.3.2 Key Words

Key terms include **Artificial Intelligence, AI adoption, Indian commerce, AI applications in India, AI challenges, AI opportunities, e-commerce, retail, and supply chain management.**

3.3.3 Database

All secondary data will be collected through sources such as Google Scholar, JSTOR, ScienceDirect, and Statista and ResearchGate for industry reports to achieve vivid information about the contribution of AI in Indian commerce.

3.4 Data Extraction and Quality Appraisal

Systematic gathering of data for this selected information extracted from the secondary sources selected and includes articles from academic literature, industrial and government reports (Acerbi *et al.* 2021). Quality appraisal will then determine the reliability and pertinence of each source. Considerations that might involve the publication date, method and source reliability in order to ensure only the best-quality data will be used. However, 10 articles has been chosen for this research and finally, the number of authentic articles decreased to 5.

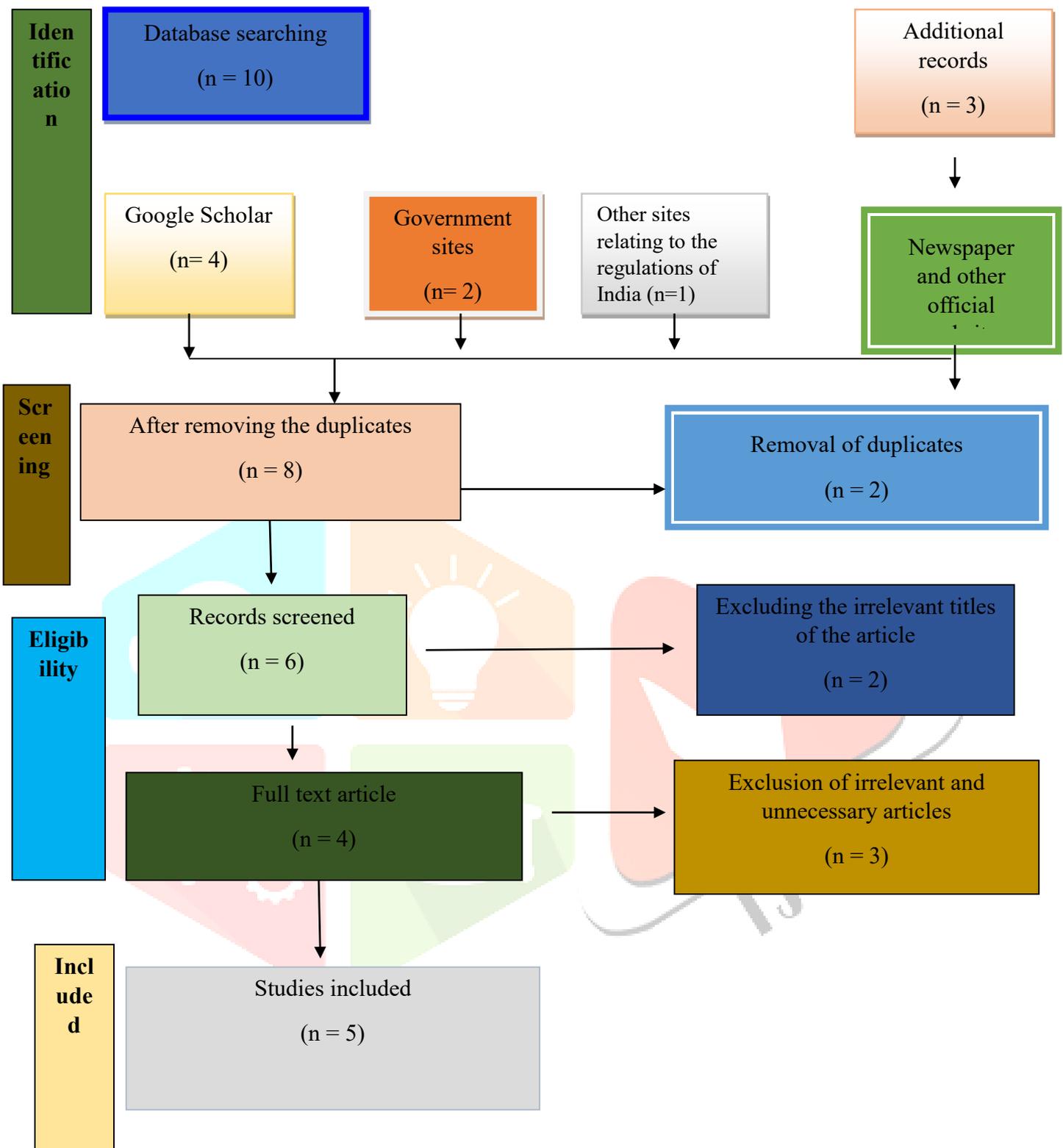


Table 2: Prisma Table

(Source: self-developed)

3.5 Data Analysis

Analysis of the data would take the thematic approach with major key themes such as application, challenge and opportunities related to the AI adoption in Indian Commerce, drawing relevance patterns, trends and insights from secondary data that were further used to analyse themes leading towards a conclusion regarding AI adoption impacts on Indian Businesses.

3.6 Ethical Consideration

Some ethical considerations include keeping transparency on how the data was used, respect for intellectual property rights, and source confidentiality (Pietilä *et al.* 2020). Secondary data would be used so proper citation and acknowledgment will be given. Furthermore, this study avoids bias because it presents results objectively and shows fairness in analysis and interpretation.

4. Findings and analysis

Article	Country	Methodology	Findings
Lari <i>et al.</i> (2022)	India	Literature Review, Case Studies	AI is transforming e-commerce by enhancing customer personalization, streamlining operations, and leveraging predictive analytics to drive efficiency. Yet there are challenges, such as data privacy concerns, poor infrastructure, and an insufficient amount of trained professionals that frustrate their growth. These challenges need to be addressed so that AI can maximize its full potential and be aligned with the way e-commerce will unfold in the years to come.
Suresh and Rani (2020)	India	Survey Methodology (Primary Data Collection)	Consumers in Chennai seem to have an agreeable disposition toward AI and would like, in particular, to have AI personalization features within e-commerce to make their shopping experience more tailored. Although there are concerns about data privacy and the fear of job losses, there do not seem to be massive drawbacks to the adoption of AI. Readiness to adopt would show a growing trust in AI to deliver on its promise of upgrading the shopping experience while catering to the needs of consumers. For AI to assist in shaping the future of e-commerce in Chennai will require the tackling of barriers, such as data privacy.

Article	Country	Methodology	Findings
Rana <i>et al.</i> (2021)	India	Literature Review, Industry Case Studies	AI is revolutionizing Indian manufacturing by enhancing efficiency, optimizing supply chains, and reducing operational costs. It enables quality control, predictive maintenance and data-driven decision-making, driving competitiveness in the global market. Besides infrastructure inadequacies, they are facing high adaptation costs, tech gaps, and a lack of trained professionals in small-scale businesses. To tap AI's true prowess in reshaping manufacturing in India, one needs to overcome impediments through investments, government support, and developed skill programs.
Bhushan (2021)	India	Literature Review, Case Studies	The AI solutions in the Indian hospitality industry continuously adopt and allow customer satisfaction to enhance personalized service and real-time management. As they elevate efficiency and guest experiences, however, small establishments have run into unstable grounds, such as high implementation costs, shortages of trained human resource specialists, and infrastructure gaps. These barriers can be handled through targeted investment, government provision, and human resources planning to relieve usage for the organization.
Rana <i>et al.</i> (2022)	India	Survey and Secondary Data	Use of AI in business analytics leads to operational efficiency. The research finding therefore indicates the existence of inefficiencies and challenges for SMEs. Firms need to invest in the correct staff and adequate protection of data to achieve competitive advantage.
Malali and Gopalakrishnan (2020)	India	Case Studies, Secondary Data	AI for Fraud prevention, Customer engagement and other services for the customer. The concepts of marketing have been applied in the Indian banking Industry.as been showcased above. Regulatory barriers, risks, and the digital difference in the rural regions of India are

Article	Country	Methodology	Findings
			reported on particular difficulties of the organization concerning AI.
Jaiswal and Arun (2021)	India	Literature Review, Case Study	The features offered by AI may bring a positive shift in the education industry by learning interventions, flexibility as well as the streamlining of bureaucratic processes, activities, proper utilisation of the available resources and lastly the work tasks. Despite these changes, there are continuing problems connected with insufficient facilities, high costs of putting into action, and less AI-skilled educators.
Rizvi <i>et al.</i> (2021)	India	Literature Review, Industry Reports	The idea of AI application for the Indian manufacturing sector is still confined to automation that can be applied in areas such as predictive maintenance, and supply chain optimization. However, skill challenges such as gaps, high initial costs, limited digital infrastructure. If it was not for these challenges, then the principle would probably be used much more regularly.
Kaur <i>et al.</i> (2020)	India	Literature Review, Secondary Data	AI is revolutionizing banking in India by increasing customer service levels using advanced technology, enhancing operational efficiency, and enabling effective risk management and decision-making. However, implementation has its own challenges, including the rising costs of technology, the gradual pace of legislation, and a shortage of specialized professionals in AI. To remedy this, workforce development, regulatory clarity, and collaboration between financial institutions and technology providers will be needed. By overcoming these constraints, banks in India will be able to fully utilize AI to enhance solutions and provide themselves with a competitive edge in the global market.

Article	Country	Methodology	Findings
Chatterjee <i>et al.</i> (2021)	India	Survey, Case Studies	Agile organizations in India have successfully implemented AI-enabled CRM systems that have provided benefits in customer relationship management and decision-making. Nevertheless, some challenges remain with equal tenacity, including the high complexity of integration with existing systems, concern regarding data privacy, and the kind of vast skillsets demanded to operate and maintain these immensely powerful technologies. Investments in workforce training, security of data handling, and refining strategies on system integration will have to be made to enable harnessing the full potential of AI-enabled CRM solutions.

Table 3: Findings

(Source: self-developed)

Analysis

Theme 1: AI Applications and Benefits in Indian Commerce

- Findings:** A consistent body of evidence from literature shows that AI is an innovation driver and business value across all sectors in India (Jaiswal and Arun, 2021). In e-commerce, AI is mainly applied for personalization and predictive analytics. In the manufacturing sector, AI has streamlined processes, reduced costs, and improved supply chain management. Likewise, the banking sector has used AI for fraud detection and automated customer service. The hospitality industry benefits from AI by offering personalized guest experiences.
- Comparative Analysis:** Although the overall application of AI is perceived as transformative, industries such as banking and retail are using AI more aggressively than smaller industries like education and hospitality. This is because the banking sector has a large investment capacity as well as regulatory support, whereas sectors such as education face challenges regarding infrastructure and resource allocation.

Theme 2: Challenges in AI Adoption

- **Findings:** Key impediments have been infrastructure restrictions, expensive deployment, and lack of workforce (Rizvi *et al.* 2021). According to different studies, AI adoption has remained to face regulatory problems in the financial and manufacturing sectors and a security issue in both these areas. Additional constraints that SMEs face include lack of resources and digital skills. On top of these, ethical concerns regarding data privacy and algorithmic bias surfaced in several studies.
- **Comparative Analysis:** Although AI adoption in large firms is relatively smooth, smaller firms face more problems with limited resources and infrastructural inadequacies. Sectors like banking, where the digital transformation is high, are more complex issues such as regulatory issues, whereas smaller sectors such as education focus on the infrastructural inadequacies.

Theme 3: Future Potential and Growth of AI in Indian Commerce

- **Findings:** The future of AI in Indian commerce is optimistic and is expected to increase adoption of AI with the improvement of digital infrastructure (Kaur *et al.* 2020). The potential for AI to drive growth in sectors like retail, banking, and education is vast, especially as AI converges with emerging technologies like IoT and blockchain. Furthermore, as CRM systems get integrated into machines with automation, customer experiences as well as organizational efficiency promise to experience further transformations.
- **Comparative Analysis:** The banking and e-commerce industries are bound to flourish sharply using AI, mainly because they absorb novel technologies. On the other hand, other sectors such as manufacturing and education will experience moderate growth based on infrastructure development and training of human capital.

5. Discussion

This research intends to give a general view about the role of AI in Indian commerce, focusing on the applications, challenges, and opportunities. With the high interest in AI across most industries around the world, combined with the growth in India's digital economy, this topic is highly relevant. Being one of the largest emerging economies, India presents a specific context for studying the possible aspects and barriers of AI within the commercial sector (Chatterjee *et al.* 2021). The implication for this research will add knowledge to the current knowledge base on how they can all benefit from the use of social media services to the Indian businesses, ranging from e-giants to the SMEs. AI for unlocking growth, operational efficiency and enhanced customers. experience.



Figure 3: Top AI applications

(Source: Statista.com, 2019)

The first of the above-mentioned themes investigated at the present stage relates to the use of AI in Indian commerce. Over the recent past, the incorporation of AI related technologies has grown steadily being implemented in diversified fields, for example, retailing industry, electronic commerce, and the management of supply chain. For example, in the retail segment, this technology is used in a variety of ways in which the customer experience has been transformed to personalized strategies, such as recommendation, real time pricing, and promotional matrices with marketing strategies being the most popular among customers. E-commerce biggies like Amazon and Flipkart are already making uses of artificial intelligence to effectively estimate consumer behaviour and organize the stock management. AI provides advantage to the supply chain industry through automation functions they otherwise could perform, thus eradicating possible human mistakes and increasing the speed of work. They do more than this by enhancing the performance in the business operations offer insights to businesses as to their customers, which the tools assist various industries to make the right adjustments to their current tactics (Gochhait *et al.* 2020).

Although the employment of AI in Indian commerce is on the rise in this study, it also pinpoints some of the key issues that affect business organisations as well. An important concern is the absence of an organized block of instruction infrastructure, particularly in the remote areas where the access to the faster internet connection is still a problem and reliable sources of energy for both household and industrial use are scarce to date. This has become as most recognize EXT-to-INT as a substantial problem for implementing AI within their SMEs. India also suffers from an insufficient number of qualified specialists that can acquire, deploy and sustain the use of AI technology. A skills gap stays in the manner in which there is the total integration of AI across fields. More than this, issues such as piracy of data and malice of algorithm are as the implementation of AI systems becomes more frequent the topics appear more commonplace its way deeper into the heart of business operations they are. Consequently, for example where the data protection laws are still evolving the position is still activity, there are always issues that remain controversial where their implementation is concerned; this makes such issues delicate in nature.

The study further explores the future prospects of AI in Indian trade. The rapid digitization of the Indian economy, combined with advancements in machine learning, natural language processing, and robotics, is the perfect storm for businesses to find a competitive edge in AI. This would transform industries like retail and e-commerce through real-time, personalized customer interactions and automated routine tasks. Additionally, since AI technologies are converging with other emerging technologies such as blockchain and IoT, organizations shall witness even more advanced business operations in terms of security, transparency, and efficiency.

6. Conclusion

This research proposal explores the changing face of AI in Indian commerce and the applications, challenges, and future prospects of the same. AI has a tremendous potential in coming decades with India on its way to become a major economic super power of the world.

chance to revolutionise the commercial segment functioning to assist and enhance various sorts of companies optimise organisational performance, enhance customers' satisfaction, and achieve competitive advantage.

The study's conclusions will provide crucial details regarding the present applications of AI in India's major industries, including supply chain management, e-commerce, and other IT applications. Artificial intelligence applications like pattern forecasting, personalized advise, and AI-powered solutions are already demonstrating how successful they are in streamlining commercial operations that contemporary organizations face. Nevertheless, there are a few issues, such as infrastructure, the lack of technical specialists, and the values and standards in regards to made available by reliable and relevant databases, data privacy and influence of specified algorithms hinder full utilization of AI.

Looking a bit to the prospective of AI in Indian commerce, it indeed has a much to offer expectations are high for, with the possibilities for businesses to explore AI technologies to enhance and grow it in the future. AI convergence with other emerging technologies like block chain and IOT, will, most that can immediately apply to business advantages and create new opportunities for growth opportunities. However, for using AI potential at their maximum, the government and private sector will need to come together to get adoption done barriers. To be incorporated properly in business entities the following must happen which is the country, in infrastructure use of digital technology, improvement of skills security, the proliferation of smart and connected devices, increasing reliance on remote learning and collaboration, as well as the rapid development of personalized learning technologies, and best-of-breed academic support programs will require strong security solutions, little or no compromised user experience for security control, constantly developing and adjusting privacy and data protection regulation and standards to the demands and needs in changing digital environments.

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