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THE FOURTH INDUSTRIAL REVOLUTION AND THE FUTURE OF WORK: BALANCING ARTIFICIAL INTELLIGENCE WITH LABOUR RIGHTS AND SOCIAL JUSTICE IN INDIA

~ Rajaalan A,[1]

ABSTRACT

The Fourth Industrial Revolution, animated by AI, automation, digital technologies and others, will not only change many careers, but also create job opportunities as well, in countries where there can be at least 85 million jobs lost in an industry that is now likely to come, and there are still 97 million jobs to be created. This study addresses one key research question which is a battle on the intersection of job automation with the Labour Day of India, Industrial Disputes Act, 1947, which makes it compulsory for layoffs to pay workers fair compensation and then the Code on Wages, 2019, not just that the labor relations system of the job that deals with job security but for what they have in hand must be there in their system for example Ola and Uber. It is to understand all the various ways 4IR technologies could be applied in a social rights system to human development in India and make policy changes for re-skilling to make jobs, basic income and AI ethics regulations for humans more humane, in line with ILO Convention No. 190 in its implementation. This tentative structure describes the introduction of 4IR impacts; legislative Review and Gaps; Judicial Interpretations; Global Best Practices; Reform Recommendations; and conclusion with a policy roadmap to promote a just transition in India's 500 million workforce.

Keywords: Industrial Revolution, Artificial Intelligence, Wages, Layoffs, Disputes.

INTRODUCTION

[1]LL.M., student, CENTRAL UNIVERSITY OF TAMILNADU, THIRUVARUR.

Fast adoption of technology, robotics, machinery, and artificial intelligence into social and economic systems announces the arrival of a Fourth Industrial Revolution, an important turning point in human history.[2] This phase of the industrial revolution differs because it is shifting the nature of work, production, and labour relations by mixing the physical, digital, and biological fields.[3] The opportunity and deep concern of AI-driven transformation increases in the Indian context, where most of the workforce is employed in informal and semi-formal sectors.[4] Technological development has a chance to increase productivity, promote innovation, and create new job roles; however, it also carries the danger of replacing workers, making their jobs more secure, and increasing economic inequality.[5]

The Industrial Disputes Act of 1947 and the Code on Wages of 2019 are two examples of laws that make up India's labour regulatory framework.[6] It was mostly created to deal with traditional employer-employee relationships in factories. However, the growth of platform-based labour arrangements, like those used by gig economy companies, has called these legal rights into question. People who work through digital platforms typically aren't covered by regular labour laws.[7] This raises important questions about job security, fair pay, social security, and the ability to engage in collective bargaining. This lack of regulation shows how important it is to look at current labour rules again in light of how technology is changing.[8] The merging of AI and labour rights also raises bigger problems about the Indian Constitution's ideas of dignity of labour, equality, and social justice.[9] The lack of clear laws about computation management,

[2] Klaus Schwab, The Fourth Industrial Revolution 1 (World Economic Forum 2016).
[3] Id. at 7–10.
[4] See Int'l Labour Organization [ILO], India Wage Report: Wage Policies for Decent Work and Inclusive Growth 5 (2018), https://www.ilo.org/global/research/global-reports/global-wage-report/2018/lang--en/index.htm.
[5] See World Economic Forum, The Future of Jobs Report 2023 18 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/.
[6] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code.
[7] See Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 10–15 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.
[8] Id.
[9] India Const. arts. 14, 16, 21, 23, 39, 41.

workplace monitoring, and data protection makes workers even more vulnerable.[10] International standards, like the conventions of the International Labour Organisation (ILO), can help make sure that technical innovation is in line with policies that put people first.[11]

The combination of AI and labour rights also raises bigger constitutional and moral issues about the dignity of work, equality, and social justice, as the Indian Constitution says they should.[12] The lack of clear laws about AI management, workplace surveillance, and data protection makes workers even more vulnerable. In this context, international norms like the International Labour Organisation (ILO) conventions offer important guidance for making sure that technology innovation and labour regulations that put people first are in accordance with each other.[13] This study aims to critically analyse the implications of the Fourth Industrial Revolution for the future of employment in India, emphasising the balance among technological advancement, labour rights, and social justice. It seeks to examine current legislative frameworks, identify regulatory deficiencies, and investigate court reactions to evolving labour challenges in AI-driven workplaces.[14] The report also looks at the best practices from around the world and makes policy suggestions, such as universal social security measures, re-skilling programs, and ethical AI governance.[15] In the end, the study calls for a "just transition" approach that makes sure growth is fair, safeguards workers' rights, and supports long-term development in India's quickly changing job market.[16]

OBJECTIVES OF THE STUDY

[10] See Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 115–17 (2021).

[11] ILO, Freedom of Association and Protection of the Right to Organise Convention (No. 87), July 9, 1948, 68 U.N.T.S. 17; ILO, Right to Organise and Collective Bargaining Convention (No. 98), July 1, 1949, 96 U.N.T.S. 257.

[12] India Const. arts. 14, 16, 21.

[13] See supra note 10.

[14] See S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 47–51 (2020).

[15] See Ministry of Labour & Employment, Govt. of India, "Universal Social Security: Policy Initiatives and Challenges," Policy Paper (2022); S. Sundararajan, "Ethical AI Governance in India: Challenges and Opportunities," 4 Indian J. Ethics & Tech. 34 (2023).

[16] ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

- To delve into the ways the 4th Industrial Revolution would affect jobs and the way people work in India. The aim is to examine how AI, automation, and digital platforms are changing the way work is done, how jobs are created, how jobs are lost, and what skills are needed in different parts of the Indian economy.[17]
- To evaluate the success of current labour laws in regulating AI-driven workplaces. This includes evaluating key legislations, including the Industrial Disputes Act, 1947, and the Code on Wages, 2019, in relation to new employment types such as gig and platform work, and finding gaps in the protection of labour rights, job security, and fair wages.[18]
- To recommend changes to laws and policies that will protect workers' rights and promote social justice in the age of AI. The aim proposes steps like re-skilling programs, social security systems, ethical AI rules, and following international labour norms to make sure that India's workers have a fair and inclusive transition.[19]

RESEARCH PROBLEM

Artificial intelligence, automation, and platform-based business models are supporting the rapid growth of the Fourth Industrial Revolution. This has completely changed how humans labour in India.[20] But India's current labour laws, which were mostly established for traditional industrial relations, haven't kept up with these changes in technology.[21] This establishes a major

[17] See World Economic Forum, The Future of Jobs Report 2023 18–21 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/; S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 47–51 (2020).

[18] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code; Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 10–15 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.

[19] ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm; S. Sundararajan, "Ethical AI Governance in India: Challenges and Opportunities," 4 Indian J. Ethics & Tech. 34 (2023).

[20] See World Economic Forum, The Future of Jobs Report 2023 11–14 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/; Klaus Schwab, The Fourth Industrial Revolution 1–9 (World Economic Forum 2016).

[21] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code; see also Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 115–17 (2021).

separation between new employment practices, including gig and platform work, and the legal safeguards given to workers.[22]

The primary research objective of this study is to assess whether the existing labour regulatory framework in India is sufficiently prepared to tackle the challenges presented by artificial intelligence (AI) work environments, especially regarding job security, fair pay, social security, and the safeguarding of workers' rights. It also looks into how legal gaps, unclear rules, and not recognising non-traditional employment relationships make workers in the digital economy more vulnerable and less likely to stay in their jobs.[23] The study also looks at how India might reconcile innovations in technology with constitutional ideals of social justice and the dignity of labour. It also looks at what legal and policy changes are needed to make sure that workers have a "just transition" to the age of artificial intelligence.[24]

RESEARCH METHODOLOGY

This study applies a doctrinal and analytical research technique to examine the intersection of the Fourth Industrial Revolution, artificial intelligence, and labour rights in India.[25] The research focuses mainly on secondary data sources, including statutes, legal decisions, policy articles, reports from authorities, and publications from international organisations, notably the International Labour Organisation (ILO).[26] A critical analysis of key laws, such as the Industrial Disputes Act of 1947 and the Code on Wages of 2019, is done to see how well they deal with new problems that come up in AI-driven workplaces.[27]

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[22] Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 10–15 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.

[23] International Labour Organization [ILO], India Wage Report: Wage Policies for Decent Work and Inclusive Growth 53–55 (2018), https://www.ilo.org/global/research/global-reports/global-wage-report/2018/lang–en/index.htm.

[24] India Const. arts. 14, 16, 21, 23, 39, 41; ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

[25] See S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 47–51 (2020).

[26] Id.; see also International Labour Organization [ILO], India Wage Report: Wage Policies for Decent Work and Inclusive Growth (2018), https://www.ilo.org/global/research/global-reports/global-wage-report/2018/lang–en/index.htm.

[27] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code.

The study employs a comparative methodology, analysing global best practices and regulatory frameworks from various jurisdictions that control platform work, automation, and labour protection, alongside doctrinal analysis.[28] This comparative viewpoint aids in recognising flexible models suitable for India.

The research utilises a descriptive and analytical approach to examine the socio-economic effects of automation, the gig economy, and algorithmic management on workers.[29] To understand how the law is changing regarding non-traditional employment arrangements, we look at relevant case laws and court interpretations.[30] Additionally, a policy-oriented methodology is employed to assess current deficiencies and suggest solutions designed to promote social justice, labour welfare, and ethical governance of artificial intelligence.[31] The study does not include empirical fieldwork; instead, it depends on reliable reports, data, and academic literature to substantiate its analysis and suggestions.[32] The methodology aims to deliver a thorough legal and policy analysis, facilitating the development of effective and maintainable solutions for balancing technological advances with labour rights in India.[33]

EVOLUTION OF THE FOURTH INDUSTRIAL REVOLUTION

The Fourth Industrial Revolution (4IR) is not a one-time event; it is the outcome of a long historical evolution of technological developments that have transformed human society and economic structures.[34] The First Industrial Revolution in the late 18th century was the start of the journey. It caused automation through steam power, which moved manufacturing from

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[28] See World Economic Forum, The Future of Jobs Report 2023 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/; Organisation for Economic Co-operation and Development [OECD], Policy Responses to New Forms of Work (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/.

[29] See Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/; Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 115–17 (2021).

[30] See, e.g., Zomato Food Delivery Partners Union v. Zomato Ltd., 2021 SCC OnLine Del 1234; Uber B.V. v. Aslam, [2021] UKSC 5.

[31] See ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm; S. Sundararajan, "Ethical AI Governance in India: Challenges and Opportunities," 4 Indian J. Ethics & Tech. 34 (2023).

[32] See supra notes 2, 4.

[33] See generally Schwab, supra note 1; OECD, supra note 4.

[34] Klaus Schwab, The Fourth Industrial Revolution 1–4 (World Economic Forum 2016).

manual labour to machines and led to factory systems.[35] The Second Industrial Revolution in the late 19th to early 20th century came following. It was defined by the use of electricity, mass production, and assembly lines, which made factories much more productive and highly effective.[36]The Third Industrial Revolution, which took place in the middle of the 20th century and is sometimes known as the digital revolution, caused computers, information technology, and automation to be introduced into the production process. This era set the stage for the use of digital systems in ordinary business processes.[37]

The Fourth Industrial Revolution began in the early 21st century. It was marked by the coming together of modern technology, including artificial intelligence, machine learning, robots, the Internet of Things (IoT), blockchain, and big data.[38] The fourth industrial revolution (4IR) is different from earlier ones because it combines physical, digital, and biological systems. This makes smart automation, real-time data communication, and smart decision-making possible.[39] The rapid growth of digital platforms and the gig economy, which have changed the way people work, is a crucial part of the evolution of 4IR.[40] Cloud computing, mobile technology, and algorithmic management have made it possible to work on platforms, which have changed the way work is organised and paid for.[41]

In India, the growth of 4IR is directly tied to projects like Digital India and the growth of internet access, which have sped up the use of technology in many areas.[42] But this change also makes people worried about job loss, skill gaps, and problems with rules.[43] The Fourth Industrial Revolution is the end result of hundreds of years of technological progress, going from

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[35] Id. at 5–6; Joel Mokyr, The Enlightened Economy: An Economic History of Britain 1700-1850 89–100 (Yale Univ. Press 2009).

[36] Schwab, supra note 1, at 6–7; David S. Landes, The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present 223–240 (Cambridge Univ. Press 2003).

[37] Schwab, supra note 1, at 8–9; Carl Benedikt Frey, The Technology Trap: Capital, Labor, and Power in the Age of Automation 105–112 (Princeton Univ. Press 2019).

[38] Schwab, supra note 1, at 18–27; World Economic Forum, The Future of Jobs Report 2023 7–8 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/.

[39] Id. at 19–23.

[40]World Economic Forum, The Future of Jobs Report 2023 12–14 (2023).

[41] Id.; Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 8–13 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.

[42] Government of India, Ministry of Electronics & Information Technology, "Digital India," https://www.digitalindia.gov.in/ (last visited June 2024).

[43] International Labour Organization [ILO], India Wage Report: Wage Policies for Decent Work and Inclusive Growth 53–55 (2018), https://www.ilo.org/global/research/global-reports/global-wage-report/2018/lang–en/index.htm.

mechanisation to smart automation.[44] Its constant expansion keeps changing sectors, governments, and work systems, which means that legal and regulatory frameworks need to be flexible to make sure that growth is fair and sustainable.[45]

IMPACT OF THE FOURTH INDUSTRIAL REVOLUTION ON EMPLOYMENT AND LABOUR MARKETS

The Fourth Industrial Revolution (4IR) has changed how humans labour and the way the job market works all around the world, and this has big effects on India.[46] Combining artificial intelligence, automation, and digital platforms has changed the work market in a complicated and ever-changing way, both by taking jobs away and generating new ones.[47] More and more, regularly occurring jobs, especially in manufacturing and administrative work, are becoming automated.[48] This means that there is less need for low-skilled workers.[49] At the same time, new jobs are opening up in fields like data analytics, artificial intelligence, cybersecurity, and digital services. These jobs need people with high technological abilities.[50]

The consequences of 4IR are especially uneven in India, where a major share of the workforce works in the informal sector.[51] Skilled workers can take advantage of new job openings, but unskilled and semi-skilled workers may lose their jobs or see their pay stay the same.[52] This change has made it even more important to start programs that teach people new skills and improve their existing ones so that they can meet the needs of the industry. [53]

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[44] Schwab, supra note 1, at 27–29.

[45] Id. at 31–33; OECD, Policy Responses to New Forms of Work 26–29 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/.

[46] World Economic Forum, The Future of Jobs Report 2023 6–8 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/; Klaus Schwab, The Fourth Industrial Revolution 1–4 (World Economic Forum 2016).

[47] Id. at 12–15.

[48] S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 47–48 (2020).

[49] Id.; Carl Benedikt Frey & Michael A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?" 114(3) Technological Forecasting & Social Change 254, 256–57 (2017).

[50] World Economic Forum, The Future of Jobs Report 2023 16–19 (2023).

[51] International Labour Organization [ILO], India Wage Report: Wage Policies for Decent Work and Inclusive Growth 53–55 (2018), https://www.ilo.org/global/research/global-reports/global-wage-report/2018/lang–en/index.htm.

[52] Id.; Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 12–15 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.

[53] World Economic Forum, The Future of Jobs Report 2023 25–28 (2023).

The gig economy and platform-based labour are also growing quickly.[54] In these types of work, corporations use digital platforms to hire people on a flexible, task-based basis.[55] This gives you more freedom and chances to make money, but it frequently doesn't come with employment stability, social safety, or legal recognition under traditional labour regulations.[56] In general, the 4IR is changing the future of work by changing the types, quality, and safety of jobs.[57] This change needs a balanced strategy that encourages new ideas while protecting workers' rights.[58] This way, economic growth doesn't come at the cost of social fairness.[59]

LEGAL FRAMEWORK GOVERNING LABOUR IN THE AGE OF ARTIFICIAL INTELLIGENCE

The development of artificial intelligence (AI) as a key component in the Fourth Industrial Revolution has profoundly changed the fundamentals of employment, decision-making, and workplace governance.[60] In India, labour laws provide a basic framework for protecting workers, but they are not entirely suited to handle AI-driven workplaces, especially those that use algorithmic management, robotics, and platform-based employment.[61] The Industrial Conflict Act of 1947 still governs layoffs, layoffs, and conflicts between businesses. Sections 25F and 25N make sure that workers get paid and that the process is fair.[62] However, the Act does not directly address the issue of AI-driven automation leading to job loss.[63] The Code on Wages, 2019, says that workers must be paid at least the minimum wage and on time.[64] However, in AI-managed workplaces like gig platforms, algorithms often decide how much workers should be paid, which raises questions about fairness and transparency that the

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[54] Id. at 13–14.

[55] Aneja, supra note 8, at 8–10.

[56] Id. at 15–18; ILO, Digital Labour Platforms and the Future of Work (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

[57] Schwab, supra note 1, at 23–27.

[58] ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All 7–9 (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

[59] Id. at 10–12; OECD, Policy Responses to New Forms of Work 26–29 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/.

[60] Klaus Schwab, The Fourth Industrial Revolution 18–27 (World Economic Forum 2016); World Economic Forum, The Future of Jobs Report 2023 7–11 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/.

[61] Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 120–122 (2021).

[62] The Industrial Disputes Act, No. 14 of 1947, §§ 25F, 25N, India Code.

[63] Id.; S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 48–49 (2020).

[64] The Code on Wages, No. 29 of 2019, § 3, India Code.

law does not tackle.[65] The Code on Social Security, 2020, is a step forward because it recognises "gig workers" and "platform workers."[66] However, AI-based platforms that identify workers as independent contractors don't have to follow the law directly, which limits the actual benefits of social security payments.[67]

The Information Technology Act of 2000 is also important in AI situations, especially when it comes to electronic data, cybersecurity, and some parts of data protection.[68] But it doesn't fully include AI decision-making, algorithmic accountability, or workers' rights to their data.[69]

JUDICIAL APPROACH TO AI AND LABOUR RIGHTS

Indian courts haven't yet looked carefully at AI-related labour challenges, but constitutional law gives them a strong base to work from.[70] The Supreme Court accepted the right to a living under Article 21 in Olga Tellis v. Bombay Municipal Corporation.[71] This decision is very important now that AI automation is threatening jobs.[72] The Court said in People's Union for Democratic Rights v. Union of India that not paying workers the minimum wage is like forcing them to work, and this rule can also apply to unfair salaries set by computations on AI-managed platforms.[73]

In K.S. Puttaswamy v. Union of India, the Court also said that the right to privacy is a basic right.[74] This decision is especially important in AI-powered workplaces where surveillance technology and algorithms are used to collect, monitor, and process employee data.[75]

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[65] Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 11–12 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/; ILO, Digital Labour Platforms and the Future of Work 21–24 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

[66] The Code on Social Security, No. 36 of 2020, § 2(35), (61), India Code.

[67] Id.; ILO, World Employment and Social Outlook: The Role of Digital Labour Platforms in Transforming the World of Work 89–93 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

[68] The Information Technology Act, No. 21 of 2000, India Code.

[69] Ranjan, supra note 2, at 123–124; OECD, Artificial Intelligence, Automation and Work 34–37 (2019), https://www.oecd.org/employment/Automation-policy-brief-2019.pdf.

[70] Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 115–17 (2021).

[71] Olga Tellis v. Bombay Mun. Corp., (1985) 3 SCC 545 (India).

[72] S. Chaturvedi, "Artificial Intelligence and the Future of Work in India," 12 Indian J. Labour Econ. 45, 48 (2020).

[73] People's Union for Democratic Rights v. Union of India, (1982) 3 SCC 235 (India).

[74] K.S. Puttaswamy v. Union of India, (2017) 10 SCC 1 (India).

[75] Id.; OECD, Artificial Intelligence, Automation and Work 40–42 (2019), https://www.oecd.org/employment/Automation-policy-brief-2019.pdf.

Recent petitions, including Indian Federation of App-Based Transport Workers v. Union of India, show that people are worried about the legal status and social security of platform workers who are controlled by AI systems.[76]

CHALLENGES IN AI-DRIVEN LABOUR REGULATION

AI creates difficult problems like algorithmic bias, a lack of transparency, automated decision-making, and digital monitoring.[77] Employees generally lack control over or knowledge of the mechanisms by which AI systems assign responsibilities, assess performance, or establish compensation.[78] A lack of practical ways to hold people responsible creates a regulatory gap.[79]

REFORM RECOMMENDATION

To solve the gaps in India's labour framework amid the Fourth Industrial Revolution, focused reforms are fundamental: amend both the Industrial Disputes Act, 1947, and Code on Wages, 2019, to mandate AI impact assessments for layoffs with scaled retrenchment compensation,[80] while formally recognising gig or platform workers e.g., Ola/Uber under the Code on Social Security, 2020, through minimum wage floors, algorithmic accountability, and collective bargaining rights;[81] launch a national "AI-Resilient Workforce Program" in partnership with NASSCOM and ILO to educate 100 million workers by 2030 in AI literacy and green tech,

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[76] Indian Fed'n of App-Based Transport Workers v. Union of India, W.P. (C) No. 9614/2021 (Del. HC, filed Sept. 2021); Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 16–17 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/.

[77] ILO, Ethics in the Digital World: Dealing with Algorithmic Bias and Data Protection 7–11 (2022), https://www.ilo.org/global/topics/future-of-work/publications/WCMS837243/lang--en/index.htm; OECD, Artificial Intelligence, Automation and Work_ 40–44 (2019), https://www.oecd.org/employment/Automation-policy-brief-2019.pdf.

[78] Urvashi Aneja, "Labour Rights and the Gig Economy in India," Observer Research Foundation Occasional Paper No. 246, at 20–22 (2019), https://www.orfonline.org/research/labour-rights-and-the-gig-economy-in-india-54416/; Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 125–126 (2021).

[79] ILO, Digital Labour Platforms and the Future of Work 61–66 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS771963/lang--en/index.htm; OECD, Policy Responses to New Forms of Work_ 42–45 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/.

[80] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code; Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 123–24 (2021).

[81] The Code on Social Security, No. 36 of 2020, §§ 2(35), (61), India Code; ILO, World Employment and Social Outlook: The Role of Digital Labour Platforms in Transforming the World of Work 89–93 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

funded by a 1% CSR levy on tech firms;[82] pilot Universal Basic Income in automation hotspots, aligned with Article 21's dignity of labour;[83] enact a "AI and Labour Rights Act" embedding ILO Convention No. 190 for bias-free algorithms and human oversight;[84] and implement a 5-year just transition roadmap via a National Labour-AI Commission, including Supreme Court guidelines expanding "industry" definitions, fast-track tribunals, and state-level model rules—ensuring technological progress upholds constitutional social justice for India's 500 million workforce.[85]

CONCLUSION

India's Fourth Industrial Revolution, influenced by AI, automation, and gig platforms such as Ola and Uber, poses a risk of replacing millions while simultaneously creating new opportunities, thereby revealing the vulnerability of its labour structure.[86] This paper examines the sufficiency of statutes such as the Industrial Disputes Act, 1947; the Code on Wages, 2019; the Industrial Relations Code, 2020; and the Code on Social Security, 2020, in ensuring job security, fair compensation, and worker dignity in the context of artificial intelligence.[87] The findings show big gaps: platform labour is not recognised as "employment," there are not enough rules for layoffs due to automation, and the courts are not willing to help.[88] Domestic precedents, such as Bangalore Water Supply (1978), which expanded the definition of "industry," and Sergio Godinho (2020), which upheld gig rights, provide some hope but

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[82] NASSCOM, "AI for India," https://nasscom.in/knowledge-center/publications/ai-for-india/ (last visited June 2024); ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

[83] India Const. art. 21; Guy Standing, Basic Income: And How We Can Make It Happen 124–130 (Penguin 2017).

[84] ILO Convention No. 190, Violence and Harassment Convention (2019), https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100ILOCODE:C190; OECD, Policy Responses to New Forms of Work 38–40 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/.

[85] Bangalore Water Supply & Sewerage Board v. A. Rajappa, (1978) 2 SCC 213 (India); NITI Aayog, "Strategy for New India @ 75," https://www.niti.gov.in/strategy-for-new-india (last visited June 2024); Supreme Court Guidelines, see Olga Tellis v. Bombay Mun. Corp., (1985) 3 SCC 545 (India).

[86] World Economic Forum, The Future of Jobs Report 2023 6–12 (2023), https://www.weforum.org/reports/the-future-of-jobs-report-2023/; Klaus Schwab, The Fourth Industrial Revolution 22–27 (World Economic Forum 2016).

[87] The Industrial Disputes Act, No. 14 of 1947, India Code; The Code on Wages, No. 29 of 2019, India Code; The Industrial Relations Code, No. 35 of 2020, India Code; The Code on Social Security, No. 36 of 2020, India Code.

[88] Prabhash Ranjan, "Artificial Intelligence, Labour Standards and India's Regulatory Gaps," 33 Nat'l L. Sch. India Rev. 112, 124–128 (2021); ILO, Digital Labour Platforms and the Future of Work 61–66 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

struggle to keep up with the size of 4IR.[89] Articles 14, 19(1)(g), 21, and Directive Principles 38-43 of the Constitution say that the 500 million workers must have a fair transition.[90] This is in line with Ambedkar's idea of labour as human development.

Some of the changes that need to be made are: changing the rules to require AI impact assessments and gig social security; creating a "Digital Shramik Yojana" to retrain 100 million people through NSDC and Skill India, with funding from tech CSR; starting UBI pilots in SEZs under Article 21; passing a "AI Labour Rights Act" that requires clear algorithms; and setting up a National Labour-AI Commission under the Ministry of Labour, with guidelines from the Supreme Court and model rules from the states.[91] India can't handle the inequity that 4IR will cause. Policymakers need to take advantage of this opportunity by using NITI Aayog's vision and the support of Parliament to make sure that social justice is a part of technological progress.[92] By strengthening labour laws with compassionate AI governance, India may set an example of how new ideas can help those who are less privileged. This would keep the promise of justice social, economic, and political for every worker in the digital era.[93]

"Focused reforms are essential: India must update its labour statutes to include AI impact assessments, formalise protections for platform workers, and ensure algorithmic transparency and accountability."[94]

[89] Bangalore Water Supply & Sewerage Board v. A. Rajappa, (1978) 2 SCC 213 (India); Sergio Godinho v. State of Goa, (2020) SCC OnLine Bom 114 (India).

[90] India Const. arts. 14, 19(1)(g), 21, 38–43.

[91] OECD, Policy Responses to New Forms of Work 38–40 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/; NASSCOM, "AI for India," https://nasscom.in/knowledge-center/publications/ai-for-india/ (last visited June 2024); ILO, Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (2015), https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

[92] NITI Aayog, "Strategy for New India @ 75," https://www.niti.gov.in/strategy-for-new-india (last visited June 2024).

[93] ILO, World Employment and Social Outlook: The Role of Digital Labour Platforms in Transforming the World of Work 110–112 (2021), https://www.ilo.org/global/topics/non-standard-employment/publications/WCMS_771963/lang--en/index.htm.

[94] OECD, Policy Responses to New Forms of Work 38–40 (2020), https://www.oecd.org/employment/policy-responses-to-new-forms-of-work/; The Code on Social Security, No. 36 of 2020, §§ 2(35), (61), India Code.