

IMPACT OF ARTIFICIAL INTELLIGENCE ON LABOUR LAWS IN INDIA

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ABSTRACT:

Artificial Intelligence technologies are developing fast-pace as harbingers of potential benefits for countries, economies, societies and individuals. Across multiple sectors, it shows all the signs of boosting efficiency and creating a plethora of new jobs. However there is revived concern over automation and its potential to replace human jobs thereby posing a significant challenge to the future of work. India has an opportunity to be at the forefront of this revolution by taking pro-active steps to fill the lacunae in the legal sphere and promote innovation. This includes identification of the potential sectors where AI will be most beneficial, planning a full-fledged national strategy to enrich India's AI ecosystem and execute these plans with the help of leading research institutes. The biggest barrier however is the absence of robust regulatory framework to facilitate these changes. The role of law in governing AI systems will be crucial in decreasing human apprehension towards such new technological changes. Labour laws must be all-encompassing to ensure that the needs of workforce of every sector are catered to in light of maintaining a balance between technological innovations and social security guaranteed by the state. The purpose of this article thereby lies in understanding the impact of Artificial Intelligence on the labour sector in India and addressing the issue of competence of existing labour laws to deal with the potential changes. While technology is often seen as a catalyst of positive change, laws are essential to ensure that a scenario of job polarization is not created that favours higher-educated employees among others. The article analyzes the existing AI technologies in the backdrop of the measures taken by the government to study these aspects. It further identifies areas in which India must make large strides in order to become an AI superpower and encash on this opportunity to introduce national-level programmes and incentivize corporations to up-skill and re-skill the youth, enabling them to survive the job automation debacle. Lastly, the article provides suitable recommendations to deal with the policy challenges and prod us to think about technology as well as social relations in a new light.

KEYWORDS:

Artificial Intelligence, Automation, Job Opportunities, Social Security.

LITERATURE REVIEW:

The concept of Artificial Intelligence and its futuristic impact on labour market has been widely debated and discussed over the past decade. The existing literature has to be analyzed to understand the value addition that can be added through my article. A comprehensive study by Oxford professors titled ‘The Future of Employment: How Susceptible are Jobs to Computerisation?’ (*Carl Frey and Michael Osborne, 2013*) has shown that since 2000, only 0.5 per cent of new jobs have been created that did not exist before. This is against 173 million jobs that would be automated in the next eight years in G7 countries, which are also the seven largest advanced economies in the world. After examining 702 professions globally, they concluded that “middle-skill” jobs that require routine cognitive and manual applications would be automated in the next couple of years. As a result, they argue that India, which has 65 per cent of global IT off-shore work and 40 per cent of global business processing, will have 69 per cent of its jobs in the formal employment automated by 2030. An OECD working paper titled “The Risk of Automation for Jobs in OECD Countries” (*Melanie Arntz Terry Gregory Ulrich Zierahn, 2016*) concluded that 14 percent of the total jobs in 32 OECD countries would be automated whereas another 32 percent of jobs were under significant risk of automation. The Yale Journal article on “What Should We Do After Work? Automation and Employment Law” (*Cynthia Estlund, 2018*) charts a path for reforming that body of law in the face of justified anxiety and uncertainty about the future impact of automation on jobs. In the Indian literature, an article by Cambridge students titled “Automation and the Future of Jobs in India” (*Francis Kuriakose and Deepa Iyer, 2018*) studied the economy-wide implications at the macro-level and work-place level implications at the micro-level for the worker of automation in India. According to it, the challenges that AI places before the Indian policymakers is epistemological, technical, and ethical. The future encourages one to have shared understanding of the problem and a context-specific response to the challenge. The legal challenges posed by AI systems in the Indian context and the lack of adequate legal framework was addressed in the article titled “AI: Legal Challenge in India” (*Pallavi Gupta, 2019*). Therefore the impact of computerisation/automation on labour market is well-established in the multiple studies conducted, documenting the decline of employment opportunities in routine unskilled occupations. The present paper builds on the existing literature by focusing on the policy initiatives undertaken by the government of

India in this regard and posing alternative recommendations to deal with the apprehension of loss of jobs.

INTRODUCTION:

Technological advancements have since the advent of computerization and mechanization proven to be beneficial for society, healthcare, law and order, production activities, education and other sectors of human involvement. Since the Industrial Revolution era, the world has witnessed the power of mechanization and automation in enhancing productivity and improving quality. The growth in science and engineering technology has no doubt benefitted wide range of industries. The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. In 2016, the World Economic Forum called AI “the fourth industrial revolution” that has radically transformed the way we live, work, and connect with each other.¹ Artificial Intelligence (AI) is one such modern era innovation that is still at its nascent stage but shows great potential for future growth. The fundamental ideology behind AI is the capability of a machine/computer to imitate intelligent human behaviour and thinking capability. The term Artificial Intelligence (AI) was coined in 1956 by an American computer scientist, John McCarthy who defined it as “The science and engineering of making intelligent machines, especially intelligent computer programs.” AI systems are mostly governed by Machine Learning and characterized by Deep Learning. It enables the computer machinery to perform the task solely without human aid.² It also learns from past experiences to modify and avoid any ambiguity in future, thereby providing the machines a mind of their own to deal with situations. AI is largely associated with the reasoning, learning and problem solving aspect of human intelligence. The mundane monotonous tasks performed by human workforce across the world can be easily automated by utilizing AI and this further aids human beings to perform better in handling critical and complex tasks and situations. However the benefits are accompanied by complex challenges regarding data protection, cyber security and privacy issues. There exists

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¹ Klaus Schwab, ‘The Fourth Industrial Revolution’ (*World Economic Forum*, 14 January 2016) <<https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>> accessed 25 October 2020.

² Darrel M. West, *The Future of Work: Robots, AI, and Automation* (Brookings Institution Press 2018).

a real threat to labour laws and employment that requires immediate attention like training workers, revising social policy and re-examining employment potential of new sectors. This paper attempts to balance out the benefits and challenges of AI in order to determine the bearing of AI on the labour sector.

EXISTING AI TECHNOLOGIES:

Artificial Intelligence may be a relatively new development but the world has already witnessed multiple innovations in this field providing a good reflection of a future interwoven with AI. The examples of existing AI technologies and their futuristic impact on the labour market are:

- Automated Vehicles–With the advent of Uber’s self driven cars, Infosys’ software driven golf carts and other such driverless vehicles, AVs would be a good replacement for personal chauffeurs, taxi drivers, truck/bus drivers etc. Traffic marshals, accident claim experts, motor vehicle insurers and lawyers dealing with accident victims and cases will indirectly bear the brunt of reduction in job opportunities. Although instances such as the fatal accident caused by Uber’s self-driving vehicle in Arizona, U.S.A reduces the likelihood of a full replacement.³
- Blockchain technology - The current method of double entry book keeping has lead to the creation of multiple jobs as accounts clerks, accountants and loan recovery agents and intermediaries. Blockchain technology has created a new system of ledger to end these jobs.
- Industrial Internet Of Things – IIoT refers to devices interacting with devices directly without human intervention. Smart devices can accept data coming from sensors and share them with other devices, machines or computers directly over the internet.⁴
- Intelligence Software in Service Industry - In 2017 Cyril Amarchand Mangaldas signed an agreement with Canada based technology company *Kira Systems*⁵. It uses AI to identify,

³ Daisuke Wakabayashi, ‘Self-Driving Uber Car Kills Pedestrian in Arizona’ *New York Times* (San Francisco, 19 March 2018) <<https://www.nytimes.com/2018/03/19/technology/uber-driverless-fatality.html>> accessed 25 October 2020.

⁴ Martin Ford, *Rise of the Robots: Technology and the Threat of a Jobless Future* (Basic Books, 2016).

⁵ <<https://www.cyrilshroff.com/uncategorized/cybil-amarchand-mangaldas-is-indias-first-law-firm-to-embrace-artificial-intelligence-technology-as-part-of-legal-innovation/>> accessed 26 October 2020.

analyse and extract clauses and other information from contracts and other types of legal documents with a high degree of accuracy. The Associated Press news agency has automated the writing of corporate earnings reports & sports columns with an AI system named *Wordsmith* which spots designs, patterns and trends in raw data and then describes those findings in natural language.⁶

- Other such examples include Food Delivery Drones being used by restaurants to deliver food and groceries in large parts of the world which will soon replace the jobs of food delivery boys and AI technology in gaming and speech recognition industries.

MEASURES ADOPTED BY INDIAN GOVERNMENT:

India currently has no laws or government-issued guidelines regulating AI. Instead, the government developed a number of national strategies or road maps related to AI in 2018.⁷ The Ministry of Industry and Commerce decided to constitute an eighteen-member **Task Force on AI for India's Economic Transformation**⁸ in 2017 which consisted of experts, academicians and researchers/industry leaders with the participation of governmental bodies/ministries (the National Institution for Transforming India (NITI Aayog), Ministry of Electronics and Information Technology, Department of Science and Technology, Unique Identification Authority of India and Defence Research and Development Organization). The task force's report submitted in 2018 analyzed the "use of AI along with its major challenges, and possible solutions for each sector." It examined ten sectors which were "domains of relevance to India" including Manufacturing, FinTech, Agriculture, Healthcare, National Security, Environment, Public Utility Services, Retail Education etc. It recommended the creation of an inter-ministerial National AI mission to coordinate AI-related activities in India; putting in place enabling policies to encourage and facilitate the development of AI-based products, supporting re-skilling of the current workforce and participating in the international policy discussion etc.

⁶ Stacy Liberatore, 'AI' *Daily Mail* <<https://www.dailymail.co.uk/sciencetech/article-3668837/Your-days-numbered-sports-writer-Associated-Press-using-AI-write-Minor-League-Baseball-articles.html>> accessed 26 October 2020.

⁷ <<https://www.loc.gov/law/help/artificial-intelligence/regulation-artificial-intelligence.pdf>> accessed 28 October 2020.

⁸ <<https://www.aitf.org.in/>> accessed 28 October 2020.

*NITI Aayog Discussion Paper on National AI Strategy*⁹- On February 1, 2018, Arun Jaitley stated that NITI Aayog would lead the national programme on AI and that the government is set to support startups and centres of excellence with respect to AI training and research activities.¹⁰ It was tasked with formulating a National Strategy Plan for AI in consultation with Ministries and Departments concerned, academia and private sector. The discussion paper states that the strategy should strive to leverage AI for economic growth, social development and inclusive growth. "It identified five sectors that could have the most social impact: Healthcare, Agriculture, Education, Smart Cities/Infrastructure, Smart Mobility, and Transportation. It provides over thirty policy recommendations, including: investing in scientific research, encouraging training, accelerating the adoption of AI across the value chain, and promoting ethics, privacy, and security in AI. New Centres of Research Excellence in AI (COREs) will focus on fundamental research and act as technology feeders for the International Centres for Transformational AI which will focus on creating AI-based applications in domains of societal importance.

The **Ministry of Electronics and Information Technology**¹¹ has established four committees which are currently studying AI in the context of data platforms, skilling, re-skilling, R&D and legal, regulatory and cyber security perspectives. They are headed by directors of Indian Institutes of Technology, NASSCOM and eminent researchers. These are:

- Committee on platforms and data for AI,
- Committee on leveraging AI for identifying National Missions in key sectors,
- Committee on mapping technological capabilities, key policy enablers, skilling, re-skilling and R&D
- Committee on cyber security, safety, legal and ethical issues.

WORDS SPEAK

⁹ <https://niti.gov.in/writereaddata/files/document_publication/NationalStrategy-for-AI-Discussion-Paper.pdf> accessed 30 October 2020.

¹⁰ Sharmila Nair, 'Why We Need to have Regulation and legislation on AI and Quick' *Indian Express* (31 July 2018) <<https://indianexpress.com/article/technology/opinion-technology/why-we-need-to-have-regulation-and-legislation-on-artificial-intelligence-quick-5151401/>> accessed 30 October 2020.

¹¹ Saba, 'Finalisation of National Artificial Intelligence Mission' (*SCC Blog*, 27 July 2018) <<https://www.sconline.com/blog/post/2018/07/27/finalisation-of-national-artificial-intelligence-mission/>> accessed 02 November 2020.

In February 2018, the government of India established a **multi-stakeholder task force**¹² to study the strategic and national security implications of AI for India. It submitted its report to the Minister of Defense on June 30, 2018 with recommendations relating to making India a significant power of AI in defense, specifically in the area of aviation, naval, land systems, cyber, nuclear and biological warfare including both defensive and offensive needs, recommendations for policy and institutional interventions required to regulate and encourage AI based technologies. State police forces across India are working with private companies to deploy AI-assisted facial or image recognition algorithms and predictive policing tools to detect and prevent crimes.

The Centre for Artificial Intelligence and Robotics has developed the **Network Traffic Analysis Software**¹³(NETRA). This software has capabilities to intercept and analyze the internet traffic via specified filters. Presently it is being used by RAW, IB, state-level law enforcement agencies under the aegis of the Ministry of Home Affairs.

IMPACT ON EMPLOYMENT:

The World Bank's 2016 World Development Report¹⁴ anticipates the consequence of automation as labour reallocation from labour surplus Asia to labour deficit Latin America and Africa and estimates that 69% of jobs in India are threatened by automation as technology will replace routine tasks, middle-skill jobs like clerical workers and machine operators. According to the International Labour Organisation¹⁵, 60 per cent of the formal employment in India relies on "middle-skill" jobs including sales, service, agricultural and trade-related work, all of which are prone to automation.

POSITIVE IMPACTS:

- **Free from common human problems** - A robot or an intelligent algorithm will not suffer from health issues, family issues or claim leave entitlements. While a human can

¹² <<https://www.ndtv.com/india-news/government-considering-use-of-artificial-intelligence-for-military-1893595>> accessed 02 November 2020.

¹³ 'The Design Technology behind India's 2019 Surveillance Programme' <<https://cis-india.org/internet-governance/blog/the-design-technology-behind-india2019s-surveillance-programmes>> accessed 03 November 2020.

¹⁴ <<https://www.worldbank.org/en/publication/wdr2016>> accessed 05 November 2020.

¹⁵ <https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_647306.pdf> accessed 05 November 2020.

only work for 8-10 hrs per day, an AI efficient machine is steady and can work continuously and efficiently without the necessity of break. It will prove to be useful for handling work efficiently and provide 24/7 assistance. Monotonous unskilled labour such as those in production factories and verification of documents by banks can also be automated.

- **New job opportunities** – While there exists a risk of AI advancements taking away commoditised jobs, it will also lead to creation of next-generation jobs and new areas of opportunities. IT Industry will benefit with new jobs created in areas like cyber security, cloud, big data, machine learning and AI.
- **Replacement for dangerous/ laborious jobs** – AI Robots face lesser risk than humans which can be utilized to our advantage in situations of national security and terrorist threats, exploring depths of water bodies, handling pandemics and other such hazardous man-made or natural disasters. Skilled robots can provide assistance to disabled people and custom made voice chat facilities for customer service like Apple’s SIRI and OK GOOGLE.
- **Increased accuracy** – AI follows the principle of making decisions on the basis of information which has been gathered previously that tends to apply a certain set of algorithms therefore resulting in cutting off on the chances of errors and producing a quick, precise result. Easy and accurate diagnosis in the medicine field has proved to be helpful.
- **Adequate training in the fields of management and development of people**, application of expertise to decision making, planning, and creative tasks, interacting with stakeholders like customers, suppliers etc. will ensure that people develop such skills to remain employed.

NEGATIVE IMPACTS:

- **Changes in skill demand** - The definition of “skill” will increasingly denote workers’ adaptability to work with or around automation. Systems skill including complex problem-solving abilities and social skills involving human perception will be in greater demand as opposed to physical or content skills.
- **Firm re-organisation** - Automation and redeployment of workers will realign firms on “human cloud platform,” where workers from any location can be hired to perform tasks.

This will lead to a change in firm and workforce policies in the short term. Independent workers will perform a plethora of tasks for fixed wage-rates.

- **Social changes** - Hierarchy of supervision will be replaced by networks of collaboration with distributed and remote teams. This will significantly alter motivation and communication of the workforce. These changes will lead to creation of a new employment contract with contingent employer obligations on minimum wage, social benefit and collective bargaining largely reduced.¹⁶
- **Labour relations** - Trade unions will increasingly ensure that no "lost generation" is left behind and that there are no mass dismissals caused by the introduction of AI. Unions will advocate for further training, advanced training and retraining of employees. Trade unions will be the strength to fight for employees' rights (e.g. avoid dismissals, more training to achieve digital literacy, better working conditions) and represent freelancers in the Gig Economy.
- **Global impact** - Low-wage countries such as China, India and Bangladesh are still benefiting from their surplus of low-skilled workers, and Western companies are outsourcing their production and some services to these countries. In case of automation, the surplus of low-skilled workers will turn into a curse for developing countries. It will be a challenge to integrate the unskilled production workers into a structural labor market that depends on the demand of foreign countries with no social security systems. A possible mass unemployment could lead to human catastrophes and a large wave of migration.

POLICY CHALLENGES:

Presently, there is a lack of legislation in the field of artificial intelligence in India. Though India is making fast progress regarding technology, the legal framework is not capable to deal with the consequences yet. Automation and AI based changes must be accompanied by the following key modifications:

- 1) **Re-skilling workers** – There is a need to re-skill existing workers, redeploy others to new areas of work and retool future potential workers. The 2017 IDC cognitive user adoption

¹⁶ Richard Susskind, *The Future of the Professions* (1st edn, Oxford University Press 2016).

survey for the Asia-Pacific region indicates that 70 per cent of Indian firms plan to make additional investments in workforce-training to leverage the benefits of AI.¹⁷ The concept of “smart” work and demand for specific skills will encourage universities to redesign higher education and training. The young workforce must be prepared by exposing them to the tech-enabled future of work with AI interfaces, machine learning, and increased automation.¹⁸ Online training programs, inclusion of AI and automation in the existing education curriculum, and corporate training programs for new hires will be largely beneficial.

- 2) **Re-thinking social policy** -In social policy, futuristic ideas such as livelihood insurance and universal basic income presupposes a state’s capacity to tax and distribute the additional income generated. World Social Protection Report 2017-19 by ILO shows that the share of workers covered by at least one social security programme in India is only 19 per cent. Rights at work incorporate collective bargaining rights of labour and the right to form unions. Decent work is defined as productive work under conditions of freedom (existing rights protected), equity (adequate remuneration), and dignity (social policy coverage).¹⁹ According to the State of Working in India 2018 report²⁰, a 10% increase in GDP now results in less than a 1% increase in employment. This is a substantial cause of concern.
- 3) **Re-examining employment potential of new sectors** –This involves boosting employment in sectors that are least vulnerable to automation and encouraging entrepreneurship among the youth. Sectors such as healthcare, tourism and education, jobs in the arts, entertainment, and sports have a high element of human engagement and creativity that cannot be easily automated. With a proactive government-backed initiative to promote arts, India has significant potential to partake in the rising global market for creative goods that encompasses food, fashion, jewelry, handicrafts, movies, interior design, gaming, animation, and entertainment. Boosting startups and entrepreneurship

¹⁷ <<https://www.idc.com/getdoc.jsp?containerId=US46261720>> accessed 06 November 2020.

¹⁸ Kevin C. Desouza and Kiran Kabtta Somvanshi, ‘How India can Prepare its Workforce for the AI Era’ (Brookings, 22 April 2019) <<https://www.brookings.edu/blog/techtank/2019/04/22/how-india-can-prepare-its-workforce-for-the-artificial-intelligence-era/>> accessed 06 November 2020.

¹⁹ <https://www.ilo.org/global/publications/books/WCMS_604882/lang--en/index.htm.> accessed 07 November 2020.

²⁰ ‘State of Working India 2018’ (Azimpremji University, 8 August 2018) <https://cse.azimpremjiuniversity.edu.in/wp-content/uploads/2019/02/State_of_Working_India_2018-1.pdf> accessed 07 November 2020.

among youth can be supplemented by higher government procurement of goods and services from domestic startups. The 2018 ILO report ‘Care Work and Care Jobs for the Future of Decent Work’ argues that with increased investment in education, healthcare, and social enterprises, 269 million jobs would be created by 2030.²¹

- 4) **Amendments and new laws** –Amendments must be made to existing labour laws since decreased trade union membership and fewer employees in a company will not meet the existing threshold for Unions. The lack of “foreseeability” element in AI systems will create problems of liability under tort, civil and criminal law. It is to be seen if AI systems will be considered as an “artificial person” or a “consumer good” under the Consumer Protection Act, 1986. The Information Technology Act, 2000 is not well equipped to deal with AI regulations. Section 79 of IT Act exempts intermediaries such as ISPs from liability for any third-party information, data or communication link made available or hosted by them except in certain limited circumstances. The Telecom Regulatory Authority of India will have to step in and fill the legislative and regulatory void in this regard.²²The adjudicative mechanism and the law is therefore still not available in India, although we are far headed into the AI era.

CONCLUSION:

India is uniquely placed to take advantage of developments in the AI technological advancements due to 2 primary reasons – AI is being largely used by conglomerates in performing statistical business functions which are not really a replacement but an aid to workers. Further, India has a large number of graduates from technical programs which means that there is a large base of individuals who have the aptitude to work in the AI space. This clearly indicates that the public as well as businesses are better equipped to deal with AI related changes but the government lacks the necessary laws and regulations to cushion the process of change. Though India is one of the fastest growing large economies, higher growth is not converting into increased job opportunities. Measures need to be taken by the government to meet the challenges that arise as different working environments steadily

²¹ <<https://www.ilo.org/global/topics/care-economy/care-for-fow/lang--en/index.htm>> accessed 08 November 2020.

²² Amber Sinha, Elonnai Hickok and Arindrajit Basu, ‘AI in India – A Policy Agenda’ (*Cis India*, 5 September 2018) <<https://cis-india.org/internet-governance/blog/ai-in-india-a-policy-agenda>> accessed 08 November 2020.

automate. There is a need to realize the true potential of the Artificial Intelligence technology and implement it judiciously in different fields like defence, sports, infrastructure, etc. At the same time, issues relating to unemployment driven by technology needs to be addressed by assuring social policies such as universal basic income and identifying new sources of income for citizens.

The Artificial Intelligence Association of India is a non-profit scientific society founded in 2009, devoted to advancing the scientific understanding of mechanisms underlying the thought and intelligent behaviour and their embodiment in machines. It suggests that India should consider adopting a Robot tax where employers who replace employees with robots should be required to pay a tax in order to smoothen the transition process by affording ample time to human beings to find alternative ways of earning income. The use of AI will definitely be beneficial as once manual and clerical work are replaced, professionals can focus on other important aspects and make optimum utilization of the time while maintaining a balanced life by reducing workload. It would open up avenues for new jobs, especially in information and communication technologies and data sciences. Artificial Intelligence will bring about a future that encourages us to have shared understanding of the problem and a context-specific response to the challenge. Therefore, for India to be at the forefront of the revolution, the legislature should take pro-active steps to fill the lacunae and promote innovation.