Can Artificial Intelligence Revolutionise India's Judiciary System?

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Abstract

Adoption of artificial intelligence (AI) is increasingly shaping India's economic and judicial landscape. This commentary article aims to examine: (a) AI's potential to leverage micro, small and medium enterprise (MSME) and (b) understand the usages of AI tools such as SUPACE (Supreme Court Portal for Assistance in Court Efficiency) and SUVAS (Supreme Court Vidhik Anuvaad Software) in the judiciary system of India. Although AI offers opportunities for the economy to grow efficiency, it also raises concern about trust and accountability, particularly in the legal system of a state. Therefore, the article advocates for cautious adoption and the development of AI-centric laws to ensure that AI's benefits are realised while minimising risks.

Introduction

Artificial intelligence (AI) represents a core topic in Industry 4.0; the presence of AI in various sectors is evident from the adoption of this programmed replication of supreme human intelligence in judiciary, financial sectors and also micro, small and medium enterprise (MSME). According to reports from The Economic Times, around 63 million MSMEs roughly contribute to one-third of the nation's Gross

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Domestic Product (GDP), which is about 45% of manufacturing output and 40% of direct and indirect exports.

The annual AI index report published by the Stanford University documented that India saw the fifth highest investment in the year 2023 in various start-ups based on AI products and services. The importance of AI is taken as paramount by the Government of India. One such initiative by the Ministry of Electronics and Technology is IndiaAI (A portal which promotes and features articles on AI by policy makers, researchers, columnists, etc.).

Another, collaborative initiative by the National E-governance Division of the Ministry of Electronics and Information Technology and Intel India is the Responsible AI for Youth (YUVAi) programme, which aims to develop a more AI friendly, AI literate and a new-tech mindset needed in the market to understand relevant skills with the introduction of AI. Such initiatives will equip and empower students from the very introductory level, with the required knowledge in the new age of AI.

AI usage in India and in various institutional activities governing the state has changed the way institutions function in their day-to-day activities, be it financial sectors, IT sectors or the Indian Judiciary System. Various tools like SUPACE (Supreme Court Portal for Assistance in Court Efficiency) and SUVAS (Supreme Court Vidhik Anuvaad Software) have been introduced.

The former, introduced by the Supreme Court of India, is used for providing decision-making information, while the latter acts as a catalyst in reducing regional linguistic barriers by translating judgments into various regional languages (Dhar, 2023).

The National Judicial Data Grid (NJDG) documented that around 3,89,41,148 cases are pending at the District and Taluka levels and 58,43,113 are still unresolved at the high courts. The delay in outcomes and the anxiety in the process of delivering justice take immense time, resources, reliable information and proper assistance.

The article aims to understand: (a) adoption of AI in India's economic landscape by understanding how it can transform India's MSME and (b) the introduction of AI tools in the Indian Judiciary System. The article in the subsequent section gives insights on how AI can transform India's MSME, followed by AI adoption in the judiciary system of India, USA and China, with a lens of debatable questions, and finally concludes.

Theoretical Background

The integration of AI into different features of the economy prompts an investigation grounded in a few hypothetical systems that shed light on its suggestions for business flow and financial structures (Moloi & Marwala, 2020). One conspicuous hypothetical system is the concept of Mechanical Unemployment in MSME, which hypothesises that quick headways in innovation, especially AI and mechanisation, might lead to work uprooting and workforce disturbances.

This system underlines concerns approximately the potential outdated quality of certain work parts due to the quick integration of AI. Dialogs on the forecasted work

relocations and creation of modern parts, as laid out in considers such as McKinsey Global Institute, 2017, also referred to as 'McKinsey Worldwide Established Report', and World Financial Gathering projections, adjust with this hypothesis. Additionally, the aptitudes jumble and re-skilling hypothesis centre on the potential bungle between the advancing work prerequisites driven by innovative advance and the accessible ability sets of the workforce (Mazurek & Jarek, 2019).

The fast advancement of AI and its transformative effect on work parts require ceaseless upskilling and reskilling activities. This hypothesis emphasises the versatile nature of the workforce to meet the requests postured by an AI-centric economy.

In addition, the adoption of AI in India's judiciary system aligns with the 'Theory of Technological Accessibility and Inclusion'. Moreover, inclusion tools like SUPACE and SUVAS in the Indian Judiciary System not only aim to make justice more accessible and efficient. But it also reflects a broader theoretical notion of AI functioning as an important part of a democratic management system, such as the Judiciary.

Literature Review

The transformative drive of AI penetrates different circles, inciting broad investigation into its impacts on instruction, development, business and buyer flow. Moreover, Ilkka's report for the European Union (2018) gave the foundational experiences, emphasising the need for organised arrangement systems to tackle AI's openings whereas exploring its challenges, especially in instruction.

Various existing articles extended this story by understanding AI's potential not as it were to improve existing forms but to on a very basic level by rethinking the advancement ideal model and investigate its structures. Their work highlighted AI's part as a catalyst, reshaping innovation techniques and organisational elements inside R&D, posturing charming suggestions for the end of learning and advancement (Pop et al., 2021).

In addition, later reports highlight AI's optimisation of customer encounters and operational efficiencies. Be that as it may, they too inspire concerns among representatives with respect to work uprooting and the disintegration of human abilities and character.

The criticalness of comprehensive examinations including different divisions and firms inside India has been emphasised by McKinsey Global Institute, 2017, also referred to as 'McKinsey Worldwide Established Report', and the Indian FS AI Selection Study (2021). While the selection of unused innovation within the budgetary division has made strides in execution within the managing an account framework (Singh, 2021), it has concurrently heightened fears of work uprooting among Indian labourers (NITI Aayog, 2022).

Can AI Transform India's MSME Landscape?

MSME is the backbone of India's economy. The contribution of MSME to the socio-economic development across the demographic landscape of the Indian
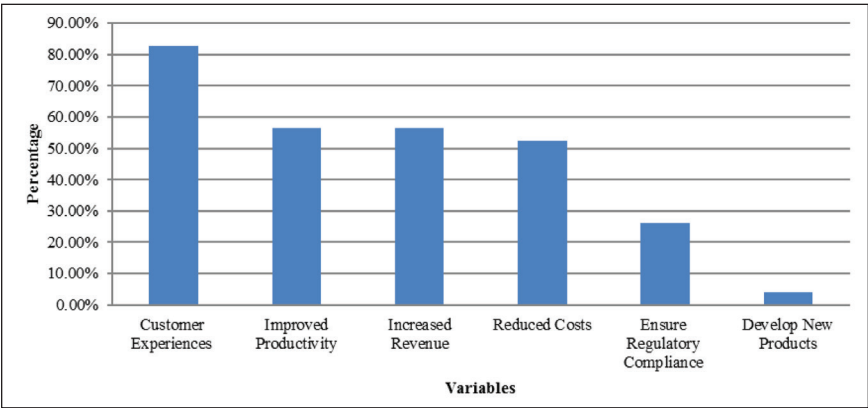
Figure 1. Determinants for AI Adoption in India.

Source: Indian FS AI Adoption Survey 2021.

economy is immensely important with 45.83% share of exports of goods produced by MSME up to November, 2023 (*The Hindu*, 2024). Understanding the importance of MSME in the development of India, the Ministry of MSME, Government of India, emphasises on the development of business environment, by introducing collateral-free loans by Pradhan Mantri Mudra Yojana. To understand how AI adoption can navigate India's MSME growth (refer Figure 1), we have taken into account two aspects: (a) AI literacy or AI awareness and (b) acceptance of AI.

AI Literacy

The campaign 'AI Literacy for All' by Uttar Pradesh government is an initiative to introduce the presence of AI and make people more familiar with the new technology. As India takes steps to be the Global Innovative Hub for technologies, the New Education Policy (NEP) 2023 understands the importance of AI-driven workforce, and the potential linkages between AI literacy and job opportunities.

The adoption of policies to educate the entrepreneurs or students (who might be entrepreneurs in future) will help the coming generation to understand the importance of AI and its collaboration as tools to various businesses, which will only contribute to the growth and efficiency of the enterprise (Observer Research Foundation, 2024). Also, using tools built as AI to manage finance and other managerial works can only help the entrepreneur in saving time and money.

However, the awareness and literacy to use the tool by the manager or the entrepreneur is important to avoid any miscalculated results for their respective businesses. This also strongly aligns with the findings of Ng et al. (2021), which advocated that understanding advanced AI technologies using AI tools and their benefits is important in building a classic AI literacy. This shall not only build an AI literacy ecosystem, but also build a solid theoretical and conceptual framework for AI development.

Acceptance of AI

The acknowledgment of AI in MSME has been documented in various academic research papers. With the advent of Industry 4.0, AI has been the global topic revolving around. It emerged as one of the big players in the adoption across various sectors, and MSME has been no exception, to accept the new age of AI (Simone et al., 2023).

Key industries which included or adopted AI have been textiles, machinery and parts, mining and quarrying, basic metal industries, electrical machinery and apparatus, transport equipment and parts, paper products and printing, food products, chemical and chemical products, leather, wood, rubber, plastic and other non-metallic mineral products, beverages and tobacco products (Sharma et al., 2022).

However, given the constraint that the adoption of AI in India's MSME has not been fully documented or the process is in its early stage. Therefore, drawing a conclusion on 'Merit/Demerit' of AI adoption in MSME will be a hasty generalisation.

We now report the factors that have potentially defined the adoption of AI in various sectors, including MSME.

Further by employing the data from the Indian FS AI Adoption Survey 2021, it shows that factors such as 'Customer Experiences', 'Improved Productivity', 'Increased Revenue' and 'Reduced Costs' have significantly determined the adoption of AI in India. Since the reduced cost in employing an AI tool is much cheaper than labour, and it not only improves the quality of the firm's work, but also increases its revenue, further improving productivity and cost minimisation.

AI and Judiciary: Insights from India, USA and China

The use of AI, like COMPAS (Correctional Offender Management Profiling for Alternative Solutions) in the United States of America, assists judges in delivering judgments, by analysing factors to predict, the likelihood of recidivism, and the presence of AI usage in the Chinese Judiciary System is evidenced by China's Smart Court system, which aids judges in delivering quicker and faster decisions using AI-backed technologies and from the stored data of past cases to deliver decisions for similar or related cases (Prabhu, 2023).

The introduction of AI tools like, SUPACE and SUVAS in the Indian Judiciary System and increased usage of technology in communicating, delivering and providing easier and understandable judgments (with translations of decisions to regional languages by SUVAS) have made the institution function more productively and efficiently, leading to faster delivery of judgments and in reducing regional and linguistic disparity in a country like India with a multi-linguistic cultural identity.

Usages of AI: India's Context

1. Administrative: The integration of AI in governing the daily activities has not only reduced human mistakes in keeping records, but has also improved

the administrative system to function efficiently and smoothly, improving the infrastructural governance of the administration.

2. Reduction in regional and linguistic disparity: The incorporation of SUVAS in the Indian judiciary system has combated the long tension of inclusion of various linguistic identities in understanding the proceedings and judgements of the courts. The translation of judgements using SUVAS has not only brought a larger chunk of the population in getting familiar with the judiciary. But, has also framed a more inclusive India under the judiciary banner.

3. Court efficiency: The introduction of SUPASS into the justice delivery system, to provide efficient information, has further mobilised the institutional functioning of the system as an efficient decision-maker. The era of data (which is valuable than Gold), the use of SUPASS has made the functioning of the court efficient and productive.

Debate on AI in the Judiciary: Evaluating Trust, Reliability and Accountability

The debate brings two important questions to the table: (a) 'Whether to trust AI or not?' and (b) 'Can it be trusted with reliability in the Judiciary System?' Most importantly, the generalisation in delivering quicker judgments based on evidence from past cases stored as data in the AI system can challenge the 'Judgment Astuteness' of a system exercising the judiciary functions of a state (Rehman, 2024). In cases of misleading legal advice due to the absence of a professional code of conduct in Machine Learning Systems, who will be held accountable?

However, to address such unforeseen issues in the judiciary system, many developed states like the United Kingdom and members of the European Union have adopted and advocated for an 'Artificial Intelligence Act'. This amendment aims to reduce the impact of biases in AI algorithms. In the context of India, NITI Aayog has developed a set of principles that include Safety, Equality, Inclusivity, Non-discrimination and Accountability.

Additionally, the Digital Personal Data Protection Bill (Ministry of Electronics and Information Technology) advocates for the right of an individual to inquire about the data collected from them by any entities.

The use of AI by the judiciary system can be both beneficial and dangerous (if not anchored in the reliability and trustworthiness of the designer or developer of the particular AI tool used in the Judiciary).

Though the usage of SUVAS and SUPACE in India has had a positive impact on delivering judgments to a multi-linguistic population in a nation like India, the rise in AI usage globally, with the introduction of more systems and tools like COMPAS in the US and China's Smart Court System, helps judges deliver quicker decisions based on behavioural (historical) evidence of individuals.

This can indeed be a revolution in the system itself. However, blind reliability, with no accountability and law enforcement in the judiciary (to protect the data and individuals), can be dangerous and question the judiciary system's ability to deliver justice.

To monitor AI in judiciary system, European Union and some Western States have adopted and advocated for an 'Artificial Intelligence Act'. This amendment aims to reduce the impact of biases in AI algorithms. In the context of India, the Personal Data Protection Act (Ministry of Electronics and Information Technology) advocates for the right of an individual to inquire about the data collected from them by any entities.

Conclusion

AI has the potential to revolutionise India's MSME, the adoption of AI to improve efficiency and productivity has been a key factor documented in various research papers. As the backbone of India's economy, the channelised and proper adoption of AI in the MSME can reduce the cost of operation, improve customer experience and also increase revenue. Various initiatives, such as IndiaAI and YUVAi by Ministry of Electronics and Information Technology, Government of India, are a commendable approach to educate, aware and introduce the population and workforce in the new environment of AI-driven world. However, a more inclusive and on-the-ground awareness campaign in rural and hilly regions of India might be a policy suggestion. While the benefits of AI are promising, it's important to recognise that the transition will not be without challenges. The early stages of AI adoption in MSMEs indicate that there is much to learn and develop, before the full potential can be realised. Therefore, a cautious yet optimistic approach, supported by continuous learning and adaptation, will be essential to ensure AI's role to transform India's MSMEs into the engines of economic growth in the era of Industry 4.0.

Also, the use of AI by the judiciary system can be both beneficial and dangerous (if not anchored in the reliability and trustworthiness of the designer or developer of the particular AI tool used in the Judiciary). Though the usage of SUVAS and SUPACE in India had a positive impact on delivering judgments to a multi-linguistic population in a nation like India, the rise in AI usage globally, with the introduction of more systems and tools like COMPAS in the US and China's Smart Court System. However, blind reliability, with no accountability and law enforcement in the judiciary (to protect the data and individuals), can be dangerous and question the judiciary system's ability to deliver justice. However, with proper amendments of laws, or to be precise 'New AI-centric Laws' to guard privacy can be a suggestive measure. One such remarkable step is initiated by the Ministry of Electronics and Information Technology, Government of India, by proposing and implementing the Personal Data Protection Act, 2023.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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