Navigating the Future of Work

Trends and Policy Insights
Tech Adoption | Gig Work | Green Jobs

Contents

1.   Introduction

Rapid technological advancements in recent decades have significantly altered how we work and where we work. These changes are transforming humanity's relationships with labour, marking a fresh phase in human progress. Advancements like artificial intelligence (AI) and machine learning (ML) are blurring the lines between physical and digital domains, presenting a new landscape of both immense opportunity and potential risk.[1]

India is at the forefront of this revolution. The economy-wide adoption of advanced technologies like AI and expedited digitization due to initiatives like the Digital India Mission is driving transformation across industries. With the rapid uptake of frontier technologies, human-machine interaction is likely to dictate the skills and competencies required of employees in order to remain competitive and employable. As automation increasingly augments and, in some cases, substitutes human labour, the workforce must adapt by acquiring new proficiencies and embracing interdisciplinary collaboration. An example is the growth of the gig economy. Enabled by technology and characterised by task-based work, short-term contracts or freelance work, the gig economy offers both opportunities and challenges for workers and employers alike.
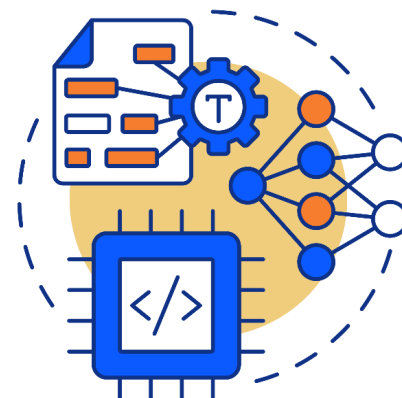
While adoption of technology is changing the nature of work, other "non-tech" elements like climate change are also redefining how we work. Increasingly there is growing emphasis on sustainability and reducing the carbon footprint of human activity. This has led to the emergence of "green jobs" that require specialised "green skills". This shift towards sustainability aligns with global efforts to combat climate change and promote environmental conservation.

Additionally, societal shifts have brought forth new priorities in the workplace. The COVID-19 pandemic accelerated the adoption of flexible work arrangements, prompting companies to prioritise employee-centric approaches that enhance work-life balance and productivity. Flexible work models empower employees to dictate their work schedules, enable organisations' access to diverse talent pools, and also aid in minimising environmental impact. This evolving nature of work is also altering established concepts of the workplace - redefining it beyond physical boundaries to encompass private spaces like homes and even virtual spaces that are being enabled via the use of technologies like augmented and virtual reality.

[1] World Economic Forum (n.d.), "Fourth Industrial Revolution", WEF, https://www.weforum.org/focus/fourth-industrial-revolution/

This new transformed landscape necessitates a reevaluation of our definition of work and the regulations governing it. Definitions and regulations governing workplaces and workers have hitherto been driven by infrastructure-heavy businesses, classical manufacturing or IT/ITes models, and overlook the agility demanded by today's work ecosystem. Moreover, amongst these epochal changes, India stands at a pivotal juncture with a burgeoning young workforce[2] and as the world's fastest-growing large economy.[3] India's workforce, comprising a large proportion of young individuals, holds immense potential to drive economic growth and innovation. To fully harness the potential of this young workforce, it is imperative that they are equipped with requisite skills, including digital skills.

As we navigate a new era of rapidly transforming work and workplaces, it is essential to understand the evolving dynamics of work and workers, the emerging trends in the workplace, and the necessary policy frameworks to ensure a resilient and inclusive future. This report sheds light on the trajectory of these developments, and offers policy recommendations to navigate the complexities of the "Future of Work" in India.

2.   Evolution Of Work and What It Means For Workers

Technological innovations of the 20th and 21st century - the internet, robotics, machine learning, artificial intelligence (AI), renewable energy[4] - have been identified as key drivers of business transformation and the 4th industrial revolution (4IR) or Industry 4.0. A key aspect of 4IR has been technology led automation of tasks. Such automation is reshaping traditional

work paradigms and altering job roles, skill requirements, and labour markets. For instance, in manufacturing facilities, robots are deployed to enhance efficiency and safety, and machine learning algorithms are being utilised for predictive maintenance.[5] Additionally, AI is also accelerating automation. For example, AI-powered chatbots and virtual assistants are automating customer service interactions and data analysis tasks.[6] Furthermore, digitalization has fueled the explosion of gig/platform work, which is becoming one of the defining features of today's labour markets.

Finally, amidst mounting environmental concerns, the emphasis on sustainability, renewable energy and climate action has propelled "*green jobs*" to the forefront of the conversation around work transformation. With their commitment to reduce greenhouse gas emissions, nations and businesses have steadily moved towards renewable energy sources, sustainable/green construction, better waste-management practices, etc. leading to the creation of new jobs like wind turbine

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[2] EY India (2023.), "Reaping the Demographic Dividend", EY, https://www.ey.com/en_in/india-at-100/reaping-the-demographic-dividend
[3] S&P Global (2023), "India Seizes Crown of Fastest-Growing G20 Economy", S&P Global Market Intelligence, New York, https://www.spglobal.com/marketintelligence/en/mi/research-analysis/india-seizes-crown-of-fastest-growing-g20-economy-dec23.html
[4] McKinsey & Company (2022), "What Are Industry 4.0, the Fourth Industrial Revolution, and 4IR?", https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-are-industry-4-0-the-fourth-industrial-revolution-and-4ir
[5] World Economic Forum (2024), "How We Can Unleash the Power of AI in Manufacturing", https://www.weforum.org/agenda/2024/01/how-we-can-unleash-the-power-of-ai-in-manufacturing/
[6] Google Cloud (n.d.), "AI Chatbot Use Cases", https://cloud.google.com/use-cases/ai-chatbot?hl=en

technicians, sustainability managers, and environmental engineers, etc. all contributing to environmental sustainability. Environmental consulting positions for people advising companies on eco-friendly practices and sustainability initiatives are also on the rise.[7]

Amidst this ongoing "4th industrial revolution", it is crucial to understand what new forms of work will look like, and how they will impact workers, employers, and consumers. This section examines three key trends—technology adoption, gig work, and sustainability— with each subsection delving deeper into how they are reshaping the labour market and unique challenges and opportunities they present for India's workforce.

2.1. Adoption of Technology: Artificial Intelligence and Automation of Work

Mechanisation and automation of jobs has been a fixture of the industrial landscape since the first industrial revolution. In 1913, the use of the moving assembly line for manufacturing cars, pioneered by Henry Ford, revolutionised the scaling of the production of cars rapidly from 25 per day to about 1000 per day at the Ford Motor Company.[8] This was followed by the use of robots in the industry, in the later years of the 20th century, to perform repetitive tasks in automobile manufacturing which increased productivity, improved quality of production and minimised costs.[9] Much like today, there were concerns that robots could fully replace humans. However, humans continued to supervise machine operations. As technology improved, robots began handling more complex tasks.[10]

Today, automation also encompasses the adoption of frontier technologies like robotics, machine learning (ML), and artificial intelligence (AI). These technologies, like the innovations in the past, portend profound disruptions to the future of work. According to assessments by the International Labour Organization (ILO) and the World Economic Forum[11], **the adoption of new technologies holds the potential to automate a significant proportion of tasks, particularly those characterised by routine and rule-based activities requiring low to medium skills.** One report[12] indicates that 50-60% of current occupations, and over 30% of current work hours, globally have the potential to be automated.
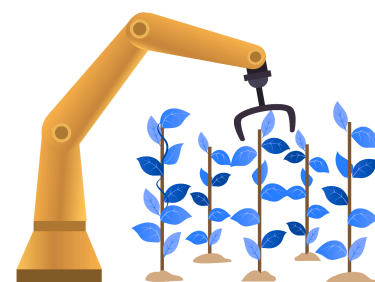
In the Indian context, studies estimate that the overall potential for automation could be anywhere between 52-62%.[13] While automation potential is highest[14] in sectors like

[7] Deloitte (2023), "An Overview of Green Job Growth", https://action.deloitte.com/insight/3340/an-overview-of-green-job-growth

[8] PBS (n.d.), "Henry Ford: A Gallery", https://www.pbs.org/wgbh/americanexperience/features/gallery-henryford/

[9] World Economic Forum (2020), "A Short History of Jobs and Automation", https://www.weforum.org/agenda/2020/09/short-history-jobs-automation/

[10] ibid

[11] World Economic Forum (2020), "The Future of Jobs Report 2020", https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

[12] McKinsey & Company (2017), "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages", https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages

[13] International Labour Organization (2018), "Emerging technologies and the future of work in India", ILO, Geneva https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new_delhi/documents/publication/wcms_631296.pdf

[14] McKinsey & Company (2017), "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages", https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages

manufacturing (67%), retail (56%), agriculture (49%) and construction (42%), technology adoption by workers is still hindered by low skill levels and limited capital. It is important to note that approximately 60% of the formal workforce in India is engaged in "medium-skill" occupations that are more susceptible to automation.[15] This could have profound implications on the types of skills that will be in-demand. While low-skilled workers may be displaced, those who can complement automation with more complex problem-solving and social skills, could enjoy higher wages.[16]
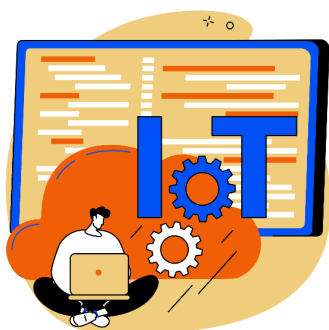
Further, the widespread availability and deployment of AI is also rapidly disrupting the way we work. **India has emerged as one of the leading global markets in the adoption of AI and automation, with surveys conducted by the Data Security Council of India (DSCI) indicating that 97% of surveyed organisations have invested in AI & Machine learning (ML) technologies.**[17] Generative AI (GAI), with its ability to generate content, can significantly augment human skills, and has consequently found utility across sectors.[18] While skills required for jobs are continuously evolving, a report highlights that GAI is accelerating the pace of skill evolution for various jobs by an additional estimated 5 percentage points by the 2030s.[19] This signifies a faster transition within the workforce and a substantial shift in the core skill sets needed across various professions. One example of this is the recent strikes by the Film & TV Writers Guild of America, where risks posed by GAI to writers were major points of contention.

While these developments are certainly concerning, a study assuages some of these fears by highlighting that many occupations require a variety of skillsets that cannot be fully displaced by GAI.[20,21] It categorises occupational roles into three groups based on the impact of GAI as -

- <u>Augmented by GAI</u>: Roles that primarily consist of skills that are both replicable by and complementary to GAI, eg: web designer, data analyst, software engineer, etc.
- <u>Disrupted by GAI</u>: Roles with a significant portion of skills that can be replicated by GAI, but a lower proportion of complementary skills, eg: content writer, translator, librarian, etc.
- <u>Insulated from GAI</u>: Roles with only a small portion of skills that can be replicated by GAI within their core skill set, eg: doctor, construction worker, real estate agent, etc.

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[15] Kuriakose, F. & Iyer, D.K. (2018), "Automation and the Future of Jobs in India", University of Pennsylvania, Philadelphia ,https://casi.sas.upenn.edu/iit/kuriakoseiyer

[16] Holzer, H.J. (2022), "Understanding the Impact of Automation on Workers, Jobs, and Wage"s, Brookings Institution, Washington D.C., https://www.brookings.edu/articles/understanding-the-impact-of-automation-on-workers-jobs-and-wages/

[17] Data Security Council of India (2024), "India Cybersecurity Domestic Market", DSCI, New Delhi, "https://www.dsci.in/files/content/knowledge-centre/2024/India%20Cybersecurity%20Domestic%20Market%202023.pdf

[18] Deloitte AI Institute (2023), "The Generative AI Dossier: A Selection of High-Impact Use Cases Across Six Major Industries", https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consulting/us-ai-institute-gen-ai-use-cases.pdf

[19] Kimbrough, K. & Carpanelli, M., (2023), "Preparing the Workforce for Generative AI: Insights and Implications", LinkedIn Economic Graph, https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/preparing-the-workforce-for-generative-ai.pdf

[20] LinkedIn Economic Graph, 2023. "Future of Work Report: AI at Work." https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/future-of-work-report-ai-november-2023.pdf

[21] Baird, M., Carpanelli, M. & Lara, S., (2024), "Generative AI and Gender: Global Measures of Workers in GAI Classifications", LinkedIn Economic Graph, https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/generative-ai-and-global-gender-work-classification.pdf

This highlights the need to re-evaluate the skill sets needed for different jobs, to minimise the risk of displacement for workers. **AI-driven disruptions, although more groundbreaking than ever before, parallel the transformations brought about by computers, the internet, and mobile devices a couple of decades ago.** For instance, computers revolutionised tasks such as data processing and analysis, leading to increased efficiency and productivity in office environments. **Similarly, AI is poised to become an indispensable component of the job market across sectors, in the coming decade and beyond.** AI algorithms are already being used in medical diagnosis to analyse medical imaging data and identify patterns indicative of diseases[22]; in finance, AI-driven algorithms are employed for automated trading and risk management, optimising investment strategy.[23] Just as society adapted to past technological shifts like the internet, the computer and mobile phones, we too can navigate the AI transition—provided we proactively reorient our skilling ecosystem.

The government, already cognizant of these concerns, has taken several initiatives. In 2018, the NITI Aayog developed the National Strategy for Artificial Intelligence[24], with a vision of "AI for All", to provide a framework for leveraging AI for inclusive growth. AI for All aims to address challenges of access, affordability, expertise and skills, among others. Furthermore, in March 2024, the Union government launched the India AI Mission focusing on innovation, promotion of AI across sectors, and skill development.[25]

A recent report[26] has also highlighted the increasing demand for specialised AI skills, like coding, data analyses etc., in online job postings, while also stating that demand for workers with such skills quadrupled between 2010 and 2019. **Along with these advanced AI skills, even basic skills for interacting with AI have quickly become "in-demand" skills for many occupations.[27]** As automation and AI continue to advance, specialised skills in AI software development, data science, and problem-solving will be increasingly valued in the job market. Even basic knowledge of AI software and data analytics will become essential for many roles. Strong interpersonal skills will remain crucial, as human-machine interactions become more common, and individuals with a blend of technical expertise and effective communication abilities will be well-equipped for success in the AI-driven economy.

Recognising the immediate need to upskill and reskill the workforce for the evolving job landscape, in 2023, the government announced the launch of the Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0), with emphasis on new-age skills like AI, robotics, and

[22] IBM Think Insights (2023), "AI in Healthcare: Benefits and Use Cases", https://www.ibm.com/think/insights/ai-healthcare-benefits
[23] Hasan, S., (n.d.), "Artificial Intelligence in Financial Markets and Risk Management", Woxsen University, https://woxsen.edu.in/blog/artificial-intelligence-in-financial-markets-and-risk-management/
[24] NITI Aayog (2019), "National Strategy for Artificial Intelligence", Government of India, New Delhi, https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf
[25] Ministry of Electronics & IT (2024), Press Release on AI and Employment, Government of India, New Delhi, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2012357
[26] OECD (2023), "OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market", OECD Publishing, Paris, https://doi.org/10.1787/08785bba-en.
[27] CNBC (2023), "ChatGPT is the Hottest New Job Skill That Can Help You Get Hired, According to HR Experts", CNBC News, https://www.cnbc.com/2023/04/05/chatgpt-is-the-newest-in-demand-job-skill-that-can-help-you-get-hired.html

soft-skills.[28,29] More recently, in March 2024, the National Skill Development Corporation International (NSDCI), a subsidiary of National Skill Development Corporation (NSDC), launched the Global Job Readiness Program (GJRP) in partnership with Australia's Deakin University. This initiative focuses on six critical areas, including soft skills such as communication, collaboration, problem-solving, innovation, financial literacy, and digital literacy.[30]

The rapid adoption of AI across sectors presents a golden opportunity to proactively accelerate and scale skill development programs in India, ensuring that our workforce keeps pace with the demands of the global industry.

2.2. Proliferation of Gig Work

The gig economy - characterised by short-term, project-based tasks facilitated largely through digital platforms - is redefining the employment landscape globally. While "gigs", or one-off jobs are not new, the increased use of technology has contributed to a rapid proliferation of this type of work. The International Labour Organization's 2021 World Employment and Social Outlook Report highlights a fivefold increase in digital labour platforms over the last decade, illustrating the gig economy's explosive growth worldwide.[31] India – with its demographic dividend, half-a-billion labour force and the world's youngest population, rapid urbanisation, widespread adoption of smartphones and associated technology – is the new frontier of this revolution.[32] As of 2020-21, India's gig workforce was estimated to be 7.7 million and projected to grow to 23.5 million by 2029-30[33], with an estimated 56% of new employment in India being generated by **gig economy companies across both blue and white collar workforce.[34]**

The popularity of gig work is based on it providing alternative employment arrangements with flexibility and low entry barriers, especially for the unemployed and migrant workers, as well as those residing in different geographical areas.[35] For individuals, gig work offers new opportunities, particularly for those who face challenges securing traditional full-time jobs due to educational barriers or limited time availability. For firms, it leverages technology to create

[28] Ministry of Skill Development and Entrepreneurship (2024), "Guidelines for Pradhan Mantri Kaushal Vikas Yojana 4.0", Government of India, New Delhi, https://www.msde.gov.in/static/uploads/2024/02/PMKVY-4.0-Guidelines_final-copy.pdf

[29] Ministry of Finance (2023), Press Release on Economic and Employment Initiatives, Government of India, New Delhi, https://pib.gov.in/PressReleasePage.aspx?PRID=1895304

[30] NSDC International (2024), Press Release: Global Job Readiness Program on Skill India Digital Platform, National Skill Development Corporation, New Delhi, https://nsdcindia.org/sites/default/files/Press%20Release_NSDC%20International%20in%20partnership%20with%20Deakin%20University%20rolls%20out%20Global%20Job%20Readiness%20Program%20on%20Skill%20India%20Digital%20platform_.pdf

[31] International Labour Organization (2021), "World Employment and Social Outlook: Trends 2021", ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_795453.pdf

[32] NITI Aayog (2022), "India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Government of India, New Delhi", https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf

[33] For comparison, in the same year India's total workforce was estimated to be 556.51 million, of which formal workforce was 127 million. https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf

[34] NITI Aayog (2022), "India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Government of India", New Delhi, https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf

[35] De Stefano (2016), "The rise of the 'just-in-time workforce': On demand work, crowdwork, and labour protection in the 'gig-economy'", Working Paper 71. Conditions of Work and Employment Series, ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443267.pdf

flexible contractual arrangements. These arrangements optimise labour costs and provide "numerical flexibility" to adapt to fluctuating demand, ultimately enhancing competitiveness.[36]

Despite these positive aspects, gig workers face a myriad of challenges stemming from the unique nature of their employment arrangements. **Operating as independent contractors engaged in short-term, project-based tasks, gig workers often find themselves outside the purview of traditional employer-employee relationships.**[37] This leads to lack of access to essential social security benefits and protections like health insurance, retirement plans, and unemployment benefits.[38] Gig workers also contend with problems such as unpredictable work hours[39], blurred boundaries between work and personal life, and a lack of collective bargaining power[40]. The unpredictability in income can exacerbate insecurities, as earnings for gig workers can drop precipitously during periods of low demand, leaving them financially vulnerable. These challenges were acknowledged at the 18th G20 summit in New Delhi, as it called for ensuring "*adequate social protection and decent working conditions for gig and platform workers.*"[41]

In fact, to address some of these challenges, India's Code on Social Security, 2020, for the first time, provides definitions for 'gig worker' and 'platform worker' and proposes social security schemes for them, including life and disability insurance cover, health benefits, and old age protection.[42] It also provides for a Social Security Fund. States have also been proactive in advancing benefits to gig workers. The Telangana government recently announced health and accident insurance for gig workers through the Rajiv Arogyasri scheme.[43] Rajasthan enacted the Rajasthan Platform Based Gig Workers (Registration and Welfare) Act, 2023, which regulates the engagement of gig workers and envisages a social security and welfare fund for gig workers paid for by the primary employers/aggregators via a welfare cess.[44]

As government-led social security measures for gig workers gain momentum, the necessity to adapt our regulatory

[36] International Labour Organization (2016), "Non-standard employment around the world", ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_534326.pdf

[37] International Labour Organization (2021), "Extending Social Security to Workers in the Platform Economy", ILO, Geneva, https://www.social-protection.org/gimi/Emodule.action;jsessionid=TRLxXu3kUWhRXYlumnGySrnalaw7Kj8I_DCRrIy4c3Qp4gT1KQSC!1750948109?id=127

[38] Johnston, H. and Land-Kazlauskas, C. (2019), "Organizing On-Demand: Representation, Voice, and Collective Bargaining in the Gig Economy", ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_624286.pdf

[39] Sutherland, W., Jarrahi, M.H., Dunn, M. and Nelson, S.B. (2020), "Work Precarity and Gig Literacies in Online Freelancing, Work, Employment and Society", Vol. 34, No. 3, pp. 457-475, SAGE Publications, https://journals.sagepub.com/doi/pdf/10.1177/0950017019886511

[40] Johnston, H. and Land-Kazlauskas, C. (2019), "Organizing On-Demand: Representation, Voice, and Collective Bargaining in the Gig Economy", ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_624286.pdf

[41] Ministry of External Affairs (2023), "G20 New Delhi Leaders' Declaration", Government of India, New Delhi, Point 20(viii),https://www.mea.gov.in/Images/CPV/G20-New-Delhi-Leaders-Declaration.pdf

[42] Ministry of Labour and Employment (2023), Rajya Sabha Starred Question No. 164: Social Security Scheme for Gig Workers, Government of India, New Delhi, https://sansad.in/getFile/annex/260/AS164.pdf?source=pqars.

[43] Livemint (2023), "Telangana CM Revanth Reddy Announces Benefits for Gig Workers, Cab, Auto Drivers", https://www.livemint.com/news/telangana-cm-revanth-reddy-announces-benefits-for-gig-workers-cab-auto-drivers-check-details-here-11703393846687.html

[44] PRS India (2023), "The Rajasthan Platform Based Gig Workers (Registration and Welfare) Act", 2023, https://prsindia.org/files/bills_acts/acts_states/rajasthan/2023/Act29of2023Rajasthan.pdf

framework to the evolving nature of work has become pressing. This urgency is amplified by the fact that a growing number of individuals are turning to gig work as their primary source of income. One survey found that over 95% of taxi and delivery workers in major Indian cities rely on platform work as their main income.[45] This underscores the critical role of gig workers in India's economy and the urgency in addressing their needs. These challenges have also emerged as key forces influencing the future of gig work in India (discussed in greater detail in Section 3.1). While significant efforts are underway to create a conducive environment for gig work, there is a need to affect solutions that balance the flexibility and opportunities offered by gig work, with necessary social protection for workers.

2.3. Growing Salience of Sustainability Measures and Green Jobs

In discussions surrounding the future of work, one aspect that merits significant attention is the prominence of green jobs in shaping our future workforce.

Green jobs, according to the ILO, are *"decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency".*[46] Green skills are skills that are required for green jobs and encompass competencies, knowledge, and expertise that enable individuals to perform tasks or roles that contribute to environmental preservation or restoration. These types of jobs and skills are gaining increasing salience, as governments and businesses worldwide have committed to achieving net zero emissions by 2050, which will require substantial transformations across economies and industries. The new opportunities include a wide variety of jobs across sectors, like renewable energy (e.g. solar installer and wind turbine installer), agriculture (e.g. irrigation engineers), R&D roles related to environmental issues etc. Interestingly, many green skills are also utilised in non-traditional green jobs, such as fleet management and data analysis.

The transition to a "green economy" has the capacity to create a significant number of new jobs. In fact, studies show that investments that facilitate the green transition of businesses are among the biggest drivers of net job creation effect.[47] This global shift towards green technologies could potentially create 30 million jobs in sectors such as clean energy, efficiency, and low-emissions technologies by 2030.[48]

Green transition in the global economy is also being enabled by innovations like hydrogen fuel cells and carbon capture technologies that are driving the shift away from fossil fuels, creating jobs and raising the demand for skilled labour. This can have several implications for consumers, workers, communities, regions, and countries, both positive and negative. While the transition may

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[45] Johnston, H. and Land-Kazlauskas, C. (2019), "Organizing On-Demand: Representation, Voice, and Collective Bargaining in the Gig Economy", ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_624286.pdf
[46] International Labour Organization (2016), "What is a Green Job?", ILO, Geneva, https://www.ilo.org/global/topics/green-jobs/news/WCMS_220248/lang--en/index.htm
[47] World Economic Forum (2023), "Future of Jobs Report 2023", WEF, https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf
[48] International Energy Agency (2020), "Sustainable Recovery", IEA, Paris, https://iea.blob.core.windows.net/assets/c3de5e13-26e8-4e52-8a67-b97aba17f0a2/Sustainable_Recovery.pdf

foster the emergence of new livelihoods, it may also worsen the economic challenges faced by communities dependent on fossil fuel supply chains or heighten the financial instability of individuals engaged in extracting essential materials. **Therefore, the need for a "just transition" cannot be overstated.**[49]

Considering this, specifically in urban and peri-urban areas in India,[50] both green job creation and the demand for upskilling and reskilling the workforce for a just transition, will be driven primarily by the following sectors:

- **Renewable energy:** Solar energy, wind energy, and bioenergy are driving growth in the renewable energy sector, which has been recognised as a "Super 10" sector for job creation.[51] Furthermore, the focus on green hydrogen is expected to intensify in the forthcoming years. Recognising this, the Government of India has announced an outlay of Rs. 600 crore to the *National Green Hydrogen Mission* in the 2024 Union Budget[52], and Rs. 11,814 crore to the *Grid Connected Rooftop Solar Programme*, which are likely to give further impetus to solar and green hydrogen related jobs.[53] In terms of the number of jobs, solar energy is expected to accommodate 3.26 million jobs by 2050, followed by wind energy with an anticipated 0.18 million jobs by 2030. Additionally, the bioenergy sector is forecasted to create 0.27 million jobs, while green hydrogen is expected to support 0.6 million green jobs by 2030.[54]

- **Waste Management:** E-waste and wastewater management stand out as prominent segments within waste management. Handling e-waste alone could generate approximately 0.5 million formal employment opportunities in India by 2025.[55] The wastewater management sector, currently supporting 0.71 million jobs, is also expected to demand a substantial influx of skilled labour over the coming decade.[56]

- **Electric vehicles (EV):** By 2030, the expansion of EVs is projected to generate employment for 10 million individuals directly and an additional 50 million indirectly.[57] This not only presents an opportunity to employ new workers, but also to enhance the skills of the existing 35 million Internal Combustion Engine (ICE) workforce[58], ensuring their continued employability in a transitioning automotive industry.

[49] Gupta, S., Hingne, A. and Shah, P. (2023), "Early, Concerted Efforts Key to a Just Transition for Indian MSMEs: Insights From Auto and Textile Sectors", World Resources Institute India, New Delhi, https://wri-india.org/blog/early-concerted-efforts-key-just-transition-indian-msmes-insights-auto-and-textile-sectors

[50] Skill Council for Green Jobs (2023), "Gearing Up the Indian Workforce for a Green Economy: Mapping Skills Landscape for Green Jobs in India", SCGJ, New Delhi, https://sscgj.in/wp-content/uploads/2023/05/Skills-Lanscape-for-Green-Jobs-Report.pdf

[51] Bhowmick, S. (2023), "India's Super 10: Opportunity Sectors for Employment Growth", Observer Research Foundation, New Delhi, https://www.orfonline.org/expert-speak/india-s-super-10-opportunity-sectors-for-employment-growth

[52] The Economic Times Energy (2024), "Budget 2024: Green Hydrogen's Allocation Rises by Whopping 102 Per Cent", New Delhi, https://energy.economictimes.indiatimes.com/news/renewable/budget-2024-green-hydrogens-allocation-rises-by-whopping-102-per-cent/107332321

[53] Ministry of New and Renewable Energy (2022), "Extension of Phase-II of Grid Connected Rooftop Solar Programme", Government of India, New Delhi, https://cdnbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2023/10/202310051549377365.pdf

[54] Skill Council for Green Jobs (2023), "Gearing Up the Indian Workforce for a Green Economy: Mapping Skills Landscape for Green Jobs in India", SCGJ, New Delhi, https://sscgj.in/wp-content/uploads/2023/05/Skills-Lanscape-for-Green-Jobs-Report.pdf

[55] ibid

[56] ibid

[57] ibid

[58] Tarei, P.K., Chand, P. and Gupta, H. (2021), "Barriers to the Adoption of Electric Vehicles: Evidence from India, Journal of Cleaner Production", Vol. 291, p. 125847, Elsevier, https://doi.org/10.1016/j.jclepro.2021.125847.

- **Sustainable Textiles:** There is a lack of precise estimates or definitions of green job opportunities within the textile sector.[59] However, the government's initiatives - like Integrated Processing Development Scheme, National Handloom Development Programme, National Handicraft Development Programme, SAMARTH–Scheme for Capacity Building in Textiles Sector, Silk Samagra 2, and Scheme for Integrated Textile Parks - aim to boost employment, investment, and industry expansion in a sustainable manner. These could pave the way for upskilling/reskilling 45 million textile workers.[60]
- **Construction:** The construction industry is estimated to employ over 76 million workers. The sector's shift towards sustainability and circularity is being propelled by the adoption of global and national green rating systems. Additionally, major private players are embracing these advancements and setting decarbonisation targets i.e., reducing carbon emissions and reliance on carbon-intensive sources. There is a need for reskilling workers and providing managerial training to enterprises to enable this transition. Further, the growing environmental concerns at factories and construction sites are leading to increased demand for specific skills. Jobs such as Environment, Health, and Safety (EHS) expertise, safety management, and regulatory affairs consultants supporting environmental goals are increasingly sought after in the construction sector.[61] In this context, it is estimated that approximately 11 million jobs in the construction sector will be affected by sustainability transitions by 2030.[62]

These trends are reflected in the rising demand for green roles across India's major cities. Statistics indicate a significant rise in green job advertisements for roles like sustainability analysts and managers, in major cities, with Delhi-NCR experiencing a 289% year-on-year increase, followed by Mumbai at 216% and Bengaluru at 174%.[63] Additionally, a report suggests that the number of workers with at least one green skill is growing globally.[64]

India has seen the highest 5-year jump in the number of people with EV skills. **India also leads in green skill adoption within sectors which are not traditionally considered environment friendly, like oil, gas, and mining.**[65] This could be attributed to the efforts of the Skill Council for Green Jobs (SCGJ)[66] established by the Government of India in 2015, with the aim of creating competency frameworks for roles within renewable energy, sustainable development, and environmental sectors. Additionally, specific public green skills development policies and programs, such as the Green Skills Development Programme initiated by the Ministry of

[59] International Labour Organization (2023), "Assessment of Green Jobs and Decent Work Opportunities in the Textile/Garment Sector in Jharkhand State", ILO, Geneva, https://www.un-page.org/static/77435453f4e208a6cd7978a296cac832/231023-assessment-of-green-jobs-and-decent-work-opportunities-in-the-textile-garment-sector-in-jharkhand-state-india.pdf

[60] Ministry of Textiles (2022), "Direct Employment in Textiles Sector is Estimated at 45 Million: Centre", Government of India, New Delhi https://pib.gov.in/Pressreleaseshare.aspx?PRID=1885412

[61] Bala, S. (2023), "Green Jobs in India: Present and Future Prospects", V.V. Giri National Labour Institute, Noida https://vvgnli.gov.in/sites/default/files/157-2023%20Shashi%20Bala.pdf

[62] Skill Council for Green Jobs (2023), "Gearing Up the Indian Workforce for a Green Economy: Mapping Skills Landscape for Green Jobs in India", SCGJ, New Delhi, https://sscgj.in/wp-content/uploads/2023/05/Skills-Lanscape-for-Green-Jobs-Report.pdf

[63] The Hindu BusinessLine (2023), "Demand for Green Jobs in the Country Up 81% Y-o-Y: foundit", https://www.thehindubusinessline.com/companies/demand-for-green-jobs-in-the-country-up-81-y-o-y-foundit/article66562457.ece

[64] LinkedIn Economic Graph (2023), "Global Green Skills Report 2023", https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/green-skills-report-2023.pdf

[65] World Economic Forum (2023), "The Future of Jobs Is Green: How Climate Change Is Changing Labour Markets", WEF, https://www.weforum.org/agenda/2023/04/future-of-jobs-is-green-2023-climate-change-labour-markets/

[66] Skill Council for Green Jobs (2023), "Gearing Up the Indian Workforce for a Green Economy: Mapping Skills Landscape for Green Jobs in India", SCGJ, New Delhi, https://sscgj.in/wp-content/uploads/2023/05/Skills-Lanscape-for-Green-Jobs-Report.pdf

Environment, Forests and Climate Change (MOEFCC), have also aimed at providing employment opportunities for youth in the environment and forest sectors.[67]

Having said this, it is also important to note that skill growth has not kept pace with the demand for green skills globally. According to some experts, just one out of every eight workers worldwide possesses the necessary green skills to facilitate the transition to a sustainable economy.[68] Additionally, although the demand for jobs necessitating at least one green skill is increasing by 9.2 percent annually, the number of workers equipped with such skills is only growing at a rate of 5.4 percent per year.[69]

In this backdrop, the SCJG in India could play a pivotal role in rapidly scaling the implementation of industry-led skill development, aligned with the nation's net zero targets and sustainability objectives.

3. Evolving Workplaces

In addition to the ever-evolving landscape of work detailed above, the workplace itself is undergoing a dramatic transformation fueled by technology and evolving worker preferences. From flexible work arrangements to the integration of AI and automation, the emerging workplace reflects a confluence of factors reshaping traditional work environments. This section explores two key aspects of this transformation: the growing adoption of flexible and hybrid work models, and the evolving nature of workplaces shaped by gig and platform work. Each subsection examines how these changes are redefining work environments and the challenges and opportunities they present.

3.1. Flexible Work

Prior to the COVID-19 pandemic, remote/telework* was largely occasional, with only a small fraction of workers engaging in it regularly.[70] **However, the pandemic accelerated the adoption of remote work across various sectors, raising the proportion of tele/remote workers to 28.6%, reshaping conventional work paradigms.** Employers in India, particularly those reliant on information and communication technologies (ICTs), quickly embraced this work model.[71] **The shift, enabled by ICTs, emerged as a vital tool for business continuity, ensuring operations continued amidst lockdowns and safety measures.**

Remote work offers numerous advantages for employers and workers alike, including access to a wider talent pool, cost savings, improved work-life balance, and higher productivity and

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[67] Ministry of Environment, Forest & Climate Change (n.d.),” Green Skill Development Program”, Government of India, New Delhi, https://www.moef.gov.in/green-skill-development-program.

[68] LinkedIn Economic Graph (2023), “Global Green Skills Report 2023”, https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/green-skills-report-2023.pdf

[69] Trellis (2024), "The Green Skills Gap is Widening", https://www.greenbiz.com/article/green-skills-gap-widening

[70] https://www.elibrary.imf.org/view/journals/001/2023/112/article-A001-en.xml

* working arrangement that allows an employee to use ICTs to work from a remote location outside the corporate offices

[71] McKinsey & Company (2020), "What's Next for Remote Work: An Analysis of 2,000 Tasks, 800 Jobs, and Nine Countries", McKinsey Global Institute, https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-jobs-800-jobs-and-nine-countries

retention rates. This enables employers to attract top talent regardless of location, while employees benefit from reduced commuting costs and increased autonomy in managing their work and personal lives, ultimately leading to greater job satisfaction and loyalty.[72]

- **Productivity and Job Satisfaction:** At the heart of flexible arrangements lies the empowerment of employees to tailor their work-life balance, granting them the autonomy to dictate when, where, and how they engage in their tasks. Working from quieter environments also enhances productivity. Such arrangements are, therefore, increasingly preferred by employees, easing recruitment and positively impacting retention rates.[73] Flexibility not only fosters enhanced work-life equilibrium but also translates into reduced commute times and heightened job satisfaction.**[74]**
- **Access to Diverse Talent:** Flexible work allows employers to recruit talent from diverse locations without the need for physical offices. According to a report, 54% of employers anticipated hiring candidates from tier-2 and tier-3 cities, indicating the growing availability of talent in these regions,[75] presenting an opportunity to tap into a diverse talent pool while reducing costs associated with traditional office-based setups.
- **Inclusivity:** Flexible models also hold promise in fostering greater participation from underrepresented groups in our labour force, including women and persons with disabilities (PwDs). For PwDs, flexible work can increase access to job opportunities and help build fulfilling careers. For women, flexible work can allow opportunities to balance care work and office responsibilities, helping address a key reason why women often drop out of the workforce.[76,77] **Recognising this, Prime Minister Modi announced the development of a vision for the year 2047 in Amrit Kaal, emphasising the need for flexible workplaces, a work-from-home ecosystem, and flexible work hours as opportunities to boost women's labour force participation.**[78]
- **Cost Savings:** Flexible work could also alleviate pressure on real estate markets in major cities and lead to cost savings on office space, utilities, equipment, and travel expenses. In fact, some reports suggest that work-from-home arrangements resulted in savings up to USD 1 billion for companies like Google.[79]

However, solely remote work has some drawbacks, despite the flexibility and autonomy it offers to employees. It can blur the boundaries between work and personal life making it

[72] Seattle University Albers School of Business (2023), "The Status of Remote Work: Pros, Cons, and What It Means for Career Advancement", Seattle University, Seattle, https://www.seattleu.edu/business/news-events/pov/posts/the-status-of-remote-work-pros-cons-and-what-it-means-for-career-advancement.php

[73] OECD (2020), "Productivity Gains From Teleworking in the Post COVID-19 Era: How Can Public Policies Make It Happen?", OECD Publishing, Paris, https://www.oecd.org/en/publications/2020/07/productivity-gains-from-teleworking-in-the-post-covid-19-era-how-can-public-policies-make-it-happen_0aad8ddd.html.

[74] Zoom India and The Quantum Hub (2022), "The Future of Work: Developing an Inclusive Hybrid Work Policy for India", https://thequantumhub.com/wp-content/uploads/2022/12/flexible_work-whitepaper.pdf

[75] Randstad (2022), Talent Trends Report 2022 (First Edition), Randstad India, https://info.randstad.in/randstad-india-talent-trends-report-2022-1st-edition

[76] Lambah, H. (2022), "How Hybrid Working Can Empower Women in the Workplace", YourStory, https://yourstory.com/herstory/2022/07/how-hybrid-working-can-empower-women-in-the-workspace

[77] McKinsey & Company (n.d.), "The Pandemic's Gender Effect", McKinsey Quarterly, https://www.mckinsey.com/featured-insights/diversity-and-inclusion/five-fifty-the-pandemics-gender-effect,

[78] The Print (2022), "Flexible Workplaces and Work Hours, WFH Ecosystem Need of Future: PM Modi", ThePrint India, New Delhi, https://theprint.in/india/flexible-workplaces-and-work-hours-wfh-ecosystem-need-of-future-pm-modi/1100591/

[79] https://www.indiatoday.in/technology/news/story/google-work-from-home-savings-revenue-sundar-pichai-1796539-2021-04-30

harder for employees to disconnect from work.[80,81] Continuous remote work could also result in increased isolation and decreased connection among coworkers,[82] and lower access to opportunities for professional development[83,84] and fewer promotions.[85,86] Some companies have, in fact, implemented a policy change requiring remote workers to adopt a hybrid model in order to remain employed[87] or be considered for career advancement.[88] Despite this, a substantial number of employees may be prepared to leave their jobs if required to return to office,[89] showing that the perceived benefits of working from home are still important to consider.

To address some of the above challenges, it appears that more and more employers are adopting hybrid practices - allowing workers to work from home (WFH) on some days and from the job site on other days. These flexible working arrangements - in terms of work location, hours, and days of work[90] - leverage the benefits of physical presence such as enhancing collaboration productivity, while retaining the best features of remote work such as reduced stress of commuting and increased productivity.[91]

Flexibility in work arrangements varies by industry and role, especially as access to flexible work is associated with intensive use of ICTs and other technologies. For instance, at least 77% of employees in "computer/mathematical occupations" that use ICTs are able and willing to access flexible work due to digital transformations. Additionally, a wide range of industries, including pharmaceuticals, building and construction, food preparation, transportation, etc. now offer roles with flexible work options, reflecting evolving trends in the industry.[92]

[80] van Zoonen, W., Sivunen, A., & Rice, R. E. (2020). Boundary communication: how smartphone use after hours is associated with work-life conflict and organizational identification. Journal of Applied Communication Research, 48(3), 372–392. https://doi.org/10.1080/00909882.2020.1755050

[81] Otonkorpi-Lehtoranta, K., Salin, M., Hakovirta, M., & Kaittila, A. (2021). Gendering boundary work: Experiences of work–family practices among Finnish working parents during COVID-19 lockdown. Gender, Work & Organization, 29(6), 1952–1968. https://doi.org/10.1111/gwao.12773

[82] Maurer, R. (2020), "Remote Employees Are Working Longer Than Before", Society for Human Resource Management, https://www.shrm.org/topics-tools/news/remote-employees-working-longer.

[83] BBC Worklife (2020), "What Remote Jobs Tell Us About Inequality", British Broadcasting Corporation, London, https://www.bbc.com/worklife/article/20200921-what-remote-jobs-tell-us-about-inequality

[84] https://www.rotman.utoronto.ca/Connect/Rotman-MAG/Issues/2023/Spring-2023/Spring-2023-Feature-Articles/Spring_23_Equality

[85] Business Insider (2023), "Remote Workers Are Less Likely to Get Promotions and Raises, but Are Happier: Survey", Insider Inc., New York, https://www.businessinsider.com/remote-workers-less-likely-promotions-raises-happier-wfh-rto-survey-2023-12.

[86] Livemint (2024), "Remote Workers Are Losing Out on Promotions", HT Media, New Delhi, https://www.livemint.com/special-report/remote-workers-are-losing-out-on-promotions-11705054891559.html

[87] India Today (2024), "Amazon Managers Have Templates Ready on Email to Fire Employees If They Fail to Report Office, Read Sample Here", India Today Group, New Delhi, https://www.indiatoday.in/technology/news/story/amazon-managers-have-templates-ready-on-email-to-fire-employees-if-they-fail-to-report-office-read-sample-here-2452929-2023-10-24

[88] Business Today (2024), "No Promotion for Work From Home Employees: Dell Asks Employees to Come to Office at Least 3 Days a Week", India Today Group, New Delhi, https://www.businesstoday.in/technology/news/story/no-promotion-for-work-from-home-employees-dell-asks-employees-to-come-to-office-at-least-3-days-a-week-421974-2024-03-19

[89] FlexJobs (2024), "Losing Talent to Return-to-Office Mandates: Insights From the FlexJobs Survey", https://www.flexjobs.com/blog/post/losing-talent-to-return-to-office-mandates-insights-from-the-flexjobs-survey/

[90] Dunn, M., Munoz, I. and Jarrahi, M.H. (2023), "Dynamics of Flexible Work and Digital Platforms: Task and Spatial Flexibility in the Platform Economy", Digital Business, Vol. 3, No. 1, p. 100052, Elsevier, https://doi.org/10.1016/j.digbus.2022.100052.

[91] Dennison, K. (2024), "How The Flexible & Remote Work Debate Will Carry Into 2024", Forbes, https://www.forbes.com/sites/karadennison/2024/01/24/how-the-flexible--remote-work-debate-will-carry-into-2024/?sh=3adfccf54693

[92] McKinsey & Company (2022), "Americans Are Embracing Flexible Work—and They Want More of It", McKinsey Real Estate Insights, https://www.mckinsey.com/industries/real-estate/our-insights/americans-are-embracing-flexible-work-and-they-want-more-of-it.

3.1.1. Workplaces for a Flexible Future

The reliance on technology for flexible work arrangements is not only changing the way we approach work but also reshaping traditional office spaces and the concept of the workplace itself, as highlighted below:[93]

- **Demand for Co-working Spaces:** While the workplace has come to include homes and any other location of one's choosing, the emergence of co-working spaces across cities has been a key enabler of flexible work. Some reports indicate that the sense of community in coworking spaces fosters connections and a feeling of belonging, without imposing mandatory social interactions.[94] In India, the number of co-working spaces has gradually increased, signalling their popularity.[95] Several state governments in India have also made efforts to create flexible work opportunities through 'Work near Home' (WNH) Centres and co-working spaces. WNH hubs are shared workspaces located in residential areas, offering professionals the benefits of a structured office environment closer to their homes.

- **Virtual Workplaces:** Advanced technologies like virtual and augmented reality (VR/AR), like Metaverse, are also gaining traction among employers due to their ability to enable collaboration with the use of digital avatars of employees. With flexible work decentralising teams, tools like Metaverse could offer a virtual immersive experience, filling the need for social connections.[96,97] Recently, there has been a significant trend of companies investing in virtual real estate within platforms like the Metaverse. Notable examples include PwC Hong Kong and JP Morgan, who have ventured into the metaverse by purchasing virtual land. Additionally, consumer brands such as Adidas and Samsung are establishing virtual locations to engage with customers and offer immersive brand experiences.[98] This shift towards virtual real estate underscores the growing importance of digital environments for social interaction, collaboration, and brand engagement.

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[93] ibid

[94] Spreitzer, G.M., Bacevice, P. and Garrett, L. (2015), "Why People Thrive in Coworking Spaces", Harvard Business Review, https://hbr.org/2015/05/why-people-thrive-in-coworking-spaces?registration=success

[95] Livemint (2023), "Coworking Spaces Double in 4 Years in India: Report", https://www.livemint.com/news/india/coworking-spaces-on-the-rise-india-s-top-cities-witness-90-growth-in-net-absorption-of-flexible-workspaces-postpandemic-11683015874329.html

[96] Meta (2022), "How VR and the Metaverse Will Change the Workplace in 2023", Meta Technologies https://tech.facebook.com/ideas/2022/12/metaverse-change-workplace-2023/

[97] World Economic Forum (2023), "6 Work Challenges the Metaverse Will Address", WEF, Geneva,, https://www.weforum.org/agenda/2023/01/6-world-of-work-challenges-the-metaverse-will-address-davos2023/

[98] Business Chief (2022), "PwC, JP Morgan, Samsung - Buying Land in the Metaverse", https://businesschief.com/technology-and-ai/pwc-jp-morgan-samsung-buying-land-in-the-metaverse

- **Sustainable Workplaces:** As organisations around the world commit to sustainable practices, embracing flexible work arrangements could also reduce our emissions and alleviate traffic congestion in urban areas. In a recent development, the Karnataka High Court issued a directive to the state government to reassess prevailing working hours, emphasising the potential integration of flexible work arrangements as a strategy to alleviate traffic congestion within Bangalore.[99]

Beyond these, **automation is also disrupting the concept of the workplace, even in industries like shipping and fishing, where the workplace intuitively feels 'fixed'**. For example, recent technological developments allow autonomous ships, governed by sophisticated computer software for navigation and system management, to allow onshore crews to remotely control these vessels. This not only enhances operational efficiency but also holds the potential to decrease offshore accidents.[100]

3.1.2. Opportunities and Challenges

Despite the many benefits of flexible working, it is important to note that its availability to workers is dependent on digital literacy and access to digital infrastructure - the internet, computers, smart phones, etc. Unfortunately, India still faces some challenges in this regard. For instance, wireline broadband penetration rate is very low with relatively slow internet speeds.[101,102] And 66% urban households in India have access to the internet , only 24% rural households have any internet access.[103] This divide is further pronounced due to poor digital literacy rates in parts of the country.[104] The Government of India, recognising these issues, is implementing major schemes like the National Broadband Mission, Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) etc. These aim to address the digital divide at its root, by increasing both connectivity and digital literacy.

Beyond access barriers, the widespread use of digital tools in flexible work settings also introduces critical risks around data security and privacy.. According to a report,[105] there were an increased number of cases of cybercriminals exploiting organisational vulnerabilities during the pandemic due to factors such as insecure Wi-Fi networks, software vulnerabilities, and insufficient cyber awareness among employees. The report revealed a 53% increase in ransomware attacks and social engineering risks, with 40% of organisations reporting cyber intrusions specifically targeting their flexible work setups.

[99] The News Minute (2023), "Bengaluru Traffic: HC Tells Govt to Consider Revising School and Workplace Timings", https://www.thenewsminute.com/karnataka/bengaluru-traffic-hc-tells-govt-to-consider-revising-school-and-workplace-timings
[100] NMDG (2018), "Is Automation the Future of Shipping?", National Maritime Development Group, London, https://www.nmdg.co.uk/automation-future-shipping/
[101] Surfshark (2024), Digital Quality of Life Index, Surfshark Research, https://surfshark.com/dql2023
[102] World Bank (n.d.), "Fixed Broadband Subscriptions (per 100 people)", World Development Indicators, https://databank.worldbank.org/metadataglossary/world-development-indicators/series/IT.NET.BBND.P2
[103] NIIT Foundation (2024), "Bridging the Digital Divide: Empowering Rural India", NIIT Foundation, New Delhi, https://niitfoundation.org/bridging-the-digital-divide-empowering-rural-india/
[104] Oxfam India (2022), India Inequality Report 2022: Digital Divide, Oxfam International, New Delhi, https://d1ns4ht6ytuzzo.cloudfront.net/oxfamdata/oxfamdatapublic/2022-12/Digital%20Divide_India%20Inequality%20Report%202022_PRINT%20with%20cropmarks.pdf.
[105] EY India (2022), "How Security Risks Are Impacting Hybrid Work Models", EY Forensic & Integrity Services, https://www.ey.com/en_in/forensic-integrity-services/how-security-risks-are-impacting-hybrid-work-models

Without proper safeguards in place, organisations may be vulnerable to cybersecurity threats, such as data breaches or unauthorised access to sensitive information. In light of this, the Union government has launched several initiatives and schemes to enhance cybersecurity for businesses and citizens alike. These include[106] strengthening the Indian Computer Emergency Response Team (CERT-In)'s capabilities, launching Cyber Surakshit Bharat, establishing the National Critical Information Infrastructure Protection Center (NCIIPC) for critical information protection, appointing Chief Information Security Officers (CISOs), establishing the Cyber Swachhta Kendra for botnet cleaning, and enforcing the National Cyber Security Policy to create a resilient cyberspace and develop a skilled workforce. State governments like Karnataka have also announced the implementation of a state-level cybersecurity policy.[107]

In addition to technological and infrastructure gaps, India's legal and regulatory frameworks have yet to fully catch up with the realities of flexible work. India's labour laws, governed by both central and state legislation, lack adequate provisions for flexible work models despite recent labour code reforms in 2020,[108] although they also do not impose restrictions on these practices. Existing labour legislation does not specifically differentiate between traditional office-based work and remote work, leading to uncertainties regarding benefits, leave policies, and working hours for remote workers. While certain specific provisions - such as the Maternity Benefit (Amendment) Act, 2017 recognise work from home arrangements and recent government guidelines allow 100% work from home in IT Special Economic Zones (SEZs) - comprehensive legislation enabling remote work arrangements is lacking.[109,110]

Existing guidelines, such as the Model Standing Orders for Service Sector, 2020,[111] offer limited provisions for flexible work but may require industry-specific adaptations to address the diverse needs of different sectors. Moreover, compliance with labour regulations, including record-keeping and wage regulations, becomes complex in such setups where the definition of a workplace is blurred, and employees may work across different states or cities.

Additionally, the dissonance between central and state labour rules further complicates matters, posing challenges for employers in assessing statutory obligations and employee benefits, including tax exemptions and infrastructure support for flexible work. For instance, in the case of professional taxes and Labor Welfare Fund contributions, employers must submit locally issued documents for remote employees, even though the employer doesn't maintain a local presence. This creates additional administrative burdens and complicates compliance efforts. Therefore, there is an immediate opportunity in India to pave the way for flexible work through supportive laws and policies.

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[106] Data Security Council of India (DSCI) (n.d.), "The Role of Government Initiatives in Tackling Cybersecurity Challenges in India", DSCI Centre of Excellence, https://ccoe.dsci.in/blog/the-role-of-government-initiatives-in-tackling-cybersecurity-challenges-in-india
[107] The Hindu (2024), "Cybersecurity Policy to be Implemented in Karnataka Soon", https://www.thehindu.com/news/national/karnataka/cybersecurity-policy-to-be-implemented-in-karnataka-soon/article67921769.ece
[108] PRS Legislative Research (n.d.), Overview of Labour Law Reforms, PRS India, New Delhi, https://prsindia.org/billtrack/overview-of-labour-law-reforms.
[109] ET HRWorld (2023), "'Work From Home' Under Indian Legal System", The Economic Times, New Delhi, https://hr.economictimes.indiatimes.com/news/workplace-4-0/work-from-home-under-indian-legal-system/98464374,
[110] https://www.thehindu.com/news/national/centre-allows-work-from-home-for-maximum-one-year-in-sez/article65661068.ece
[111] As stated in the Draft Model Standing Orders , "Subject to conditions of appointment or agreement between employer and workers, employer may allow a worker to work from home for such period or periods as may be determined by employer."

3.2. Workplace for Gig Workers

The transformation of work through gig work was discussed in Section 2.2. In this section, we will be looking at how the workplace itself has changed due to gig work. The gig-economy is usually understood to include chiefly two forms of work: "crowdwork" and "work on-demand via apps".[112] The first term refers to activities that require completion of tasks through online platforms. Here, typically, intermediating platforms help clients and individuals connect over the internet, potentially allowing them to collaborate across the globe. In contrast, "work on-demand via apps" refers to a form of work where traditional tasks like transportation, cleaning, and clerical work are channelled and executed through apps. Firms managing these apps also intervene in setting minimum quality standards and managing the workforce.

While for "crowdwork" the workplace closely resembles flexible working arrangements, for "work on demand via apps" the scope of the 'workplace' gets widened. **Workplaces in these arrangements cover both public spaces (e.g. for food delivery service and ride hailing services) as well as private spaces (e.g. for home grooming services and cleaning services).[113] This duality of workplaces is a unique feature in gig work.**

While the dichotomy of workspaces poses challenges, gig work remains alluring due to its myriad benefits, including low entry barriers and heightened flexibility. By introducing innovative solutions across various sectors such as passenger mobility, hyperlocal delivery, retail, and personal and home care, **platforms[114] have demonstrated the potential to generate livelihood opportunities for diverse individuals, including students, homemakers, store owners, and those operating in the informal sector.** Moreover, these opportunities can be accessed from virtually any location. With the prevalence of internet-enabled smartphones and the availability of monetizable tangible and intangible assets, virtually anyone can transition into a platform worker.[115] These minimal entry barriers, coupled with the ability to juggle multiple jobs, endow the platform economy with tremendous potential to harness India's demographic dividend.[116]

The gig economy offers workers a high degree of choice in *when and how much* they want to work, and sometimes even *where* they want to work. This flexibility significantly shapes gig economy workplaces, empowering workers to tailor their schedules to their personal needs and preferences. Such autonomy revolutionises the traditional concept of a workplace, enabling individuals to operate from diverse locations, ranging from public spaces like roads and markets to private spaces such as homes. While the ability to choose fosters independence, it also introduces challenges related to operational management, safety protocols, behaviour standards, and workplace accessibility.

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[112] De Stefano (2016), "The rise of the 'just-in-time workforce': On demand work, crowdwork, and labour protection in the 'gig-economy'", Working Paper 71. Conditions of Work and Employment Series, ILO, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443267.pdf

[113] Kain, D. (2024), "Caste out: How social hierarchy and exclusion affect gig workers in India [Online]", The Sociological Review Magazine, https://doi.org/10.51428/tsr.fqte1515

[114] "Platform" refers to a digital marketplace or application that connects freelance workers with short-term jobs or tasks, often provided by businesses or individuals seeking specific services.

[115] NITI Aayog (2022), India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Government of India, New Delhi, https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf

[116] Morgan Stanley (2017), "India's Millennials to Drive Growth in Four Key Sectors", Morgan Stanley, https://www.morganstanley.com/ideas/India-millennials-growth-sectors

3.2.1. Workplace Duality - A Challenge for Gig Workers

Workplaces for gig workers often include both public as well as private spaces and this creates unique challenges which are delineated below.

- **Challenges in Public Spaces:** Navigating public spaces such as roads exposes gig workers to a myriad of safety hazards, including vehicular traffic and pedestrian congestion, endangering their physical well-being. Delivery riders, for example, encounter numerous risks during their duties, ranging from road accidents and injuries to theft, crime, violence, and adverse weather conditions.[117,118] A survey conducted in 2021-22 revealed that approximately 80% of workers in the taxi and delivery sectors faced significant safety risks during work hours,[119] with 30% experiencing risks related to theft, 25% to physical assault, and 40% to adverse weather conditions.

- **Challenges in Private Spaces:** Conducting tasks in private spaces, such as homes, presents a distinct set of challenges, particularly concerning personal safety and security. Gig workers providing services like grooming or cleaning may find themselves in unfamiliar environments and interactions, raising concerns about personal safety and the potential for harassment or violence. The 2021 report on "Workers in the Gig Economy" highlights detailed accounts of sexual harassment experienced by spa therapists working for a digital platform, often from clients expecting sexual favors.[120] Furthermore, the absence of standardised safety protocols in private spaces leaves gig workers vulnerable to accidents or injuries while performing tasks in clients' homes.

Many gig platforms have incorporated SOS buttons into their apps and established dedicated helplines to offer assistance during emergencies. For instance, Swiggy recently announced the rollout of an ambulance service dedicated to delivery executives and their dependents in emergency situations.[121] However, the challenges outlined above underscore the intricate nature of gig work environments and highlight the pressing need for comprehensive safety measures and support mechanisms to safeguard the well-being of gig workers. Addressing these concerns requires not just platform-level responses but also comprehensive regulatory interventions, as outlined in the following section.

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[117] Fairwork India (2023), Fairwork India Ratings 2023: Labour Standards in the Platform Economy, Fairwork Foundation, p. 17, https://fair.work/wp-content/uploads/sites/17/2023/11/Fairwork-India-Report-2023.pdf.

[118] Wired (2023), "Gig Workers Are Being Stabbed, Stoned, and Abused in India", https://www.wired.com/story/india-gig-workers-violence-deadly-attacks/.

[119] Centre for Internet and Society (2024), "Workers' Experiences in App-Based Taxi and Delivery Sectors: Key Initial Findings From Multi-City Quantitative Surveys", cis-india.org/raw/workers-experiences-in-app-based-taxi-and-delivery-sectors-key-initial-findings-from-multi-city-quantitative-surveys

[120] People's Union for Democratic Rights (2021), Behind the Veil of Algorithms: Invisible Workers - A Report on Workers in the 'Gig' Economy, PUDR, New Delhi, https://www.pudr.org/publicatiosn-files/PUDR-report-on-gig-workers-Behind-the-Veil-of-Algorithms.pdf.

[121] The News Minute (2023), "Swiggy Launches Free Ambulance Service for Delivery Executives and Their Dependants", https://www.thenewsminute.com/atom/swiggy-launches-free-ambulance-service-delivery-executives-and-their-dependants-172025.

4. Policy Recommendations for a Resilient and Inclusive Future of Work

India's rapidly digitising landscape and technological advancement necessitate a proactive approach to ensure a resilient and inclusive future of work. Based on the insights garnered from the preceding analysis, we propose targeted interventions **aimed at addressing the multifaceted dynamics of the evolving work environment.** These recommendations have been crafted with an aim to empower the workforce, enhance its technological adaptability, and foster sustainable economic growth with social equity. The success of this strategy hinges on collaboration between stakeholders across the industry and government.

4.1. Skilling, Upskilling and Reskilling

For Employers

- **Foundational training:** Given India's deficit in digital skills, it's crucial for the industry to bolster the education system by creating and endorsing multilingual technology literacy training. This approach should blend traditional classroom teaching with digital tools for effective delivery. For instance, Wells Fargo collaborates with MagicBus India to empower underprivileged, first-generation adolescent learners to acquire advanced digital and life skills alongside their formal education. Other industry leaders can follow suit by directing their CSR funds toward similar programs aimed at promoting digital skills from the school level onwards.

- **Collaborations for industry-relevant digital skills**: Industry players can partner with vocational training institutes or other relevant organisations to bridge the digital skills gap among workers. **Companies could also contribute by providing resources on the Skill India Digital platform,** a government-created online platform designed to simplify digital learning by aggregating information from various sources like skill providers, employers, staffing agencies, and financial institutions.
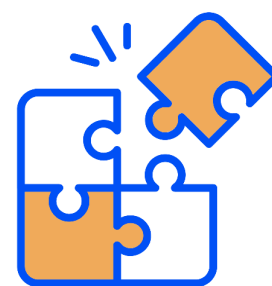
For Governments

- **Promote continuous, lifelong learning:** Encouraging continuous, lifelong learning is paramount, given the ever-changing job landscape and the need for a diverse skill set. Both central and state governments must prioritise fostering such opportunities. **Singapore serves as a successful model, having established lifelong learning as a core aspect of its societal fabric**. The SkillsFuture program,[122] initiated in 2020, exemplifies this approach by targeting students, training providers, and individuals in early and mid-career stages. It actively monitors industry trends to adapt training curriculums to future skill demands and emerging job sectors. The comprehensive plan for the adult education curriculum framework, as recommended by the National Education Policy 2020,[123] should include initiatives to support continuous and lifelong learning.

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[122] SkillsFuture Singapore, https://www.skillsfuture.gov.sg/aboutssg
[123] Point 21.5, National Education Policy 2020

- **Focus on transferable skills:** Successfully adapting to disruptive technologies that impact the work ecosystem hinges on the development of transferable skills—abilities applicable across various job roles. Examples include effective communication, problem-solving, teamwork, and digital literacy. These skills are particularly crucial for emerging economies like India, with large youth populations, to foster a resilient workforce. The National Policy on Skill Development and Entrepreneurship 2015 already underscores the significance of some of these skills, labelling them as "employability skills" (language, IT, financial literacy, and soft skills).[124] To align with the evolving work landscape, a stronger and more integrated approach to transferable skills can be achieved by emphasising their importance in the National Policy on Skill Development and Entrepreneurship.

4.2. Flexible Work

For Employers

- **Implement and facilitate flexible work arrangements:** Organisations should strive to offer employees the flexibility to choose a work style that best suits them. Employers can achieve this by either assigning specific roles for flexible work or extending the choice to all employees based on the specific needs of their business. Such flexibility should be accompanied by clear guidelines outlining the processes and communication channels for requesting flexible working arrangements. In recent years, numerous companies including Hindustan Unilever (HUL), ITC, Maruti, Nestlé, PepsiCo, Tech Mahindra, McCain, Mondelez, Airtel, Mercedes Benz, and Swiggy have implemented flexible working options for some or all of their employees.[125]
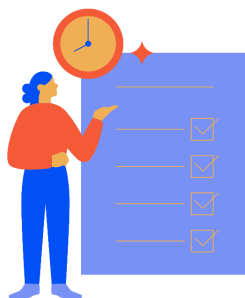
- **Provide tools and solutions necessary for flexible work:** Employers should equip their employees with the necessary tools and technology solutions to collaborate effectively, regardless of whether they are working remotely or in-person. Investing in quality communication platforms, project management software, and collaboration tools is essential to facilitate seamless remote work experiences. Additionally, providing training and mentorship to support career growth and skill enhancement, along with virtual team-building activities will boost morale and strengthen team connections.

  To address cybersecurity concerns, organisations must invest in cybersecurity tools and practices, including the implementation of new protocols and controls. This

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[124] Ministry of Skill Development and Entrepreneurship (2015), National Policy for Skill Development and Entrepreneurship 2015, Government of India, New Delhi, https://www.nitiforstates.gov.in/policy-viewer?id=PNC1160P000010.
[125] The Economic Times (2023), "Hybrid Working Makes a Place for Itself at India Inc", https://economictimes.indiatimes.com/jobs/hr-policies-trends/hybrid-working-makes-a-place-for-itself-at-india-inc/articleshow/103672376.cms

proactive approach will help minimise data security risks associated with remote work arrangements.

- **Make flexible work "*work for all*"**: Flexible work arrangements may pose unique challenges for employees from certain backgrounds. For example, individuals with disabilities (PwDs) and caregiving parents may encounter additional obstacles. To support PwDs, organisations can implement measures to ensure that productivity and enterprise software are vetted for accessibility. For caregiving parents, parental leave, maternity benefits, and flexible hour policies could be revisited and revised to be more inclusive. These policies must be drafted in a gender-sensitive manner to prevent women from facing specific disadvantages.

  By addressing these issues and offering career progression and leadership training opportunities regardless of work style, organisations can create a more equitable and supportive work environment for all employees.

- **Establish best practices for employee welfare:** Organisations can collaborate with their employees and HR departments to craft HR policies that support hybrid work, adopting a test-and-learn approach for continuous improvement. Implementing policies that promote work-life balance, such as flexible work slots, compensatory breaks for those with parenting or caregiving responsibilities, and the right to disconnect after hours, can significantly enhance employee morale and health.

  Employees must also be educated about their rights in a flexible/hybrid setup, ensuring they understand protections under laws like the Prevention of Sexual Harassment (POSH) Act and the Maternity Benefits Act remain in effect regardless of their work model. Addressing pay parity is also critical - any flexible work policy must clearly state the impact of flexible work on the compensation structure of employees and ensure no undue pay discrimination between remote and on-site workers.

For Governments

- **A national strategy for flexible work:** The promotion of flexible work has positive repercussions for gender equality, inclusion of persons with disabilities in the workforce, development of greener cities with reduced traffic congestion, and cost savings for businesses. Thus, the central government, alongside state governments, can consider developing a National Flexible Work Strategy. This strategy could explore how to maximise the benefits arising from flexible work, minimising any downsides and ensuring alignment with the government's wider labour and gender policy objectives.

Internationally, such initiatives have been successful, such as Ireland's 2021 National Remote Work Strategy, called, **'Making Remote Work'[126]. The strategy aimed at ensuring that "remote working is a permanent feature in the Irish workplace in a way that maximises economic, social and environmental benefits".[127]** In order to promote flexible work, the strategy recommended mandating 20% home and remote work in the public sector, investing in a network of remote working hubs, legislating the right to request remote working and making high-speed broadband internet available everywhere.

- **Provide infrastructure support for flexible work:** State and local governments could prioritise investments in building infrastructure that can facilitate hybrid work, such as work near-home hubs and other coworking spaces. India has seen the emergence of two broad models of such work-near-home hubs. **First is the West Bengal Housing Infrastructure Development Corporation's (HIDCO) work-near-home hubs called "Happy Works".[128] It offers affordable spaces for various professionals near their residences, financed through nominal fees. The second model is the remote coworking spaces being provided by L&T Metro Rail Limited in Hyderabad, called 'Office Bubbles'.[129]** For both the models, subsidised availability of land and/or other financial incentives extended by state governments can go a long way in encouraging such hubs in smaller cities. **Repurposing and equipping facilities in unused or underutilised community spaces such as public libraries**, etc. can be another avenue to provide infrastructure for flexible work. Remarkably, over 80 digital libraries have been developed under the Smart City Mission. Thus, there exists a unique opportunity to integrate co-working spaces with these modern libraries. In Singapore, for instance, libraries already provide features of coworking spaces such as hot desks and conference rooms.
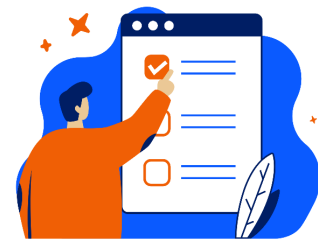
  Ireland has developed a similar network of 228 co-working hubs located all across the country named as Connected Hubs.ie.[130] Operated by The National Hub Network this initiative brought together individual hubs under a shared identity to ease their discovery and maximise the economic opportunity of remote working.

[126] Department of Enterprise, Trade and Employment (2021), Making Remote Work: National Remote Work Strategy, Government of Ireland, Dublin, https://enterprise.gov.ie/en/publications/publication-files/making-remote-work.pdf.

[127] International Organisation of Employers (2021), "Ireland Implements the National Remote Work Strategy: Policy and Practical Application", IOE, Geneva, https://industrialrelationsnews.ioe-emp.org/industrial-relations-and-labour-law-february-2021/news/article/ireland-implements-the-national-remote-work-strategy-policy-and-practical-application.

[128] WBHIDCO Ltd (n.d.), Happy Works Working Pod, West Bengal Housing Infrastructure Development Corporation, Kolkata https://www.wbhidcoltd.com/projects/happy-works-working-pod

[129] ET CISO (2022), "Hyderabad Metro Rail Offers 'Office Bubbles' as Secured Remote Co-Working Spaces for IT Companies", https://ciso.economictimes.indiatimes.com/news/hyderabad-metro-rail-offers-office-bubbles-as-secured-remote-co-working-spaces-for-it-companies/92593918) .

[130] Connected Hubs Network (n.d.), Unlock Ireland's Workspaces: Connected Hubs Network, Government of Ireland, Dublin, https://connectedhubs.ie/about-connected-hubs.html.

- **Provide fiscal Incentives:** Flexible work necessitates employees to set up a workspace at home, incurring costs for devices, furniture, and ongoing expenses like electricity and internet charges. Some companies are providing allowances or reimbursements to cover these expenses. Central and state governments can also consider revising deductions for employees and independent professionals working from home, either part-time or full-time. Tax exemptions, up to a certain ceiling amount, can be offered for expenses related to purchasing home office infrastructure and maintaining services like internet and electricity. **For example, the Irish government has allowed workers to claim remote working relief up to 30% for heat, electricity and broadband in taxes.**[131]

- **Reconcile labour laws:** Labour laws need to be amended to offer clearer guidelines on the status of flexible work arrangements. While the Supreme Court has acknowledged the necessity and benefits of flexible work in certain cases (as *obita dicta* in certain cases),[132] it is crucial to codify these principles into law to ensure the realisation of the benefits of flexible work. Since labour falls under the concurrent list of the Constitution, amendments in this regard would require collaboration between the central and state governments.

  However, flexible work arrangements are currently constrained by employer-employee contracts and discrepancies between central and state laws. To address this, central and state governments could explore the creation of enabling regulations that establish an overarching framework for flexible work models, while clearly identifying the rights of remote workers. Several countries like the UK[133], Colombia[134] and Spain[135] have enforced similar legislation to grant employees such rights.

4.3. Gig/Platform Work

For Employers

- **Extend social security measures:** Employers should consider offering paid sick leave, health insurance, and occupational disease and work accident insurance to gig workers to ensure their health and well-being are protected. During the COVID-19 pandemic, several platforms had implemented such measures. **Perhaps a model like that in**

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[131] Citizens Information Board (n.d.), "Working From Home and Tax Relief", Government of Ireland, Dublin, https://www.citizensinformation.ie/en/money-and-tax/tax/income-tax-credits-and-reliefs/eworking-and-tax-relief

[132] Live Law (2024), "The Lost Cubicle: Reassessing Work-From-Home Paradigms in the Post-Pandemic World", Live Law Media, New Delhi, https://www.livelaw.in/articles/the-lost-cubicle-reassessing-work-from-home-paradigms-in-the-post-pandemic-world-246932

[133] CMS Law (2024), "Remote Working Legislation, Laws & Regulations in Colombia", CMS Legal Services, https://www.legislation.gov.uk/ukdsi/2002/0110441087

[134] The National Law Review (2020), "Spain's New Decree on Remote Working", National Law Forum LLC, https://cms.law/en/int/expert-guides/cms-expert-guide-to-remote-working/colombia

[135] KrASIA (2019), "Indonesia Brings Regulations for On-Demand Motorcycle Taxis Into Effect", KrASIA Media, https://www.natlawreview.com/article/spain-s-new-decree-remote-working

Indonesia can be replicated, wherein an innovative digital mechanism is leveraged to automatically deduct a small amount of the tariff on motorcycle taxis for accident insurance of both the driver and the passenger for the length of the trip.[136] Indian gig and platform companies can explore a similar model to build a corpus fund to extend social security cover to their workforce.

- **Income support**: There is a pressing need for policies aimed at safeguarding gig workers from the precarious nature of their work. Income support measures could be implemented to assist gig workers facing irregular work patterns, ensuring they have a guaranteed minimum income and social security to cushion against income fluctuations during uncertain periods. By adopting such initiatives, platforms can proactively tackle the uncertainty and inconsistency often associated with gig work. This approach can also help alleviate financial strain and foster stability for gig workers.

- **Ensure transparent terms & conditions:** Gig platforms must ensure that their contracts are easily accessible, readable, and understandable. They should provide clear explanations of terms and conditions during training to ensure gig workers are fully aware of their obligations. Some companies have taken steps in this direction by making contracts available in **regional languages**.[137]

For Governments

- **Create supportive regulation:** There is a need for regulatory frameworks to support gig workers, including regulations to ensure fair wages, access to benefits, and protection against exploitation. **Rajasthan recently passed the *Rajasthan Platform Based Gig Workers (Registration and Welfare) Act, 2023*[138]**, which regulates the engagement of gig workers and aims to provide social security and other benefits to platform-based gig workers. The Act also **envisages a social security and welfare fund for gig workers**, requires primary employers/aggregators to deposit a welfare cess, and sets out monetary fines for violations of the Act by aggregators.

- **Extend social protection policies:** There's a pressing need to expand social protection policies tailored to the specific requirements of gig workers. This can be achieved at both the central and state levels by devising specific social safety schemes. For instance, the Karnataka Government has extended accident and health insurance coverage to all platform workers within the state, setting a positive example for other regions to follow.[139] The scheme provides an insurance facility of total Rs. 4 lakh which includes, life insurance and accident insurance of Rs. 2 lakh each, with the premium

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[136] ibid

[137] Fairwork India (2023), Fairwork India Ratings 2023: Labour Standards in the Platform Economy, Fairwork Foundation, p. 25, https://fair.work/wp-content/uploads/sites/17/2023/11/Fairwork-India-Report-2023.pdf

[138] PRS Legislative Research (2023), The Rajasthan Platform Based Gig Workers (Registration and Welfare) Act, 2023, PRS India, New Delhi, https://prsindia.org/files/bills_acts/acts_states/rajasthan/2023/Act29of2023Rajasthan.pdf

[139] Government of Karnataka (2024), "Karnataka State Gig Workers Insurance Scheme", Karnataka State Unorganised Workers Social Security Board, Bengaluru, https://ksuwssb.karnataka.gov.in/info-2/Karnataka+State+Gig+Workers+Insurance+Scheme/en

being borne by the government. Similarly, the Rajasthan Gig Workers Act 2023, creates a Welfare Fund for gig workers.[140]

4.4. Sustainability and Green Jobs

For Employers

- **Partner with other organisations for skill development:** As part of their CSR programs, employers could collaborate with technology partners to address skill gaps and prepare youth for the emerging green economy. Recently, some companies collaborated to launch the Green Skills Passport, a free online education program aimed at equipping young people with skills for the emerging green economy.[141] This initiative was piloted in the U.S., India, and Bangladesh. Similar measures could be replicated by others.

For Governments

- **Establish a National Green Jobs Program:** As has been done in some other countries,[142] the government could consider implementing a multi-faceted strategy focusing on green job creation tailored to India's industries and economic landscape. This could include: (1) changing societal attitudes toward sustainability through educational interventions; (2) creating a supportive business climate for sustainable private sector development; and (3) fostering sustainable MSMEs to provide green employment.

- **Closer alignment of the Green Skill Development Programme (GSDP) with industry needs:** In response to increasing demand for environmental competencies in the economy, Germany integrated modules and training about environmental competencies into its existing occupational competency frameworks and vocational training curricula. This approach is facilitated by Germany's tradition of dual training, where employers influence training content. While some of this is already being done in India, the government could undertake regular review of courses in collaboration with the industry and replace underperforming courses with those aligned with market demand.[143]

[140] Fairwork India (2023), Fairwork India Ratings 2023: Labour Standards in the Platform Economy, Fairwork Foundation, https://fair.work/wp-content/uploads/sites/17/2023/11/Fairwork-India-Report-2023.pdf

[141] ESG Today (2023), "EY, Microsoft Launch Green Skills Training Program", https://www.esgtoday.com/ey-microsoft-launch-green-economy-job-training-program/

[142] Bala, S. (2023), Green Jobs in India: Present and Future Prospects, V.V. Giri National Labour Institute, Noida https://vvgnli.gov.in/sites/default/files/157-2023%20Shashi%20Bala.pdf

[143] Ministry of Environment, Forest & Climate Change (n.d.), Green Skill Development Program, Government of India, New Delhi, https://www.moef.gov.in/green-skill-development-program.

Bigger Picture

The future of work in India is being reshaped by technological disruption, the rise of the gig economy, the imperative for sustainability, and evolving workplace models. While these trends present significant challenges, they also offer immense opportunities to build a more flexible, inclusive, and resilient workforce. With a young, dynamic population and rapid digital adoption, India has the potential and opportunity to lead the global transition toward a skills-driven, green, and equitable labour market. However, realizing this vision requires proactive policy measures, industry collaboration, and investment in human capital.

Therefore, to successfully transform these challenges into opportunities, key priorities must include:

- Upskilling for the AI era to ensure workers complement, rather than compete with, automation.
- Formalising protections for gig workers, ensuring fair wages, social security, and safe working conditions.
- Scaling green jobs through targeted training and industry partnerships to meet sustainability goals.
- Embracing flexible work models while addressing digital divides and cybersecurity risks.

The path forward demands innovation, adaptability, and a commitment to leaving no worker behind. By bridging policy, education, and industry, India has the opportunity to not just navigate the future of work, but to shape it. This is a pivotal moment: the decisions we make today will define whether India's workforce merely survives or truly thrives in the economy of tomorrow, laying the foundation for a future where growth is both inclusive and truly sustainable.

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