WOMEN AND FUTURE OF WORK IN INDIA

Challenges and Opportunities

Ellina Samantroy
Priyanka Chatterjee

Women and Future of Work in India: Challenges and Opportunities

Ellina Samantroy[1]
Priyanka Chatterjee[2]

V. V. Giri National Labour Institute
(Ministry of Labour & Employment, Govt. of India)
Sector – 24, Noida

[1]*Fellow at the V.V. Giri National Labour Institute, Noida*
[2]*Associate Professor, School of Law, Bennett University, Greater Noida*

ISBN: 978-93-5779-380-3

Copyright © V.V. Giri National Labour Institute, Noida

No. of Copies : 100

Year of Publication : 2026

This document can be downloaded from the Institute's website at www.vvgnli.gov.in

Opinions expressed in the study are solely of the author and do not necessarily reflect the views of the Institute.

Printed and Published by V.V. Giri National Labour Institute, Sector–24, Noida–201301, U.P.

Printed at: Radhe Print and Solutions

List of Tables

List of Figures

List of Text Boxes

List of Acronyms and Abbreviations

AI	:	Artificial Intelligence
CAMS	:	Comprehensive Annual Modular Survey
CMS:T	:	Comprehensive Annual Modular Survey :Telecom
DDU-GKY	:	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
EPFO	:	Employees' Provident Fund Organisation
GoI	:	Government of India
ICCs	:	Internal Complaints Committees
ICT	:	Information and Communication Technology
ILO	:	International Labour Organization
IMF	:	International Monetary Fund
IWWAGE	:	Initiative for What Works to Advance Gender Equality
LFPR	:	Labour Force Participation Rate
MGNERA	:	Mahatma Gandhi National Employment Guarantee Act
MSMEs	:	Micro, Small, and Medium Enterprises
MUDRA	:	Micro Units Development and Refinance Agency
NCS	:	National Career Service
NFHS-5	:	National Family Health Survey-5
NIC	:	National Industrial Classification
NSQF	:	National Skill Qualification Framework
OECD	:	Organization for Economic Co-operation and Development
PLFS	:	Periodic Labour Force Survey
PMJDY	:	Pradhan Mantri Jan Dhan Yojana
PMKVY	:	Pradhan Mantri Kaushal Vikas Yojana
SC	:	Scheduled Caste
SERB	:	Science and Engineering Research Board
SHGs	:	Self-Help Groups
SPF	:	Sasakawa Peace Foundation.
ST	:	Scheduled Tribes
STEM	:	Science, Technology, Engineering, and Mathematics
TUS	:	Time Use Surveys
UN	:	United Nations
WEP	:	Women Entrepreneurship Platform
WPR	:	Work Participation Rate

Preface

This study, *Women and Future of Work in India: Challenges and Opportunities*, seeks to explore the evolving landscape of women's labour force participation in India amidst technological change, demographic shifts, and socio-economic transformations. It highlights both the persistent barriers that restrict women's economic engagement and the emerging opportunities that could empower them as key contributors to national development. As India charts its path towards becoming a developed nation by 2047, the inclusion of women in both traditional and emerging sectors such as digital platforms, STEM, and the care economy must be viewed not only as a matter of social justice but as a strategic imperative.

While significant policy efforts have been undertaken, deep-rooted structural issues such as the burden of unpaid care work, occupational segregation, and unequal access to education and skill development, particularly among rural and marginalised populations, continues to hinder progress. The digital transformation, accelerated by the Fourth Industrial Revolution, has created new avenues for work but also widened the gender digital divide. Women continue to face substantial challenges in accessing digital tools, infrastructure, and literacy, which limits their participation in the new economy.

This study adopts a gender-sensitive, evidence-based approach to analyse these multidimensional challenges and offer practical, forward-looking solutions. It advocates for systemic reforms aimed at advancing digital inclusion, expanding social protections, addressing structural inequalities, and fostering women's leadership and entrepreneurship. The recommendations align with international frameworks such as the ILO conventions and the Sustainable Development Goals, and present a comprehensive strategy for enabling a more inclusive and resilient future of work contributing to a Viksit Bharat by 2047.

I am sure that this study will be invaluable in guiding planners, policymakers, researchers, civil society organizations, trade unions, and all stakeholders committed to strengthening women's economic participation and ensuring that the transition to a future-ready workforce is inclusive and equitable.

Dr. Arvind
Director General

Acknowledgement

We take this opportunity to express our gratitude to those who have been instrumental in the successful completion of this work. Firstly, we are deeply grateful to Dr. Arvind, Director General of the V. V. Giri National Labour Institute, Noida for his continuous support and insightful guidance throughout the preparation of this report. His constant encouragement and unwavering support has been pivotal in shaping this work.

We are extremely grateful to Prof. (Dr.) Pradeep Kulshreshtha, Dean, School of Law, Bennett University for his unwavering support and encouragement for undertaking this collaborative research with Bennett University.

Special thanks to the Research Advisory Group members of the Centre for Gender and Labour, VVGNLI, Dr. Ratna Sudarshan, Ms. Chitra Chopra, Prof. Renuka Singh and Ms. Amarjeet Kaur for their insightful comments that helped in enriching the study.

Sincere thanks to Mr. Shahnawaz Ahmad, Research Associate, VVGNLI, for his constant support and guidance at various stages of the study. His hard work, unwavering dedication, and intellectual commitment were instrumental in shaping its final form. The study would not have reached this stage without his active involvement and valuable contributions.

We would also like to thank Ms. Kusum Balooni for her efficient management of data and providing technical support to the study. We also express heartfelt thanks to Ms. Nidhi Agarwal, Stenographer at VVGNLI, for her technical support to this study. Special thanks to Ms. Bhavya Sinha, Ms. Avantika Tyagi and Ms. Drishti Sharma, interns at VVGNLI, for their support and assistance to the study. Also, we would like to thank Mr. Aadil Nadeem Siddique, Student, School of law, Bennett University for designing the cover pages and Executive Summary document.

We also express our gratitude to Shri S.K. Verma, Library and Information Officer, VVGNLI for being extremely kind in extending his support for collecting relevant literature and providing necessary documents for the study.

We appreciate the efforts of Shri H.S. Rawat, Administrative Officer; Shri V.K. Sharma, Assistant Administrative Officer, and Shri Vaibhav Raina, Accounts officer, for their efforts in the smooth facilitation of this study.

The support provided by Mr. Rajesh Karn from the Publications Section, VVGNLI, has been indispensable in giving the final shape to the report. We are extremely grateful to him for his dedicated efforts. This study is truly the result of the collaborative efforts of these individuals and organizations. Their support, expertise and commitment have been invaluable and their contributions are deeply appreciated.

Chapter 1: Introduction

1.1 Context

The ongoing transformation in the labour market, driven by digitisation, automation and the rise of gig economy has led to unprecedented changes in the world of work. The Global Commission on Future of Work Report of the International Labour Organisation (ILO) 2019 had reflected on new forces which are transforming the world of work leading to urgent challenges that need to be addressed towards creating a brighter future and deliver economic security, equal opportunity and social justice (ILO, 2019). While technological progress has immense potential to promote gender equality, it also risks deepening existing regional and gender disparities within the digital economy. Though these shifts have created new avenues for women's employment providing access to emerging sectors, gender disparities still persists in the labour market. Women's labour market participation continues to lag behind that of men, reflecting significant inequality and challenges in the labour market.

Women's participation in the global labour force remains significantly lower than men, highlighting persistent gender inequality in the labour market. According to the ILO's World Employment and Social Outlook: Trends 2025, the global women labour force participation rate (LFPR) was 47.2 per cent in 2024, significantly lower than the corresponding figure of 72.4 per cent for men. This wide gap of 25.2 percentage points emphasises persistent structural constraints on women's entry into the world of work (ILO, 2025). The Indian labour market reflects a complex situation with women's low labour market participation and consistent gender gaps. In India, over 91 per cent women are employed in informal sectors having limited access to employment and social security. The Periodic Labour Force Survey (PLFS) 2023-24 reveals stark disparities with only 47.3 per cent rural and 27.2 per cent urban women participating in the labour market, compared to 79.8 per cent and 74.9 per cent men, respectively. These gaps are compounded by persistent wage disparities, with women earning 19-24 per cent less than men for comparable work (MoLE, 2023)[1]. However, recently there has been an increase in women's work participation rates by 15 percentage points in the 15-59 age group to 39 per cent during 2023-24 from the previously reported 24 per cent in 2017-18 by the PLFS. Inspite of the recent improvements in participation, the gender gap persists, with significant disparities in income, employment opportunities, and job quality (WEF, 2024).

Also, women are mostly engaged in certain low paying sectors, in vulnerable employment that restricts their upward mobility and limits their access to comprehensive social protection. Labour market inequalities are exacerbated by the burden of unpaid domestic and caregiving responsibilities of women that discourages women to continue in paid employment for a longer duration. The recent Time Use Survey (TUS) has reported that women spend around 5 hours in unpaid domestic work and 2.3 hours in unpaid care giving responsibilities Overall, women performed over three times the domestic labour and twice the caregiving duties compared to men, limiting their autonomy and participation in formal employment (MoSPI, 2024). The disproportionate allocation of unpaid care and domestic responsibilities constrains women's access to education and vocational training, thereby reinforcing their concentration in informal and low-wage employment sectors.

Evidence in literature have reported that inspite of higher educational attainment among women, their labour force participation remains lower than that of men, reflecting a disconnect between qualifications and employment outcomes (OECD, 2023). While some studies have highlighted increasing level of education and decreased labour force participation, some others have reported that labour force increases only with highest levels of education. Also, education levels beyond compulsory schooling can lead to

[1]Female Labour Utilization in India – April 2023. Ministry of Labour and Employment, Government of India. Retrieved September,02, 2025, from https://dge.gov.in/dge/sites/default/files/2023-05/Female_Labour_Utilization_in_India_April_2023_final__1_-pages-1-2-merged__1_.pdf

greater motivation to participate in employment (Chatterjee et al, 2018: Bhaduri and Pastore, 2017.)[2] Women's education and labour market outcomes has remained a complex challenge deeply rooted in socio-cultural norms, structural barriers and excessive burden of unpaid and care work which needs to be examined and addressed accordingly. In the contemporary discourse on women and future of work, one of the key drivers for improving women's employability is skill development and vocational training. While transitioning into future of work, the ILO has cautioned that existing skills will not match the jobs of tomorrow and newly acquired skills may quickly become obsolete (ILO, 201f9). Therefore, education and skill development become central to enabling their transition into the future of work (Aggarwal, 2023; Kshatriya and Kurien, 2022).

Amidst the existing inequalities in the labour market, the ongoing technological transformation has brought about unprecedented changes in the world of work, giving rise to new forms of employment, digitalisation, the gig economy, and shifting skill demands (WEF, 2025; ILO, 2025). While digitalisation and automation reshape labour markets, women face both unique challenges and emerging opportunities (WEF, 2025; ILO, 2023). As envisaged in the ILO's Global Commission on Future of Work 2019, new forces have been transforming the world of work with innumerable opportunities emerging in terms of employment, improving quality of working lives, expanding choices and closing the gender gaps (ILO, 2019). Within the future of work scenario, promoting gender equality remains a critical challenge. The Commission envisages a 'human-centred agenda' based on three pillars, *investing in people's capabilities through lifelong learning and universal social protection*, *establishing a Universal Labour Guarantee to ensure minimum rights for all workers regardless of employment type*, and *fostering sustainable work in the green, digital, and care economies* (ILO, 2019). This opens up a wide range of opportunities for women workers across the world and also reiterates the need to examine the present employment situation while assessing the opportunities available for women in the future of work.

1.2 Impact of Technology: Gendered Effects

There is no denying the fact that the future world of work is undergoing a profound transformation driven by rapid advancements in automation, artificial intelligence (AI), and digital platforms that are reshaping employment globally, dismantling traditional job models, and giving rise to new forms of labour, such as platform-mediated gig work, algorithmically managed tasks, and hybrid work arrangements. These developments have created significant inequalities, particularly affecting different groups of workers, including women (IMF, 2019; ILO, 2021). The Future of Jobs Report by the World Economic Forum in 2025 highlights how automation and AI are reshaping labour demand. It estimates that by 2025, automation may displace 85 million jobs globally, but 97 million new roles will emerge in high-growth sectors such as AI and machine learning, cloud computing, education technology, green energy, and healthcare, resulting in a net gain of 12 million jobs (WEF, 2025). However, this shift is not gender-neutral as it would affect men and women differently.

Women are still underrepresented in high-growth fields and overrepresented in declining roles, such as clerical and administrative support, which are highly vulnerable to automation (WEF, 2025). These disparities underscore the need for gender-inclusive policies in skilling, hiring, caregiving support, and digital access. Promising sectors for women's employment in the future of work include digital education, content creation, healthcare services, and climate-resilient work, but realizing this potential requires coordinated investments in infrastructure, inclusive labour market institutions, and equitable algorithmic design (WEF, 2025).

1.3 Challenges for Women in Future of Work and Emerging Opportunities

Globally, automation and digital transformation pose distinct challenges for women. One in four jobs is vulnerable to generative AI, and in high-income countries, 9.6 per cent of women's jobs are

[2]Chatterjee, E., Desai, S., & Vanneman, R. (2018). Indian paradox: Rising education, declining women's employment. Demographic Research, 38(31), 855–878. https://doi.org/10.4054/DemRes.2018.38.31

at high risk compared to only 3.5 per cent for men (ILO, 2025). According to IMF research, 180 million women's jobs globally are at risk of automation within the next two decades, particularly among older women, those in clerical, sales, and service occupations, and those with lower levels of formal education (Brussevich et al., 2018). While women have made significant gains in education and professional roles, they remain underrepresented in STEM (Science, Technology, Engineering and Medical) and high-tech sectors fields that are more resilient to automation (Brussevich et al., 2018). Without deliberate interventions, these disparities could worsen wage gaps and erode progress in gender equality. Policy prescriptions include early STEM interventions, bridging the digital divide, implementing portable learning accounts, and providing gender-sensitive social protections suited to emerging work models (Brussevich et al., 2018).

The ILO has reported that fewer than 20 per cent of people work in high-skill jobs that need advanced analytical abilities and are less likely to be affected by automation. Industry experts add that digital platforms will create new chances for micro-entrepreneurship, offering flexible work hours and opportunities for people to increase their earnings and plan their finances independently. Platforms will also help women to access new job opportunities by overcoming challenges related to limited physical mobility and household responsibilities. Women still face barriers to well-paid jobs and economic opportunities because of gender-based social norms. Emerging trends in technology and employment may worsen existing inequalities in the labour market, especially those related to gender, caste, and religion. (ILO, 2018)[3] .Women are least likely to be replaced by technology in jobs such as child care, elder care, and teaching. While automation is expected to impact men mainly in low-paying jobs, women face risks across both low and high-paying roles. This means that women's access to better-paying jobs could be more affected. Women may face a higher economic risk from automation than men because technological change is more likely to replace women's middle and well-paid jobs (Hegewisch et al, 2019)[4]. In India, this threat is compounded by deep structural inequalities. Labour market data reinforces these concerns, showing that the vast majority of the workforce remains concentrated in low-skill or semi-skilled occupations, with only around 10–12 per cent engaged in high-competency roles, which are more likely to withstand automation-related disruptions[5].

While reflecting on India's transition to a digital and service-driven economy, it was reported that AI technologies pose both threats and opportunities for working population. On one hand, automation may endanger routine white-collar roles, particularly in IT-enabled services (ITeS). On the other hand, AI-human collaboration can also offer pathways for productivity enhancement and job quality improvement (GoI, 2024). A survey by IIM Ahmedabad indicates that 68 per cent of white-collar workers anticipate automation in their jobs within five years, with 40 per cent fearing their current skills may become obsolete, concerns particularly acute for women, who are disproportionately employed in automatable, low-complexity service roles[6]. However, the survey highlights that AI augmentation can improve productivity by up to 34 per cent for low-skilled workers and enhance task outcomes with appropriate training and governance frameworks. It advocates for enabling, insuring, and stewarding institutions to manage this transition, particularly for marginalised and women workers. Sectors like healthcare, education, retail, and finance are identified as having high employment elasticity, making them suitable for inclusive growth and women workforce integration, provided equitable skilling and social protection policies are implemented. The survey positions India's young and fast-growing women workforce as a prospective demographic dividend, subject to public policies that focus on fundamental

[3]International Labour Organization (2018). Emerging technologies and the future of work in India. Indiahttps://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40asia/%40ro-bangkok/%40sro-new_delhi/documents/publication/wcms_631296.pdf

[4]Hegewisch, A., Childers, C., and Hartmann H. (2019). Institute for Women's Policy Research. https://iwpr.org/women-automation-and-the-future-of-work/

[5]https://www.pib.gov.in/PressReleasePage.aspx?PRID=2140231

[6]Indian Institute of Management Ahmedabad. (2024, August 23). IIMA report reveals that employees are ready to embrace AI-driven transformations – the gap in AI education and upskilling needs to be filled [Press release]. https://www.iima.ac.in/inmediaiima-report-reveals-employees-are-ready-embrace-ai-driven-transformations-gap-ai-education

digital literacy, equal access to opportunities, and fair governance of emerging technologies (GoI, 2024).

1.4 Discussions in International Policy Forums

International policy forums such as the G20 and BRICS, additionally, along with organizations like the ILO, have increasingly prioritised gender equality, social justice, and inclusive labour transitions in response to digital transformation. Building on these priorities, under South Africa's presidency (2025), the G20's Empowerment of Women Working Group has concentrated on the care economy, women's financial inclusion, and prevention of gender-based violence, aligning these efforts with SDG 5. These initiatives are further reinforced by ongoing advocacy from Women 20 and G20 EMPOWER, which promote women's leadership, entrepreneurship, and digital access[7]. Meanwhile, BRICS complements these goals by focusing on social justice and AI governance, recognising that AI could affect up to 40 percent of jobs and emphasizing the need for inclusive skill development and social protection, particularly for informal and migrant workers (ILO, 2025a)[8]. Supporting this agenda, the BRICS Women's Business Alliance advances women's participation in STEM and entrepreneurship through programs such as the Women's Startups Contest[9]. Also, the G20 Social Summit (2024) reinforced these themes by underscoring the importance of strengthening labour institutions, fostering technological inclusion through social dialogue, and enabling equitable green transitions as essential foundations for decent work (ILO, 2024)[10]. The ILO has further emphasised that nature-based solutions alone could generate up to 32 million green jobs globally by 2030, presenting a critical opportunity to promote both environmental sustainability and gender-responsive employment (ILO, 2025b). Echoing these priorities, the BRICS Labour Ministers' (2025) Declaration affirmed that managing the dual disruptions of AI and climate change demands a coordinated strategy rooted in just transition principles, universal social protection, and inclusive skilling, particularly for women, youth, informal, and migrant workers (ILO, 2025b)[11]. Together, these coordinated efforts reflect a growing consensus that advancing gender equity, STEM empowerment, green jobs, and digital inclusion is critical to building just, resilient, and inclusive global labour markets[12].

Despite increasing attention to the technological transformations shaping the future of work, significant gaps persist in research and policy frameworks addressing women's smooth transition to labour market outcomes. Some of the global reports underscore the continued neglect of the care economy in national employment strategies. The care sector encompassing childcare, eldercare, and healthcare is expected to be a key engine of future employment, particularly for women, due to aging populations and growing demand for social services. However, in India, the care sector remains predominantly informal, suffers from chronic underinvestment, and is insufficiently integrated into national policy frameworks. The exclusion is particularly severe for women from marginalised communities, whose contributions to care work are often rendered invisible. The ILO emphasises that strategic investment in the care economy could yield up to 4.9 per cent GDP growth and significantly expand women's employment if scaled appropriately (ILO, 2023). Further there has been rise of new forms of employment particularly the burgeoning gig economy that opens up plethora of employment opportunities for women.

1.5 Theoretical Perspectives on the Future of Work

As discussed above, though future of work has several challenges for women, it also promises

[7]Sasakawa Peace Foundation. (2024, April 18). G7 and G20 digital gender gap engagement. https://www.spf.org/en/global-data/user47/DGGF.pdf
[8]https://www.ilo.org/resource/news/ilo-calls-brics-strengthen-efforts-social-justice-groundbreaking-lemm
[9]BRICS Women's Business Alliance. (2024). BRICS Women's Business Alliance Annual Report 2024. https://bricswomen.com/wp-content/uploads/2024/10/BRICS-Womens-Business-Alliance-Annual-Report.pdf
[10]https://www.ilo.org/resource/news/g20-social-summit-shaping-future-work-through-decent-work
[11]International Labour Organization. (2025, April 25). ILO calls on BRICS to strengthen efforts on social justice as groundbreaking LEMM declaration on AI and Just Transition is adopted. Retrieved August 03, 2025, from https://www.ilo.org/resource/news/ilo-calls-brics-strengthen-efforts-social-justice-groundbreaking-lemm
[12]Sasakawa Peace Foundation. (2024, April 18). G7 and G20 digital gender gap engagement. https://www.spf.org/en/global-data/user47/DGGF.pdf

several opportunities with the rise of new forms of employment. Feminist analysis suggest that new technologies along with deliberate interventions can lead to reduction of the existing gender inequalities. New technologies are reshaping women's workforce roles, eroding the traditional family wage and transforming feminized jobs like office work and nursing into capital-intensive yet precarious roles (Haraway, 1991). Unlike men, women are not exiting the workforce at the same rate due to automation. Instead, work restructuring has led to non-traditional forms like remote, freelance, and digital work that are unbound by traditional structures. In parallel, the discourse on technology and the future of work has introduced new critiques, most notably through the concept of the "cyborg" as theorized by Haraway as a metaphor to challenge essentialist views of gender and to expose the ways in which technology can both discipline and surveillance feminized labour, revealing its entanglement with structures of power and control (Haraway, 1991).

Scholars warn that technological change may reverse gender equality gains. As automation reduces job availability, longer working hours may disproportionately burden women, who bear unpaid domestic responsibilities. Feminist perspectives have reflected that automation have affected women disproportionately. Though women have secured most new high-skilled jobs, concerns still persist about technological advancements marginalizing women, especially where care responsibilities are culturally assigned. These perspectives have emphasised about the need to explore how technology may affect jobs (including how that process itself may be gendered) and while appreciating the significant changes of gender relations. Changes in gender relations may prevent a return to domestic roles despite job shortages and influence access to newly created jobs in complex and unpredictable ways (Rubery, 2018). Moreover, technology adoption depends on social acceptance, including gender norms and regulatory frameworks (Hegewisch et al., 2019). Feminist concerns have also highlighted on addressing gender gaps in technology adoption while interrogating who designs these technologies and the social assumptions embedded within them. Women still encounter technological, financial, and social obstacles that are embedded in the design of various platforms. Evidence shows that online labour markets are replicating the same biases that offline labour markets have upheld for a long time. Women in these digital platforms remain at risk of being left behind. They have limited access to skilled jobs and face low demand in the era of technological advancement. Even when women work from home, they still need childcare and opportunities to learn new skills to perform their jobs effectively. However, home-based platform work often discourages both governments and employers from providing support for childcare or skill training (Dewan and Sanyal, 2023)[13].

In light of ongoing transformations, scholars have advocated for a gender sensitive policy frameworks that not only recognize unpaid and care work but also envisages gender-sensitive budgeting, funding for universal childcare and care infrastructure, and the development of inclusive, algorithmic auditing to identify bias, promote transparency and community-led digital technology governance (Fraser, 2009; Gurumurthy et al., 2023; Klein et al., 2023; Friedrich-Ebert-Stiftung, 2023). Some scholars have anticipated the creation of millions of jobs in the emerging blue, digital, and green economies. Women-dominated sectors like education, health, and social services are expected to generate more jobs, requiring emotional and intellectual skills less susceptible to automation (Brussevich et al., 2018). In fact, individuals with higher levels of human capital such as advanced education, specialized skills, and extensive work experience are less susceptible to automation (Petersen et al., 2023).

Within this background, the present study critically analyses women's employment in the broader discourse on the scope of work in the future and what opportunities it offers. It examines the interface of automation,AI and digital platforms in the context of women's employment. The study is contextualised in the backdrop of the current discussions in ILO's Global Commission on Future of

[13]International Labour Organization. (2025, April 25). ILO calls on BRICS to strengthen efforts on social justice as groundbreaking LEMM declaration on AI and Just Transition is adopted. Retrieved August 03, 2025, from https://www.ilo.org/resource/news/ilo-calls-brics-strengthen-efforts-social-justice-groundbreaking-lemm

Work and attempts to delve into the issues for women workers as they transition into the future of work. The study critically examines three significant sectors namely; Education, Skilling and Care sector while exploring opportunities for women in the future of work. The study also engages with the question of how unpaid care work and digitalisation affect women's access to decent work and economic security in the new emerging employment scenario marked by inherited challenges. The study tries to identify key barriers and challenges women face in accessing equitable employment opportunities and offer recommendations for policymakers to promote gender equality, particularly in emerging sectors such as digital, green, and care industries. It aims to contribute to the formulation of inclusive labour market policies that respond to the shifting needs and challenges experienced by women workers.

1.6. Research Objectives

- To understand the employment trends for women in various sectors.
- To explore the impact of technological transformation, digitisation, automation on women's employment in India and the challenges faced by women in the labour market
- To examine government policies aimed at promoting gender equality in the labour market, particularly in the context of advancements in digitalisation and the rise of new forms of employment, such as the gig economy.
- To identify best practices for addressing the gender gap in employment in India and promoting women's employment in the future of work.

1.7 Methodology

This study is based on a desk review of secondary research including academic literature, reports, and policy documents. A key component of the analysis involves examining unit-level data from multiple rounds of the Periodic Labour Force Survey (PLFS) to identify gender-specific trends in employment, sectoral participation, and job quality among individuals in the working-age population (15–59 years). In addition, the study extends its analysis to the broader 15+ age group to capture nuances related to educational attainment and access to skill development opportunities. Policy documents and government reports are reviewed to understand the initiatives in terms or welfare schemes and legislative interventions for promoting women's economic empowerment in the context of future of work.

1.8 Outline of the Study

The study is organized into five chapters. Chapter 1 provides the introduction, including the context, objectives, methodology, and structure of the study. Chapter 2 explores employment trends and gender gaps in the labour market focusing on sectoral distribution, informality, and employability. Chapter 3 examines women's challenges in a transforming world of work. Chapter 4 on policy mapping and legislative interventions reviews national frameworks and global practices. Chapter 5 provides the conclusion and policy recommendations for the study.

1.9 Limitations of the Study

This study is primarily based on a desk review of secondary data, which limits its scope due to the absence of field-based evidence and on-ground insights. The analysis relies solely on existing datasets such as the Periodic Labour Force Survey (PLFS) and selected policy documents, although data from various international reports have also been considered for deriving evidence. Since the area under investigation is a rapidly evolving and contemporary issue, many of the existing data sources do not fully capture the most recent developments in the world of work, particularly those shaped by digital transformation.

Chapter 2
Employment Trends and Gender Gaps in Indian Labour Market

2.1 Context

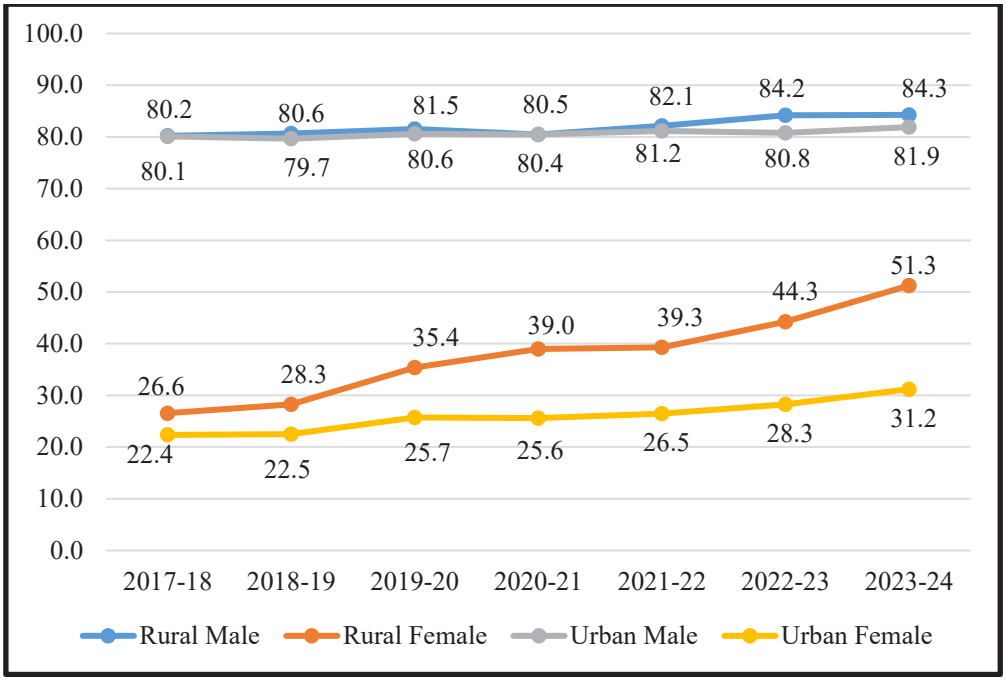
Women employment in India has portrayed a complex picture, with historically low labour force participation rate. The quinquennial Employment and Unemployment Surveys of National Sample Survey Organization (NSSO) has reflected persistent decline in women labour force participation in India. These surveys were discontinued after 2011-12 and the Government of India introduced annual data on employment named as Periodic Labour Force Survey (PLFS) data from 2017-18 onwards and there are seven PLFS data till 2023-24. PLFS data over the period of seven years from 2017-18, though, has revealed a sharp increase in women LFPR, it has still remained low in all the years as compared to men. This phase is accompanied by massive technological transformations leading to new forms of employment and skill challenges which has disproportionately affected women workers in the country. Yet, significant gender-based disparities in access to and quality of employment continue to persist in India. The chapter draws information from the PLFS data of the last five years from 2019-20 to 2023-24 to examine the employment conditions of rural and urban areas and aims to study women's employment in India across traditional, informal, and emerging sectors, their occupational segregation, and the challenges posed by informality. Additionally, it explores the nature of women employment, as well as, the factors which act as barriers for women's participation in the labour force. The chapter also analyses the role of general and technical educational level and vocational training in shaping employment outcomes. These analyses are instrumental to address the challenges of women due to digitisation and automation, and lay down the need to focus on new and necessary skills for women's transition to future of work.

2.2 Labour Force and Work Force Participation Rate

The Labour Force Participation Rate (LFPR) and Workforce Participation Rate (WPR) are the two indicators which show how the participation of rural and urban people in the working age group of 15 – 59 years has changed in the last seven years. There was an increase in the LFPR of women from 25.3 per cent in 2017-18 to 45.2 per cent in 2023-24, as compared to the LFPR of men which has only increased by only 3.3 percentage points from 80.2 per cent in 2017-18 to 83.2 per cent in 2023-24. This sharp rise in women LFPR was predominantly driven by the rise in the rural LFPR by 24.7 percentage points in contrast to only 8.9 percentage points in the urban areas (Figure 2.1). The trend remained same when WPR was considered showing that the WPR of women has increased from 23.8 per cent in 2017-18 to 43.7 per cent in 2023-24 and the rise being again more in rural areas as compared to urban areas (Figure 2.2). Despite sharp rise in both LFPR and WPR in the span of seven years, both remained consistently low for women as compared to their counterpart.

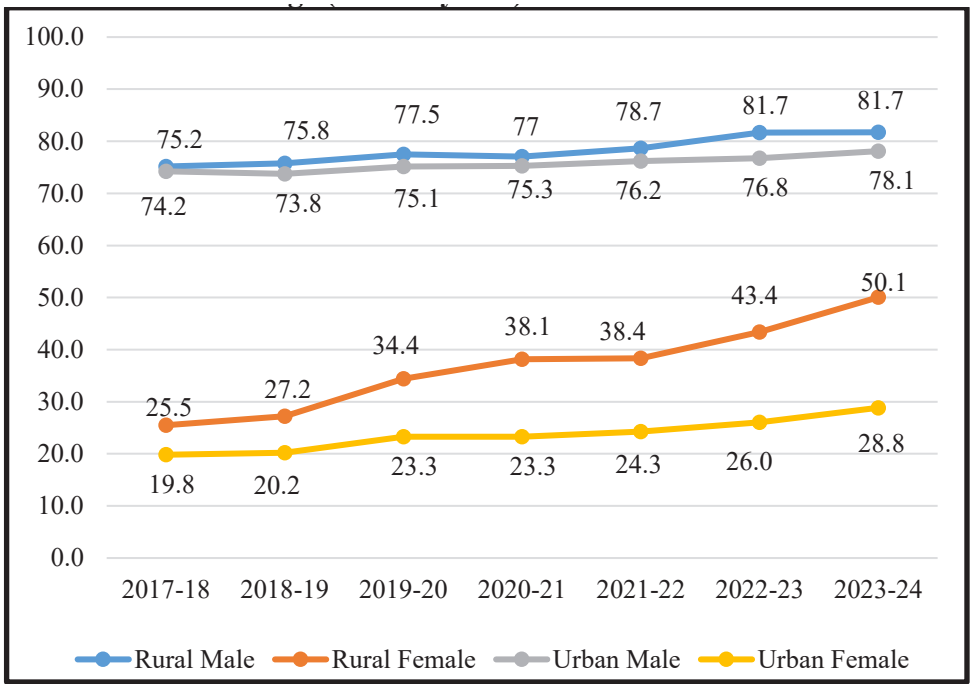
This substantial increase in women LFPR and WPR calls for the comprehensive analysis of their employment status and working conditions. The subsequent sections of the chapter discuss the type of employment, sectoral and occupational engagement of women and the relationship between their educational qualification and participation rate at the labour market.

Figure 2.1: Labour Force Participation Rate (LFPR) of Men and Women – Rural and Urban - Age (15 – 59 years) – Usual Status



Source: Calculated from unit level data of PLFS (2017-18 to 2023-24)

Figure 2.2: Work Force Participation Rate (WPR) of Men and Women – Rural and Urban - Age (15 – 59 years) – Usual Status



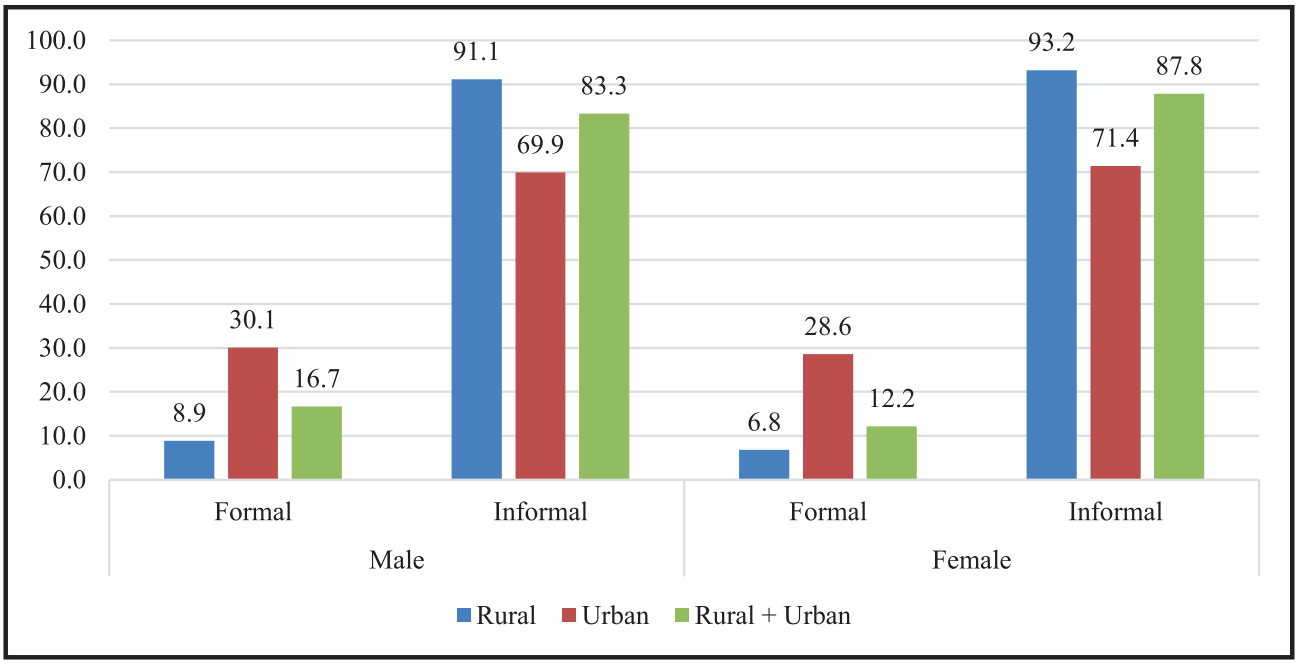
Source: Calculated from unit level data of PLFS (2017-18 to 2023-24)

2.3 Trends in Formal Vs. Informal Sector Participation in India

In India, majority of men and women workers were reported to be part of the informal employment. Over the last seven years, the share of formal-informal employment has not changed over time. As per PLFS 2023-24, 87.8 per cent women are engaged in informal employment and this has remained

unchanged over time. In rural areas, 93.2 per cent women were reported to be in informal employment and in urban areas, 71.4 per cent women were in informal employment (Figure 2.3).

Figure 2.3: Percentage of Formal and Informal Workers (Men and Women) – Rural and Urban – Age (15 – 59 years)



Source: Calculated from Periodic Labour Force Survey Data, 2023-24

2.4 Reasons for Non-Participation in the Workforce

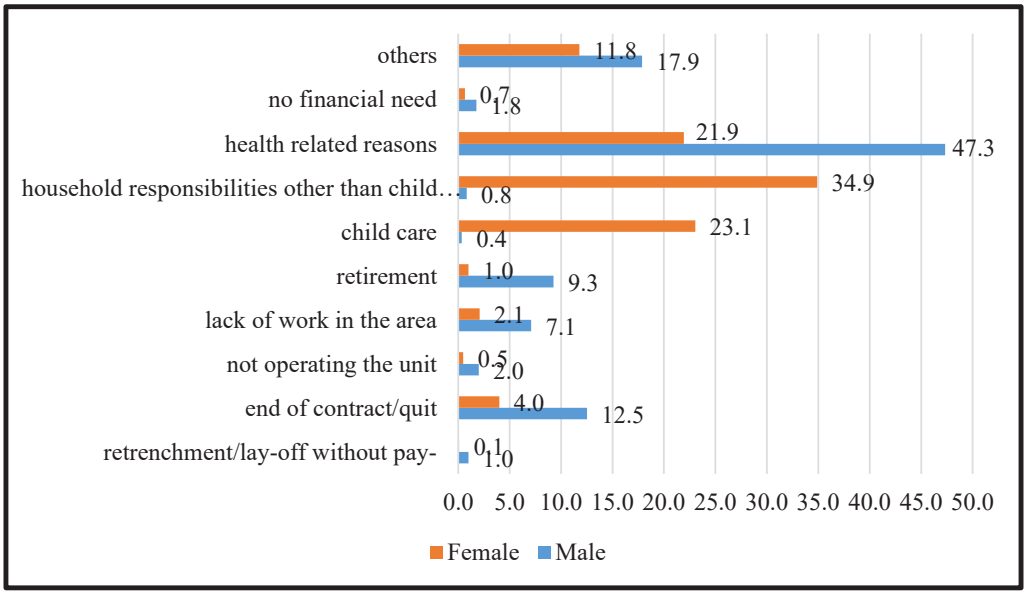
The reasons of women and men for not participating in the workforce, resulting in majorly low WPR of women, has been widely discussed in previous literature, but no empirical data was ever available. The PLFS data of 2022-23 and 2023-24 have collected the reasons for non-participation of men and women in the workforce. The household responsibilities and child-care were cited as the main reasons for women's non-participation in the workforce, whereas for men, health related reasons was cited as the main reason. In 2023-24, around 34.9 per cent women reported not joining the workforce due to domestic chores and 23.1 per cent for the child-care, which for men was almost negligible. Apart from domestic chores and child-care, around 21.9 per cent women also cited health reasons for remaining out of the workforce. In contrast, 47.3 per cent men in the same year reported not joining the workforce due to health-related reasons (Figure 2.4). The domestic chores and child-care, not only, have been reported to restrict women from entering into the workforce, but also act as the prime factors for the determination of the type of work in which women were engaged. The next sections of the chapter focus on the type of employment, sectoral engagement, occupational segregation and their working conditions related to job contract availability and social security protection in India.

2.5 Type of Employment and Working Conditions

2.5.1 Type of Employment

The rising LFPR of women in India has not been accompanied by their potential engagement in paid work in the manufacturing and services sector. Increasing gender inequalities has been witnessed with women being pushed to majorly low paid, insecure forms of self-employment which has less or no access to social protection. In the recent years, the maximum proportion of men and women in India for the 15 – 59 years age group were engaged as self-employed followed by regular workers

Figure 2.4: Reasons for Non-Participation of Men and Women in the Workforce – Rural + Urban - Age (15 – 59 years)

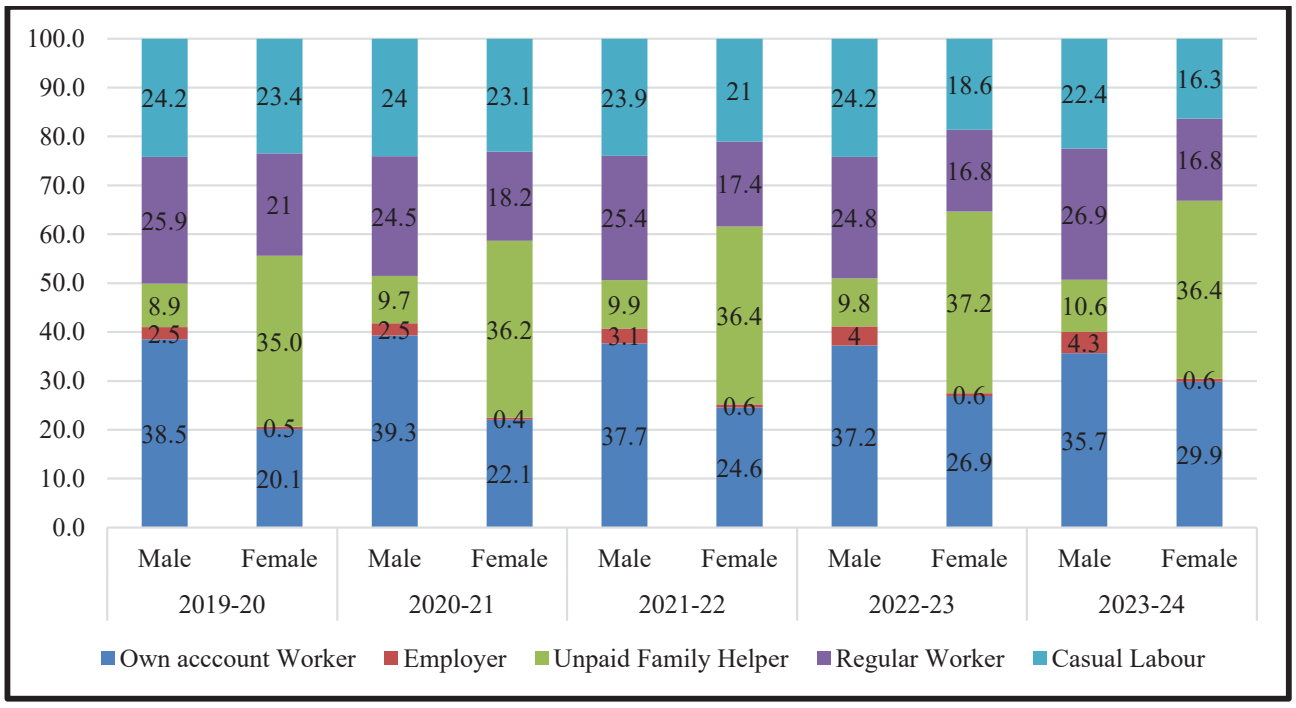


Source: Calculated from Periodic Labour Force Survey Data, 2023-24

and casual labour. The proportion of women engaged as self-employed has increased from 55.6 per cent in 2019-20 to 66.9 per cent in 2023-24 for overall India, whereas, for men, it has remained stagnant. This high proportion of self-employment is mainly contributed by the proportion of self-employment among women in rural areas (73.3 per cent in 2023-24), followed by regular workers (18.4 per cent in 2023-24) and casual labour (8.3 per cent in 2023-24). In urban areas, the picture is slightly different as the highest proportion of women are regular workers (50.9 per cent) followed by self-employment (41 per cent) and the rest are casual labour. But urban areas have also witnessed a shift in the employment status of women from the regular worker to self-employment during the five years phase of 2019-20 to 2023-24. The proportion of women engaged as regular workers has declined by 5 percentage points with a subsequent rise in the self-employment by 7 percentage points.

Further disaggregation of self-employment shows that women were either engaged as own-account worker or as the unpaid family helper. Own-account workers are the one who run their enterprises without any hired workers and the unpaid family helper are working in own family enterprises without receiving any payments. The PLFS data 2023-24 shows that 29.9 per cent women were engaged as own-account workers and 36.4 per cent were unpaid family helper. In rural areas, as per PLFS 2023-24, 30.6 per cent women workers were own-account workers which has increased sharply from 19.6 per cent in 2019-24 and the proportion of unpaid family helper has remained unchanged at around 42 per cent over these five years. In 2023-24, 26.8 per cent women were own-account workers and 13.3 per cent were unpaid family helper. Both these proportions were increased in urban areas, but the rise was more in rural areas (Figure 2.5). This high engagement of working women as own-account worker and unpaid family helper clearly indicates their vulnerability and proves that the rise in the women WPR in India in the past couple of years has not been opportunity driven (Chakraborty and Chatterjee, 2021).

Figure 2.5: Percentage Distribution of Men and Women Workers by Status of Employment – Rural+Urban – Age (15 – 59 years)

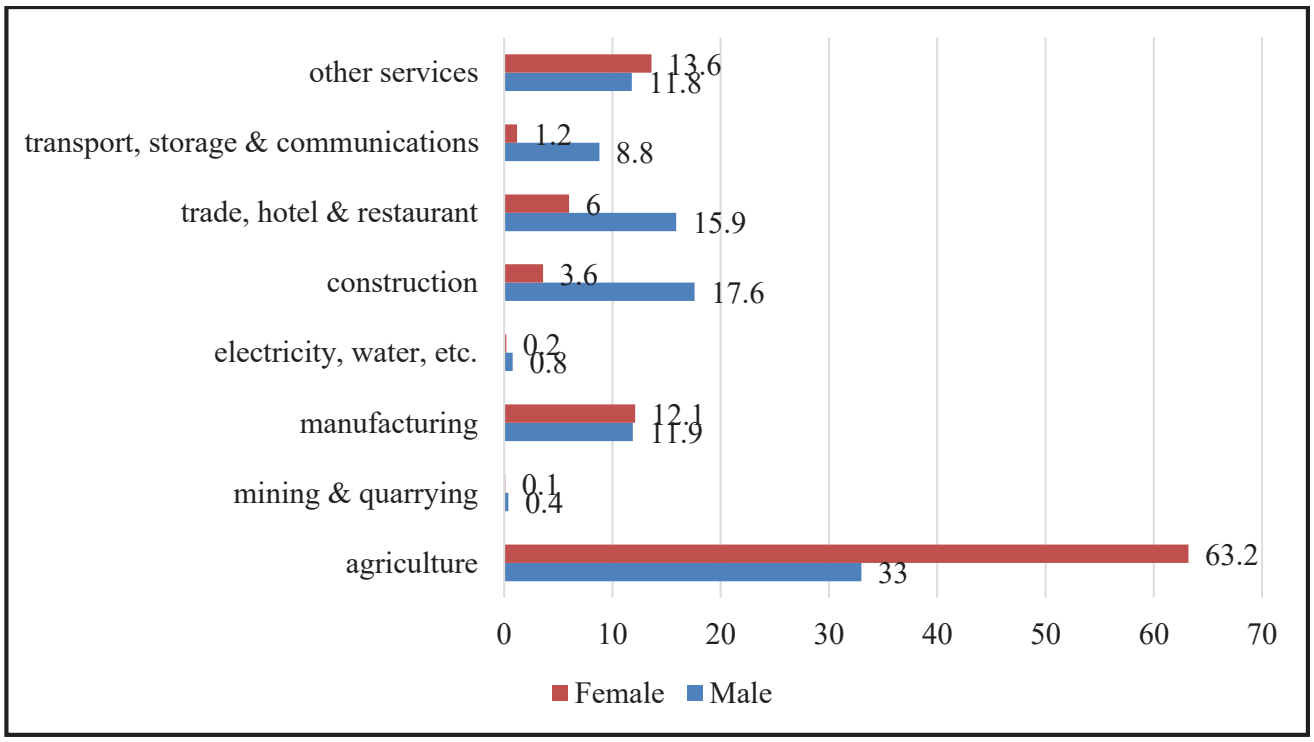


Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

2.5.2 Sectoral Distribution of Women Employment

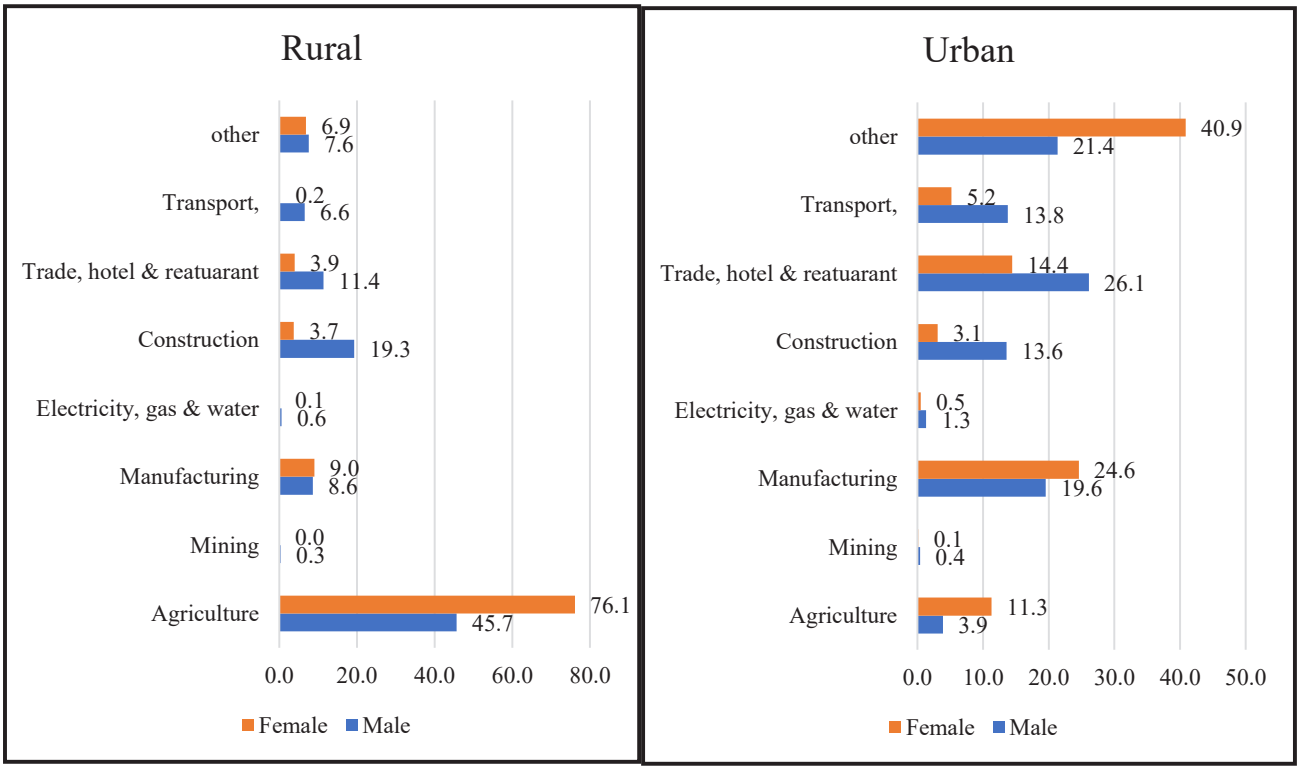
The agriculture sector was found to be employing maximum proportion of women in India followed by the other services sector and the manufacturing sector in the recent year. On the other hand, the sectors where mostly working men in the country were engaged are agriculture, construction, trade, hotel and restaurants, other services and manufacturing sector. Over the span of five years, there has been a slight increase in the agriculture sector from 59.2 per cent in 2019-20 to 63.2 per cent in 2023-24, with a corresponding decline in the other services sector and the manufacturing sector. As per the PLFS 2023-24 data, 76.1 per cent women were working in agriculture sector, followed by 9 per cent working in the manufacturing sector and 6.9 per cent working in the other services sector. In urban areas, highest employment generating sector for women was the other services (40.9 per cent) followed by manufacturing sector (24.6 per cent) and in trade, hotel and restaurant sector (14.4 per cent) (Figure 2.6). A detailed study of two-digit National Industrial Code (NIC) of PLFS 2023-24 shows major industries in the manufacturing sector and the other services sector where women were mostly engaged, when non-agricultural sector is considered, in both rural and urban areas. In the other services sector, the high employment generating industries for women were education, activities of households as employers of domestic personnel and human health activities. Few other industries, in this sector, where women were involved are other personal service activities and public administration and defence. Within the manufacturing sector, women were majorly engaged in wearing apparel, tobacco products and textiles industries.

Figure 2.6a: Percentage Distribution of Men and Women Workers by Different Industrial Sectors – Rural+Urban – Age (15 – 59 years) All India



Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Figure 2.6b: Percentage Distribution of Men and Women Workers by Different Industrial Sectors – Rural and Urban – Age (15 – 59 years)

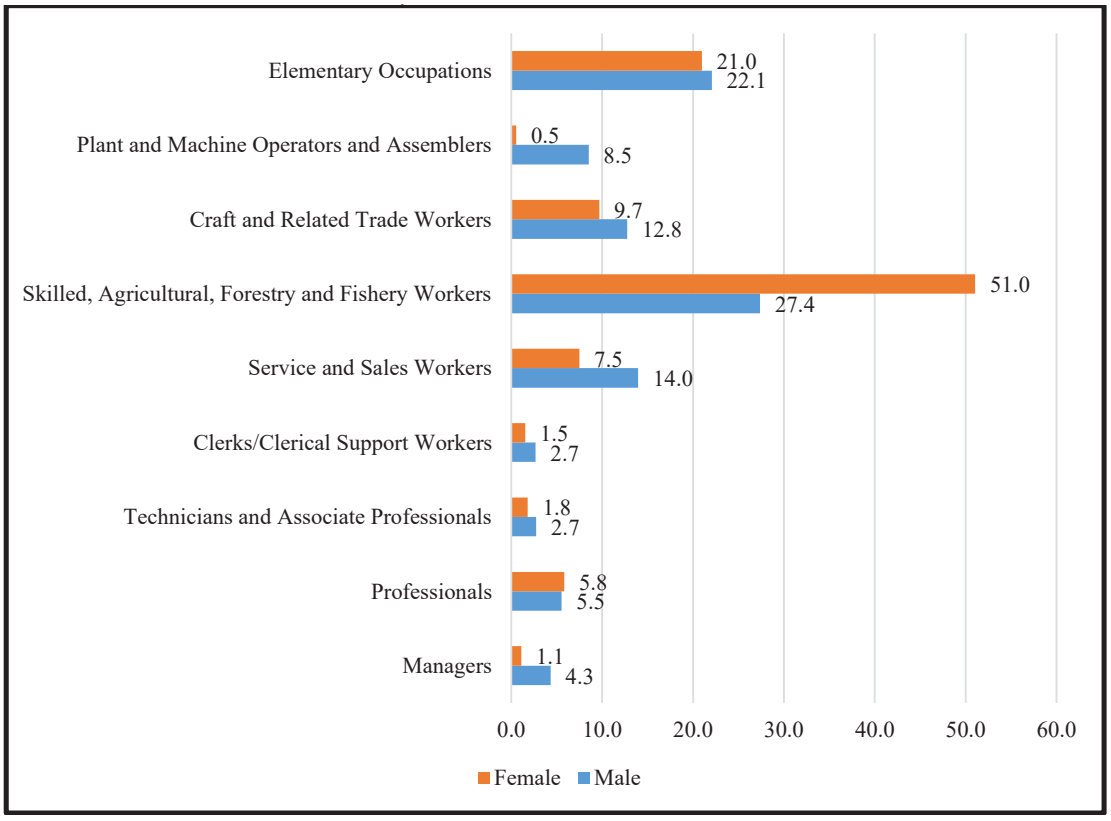


Source: Calculated from Periodic Labour Force Survey Data, 2023-24

2.5.3 Occupational Distribution of Women Employment

The previous section of the chapter shows the distribution of women workers according to the industrial sectors and reveals their maximum engagement in agriculture sector. The occupation structure simultaneously shows that in 2023-24, around 51 per cent women were engaged as skilled, agricultural, forestry and fishery workers. Apart from this, women were mostly engaged in elementary occupations (21 per cent), as craft and related trade workers (9.7 per cent) and as service and sales workers (7.5 per cent). In rural areas, except agricultural occupation, women were mostly engaged in elementary occupation, whereas women in urban areas were reported to be working as elementary occupation workers, service and sales workers and craft and trade related workers (Figure 2.7a and Figure 2.7b).

Figure 2.7a: Percentage Distribution of Workers by Occupation – All India – Age (15 – 59 Years) – Usual Status Rural+Urban



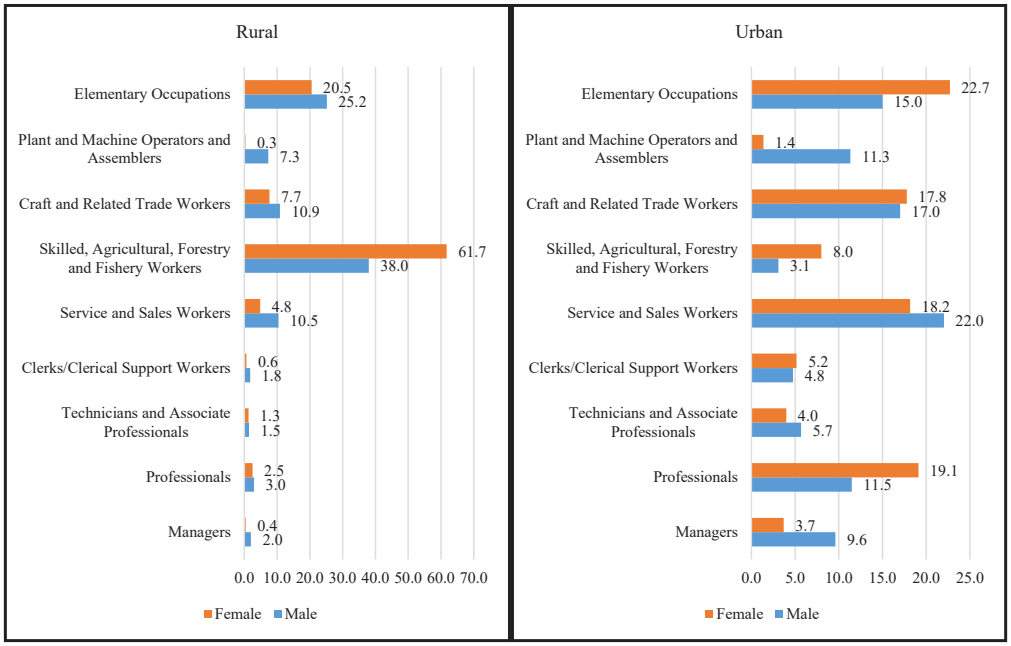
Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Given the kind of occupation and employment status of women workers, particularly in the non-agricultural sector, it is pertinent to know their working conditions in terms of their availability of job contract and social security protection.

2.5.4 Availability of Job Contract

The PLFS data captures information on the availability of any written job contract to the employees and for the workers who receive job contract, their duration is also recorded. This duration is divided into three timelines – less than or equal to one year, more than 1 year but less than 3 years and more than 3 years. As per the PLFS 2023-24, 77.4 per cent women have not received written job contract and only 16 per cent received job contract for a duration of more than 3 years. There has been a 5

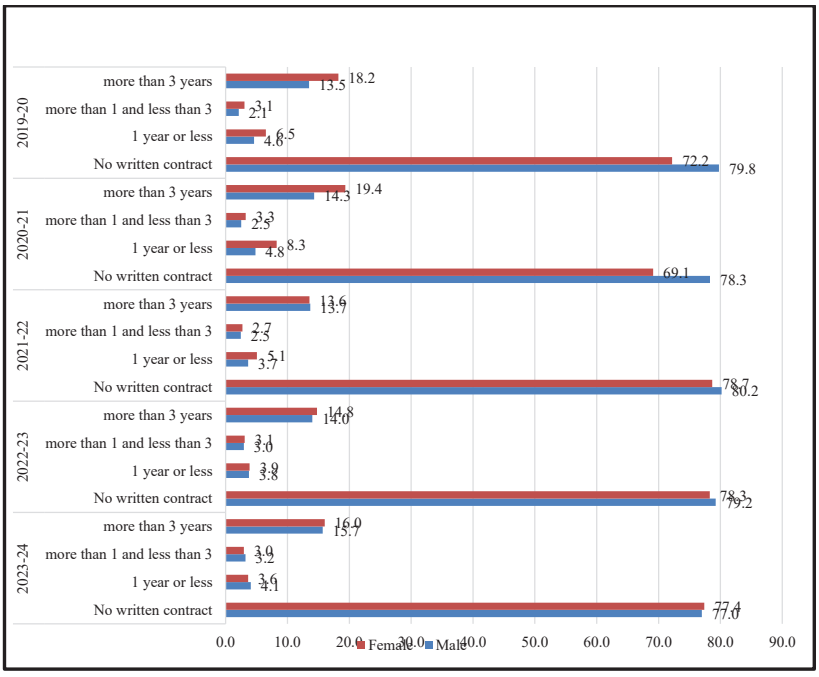
Figure 2.7b: Percentage Distribution of Workers by Occupation – Rural and Urban – Age (15 – 59 Years) – Usual Status



Source: Calculated from Periodic Labour Force Survey Data, 2023-24

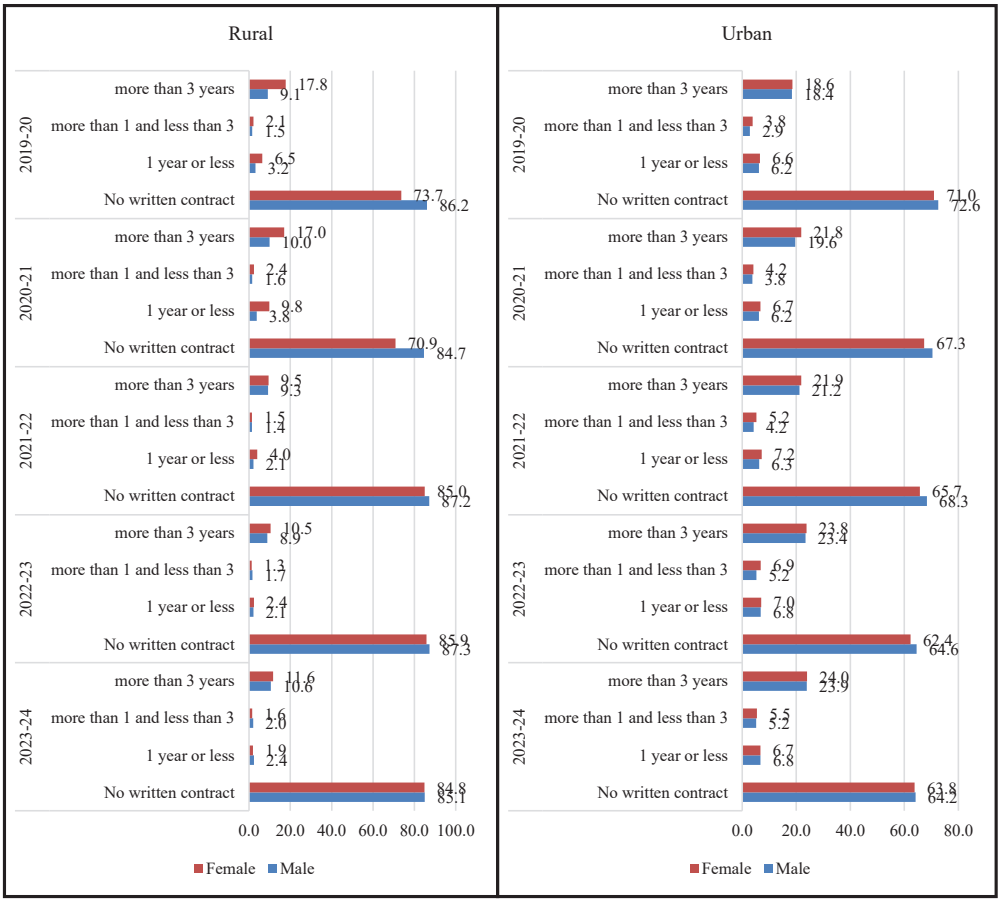
percentage points increase in the proportion of women not having any written job contract, which in contrast has slightly declined for men. This increase in the percentage of women not receiving any written job contract is mainly because of rural areas, where it has increased by almost 11 percentage points whereas in urban areas, it has seen a decline by 7 percentage points from 2019-20 to 2023-24, resulting in overall rise in this proportion over the span of five years from 72.2 per cent in 2019-20 to 77.4 per cent in 2023-24 (Figure 2.8a and Figure 2.8b).

Figure 2.8a: Percentage of Men and Women Workers Receiving Job Contract Rural+Urban – All India – Age (15 – 59 years) – Usual Status



Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Figure 2.8b: Percentage of Men and Women Workers Receiving Job Contract – Rural and Urban – Age (15 – 59 years) – Usual Status



Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

2.5.5 Availability of Social Security benefit

Social protection policies are considered as an integral part for the wellbeing of the workers and their decent working conditions. The policies play a central role in helping the working age population in getting productive and decent employment and their families to cope up with the financial situations and also facilitate access to healthcare and other services like income security in case of unemployment, employment injury, sickness, disability, maternity leave, etc.

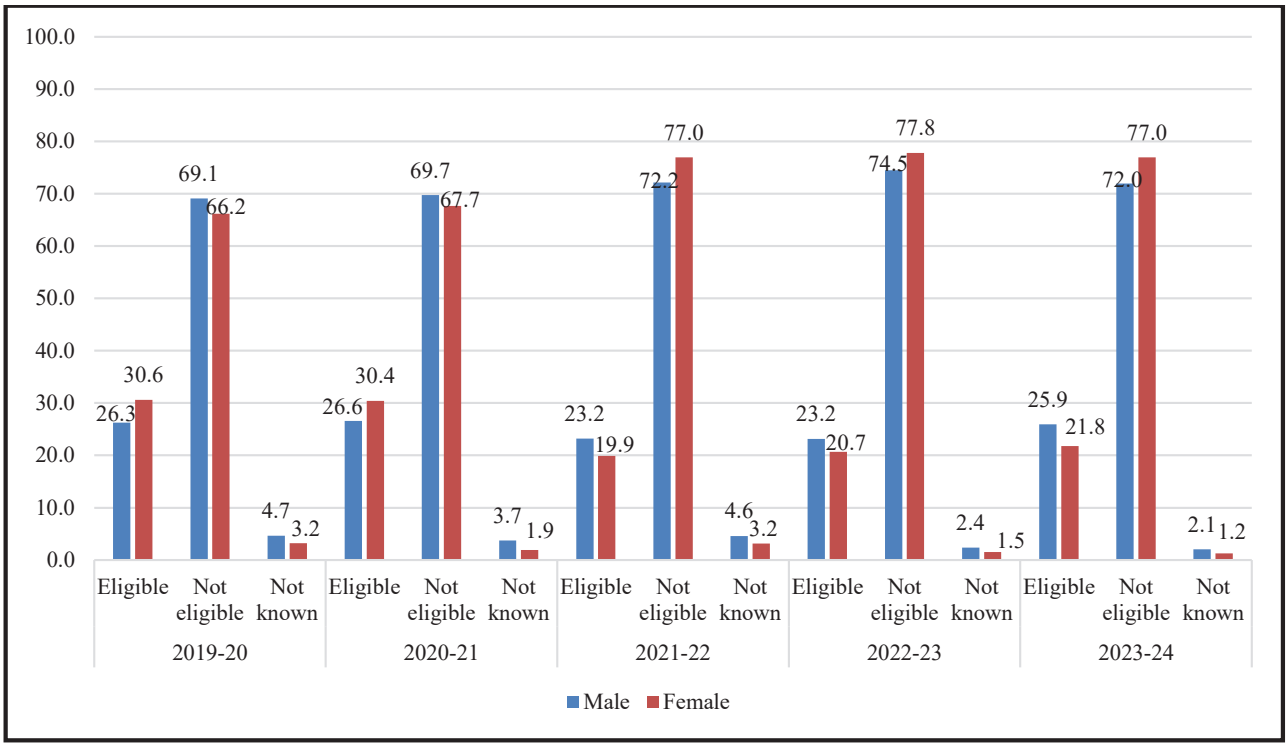
As per the PLFS, access to social security benefits include access to any one of the following benefits: pensions, provident fund, healthcare and maternity benefit and gratuity. Extending the social security protection to all kinds of workers will facilitate the transition of workers and enterprises from informal to formal sector (ILO, 2021). The social protection policies play a vital role in strengthening women's livelihood by ensuring quality care services, sustainable infrastructure, livelihood programmes and financial inclusion and will eventually empower women in terms of their access to and control over income and assets and women's social, economic and political status (ILO, 2019). Though it is ideal to have social security protection for all the workers, this right is still far from reaching the majority of the population of the world and as well as India.

India had witnessed a rise in the proportion of women being not eligible for the social security benefits from 66.2 per cent in 2019-20 to 77.8 per cent in 2023-24, whereas for men, this rise was only from 69.1 per cent in 2019-20 to 72 per cent in 2023-24. The high rise in the proportion of women not having social security benefit was mainly due to the rise in the same in rural areas. The proportion of

women not eligible for social security benefit in rural areas has increased from 75.5 per cent to 86 per cent, but for urban areas, it has increased only from 58.6 per cent to 60.6 per cent in the phase of five years from 2019-20 to 2023-24. In comparison to this, the proportion of men not having social security benefits in rural areas has slightly increased by 2.6 percentage points, whereas, in urban areas, it has remained almost unchanged (Figure 2.9 and Figure 2.9a).

Figure 2.9a: Percentage of Men and Women Workers having Social Security Benefits – All India – Age (15 – 59 years) Rural + Urban

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24



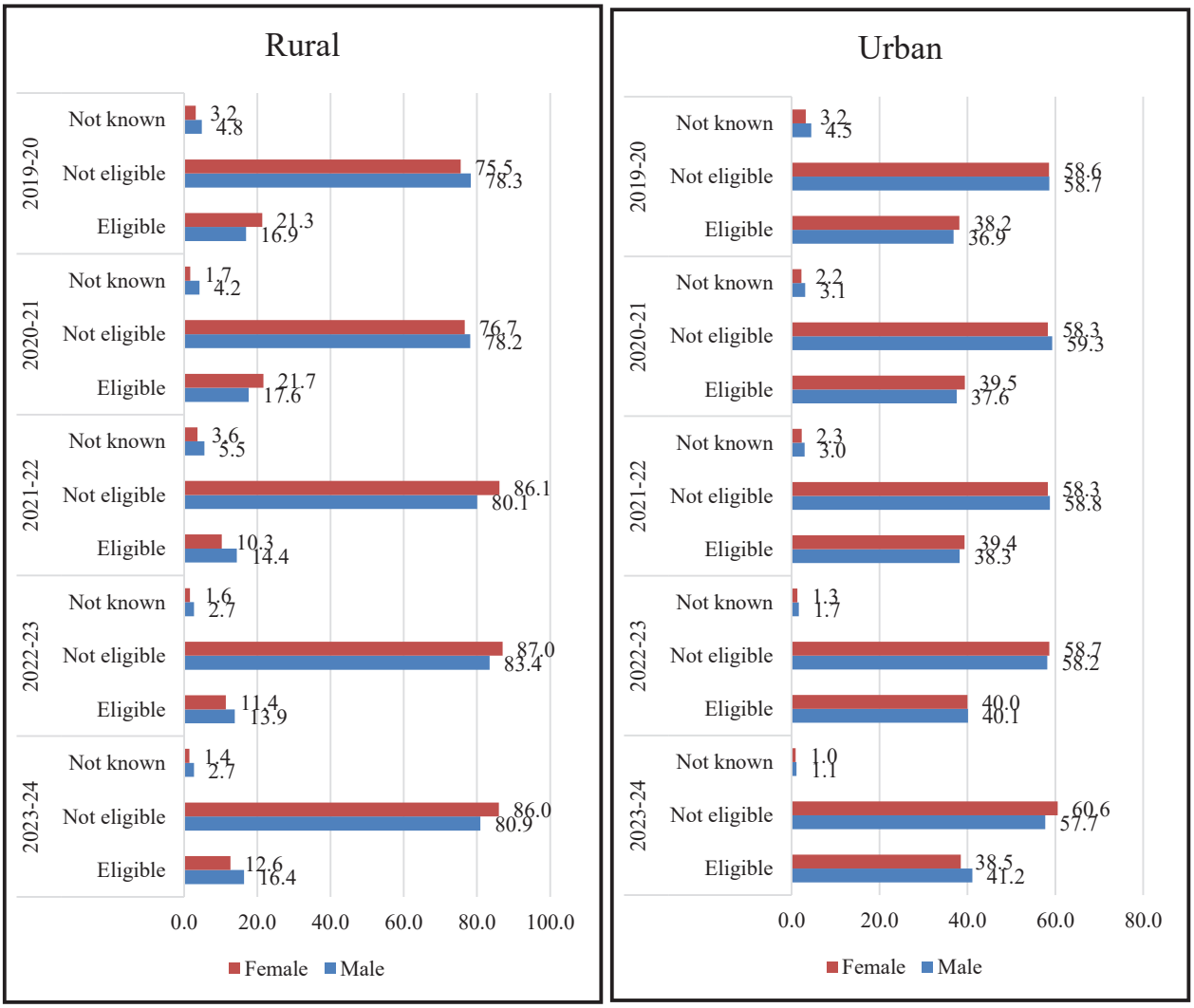
2.6 Education and Labour Force Participation of Women

Enhancement in education and skill development, worldwide has led to greater transition of education to employment. The relationship between educational attainment and labour force participation is recognised as one of the important driving tools for improving labour market flexibility and facilitates structural adjustment, as well as society's overall adaptability to social, cultural and technological demands (ILO, 2010). Thus, it is pertinent to ensure quality education and expansion of vocational training for the poor and underprivileged which will help to produce a new generation of educated and skilled employees who are flexible, analytical and can eventually serve as driving forces for innovation and growth (Majumdar, 2008). The PLFS data provides information about the general and technical education attainment, their vocational training and field of training of the individuals. This section deals with the relationship of general and technical education levels with LFPR and the type of vocational training individuals have.

2.6.1 General Education Level and LFPR

The advancement in education attainment and their corresponding growth in career lead to the improvement of women's social status (Kamat, 1976). In India, not literate women were reported to

Figure 2.9b: Percentage of Men and Women Workers having Social Security Benefits – Rural and Urban – Age (15 – 59 years)



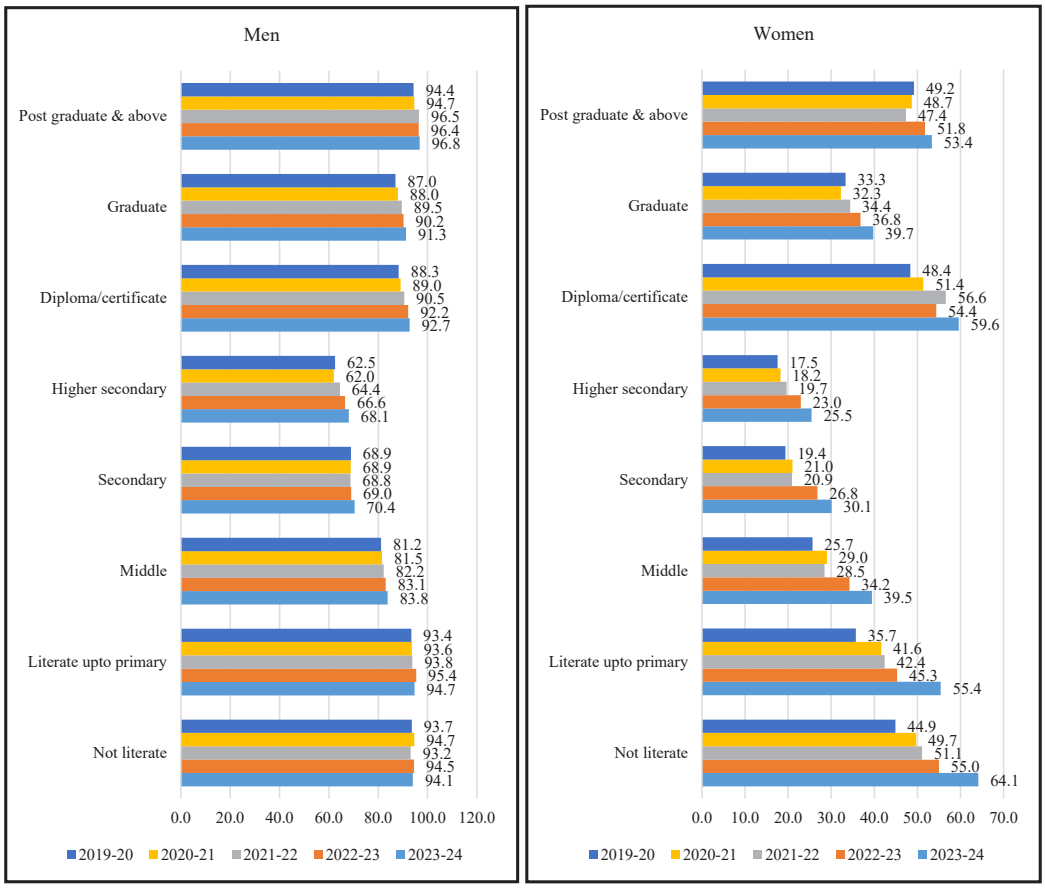
Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

have the highest LFPR in all the years except 2019-20 and the same has declined with the increase in general education level till certain level and has increased again for higher education level. As per PLFS 2023-24, the LFPR of not literate women was 64.1 per cent which has increased by almost 19 percentage points from 44.9 per cent in 2019-20. But for women with post graduate and above education level, LFPR has increased by only 4.2 percentage points from 49.2 per cent in 2019-20 to 53.4 per cent in 2023-24. The LFPR of not literate women was more in rural areas in all the years and this has increased from 47.8 per cent in 2019-20 to 68.8 per cent in 2023-24. But for urban areas, it has only increased by 9 percentage points from 31.4 per cent to 40.3 per cent in the same period. Even for the higher education level, there was a sharp rise in women LFPR in rural areas as compared to urban areas. In urban areas, LFPR of women with post graduate and above has only risen by 2 percentage points whereas the same in rural areas has increased by 8.7 percentage points (Figure 2.10). Thus, in India, though there is evidence of rising LFPR of women with educational attainment, till date, the not literate women still have high participation in low-paid unskilled informal work.

2.6.2 Technical Education Level and LFPR

The picture of women LFPR is different when technical education is considered. The highest LFPR was for women having graduate and above degree in technical education, though it has seen only a 3 percentage

Figure 2.10: Labour Force Participation Rate by General Education Level of Men and Women – All India – Age (15 – 59 years) Rural + Urban



Source: Calculated from Periodic Labour Force Survey Data, 2019-2024

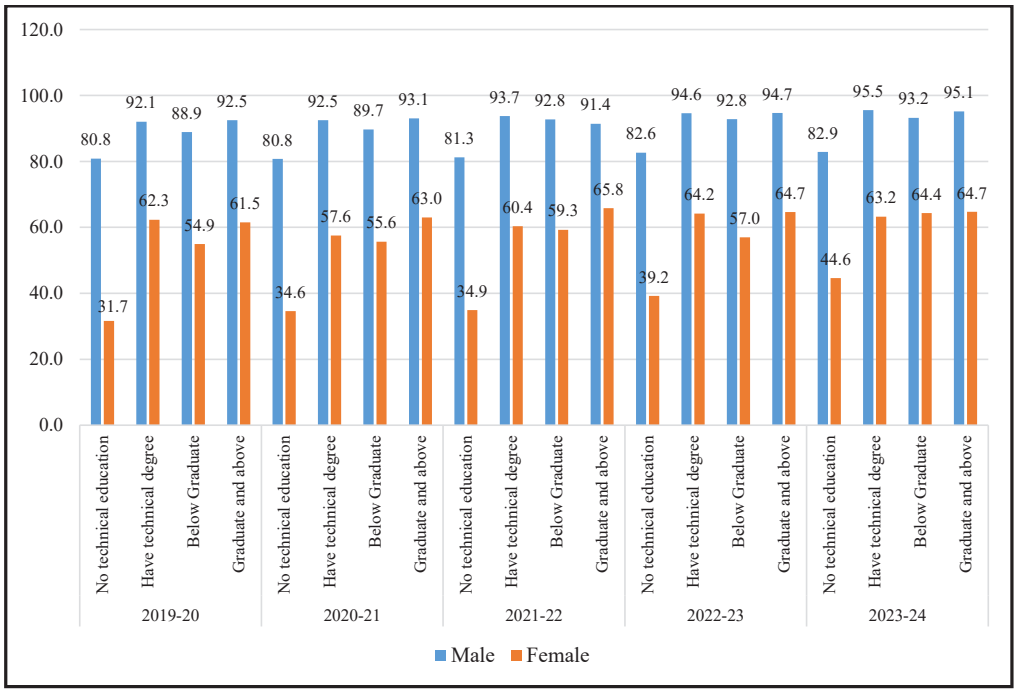
points increase over five years from 2019-20 to 2023-24. In comparison to this, the LFPR of women with no technical education has sharply increased from 31.7 per cent in 2019-20 to 44.6 per cent in 2023-24, but still remained the lowest. The LFPR for men was also highest for those having graduate and above degree in technical education and the lowest for those with no technical education. But for men, the LFPR for different levels of technical education has not seen much change from 2019-20 to 2023-24 (Figure 2.11).

2.6.3 Vocational Training and Field of Training

Vocational training is taken as one of the platforms which is used to improve women's skill and enhance their possibility to join the labour market. Hence government and other development agencies launch various vocational and business training programmes to increase women labour force participation (Chinen, Hoop, et.al)[14]. As per PLFS 2023-24, only 24.5 per cent women has received vocational training which has increased from 9 per cent in 2019-20. This increase was due to the result of the increase in both rural and urban areas. In rural areas, proportion of women having vocational training has increased from 8.3 per cent in 2019-20 to 26.2 per cent in 2023-24. In urban areas also, women with vocational training has increased from 10.6 per cent to 20.5 per cent in the same period. Out of the total women who had vocational training in 2023-24, only a meagre 3.9 per cent women has obtained the same from formal sources and rest 20.6 per cent has received from informal sources which includes hereditary sources,

[14]Chinen, M., De Hoop, T., Alcázar, L., Balarin, M., & Sennett, J. (2017). Vocational and business training to improve women's labour market outcomes in low-and middle-income countries: A systematic review. Campbell Systematic Reviews, 13(1), 1-195.

Figure 2.11 Labour Force Participation Rate by Technical Education Level of Men and Women – All India – Age (15 – 59 years) – Usual Status Rural+Urban



Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

learning on job and other sources. The major concern here is, this entire growth in the proportion of women with vocational training has happened in the informal sources. There is only a one percentage point growth in the proportion of women with formal vocational training, whereas, 14.4 percentage points growth has been seen in the proportion of women receiving vocational training from informal sources (Table 2.1). Even within informal sources, it is the hereditary source which has been the major source of women vocational training and the noticeable growth was also been identified in this source.

Table 2.1: Percentage distribution of Men and Women having Vocational Training – All India – Age (15 – 59 years)

	Formal	Hereditary	Self-learning	Learning on job	Others	Did not receive
2023-24						
Rural						
Male	3.2	18.8	9.1	12.3	2.5	54.2
Female	2.7	12.6	5.3	3.4	2.2	73.8
Urban						
Male	6.4	3.1	9.4	20.1	3.7	57.2
Female	6.7	2.0	4.4	5.1	2.3	79.5
Rural+Urban						
Male	4.2	13.9	9.2	14.8	2.9	55.1
Female	3.9	9.4	5.1	3.9	2.2	75.5
2022-23						
Rural						
Male	3.0	12.9	6.8	10.5	2.4	64.4
Female	2.5	7.5	4.4	2.9	1.8	80.9

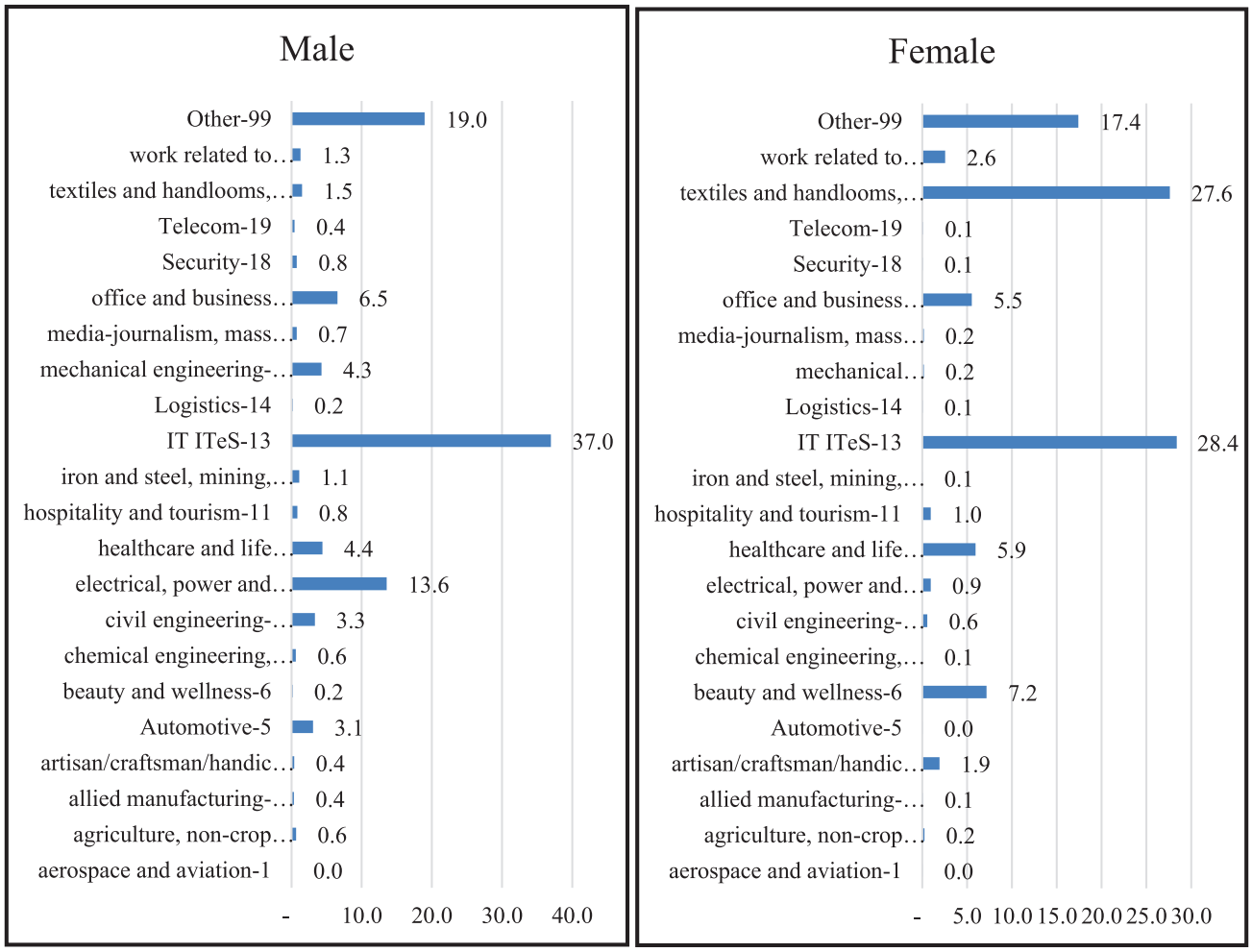
	Formal	Hereditary	Self-learning	Learning on job	Others	Did not receive
Urban						
Male	6.6	2.7	8.3	16.5	3.3	62.7
Female	6.5	1.2	3.7	3.8	2.1	82.7
Rural+Urban						
Male	4.0	9.9	7.2	12.3	2.7	63.9
Female	3.6	5.8	4.2	3.2	1.9	81.4
2021-22						
Rural						
Male	2.6	8.3	5.2	7.4	1.1	75.4
Female	1.9	4.1	3.2	1.8	0.8	88.2
Urban						
Male	6.5	2.1	6.4	14.0	1.8	69.1
Female	5.8	0.8	2.6	3.2	1.2	86.4
Rural+Urban						
Male	3.8	6.4	5.6	9.4	1.3	73.6
Female	3.0	3.2	3.0	2.2	0.9	87.7
2020-21						
Rural						
Male	2.5	7.2	4.7	6.6	0.6	78.5
Female	1.9	3.7	2.7	1.7	0.6	89.4
Urban						
Male	6.2	1.9	5.2	11.1	1.1	74.5
Female	5.3	0.7	2.7	2.5	0.8	88.0
Rural+Urban						
Male	3.6	5.6	4.8	7.9	0.7	77.3
Female	2.9	2.8	2.7	1.9	0.7	89.0
2019-20						
Rural						
Male	2.2	5.8	3.9	4.7	0.6	82.8
Female	1.7	2.9	1.9	1.1	0.7	91.7
	Urban					
Male	6.3	1.6	4.7	8.7	0.8	78.0
Female	5.4	0.8	1.7	2.0	0.8	89.4
Rural+Urban						
Male	3.5	4.4	4.1	6.0	0.7	81.2
Female	2.9	2.2	1.9	1.4	0.7	91.0
2018-19						
Rural						
Male	1.8	3.9	3.2	4.2	0.8	86.2
Female	1.1	1.5	1.5	1.1	0.8	94.1
Urban						
Male	4.9	1.3	4.3	7.6	1.5	80.5
Female	3.9	0.5	1.6	1.5	1.5	91.1
Rural+Urban						
Male	2.8	3.1	3.5	5.3	1.0	84.3
Female	2.0	1.2	1.5	1.2	1.0	93.1
2017-18						

	Formal	Hereditary	Self-learning	Learning on job	Others	Did not receive
Rural						
Male	1.5	3.0	2.6	3.1	0.4	89.5
Female	0.9	0.9	1.2	0.7	0.4	95.9
Urban						
Male	4.1	1.2	2.3	5.0	0.8	86.7
Female	3.3	0.4	1.0	1.0	0.6	93.7
Rural+Urban						
Male	2.3	2.4	2.5	3.6	0.5	88.6
Female	1.7	0.7	1.1	0.8	0.5	95.2

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

For the formal vocational training, PLFS data provides the field of training for men and women. Out of the total women who have received formal vocational training, 28.4 per cent were having training in IT-IteS, 27.6 per cent in textiles and handlooms, apparels, 17.4 per cent in other fields, 7.2 per cent in beauty and wellness and 5.9 per cent in healthcare and life sciences (Figure 2.12).

Figure 2.12: Percentage distribution of persons in the age group 15-59 years who received formal Vocational/technical training by field of training for each broad usual status (ps+ss) Rural +Urban



Source: Calculated from Periodic Labour Force Survey Data, 2023-24

2.7 Summary

The chapter has highlighted the mismatch between the rise in the LFPR and the employment of women. There has been high participation of women in self employment particularly , as unpaid family labour or own account workers. The entire population of self-employed women are not covered under the social protection policies and alongside, the coverage of even the regular workers and casual workers in the social protection policies has been reported to be less in recent year. When it comes to the role of education, both general and technical education, as well as, vocational training has not translated into employment opportunities. Women has remained confined in very few technical fields and their field of training has not expanded over the years. The limited scope of this formal technical and vocational training hinder women to participate in the new forms of employment – like gig and platform economy, etc. which requires proficiency in handling AI based platforms, and digital devices. The next chapter focusses on the challenges of women to participate in the new forms of employment, related to this digitalisation and automation and discusses the way forward.

Chapter 3
Women's Challenges in a Transforming World of Work

3.1 Context

The world of work has undergone rapid transformation over time driven by technological advancement, globalisation, and the digital economy which has made it crucial to assess how these shifts are affecting women's participation and access. Women's access to education, digital technology, and digital literacy are key determinants of their ability to adapt to these changes and seize new opportunities in the future of work. Scholars have critiqued traditional definitions of work, pointing to the workplace as a central site within emerging digital environments, where the lines between personal and professional life are increasingly blurred due to digital transformation (Richardson, 2016). Despite growing participation in areas such as computing and engineering, women globally still make up only 26 per cent of the technology workforce, hold just 22 per cent of roles in artificial intelligence, and face a persistent gender pay gap (WEF, 2024). In India, the situation is similarly concerning, with women representing 29.13 per cent of engineering students but occupying only 14 per cent of STEM jobs and 15.27 per cent of positions in AI and data science (UNESCO, 2023; MoE, 2022). These statistics show that women's obstacles extend to training and education and are intrinsically embedded in structural factors like biased recruitment, workplace discrimination, and deep-rooted societal beliefs that burden women with domestic work. Access to technology and more women entering the fields of STEM can become great facilitators of their economic empowerment, bringing not only higher-paying job opportunities but also the flexibility and expansibility that digital professions can offer. Yet, unless interventions are specifically designed to break down structural barriers, these opportunities lie beyond the reach of many.

Scholars widely agree that technology is not neutral. Haraway (1988) has argued that technological systems are shaped by the values and power structures of their creators, and contemporary research reveals how algorithms, digital platforms, and labour markets continue to reproduce gendered hierarchies. Gurumurthy (2023) critiques the rise of "digital patriarchy," where women are disproportionately funnelled into care-based gig work and receive lower pay. This disparity is particularly visible in global freelancing, where women earn an average of $28.20 per hour, compared to $45.07 for men (Munoz et al., 2022). Furthermore, digital acceleration, especially during the pandemic, has heightened women's work-life imbalances, underscoring the importance of incorporating gender in analyses of the digital economy (Grau-Sarabia and Fuster-Morell, 2021). Federici's analysis of invisible care labour highlights how capitalist economies exploit unpaid domestic work to sustain productivity, while simultaneously excluding women from formal economic systems (Kwan, 2021; Spencer, 2023).

Globally, women perform 76.2 per cent of unpaid care work, spending nearly three times as much time on it as men, with Indian women dedicating an average of 315 minutes daily, compared to just 95 minutes for men (ILO, 2019; MoSPI, 2019). This disproportionate care burden limits women's ability to engage fully in digital economies, pursue up-skilling, or participate in entrepreneurship.

The geographical location also plays a crucial role in limiting access of technology. Only 17 per cent rural women use internet, and nearly 70 per cent rely on devices controlled by men, severely restricting their autonomy and digital agency (GSMA, 2023). The presence of a multi-generational workforce adds another layer of complexity, as the intersection of age and gender create both structural and interpersonal challenges during digital transitions. This frequently leads to the marginalization of older women and those with limited digital skills (Jena and Paltasingh, 2024). Klein further warns that

without explicit intersectional reforms, even well-intentioned digital policies risk benefiting primarily privileged women, leaving marginalised groups behind (D'Ignazio and Klein, 2020). However, despite over 900 million people coming online, access to digital technologies remains deeply gendered. Only 33 per cent Indian women use internet, compared to 57 per cent men (GSMA, 2023). This gender gap mirrors global trends, where women are 15 per cent less likely than men to use internet and 300 million fewer women own smartphones than men (World Bank, 2025).

In India, the risks of automation and artificial intelligence add another layer of vulnerability, with up to 11 million women's jobs expected to be displaced by 2030, particularly in feminized sectors such as textiles, retail, and clerical work (Bhattacharya, 2019)[15]. Globally, women face a disproportionate risk from automation. As per ILO 2023, 60 per cent of clerical roles are at risk, with women experiencing 5 to 25 per cent higher risks than men. While men are more likely to be employed in creative, technical, and supervisory roles, women are overrepresented in repetitive, routine-intensive jobs that are more susceptible to automation (ILO, 2024). In India, women engaged in informal employment face heightened vulnerability, as limited access to skilling and reskilling opportunities prevents them from transitioning to more secure forms of employment (ILO, 2022).

On a global scale, estimates suggest that a significant portion of jobs in OECD countries are at high risk of automation, while the World Bank projects that two-third of jobs in developing countries are vulnerable (Goldin, 2020). Moreover, automation risks exacerbating existing inequalities by increasing women's vulnerability, particularly in sectors like care, which are predominantly women centric and resistant to automation (ILO, 2019). At the same time, women's participation in gig economies presents both opportunities and significant risks. In India, while women make up 28 per cent of gig workers, they often earn less due to algorithmic biases that channel them into stereotypically feminized roles. This phenomenon perpetuates what Gurumurthy terms "digital patriarchy" (IWWAGE, 2023; Gurumurthy, 2023). Hiring algorithms further exacerbate this issue by penalizing women for career breaks related to caregiving, making them 50 per cent less likely to be shortlisted compared to men with similar gaps (OECD, 2021; Dastin, 2018). Moreover, cyber-violence, affecting 38 per cent women globally, discourages their participation in digital spaces, reinforcing these environments as extensions of patriarchal control (Jeon and Dauletova, 2021). Despite these systemic barriers, digital technologies also offer transformative opportunities.

This chapter examines the challenges women face in the changing world of work, focusing on lifelong learning, social protection, and gender equality amid technological shifts. Also, it highlights persistent gender and rural-urban gaps in digital access, skilling, and STEM education in India, and explores the growth of gig and care economies.

3.2 Labour Market Transition and Women's Economic Empowerment

Labour market transition in the contemporary global and Indian contexts are reshaping employment structures, sectoral compositions and overall patterns of participation. These changes are driven by the rapid diffusion of digital technologies, automation, platform-based models of work, demographic shifts, climate-related transitions and evolving patterns of global trade. In India, these dynamics are visible in the expansion of gig and platform economies, the growing relevance of green and care sectors and the reconfiguration of traditional manufacturing and service industries (Aggarwal, 2023; Radhakrishnan and Singha Roy, 2023). While such transformations generate new opportunities for

[15]Bhattacharyya, R. (2019, June 5). Nearly 107 million women at risk of losing jobs globally as automation takes over: McKinsey report. The Economic Times. https://economictimes.indiatimes.com/jobs/nearly-107-million-women-at-risk-of-losing-jobs-globally-as-automation-takes-over-mckinsey-report/articleshow/69659364.cms

flexible employment, they also deepen existing divides by disproportionately displacing workers engaged in routine and low-skilled tasks, categories in which women are overrepresented. Women workers remain clustered in informal, vulnerable and low-wage employment with limited upward mobility, social security or access to training and reskilling (ILO, 2023a). The uneven access to digital infrastructure, financial inclusion and skill development programmes further compounds structural barriers, restricting women's capacity to transition into emerging sectors of work (Mehta, 2023). These realities show that labour market transitions are not gender neutral as they are shaped by and reinforce pre-existing hierarchies of work, power and social relations, with significant implications for women's economic empowerment.

The subsequent section elaborates on these dynamics further, and within an interrelated four-facet approach, namely gender employment gaps, the effects of digital transformation and gendered risk, and occupational segregation in labour market. These factors are central to explaining the contours of how transitions in labour market impact women's economic empowerment in India and worldwide and can help to map out policy routes that can turn existing challenges into inclusive and equitable growth opportunities.

3.2.1 Gender Gaps in Employment

Women are witnessed to experience wide gaps in employment and economic activity even as education and training have made huge strides. While women are engaged in education, their complete integration into the labour market remains constrained by entrenched structural discrimination, unpaid care work, and social norms. These are exacerbated by the pace of change of the labour market through automation and technological transformation, which may even widen these gaps further if no effective and specialized interventions are taken. The gap in labour force participation across the world is more than 25 percentage points, and this gap is increasing in emerging markets such as India, primarily due to digital disruptions (ILO, 2024). As evident from the previous chapter, while women labour force participation in India has increased, significant gender gaps remain. For instance, the PLFS 2023–24 data reveals that the Labour Force Participation Rate (LFPR) for women aged 15–59 was nearly 38 percentage points lower than that of men. A key factor behind this gap is the disproportionate burden of unpaid care work, with nearly 58 per cent of women's non-participation attributed to various household responsibilities which includes 23.1 per cent due to childcare and 34.9 per cent due to other domestic duties, while only 1 per cent men face similar constraints as per the PLFS 2023-24 data.

Additionally, the unequal levels of educational attainment and access to skill training significantly contribute to the widening gender gap in employment. As evident from the previous chapter, although education for women has improved, their labour force participation remains significantly lower than men across various educational levels. For example, in 2023-24, only 25.5 per cent women with higher secondary education participate in the workforce, compared to 68.1 per cent of men, a gap of 42.6 percentage points. This gap widens at the graduate level, where only 39.7 per cent women are in the labour force, compared to 91.3 per cent men. Similarly, a significant divide exists in vocational and technical training. In the same year, 73.8 per cent women reported receiving no training, compared to 54.1 per cent men, creating almost 20 percentage point gap in employability-enhancing skills. Rural women, who make up nearly 70 per cent of India's female workforce, face even higher unemployment rates (9.2 per cent) compared to their urban counterparts (7.5 per cent) (MoSPI, 2024). Few probable reasons for higher unemployment rate of rural women are limited access to skilling opportunities, mobility constraints, and inadequate childcare infrastructure. Moreover, older women, particularly those aged 45 years and above, face significantly lower participation rates, often because of a lack of

digital literacy and skills, which leaves them increasingly marginalised in an increasingly tech-driven labour market (Fernandez et al., 2024).

Scholars like Folbre (2012) critiqued how capitalist systems undervalue care, perpetuating gender gaps, while Kabeer (2017) emphasised empowerment through collective bargaining. The World Bank's Women, Business, and the Law report mentioned that legal barriers, such as restrictions on night work, further create hindrances in their participation in the labour market (World Bank, 2024). In India, though several schemes have increased rural women's employment by 20 per cent, digital wage payments exclude those without bank accounts (Dreze 2023)[16]. Addressing these gaps in the country requires redistributing care, challenging norms, and fostering inclusive growth for women's economic security.

3.2.2 Impact of Digital Transformation and Gendered Vulnerabilities

Digital technologies, though have been proved to create new employment opportunities, it also introduced distinct gendered risks such as job polarization, algorithmic bias, and digital exclusion. These vulnerabilities are especially acute for women in low-income and informal sectors, where access to digital skills, infrastructure, and online platforms remains uneven. Intersectional factors such as caste, class, age, and geography further intensify the challenges women face in digital labour markets. Structural barriers go beyond infrastructure gaps to include entrenched gender norms, limited bargaining power, and social stigma. Older women and those with limited digital literacy face compounded barriers at individual and organisational levels (Fernandez et al., 2024). De-colonial critiques further argue that the value generated by platform economies is disproportionately extracted and concentrated in the Global North, reinforcing the economic marginalisation of women in the Global South (ILO, 2024; Spencer, 2023;Gray, 2023). Even in the Indian context**,** studies highlight that digital transformation has tend to replicate and deepen existing social and economic hierarchies, disproportionately marginalising women, particularly those from rural areas, historically disadvantaged group, and informal employment sectors. Studies also show that women often lack ownership of digital devices, have limited access to the internet, and face socio-cultural barriers that restrict independent technology usage (NFHS-5, 2021). Furthermore, women-led enterprises struggle with digital onboarding due to financial constraints, poor infrastructure, and a lack of institutional support (Mehta and Mehta, 2025; Singh and yadav, 2023). In platform-based work, women experience income volatility, algorithmic monitoring and the lack of labour protection, which deepen gendered precarity in the digital economy (ILO, 2021). Digitalisation often tends to harden pre-existing social and economic inequalities, by increasing the financial burden of the lower-income women due to the high levels of entry costs, in the form of deposits and equipment charges (Ghosh, 2021).

Artificial intelligence (AI) and automation are reshaping global labour markets, but the transition is far from gender-neutral. AI-driven labour shifts are also witnessed to intensify the job market inequalities, with women being 1.5 times more likely to experience job polarization. Automation is disproportionately affecting sectors with high women employment, such as textiles, manufacturing, clerical services, and customer-facing retail, which are more likely to involve repetitive tasks easily replaced by AI systems (ILO, 2024; Tiwari 2025). In contrast, men are more commonly employed in technical, supervisory, or creative roles that are less vulnerable to automation (ILO, 2019; ILO, 2024). In India, 70 per cent of informal women workers lack digital skills which increase their risk of displacement (OECD, 2024). While AI holds the potential to complement non-routine tasks in care-related work, where women are overrepresented, these roles continue to be undervalued and poorly paid (Autor, 2022; OECD, 2022;

[16]Drèze, J. (2023, May 30). The rural wage rule GOI must relinquish. The Times of India. https://timesofindia.indiatimes.com/blogs/toi-edit-page/the-rural-wage-rule-goi-must-relinquish/

UNESCO, 2022). Furthermore, cyber-violence affects 40 per cent of Indian women online, acting as a significant deterrent to their digital participation (Nigam, 2024).

Algorithmic hiring practices often perpetuate rather than reducing patriarchal biases, as AI systems trained on historical data dominated by male-centric patterns such as those favouring men in technical roles, down-rank qualified women, mirroring broader societal exclusions (Mona, 2022). For instance, biometric welfare systems like India's Aadhaar have repeatedly excluded rural women due to authentication failures stemming from worn fingerprints caused by manual labour or lack of digital literacy, entrenching their marginalization by denying access to essential subsidies and services (UN Women, 2023; Dixon, 2017). This exclusion is especially problematic given the sectoral concentration of women's employment, as evident from Chapter 2. In rural India, women are disproportionately engaged in agricultural and allied activities, often in low-paying, informal, and seasonal roles that expose them to physical hardships exacerbating biometric failures. In urban settings, their participation is concentrated in domestic services, healthcare, education, garments, and hospitality sectors already undervalued in the formal labour market, where algorithmic biases in hiring further limit opportunities by prioritizing male-coded qualifications (Mona, 2022). When viewed together, care work and service-based employment remain the backbone of women's economic participation in India, yet these sectors' vulnerabilities are amplified by digital systems that fail to account for gendered barriers, perpetuating a cycle of inequality where women's labour remains invisible and under protected (Dixon, 2017).

Artificial intelligence has the potential to revolutionize each of these sectors, frequently in ways that reinforce instead of reducing gender inequalities. In agriculture, AI-based technologies like precision farming, robot-based monitoring, and drone-based data gathering have the potential to sideline rural women who are already less well connected to digital literacy and resources. Rural women, with only 20 per cent mobile/internet usage in low-income countries, are often excluded from AI-driven tools like predictive crop analytics due to digital divides and biased algorithms that overlook their needs (Highet and Appaya, 2025). This is compounded by persistent land ownership gaps, where women hold less than 50 per cent of secure rights in 80 per cent of countries, limiting access to AI benefits and amplifying food insecurity disparities (UN Women, 2025). In urban industries such as healthcare and education, algorithmic surveillance and online platforms pose the risk of deskilling jobs that depend on feminized, relational know-how, undermining the social worth of care work and enforcing strict performance targets. AI systems, trained on male-dominated data, devalue women's relational expertise in roles like nursing or teaching, prioritizing quantifiable metrics over holistic care and reducing autonomy (OECD, 2023). Likewise, in platform services such as domestic work and delivery work, AI-powered algorithmic supervision increases surveillance, prescribes unstable schedules, and limits women's control over their working hours. Women, who comprise over 70 per cent of care workers in gig platforms, face heightened precarity from real-time tracking and predictive scheduling, which ignore caregiving responsibilities and erode bargaining power (Njuki and Gollub, 2024). These dynamics reflect broader AI governance gaps, where biased design and unequal access perpetuate structural inequities unless addressed through inclusive policies.

These examples reveal the deep-seated gender biases embedded in AI. Despite being presented as neutral, these systems are built on historical, male-dominated labour data. Scholars such as Noble (2019) argue that algorithms reflect patriarchal hierarchies, while Kwan (2022), drawing on Good hart's Law, critiques how over-reliance on quantifiable metrics can obscure the value of feminised labour. Without targeted reskilling and policy intervention, AI could potentially displace up to 26 million women's jobs globally, further widening the gender gap in the future of work (Brussevich et al., 2018).

3.2.3 Occupational Segregation and Gendered Labour Market

Occupational segregation remains a persistent issue, particularly in emerging economies. Some scholars have highlighted the creation of occupational "ghettos." These ghettos are basically clustered occupations that become heavily dominated by a particular gender, most often women, and are typically associated with low pay, limited authority, and fewer opportunities for advancement. Scholars highlight how occupational ghettos are sustained by deep cultural and institutional structures that define certain types of work as inherently "female" or "male", thereby restricting mobility and reinforcing long-term gender inequality in the labour market. Even as women gain access to education and formal employment, they remain overrepresented in feminised sectors such as caregiving, teaching, and clerical work, which are culturally devalued and economically undercompensated (Charles and Grusky, 2004). In urban India, although some upward mobility has been noted, sectoral participation by women remains highly gendered, limiting access to high-growth and high-income sectors. This pattern is especially evident in the clustering of women in education, care work, and routine service jobs. Globally, women occupy 70 per cent of health and social work roles but only 25 per cent of manufacturing and tech positions, perpetuating wage gaps of 20-30 per cent (ILO, 2024). In India, women comprise 80 per cent of informal sector workers in feminised industries like textiles and domestic services, earning 60 per cent less than men in similar roles (MoSPI, 2024; ILO, 2024).

As discussed in the previous chapter, the PLFS data on occupational classifications under NCO-2015, reveals that women's employment continues to cluster in a narrow band of occupations, primarily elementary jobs, education, health, and low-end service work, while men dominate high-paying and high-growth segments such as engineering, manufacturing, ICT, and managerial roles. The PLFS data further highlights that the top five occupations for women in urban India which include teaching professionals, health workers, clerical and support staff, domestic helpers, and service-sector sales workers, reflecting a clear pattern of horizontal segregation in the labour market.

Building on existing gender disparities in the labour market, the accelerating impact of automation and digital technologies presents a new set of challenges that disproportionately affect women, particularly in the Indian context. Routine and clerical jobs, where women are overrepresented, are among the most susceptible to automation, leading to a heightened risk of job displacement for women workers (WEF, 2023). By contrast, male-dominated sectors such as engineering, ICT, and advanced manufacturing are more likely to experience job transformation and upskilling rather than outright job losses, thereby widening existing disparities. In India, this risk is particularly visible in sectors such as textiles and garment manufacturing, where automation in stitching, packaging, and quality control threatens large numbers of women employed in low-skilled roles (ILO, 2015). Similarly, back-office clerical work and data-entry jobs, which are major sources of urban women employment, are increasingly being replaced by AI-enabled systems, reducing opportunities for them in entry-level white-collar occupations (ILO, 2023, WEF, 2023).

Automation also reinforces occupational segregation by privileging skills linked to STEM education. These are areas where women remain underrepresented due to systemic biases in schooling, training, and recruitment, which limit their access to high-growth digital industries (UNESCO, 2022). Moreover, platform-based gig work, often positioned as a new employment avenue, has tended to replicate existing inequalities. Women are commonly clustered into care, beauty, and domestic services, while men dominate transport, logistics, and technology-enabled segments (ILO, 2024). Unless supported by gender-sensitive reskilling programmes, equitable access to digital tools, and inclusive employment policies, automation intensifies both horizontal and vertical segregation, further entrenching the economic marginalisation of women in India's labour market.

Social norms and early-life socialisation reinforce these patterns, channeling girls towards "caring" professions from an early age. Reskin and Roos (1990) describe this through the queue theory of occupational sex-typing, showing how cultural expectations systematically direct women towards certain occupations while constraining choice in others. Moreover, age-related factors further marginalise older women, who are 50 per cent less likely to reskill into digital roles (Fernandez et al., 2024). Scholars like Anker (2001) argue that globalisation reinforces horizontal segregation and vertical barriers, limiting women's career progression, which can be dismantled through quotas and education reforms (ILO, 2019). The disparities in digital access restrict women's entry into technology fields and serve as a barrier to their participation in the digital economy and it is reported that only 14 per cent of STEM jobs are occupied by women (UNESCO, 2023). At the household level, unequal access to mobile phones, internet connectivity, and digital literacy continues to limit women's opportunities, particularly in rural areas, reinforcing gender gaps in employment and education. The following section examines these dynamics in greater detail.

3.3 Access to Digital Technology

The digital divide continues to reflect and reproduce gender disparities, especially in rural communities. Even though access is on the rise, gaps in ownership, use, and digital literacy still persist. Access to digital infrastructure continues to be a prime barrier to fair participation in the digital economy, especially for women and rural dwellers in India. While government-initiated projects like Bharat Net project has connected over 214,000 Gram Panchayats with optical fiber and 4G mobile connectivity has reached more than 614,564 out of 644,131 villages, major infrastructural barriers persist, particularly for women and rural dwellers in India, limiting equitable participation in the digital economy (PIB, 2024)[17]. Highly dependable connectivity remains constrained in many areas due to uneven resource distribution and challenging terrain, notably in remote Particularly Vulnerable Tribal Group (PVTG) habitations, where only 1,136 of 4,543 identified habitations have mobile coverage as of October 2024 (PIB, 2024). Initiatives like Digital Bharat Nidhi, has covered over 199,000 villages with 8,730 mobile towers, and PM-WANI, with 247,076 Wi-Fi hotspots (PIB, 2024). Highly effective and smooth connectivity exists in only some of these villages, mainly attributed to infrastructural issues and unequal distribution of resources (PIB, 2024)[18]. Scholars pointed out that these infrastructural shortages are further aggravated by socio-technical restrictions such as poor literacy rates and inadequate digital literacy training, which disproportionately relate to women and limit their participation in leading edge technologies, such as artificial intelligence and the Internet of Things (OECD, 2022; UNIDE, 2023). These challenges are also inextricably linked to patriarchal values that constrain women's independent use of digital devices, entrenching gendered exclusions from the digital environment.

Furthermore, mobile phone ownership among rural women remains significantly lower than that of rural men, with women owning substantially fewer devices compared to their male counterparts (Rajora, 2025)[19].These inequalities are influenced not just by economic disparities but also by ingrained gender norms that still define technology as a masculine domain (Gurumurthy and Chami, 2017). Mere access to digital technology is not enough because digital literacy is essential for turning connectivity into active and meaningful participation in the digital economy.

From a women's empowerment perspective, digital literacy involves more than minimum technological know-how and encompasses the important capability of being able to navigate, interact with, and

[17]Press Information Bureau. (2024, December 27). India's rural connectivity revolution: From policy to progress. Government of India. Retrieved from https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/dec/doc20241226477201.pdf

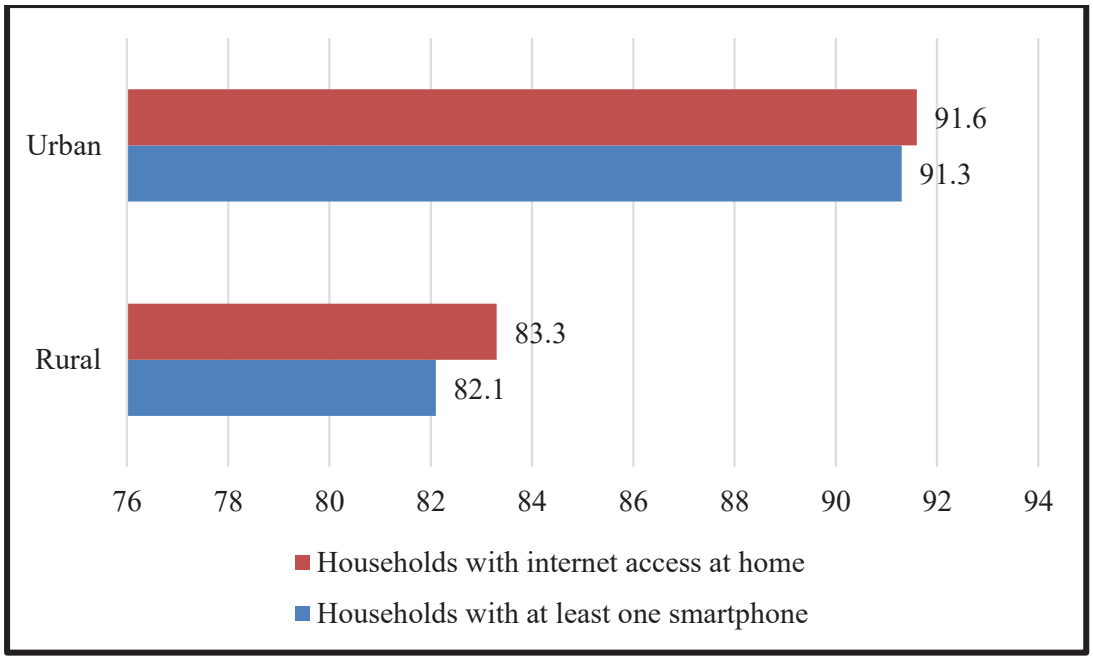
[18]Press Information Bureau. (2024, December 21). BharatNet: Bridging the digital divide – From remote villages to smart communities. Government of India. https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2086701

[19]Rajora, S. (2025, May 29). Digital divide: 51% rural women don't own a mobile phone, shows NSO data. Business Standard. https://www.business-standard.com/article/economy-policy/digital-divide-51-rural-women-don-t-own-a-mobile-phone-shows-nso-data-125052900486_1.html

critique digital systems. This also involves knowledge in domains like cyber-security and data analytics, where gendered gaps are still firmly rooted (Tewari, 2025). Scholars argue that such gaps are not only technical in scope but are instead based on larger structural inequalities that inform access to digital opportunities. Furthermore, understanding the notion of digital citizenship through feminist research includes status, practice, and normative frameworks and yields crucial insights about how gendered power relations shape exclusionary discourses about the digital participation and constrain women's full engagement in online forums (Henry et al., 2021).

In order to gain a comprehensive understanding of the current landscape of digital access and usage, it is essential to analyse the data from national surveys that explore important factors like household-level digital access, mobile and internet use, and ICT skills by a range of demographic groups. This section will deconstruct these data points to more accurately evaluate the level of digital inclusion and marginalised groups' challenges, specifically by gender and geography.

Figure 3.1: Percentage Distribution of Urban and Rural Household-Level Digital Access (All India)



Source: CMS:T 2025, MoSPI

A greater percentage of urban households (91.3 per cent) were reported to possess at least one smartphone as compared to rural households (82.1 per cent) and there was a 9.2 percentage point rural-urban gap. Similarly, internet access at home is reported by 91.6 per cent of urban households and 83.3 per cent of rural households, again indicating a rural-urban gap of 8.3 percentage point (Figure 3.1). While these figures suggest significant strides in household-level digital infrastructure across India, they also expose persistent disparities between rural and urban areas. More importantly, they fail to reflect the gendered dynamics that shape the access, control, and use of digital technologies within households.

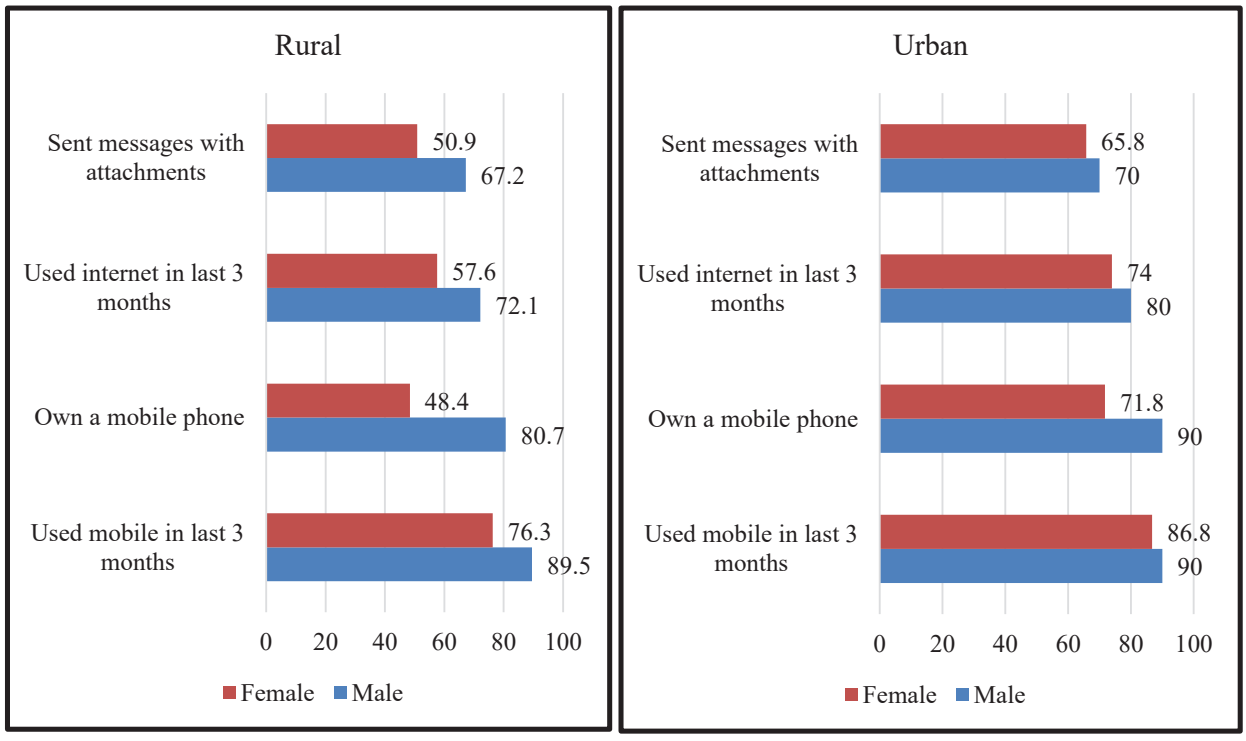
Despite the presence of smartphones and internet connectivity, digital empowerment remains far from universal, particularly for women. In many households, control over digital devices and internet access is often dominated by male members, reflecting deeply embedded patriarchal norms that restrict women's independent use of technology (Gurumurthy and Chami, 2017). Consequently, women's

capacity to use digital technologies for education, work, and empowerment continues to be constrained and conditional. This is worsened in rural areas, where women also endure other barriers linked to socio-cultural norms and strict gender roles.

In addition to gender norms, economic disparity also limits digital reach. Around the world, 80 per cent of poor people do not have internet access, and in India, low-income families, particularly in rural areas are not able to invest in smartphones or regular internet subscriptions, even where the infrastructure is in place. This economic segmentation becomes even more fundamental with the dependence on digital platforms to access basic services including welfare programs, financial services, education, and farm support. For disadvantaged groups, this digital segmentation results in further exclusion from important opportunities, reinforcing poverty cycles and hampering socio-economic mobility (Dewan and Sanyal, 2023).

From the perspective of women's future participation in the digital economy and world of work, household-level access data masks more complex realities. The mere presence of a device or internet connection does not guarantee meaningful access, digital literacy, or control. True digital empowerment requires understanding how gender intersects with other structural inequalities, such as class, caste, education, and geography, to shape who can access and benefit from technology (Haraway, 1988). Limited digital access and control for women may hinder their entry into high-growth employment sectors that rely on digital skills, such as online freelance work, gig platforms, remote jobs, and digital entrepreneurship. As evident from Chapter 2, these gaps have direct implications for women's future employment prospects in terms of being excluded from emerging job markets, facing lower wage opportunities, and limited career advancement, thereby widening gender employment gaps. Therefore, although digital infrastructure has expanded considerably, gendered control over devices, and economic constraints continue to restrict women's ability to engage fully and independently with digital tools. Therefore, not only household-level connectivity, it is equally important to explore individual-level access and agency of the digital tools.

Figure 3.2: Percentage Distribution of Men and Women Access to Mobile and Internet (Age 15+, by Gender & Area), Percentage



Source: CMS:T, (MoSPI,2025)

Figure 3.2 highlights that women have greater access to mobile phones and internet in urban areas compared to rural areas, but persistent and significant gender gaps remain across all settings. In terms of mobile phone ownership, 90 per cent urban men own a device compared to 71.8 per cent of urban women, an 18.2 percentage point gap, while in rural areas the gap is wider at 32.3 percentage points with 80.7 per cent men owning phones versus only 48.4 per cent of women. Mobile usage in the last three months is reported by 90 per cent urban men and 86.8 per cent urban women, narrowing the gender gap to 3.2 percentage points, but in rural areas it remains larger at 13.2 percentage points (89.5 per cent men, 76.3 per cent women). Internet usage also shows a similar pattern with urban men at 80.0 per cent and urban women at 74 per cent, while the usage by rural men surpasses rural women by 14.5 percentage points. When it comes to sending messages with attachments, urban women lag behind their counterparts by 4.2 percentage points, and in case of rural women, they are lagging by 16.3 percentage points (Figure 3.2). These disparities underscore a dual divide, both rural-urban and gender-based, with rural women facing the steepest disadvantages in digital access and usage.

The underlying causes of these disparities are deeply rooted in patriarchal social structures that limit women's autonomy over digital devices and internet usage. Despite interest or skills, women's control over technology is mediated or restricted by household dynamics and societal expectations. This phenomenon, known as the "second-level digital divide," reveals that ownership or nominal access does not guarantee empowered or independent use (Gurumurthy and Chami, 2017). Cultural stigmas around the use of phone by women, especially in rural communities, further restrict their digital participation by linking technology access to moral and social norms (OECD, 2022; Rasheed, 2021). Many women report in India "no need" for internet access, reflecting not disinterest but structural limitations on their mobility and autonomy (Oxfam India, 2022; GSMA 2019)[20]. This limited access to and control over digital technologies has direct implications for women's future participation in the workforce. Women with restricted mobile and internet usage are likely to face barriers in accessing online job opportunities, gig platforms, remote work, and digital skill development programs, which are increasingly central to modern employment markets. Persistent gender gaps in digital access may therefore widen employment disparities between men and women, slow women's integration into the digital economy, and reduce their ability to compete for jobs that require digital literacy and connectivity. This gradually reinforced women into traditional roles and deepening economic inequality (ILO, 2019; WEF, 2024). Addressing these gaps is essential for fostering digital inclusion that is truly equitable and empowering for all women, particularly those in rural areas.

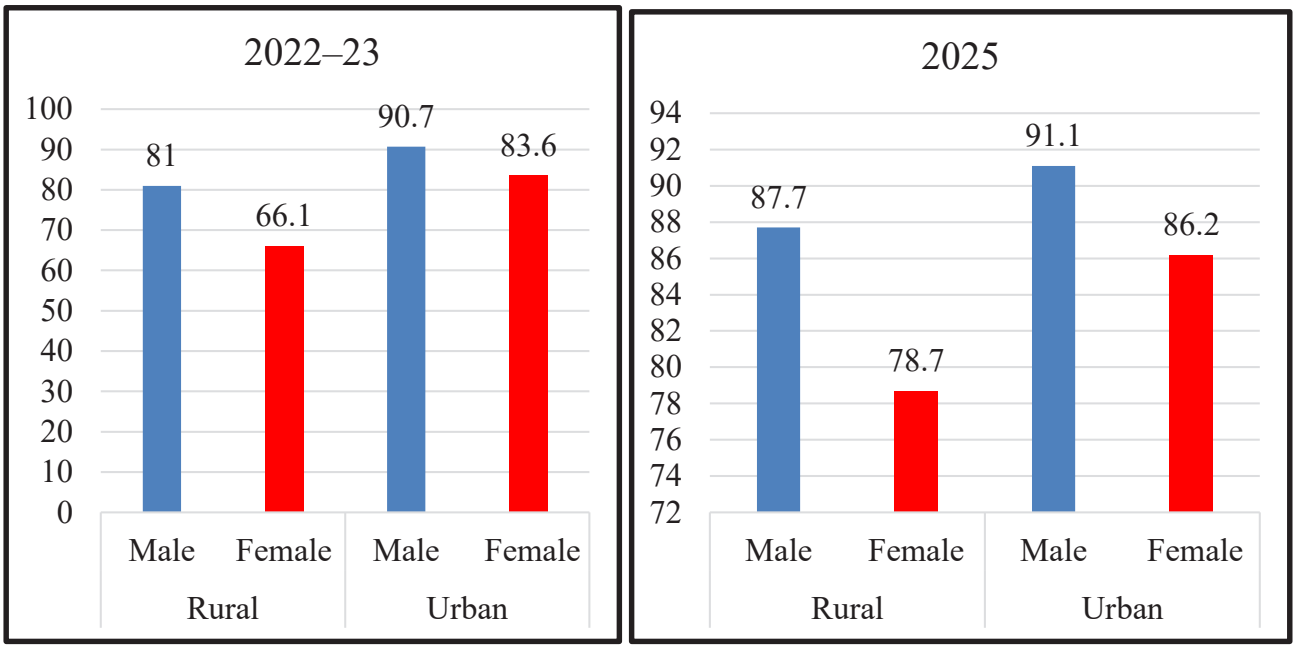
3.4 Digital Competencies and ICT Skills

After the concern of digital access, digital competencies represent the next layer in enabling women's participation in the future of work. ICT skills, such as using digital tools for communication and problem-solving, are essential for navigating digital economies, where again gender gap persists, limiting economic opportunities.

According to the "Comprehensive Modular Survey: Telecom 2025 (CMS:T)" and the "Comprehensive Annual Modular Survey (CAMS), 2022-23" published by the Ministry of Statistics and Programme Implementation (MoSPI) of the Government of India, there has been significant progress in digital literacy among young women aged 15 to 29 years. In urban areas, 86.2 per cent women could send messages with attachments in 2025 which has risen from 83.6 per cent in 2022–23. Despite this improvement, urban women still lag slightly behind their men counterparts, with

[20]GSMA. (2019). The Mobile Gender Gap Report 2019. Retrieved September 02, 2025, from https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2019/03/GSMA-Connected-Women-The-Mobile-Gender-Gap-Report-2019.pdf

Fig. 3.3: Percentage Distribution of Men and Women ICT Skills – Messaging with Attachments (Age 15–29Years)



Source: CMS:T 2025 vs CAMS 2022-23, (MoSPI)

a 4.9 percentage point gap. Rural women, however, face much steeper challenges. Although their proficiency in this case increased notably from 66.1 per cent in 2022–23 to 78.7 per cent in 2025, they continue to remain behind rural men by 9 percentage points and urban women by 7.5 points in the current year (Figure 3.3). These figures highlight persistent rural-urban and gender disparities in digital skills, reflecting broader social and structural barriers that limit rural women's access to meaningful digital engagement and economic opportunities. Globally, women are 1.6 times more likely than men to report lack of digital skills as a barrier to internet use a trend visible in India where only 25 per cent of rural women use the internet for employment (OECD 2022; Rasheed 2021).

Several barriers contribute to these gaps wherein beyond simple access, rural women face significant challenges regarding the quality and scope of digital training programs. Many receive only basic instruction focused on mobile phone use, with limited opportunities to develop advanced skills such as coding or cyber-security, which are essential for high-paying, tech-driven jobs (NASSCOM, 2020; Tewari, 2025). Language also plays a role, as most digital education is provided in English or Hindi, excluding many marginalised linguistic groups (MoE, 2023). Globally, women, especially in emerging markets, are disproportionately affected by skill mismatches that contribute to youth unemployment (Breene, 2016). Without gender-sensitive training programs, millions of technology jobs could remain unfilled by 2030 (ILO, 2019; WEF, 2024). Scholars advocate for addressing motivational barriers and applying feminist pedagogies to digital education to close this gap (Van Dijk, 2020; Antonio and Tuffley, 2014). While digital literacy among young women is improving, systemic inequalities in skill development and application continue to restrict rural women's full participation in the digital economy and STEM fields. In the following section, we will explore the critical role of advanced STEM education in opening doors to tech-driven careers.

3.5 Access to Skilling and STEM Education

Representation of women in STEM and technical education has remained skewed, which has long-term implications for their inclusion in future tech-driven job markets. The evidence from recent data

highlighted persistent gender disparities in STEM participation and vocational training, and rural-urban access of digital devices, showing that women, particularly in rural areas, remain underrepresented in technical and skill-based education. While enrolment is improving, gender disparities remain stark, particularly in newer and emerging fields like AI and Data Science. As India moves towards its aspiration of becoming a global leader in digital innovation, one of the most significant challenges it faces is the low participation of women in key technology-driven fields such as artificial intelligence (AI), data science, and machine learning. While there has been an increase in female enrolment in STEM (Science, Technology, Engineering, and Mathematics) programs, the transition to careers that are shaping the future of work remains disproportionately men dominated. This gap is not indicative of a lack of ability or capability in women, but instead a complex network of cultural attitudes, institutionalised bias, and unequal access to opportunity that persist as obstacles. Without addressing these systemic barriers along the education-to-employment pipeline, India stands to create a digital economy that does not unlock the full potential of its population's half.

Globally, women face greater challenges than men in accessing technology-oriented jobs, which often result in occupational disruptions. These challenges arise not only from the existing gender biases in the workplace but also from educational systems that often steer women away from STEM disciplines. Research has shown that educational systems, globally and in India, frequently do not encourage women to pursue technology-focused careers. In fact, women are often disproportionately impacted by labour market shifts, where fields like AI and machine learning are dominated by men, further exacerbating gender imbalances (WEF 2023; Kwan, 2021). This creates a loop where fewer women are trained in high-demand, high-skill areas, limiting their ability to participate in the most innovative sectors of the economy.

Table 3.4: Female Enrolment in Engineering and Technology (2021–22) (In Million & Percentage)

Branch	Total Enrolment (in millions)	Female Enrolment (in millions)	Female (Percentage)
Computer Engineering	1.17	0.43	36.6
Electronics Engineering	0.60	0.22	36.7
Electrical Engineering	0.38	0.09	24.1
Civil Engineering	0.30	0.10	31.7
Mechanical Engineering	0.27	0.04	15.1
AI & Data Science	0.02	0.0034	15.2
AI & Machine Learning	0.016	0.0038	23.3

Source: AISHE 2021–22, Ministry of Education,

Table 3.4 underscores uneven progress in women's participation in technical fields, with notable gaps in enrollment across STEM disciplines. While women constitute approximately 36.6 per cent of enrolments in computer and electronics engineering, their representation is significantly lower in traditional fields such as 24.1 per cent in electrical engineering and 15.1 per cent in mechanical

engineering. Emerging and rapidly expanding areas like AI and Data Science show even greater gender gaps, with women accounting for just 15.2 per cent and 23.3 per cent of enrolments, respectively. This underrepresentation stems from limited access to reskilling opportunities and care responsibilities that disproportionately affect women (UNESCO, 2022; OECD, 2022). From early education, girls, especially in rural and marginalised communities, face discouragement in pursuing mathematics and science stream, a trend reinforced by gender-differentiated educational investment and teacher biases that undermine girls' confidence in technical subjects (David, 2024; Kwan, 2021). These educational barriers contribute to a self-reinforcing cycle of exclusion, reducing the pipeline of women qualified for STEM careers.

Institutional and systemic challenges further constrain women's access to advanced STEM education and skilling opportunities. Nearly 40 per cent women in STEM report bias or exclusion in academic and workplace settings, which adversely affects retention and progression beyond undergraduate levels (Kumar, 2024; World Bank, 2024). Women in higher education face dropout rates 25 per cent higher than men, often due to harassment, lack of mentorship, and financial pressures, limiting their ability to complete advanced degrees and specialised training (GoI, 2023). Additionally, rural women encounter geographic and social barriers that reduce access to elite institutions and quality mentorship (ILO, 2024; ILO, 2023). The continuation of these disparities is likely to reinforce gendered divisions in the workforce and limit women's access to high-growth technical fields. As automation, AI, and green technologies reshape labour markets, underrepresentation in frontier disciplines constrains career trajectories and weakens innovation ecosystems by reducing diversity in leadership and problem-solving (WEF, 2023; UNESCO, 2023). Addressing these gaps requires inclusive, gender-sensitive pedagogy, targeted scholarships, and digital skilling programs designed to reach marginalised groups (ILO, 2023).

Table 3.5: Level-Wise and Gender-Wise Enrolment in STEM Courses (2021–22) (In Million)

Level	Engg. & Tech. (Male)	Engg. & Tech. (Female)	Science (Female)	Science (Male)	Science (Female)
U.G.	2.766	2.491	1.138	2.422	1.138
P.G.	0.178	0.056	0.406	0.022	0.406
Ph.D.	0.035	0.023	0.023	0.018	0.023
M.Phil.	-	0.000006	0.00122	0.00041	0.00122

Source: AISHE 2021–22, Ministry of Education,

Table 3.5 reveals a pronounced gender gap in STEM education across academic levels in India, where representation of women significantly declines from undergraduate to postgraduate and research stages. At the undergraduate level, women constitute 47.3 per cent of engineering and technology students (2.491 million out of 5.257 million) and only 31.9 per cent of science students (1.138 million out of 3.560 million) (AISHE, 2021-22). However, this representation sharply decreases in postgraduate engineering and technology programs, where women make up just 23.8 per cent (0.056 million out of 0.234 million), while in postgraduate science, women actually surpass men, constituting 94.8 per cent (0.406 million out of 0.428 million). The gender gap widens again at the doctoral level for engineering and technology, with women comprising only 39.3 per cent of enrolment (0.023 million out of 0.057 million), although in science Ph.D. programs, women slightly outnumbered men at 55.7 per cent (0.023 million out of 0.041 million). These figures reflect enduring structural barriers and gendered social norms that restrict women's access to advanced technical education, particularly in male-dominated fields such as engineering and technology (Confederation of Indian Industry, 2023; Gurumurthy and Chami, 2017).

Despite some improvements in women's participation in STEM, significant challenges remain. Women's transition to higher academic and research levels is hindered by institutional biases, exclusion from professional networks, and disproportionate unpaid care responsibilities, limiting their access to time-intensive skilling opportunities (NASSCOM, 2020; Fraser, 2016). Furthermore, workforce participation shows an even starker gender divide, with women representing only 18.6 per cent of scientists in India (PIB, 2024)[21]. Access to quality STEM education and skilling remains particularly uneven for women from rural backgrounds, those with disabilities, or those burdened by unpaid care work, compounding their exclusion (Gurumurthy and Chami, 2017). The implications of these trends for the future of work are significant. With automation, AI, and digital technologies driving economic transformation, demand for advanced STEM skills is set to rise. Women's declining participation beyond undergraduate levels, particularly in engineering and technology, reinforced occupational segregation and restricted access to high-growth sectors such as data science, green technologies, and advanced manufacturing (ILO, 2019; WEF, 2023). The exclusion of women from this technological domains limits women's career prospects, reduces inclusivity in innovation, and risks embedding gender biases into technological systems (UNESCO, 2023; UN Women, 2022). Equitable participation in STEM is therefore critical to ensure women's integration into digital economies, leadership roles, and the creation of inclusive technological futures (World Bank, 2023). These national trends align with global patterns where women are underrepresented in advanced engineering programs and high-growth tech fields due to systemic gender biases and socio-cultural barriers (European Commission, 2022; UN Women, 2023). These persistent gaps in access to STEM education and skilling limit women's career prospects and reinforce gender imbalances in high-growth technical fields in India and worldwide (MoE, 2022; United Nations, n.d.). This highlights the need for targeted interventions to support women throughout the STEM education pipeline to ensure equitable career prospects in technology-driven sectors. The next section of the chapter targets to examine how emerging employment opportunities are reshaping the future of work for women in these fields.

3.6 New Forms of Employment: Emerging Opportunities

The changing nature of work has given rise to flexible and digitally mediated employment options. While these comes as new opportunities, especially for women, they also raise concerns around income security, benefits, and working conditions. Emerging sectors such as digital health, green technology, platform economies, and health-tech innovations are fundamentally transforming the landscape of women's work. These sectors are not only providing new employment opportunities but are actually redefining work itself, empowering women not only to occupy positions but also to establish and command them. The future of work, in general, and particularly in India, is being forged by women's growing involvement in these sectors. Yet, in order to fully understand the future of women's work in India, it is necessary to go beyond tales of exclusion and barriers and to see the enormous opportunities that emerging sectors offer.

Women are not simply found to be reacting to technological and economic changes, but are themselves actively engaging with it, often using informal networks, digital tools, and community-based models to forge adaptive and context-defined livelihoods. These are indicative of larger remaking of work, especially among women who have long been on the periphery of formal labour markets. In most instances, women are merging work and caregiving responsibilities, undermining formal distinctions between productive and reproductive labour. This redefinition of work sites from offices to homes,

[21]Press Information Bureau, Government of India. (2024, February 7). Women are leading prestigious science projects like Aditya L1 mission, Chandrayaan-3 etc, says Union S&T Minister Dr Jitendra Singh (Release ID: 2003613). Ministry of Science & Technology. https://pib.gov.in/PressReleasePage.aspx?PRID=2003613

from farms to digital platforms has overstepped traditional boundaries and generated new forms of labour that are not always visible in formal employment systems.

Meanwhile, labour force trends, as indicated in recent PLFS data still show deeply ingrained gender inequalities. As much as women are moving into newer sectors, their participation is still in informal, low-paid, and low-mobility jobs. This speaks not only to the institutional constraints of current labour market arrangements but also to the layered barriers, such as social norms, limited mobility, confined access to education and technology, and the burden of unpaid care work that influence women's work trajectories. These constraints are not uniform; they intersect with rural-urban divides, caste, class, and other social hierarchies, further complicating access to emerging opportunities. It calls for a rethinking of employment systems, social protections, and skill-building mechanisms to ensure that women are not only present in these new economies but are positioned to thrive within them.

India's digital economy contributed approximately $402 billion (11.74 per cent of GDP) in 2022-23 and is projected to drive nearly 20 per cent of the country's GDP by 2030 (GoI, 2025)[22]. In parallel, global healthcare is poised to add five million jobs by 2030. These structural shifts, particularly in technology and green industries, offer new avenues for women participation. However, while these changes are promising, they also carry risks of perpetuating or even amplifying existing gender disparities, if not designed with gender sensitivity. The digital transformation of the economy, for example, provides a fertile ground for women to enter high-growth fields such as e-commerce, health-tech, and green technologies. Platforms such as Flipkart and Meesho in India have made it possible for women's self-help groups in rural communities to access wider markets, with income increase of upto 20 per cent in the initial year (Dewan and Sanyal, 2023). The flexibilty of digital platforms makes it possible for women to balance entrepreneurial work with household responsibilities, breaking down mobility constraints characteristic of conventional retail sectors. However, even with such opportunities, women still experience significant barriers, particularly in rural and deprived areas. According to Goldin, although digital transformation generates new sectors, it also replicates structural gendered exclusions, particularly for women carrying unpaid care work. Women tend to be concentrated in lower-value positions in sectors such as health-tech, where caregiving work is feminised, and green technologies, where access to funding continues to be restricted (Goldin, 2020). This labour division by gender constrains women's capacity to fully take advantage of such opportunities being created in these high-growth sectors.

In sectors like e-commerce, health-tech, and digital entrepreneurship, the flexibility offered by work-from-home arrangements provides a unique opportunity for women to balance work with caregiving responsibilities. Yet, this flexibility is a double-edged sword. While it allows women to overcome mobility restrictions, it also reinforces unpaid care work, without addressing its unequal division within households (ILO, 2018). As Federici and Kwan argue, capitalism continues to exploit unpaid care work, and its redistribution is essential for unlocking women's full economic potential (Federici, 2018; Kwan, 2021). The emerging sectors, e-commerce, health-tech, green technology, and STEM hold tremendous potential for women's economic empowerment. However, this potential can only be fully realized through the intentional design of gender-sensitive policies and interventions that address not just access to opportunities but also the cultural, economic, and social structures that perpetuate exclusion. Gender-sensitive frameworks must tackle the root causes of inequality, including unpaid care work, financial exclusion, and the deep-seated patriarchy within these sectors. Without such structural changes, the promise of these sectors will remain unfulfilled, and the inequalities that exist in India's labour market will persist, limiting women's participation in shaping the future of work.

[22]GoI, 2025. India's digital economy set to drive one-fifth of GDP by 2030: MeitY report. DD News. https://ddnews.gov.in/national/indias-digital-economy-set-drive-one-fifth-gdp-2030-meity-report

Gig and care economy are envisioned as new avenues of employment. The next section of the chapter concentrates on these two sectors discussing their contribution to women empowerment and as well as challenges, aligning with ILO's vision for decent work in new forms (ILO, 2019).

3.6.1 Gig Economy

Gig economy has opened new pathways for women workers, particularly in urban areas, by allowing flexible work arrangements that were largely absent in conventional labour markets. It involves the exchange of labour for money between individuals or companies via digital platforms that actively facilitate the matching of providers and customers on a short-term and payment-by-task basis (WEF, 2024). Unlike traditional long-term contracts or secure wage jobs, gig work is defined by temporary, task-based, and digitally mediated employment relationships (Aggarwal, 2023; De Stefano, 2015). While such platforms promise accessibility, autonomy, and new income opportunities, the lack of formal contracts, absence of robust social protection, and persistence of wage parity gaps continue to limit the transformative potential of gig work for women. The future of work in India is increasingly shaped by the expansion of this economy, which represents one of the most significant shifts in contemporary labour market. This transformation is being fueled by technological change, the spread of digital platforms, and evolving business strategies that prioritise flexibility over permanence (Kshatriya and Kurien, 2022). However, as the ILO has cautioned, unless strong protections are institutionalised, platform work risks reproducing the vulnerabilities of informal labour rather than creating sustainable and equitable futures of work (ILO, 2024). For women, gig employment embodies both opportunities and risks, as it intersects with unpaid care responsibilities, unequal access to education and skills, discriminatory norms, and existing barriers to formal employment.

Digital platforms in India have rapidly expanded across sectors such as ride-hailing, food delivery, logistics, domestic services, and beauty and care work, lowering entry barriers and providing new income-generating opportunities to workers who might otherwise remain excluded from the labour market (Mehta, 2023). For women in particular, gig platforms are often marketed as offering flexibility to balance paid work with domestic responsibilities in contexts where restrictive gender norms continue to define labour market participation (ILO, 2023). India's gig economy is projected to grow to 90 million jobs by 2030, with women expected to comprise between 28 and 35 per cent of this workforce, up from 23 per cent in 2022 (NITI Aayog, 2022; Deshpande, 2025)[23]. Platforms like Urban Company and Swiggy emphasise flexibility as a selling point, with many women gig workers citing flexible scheduling as their primary motivation to engage in this form of employment (IWWAGE, 2023). In rural contexts, e-commerce platforms such as Amazon Saheli and Flipkart Samarth have enabled new livelihood opportunities for women entrepreneurs by providing access to wider markets, digital tools, and capacity-building support (Buteau et al, 2023).

Yet, these opportunities are offset by systemic vulnerabilities. Gendered wage disparities persist, with women earning 27 per cent less than men in comparable platform work, largely due to algorithmic biases that allocate higher-paying roles such as delivery and logistics to men, while women are concentrated in feminised segments such as beauty services or tutoring (Fairwork India, 2024).

Additionally, the lack of contracts deprives close to 80 per cent of women workers of health insurance and retirement packages, further deepening insecurity in the face of economic shocks (ILO, 2024).

[23]Deshpande, P. P. (2025, January 14). A focus on India's booming gig and platform economy. The Times of India. https://timesofindia.indiatimes.com/

Security and harassment are also urgent concerns, with cyber-harassment impacting 35 per cent women gig workers and fear of night-time or off-site assignments discouraging engagement (UN Woman, 2024). Furthermore, these challenges are not evenly spread. Rural women and the lower castes have compounded barriers, with roughly 10 per cent rural women getting access to gig opportunities because of lack of connectivity, digital divides, and limited skills (Basole et al., 2021).

Unpaid care work continues to be a key driver of women's engagement in gig work. Indian women allocate considerably more time than men to domestic and caregiving activities that restrict their ability to consistently participate in paid work (Singh and Yadav, 2023). Though gig platforms present themselves as sources of flexibility, in reality this tends to mean a "double burden" where precarious platform work is added on to unpaid household work, generating time poverty and prolonged fatigue (HB et al., 2023). In the absence of public acknowledgment of care work and institutional redistribution through investments in childcare, eldercare, and public services, the gig economy threatens to perpetuate more than mitigate gendered inequalities (Ban et al., 2023).

Skilling and employability further highlight gendered divides. Higher-value segments of the gig economy, including IT services, consulting, and design, demand advanced education, digital literacy, and technical expertise. However, women often face structural barriers in accessing these skills, due to unequal access to training, limited resources, and socio-cultural restrictions (Radhakrishnan and Singha Roy, 2023). As a result, many women remain confined to low-paying and low-mobility gig opportunities, which hinder long-term career growth and perpetuate income inequality. To bridge this divide, gender-responsive skilling programs, digital literacy initiatives, and inclusive training modules are essential (NITI Ayog, 2022).

Employment trends underscore both the promise and risks of this transformation. According to NITI Aayog, India had an estimated 7.7 million gig workers in 2020–21, a figure projected to rise to 23.5 million by 2029–30, representing 4.1 per cent of total employment (NITI Ayog, 2022). This expansion reflects broader labour market shifts in which traditional salaried jobs are stagnating, and flexible, platform-based arrangements are becoming normalized (ILO, 2024; Antunes et al., 2023). Yet, gig work mirrors many vulnerabilities historically associated with informal labour, including irregular income, lack of social protection, and the absence of collective bargaining rights. De Stefano (2015) aptly describes this model as a "just-in-time workforce," where workers are endlessly replaceable and where the boundary between formal and informal employment is blurred. For women, who are already disadvantaged by systemic labour market barriers and the disproportionate burden of unpaid care, these risks are particularly acute.

Scholars have raised concerns over the structural aspects of platform work. Gurumurthy (2023) criticized the concept of "platform patriarchy," highlighting how data extraction and algorithmic control heighten exploitation. Woodcock and Graham (2021) suggested more robust worker rights and protections within international gig settings. The ILO emphasises the importance of social protection floors as critical guarantees for platform workers, pointing out that in their absence, platformisation is likely to exacerbate informalisation instead of ensuring equitable work futures (ILO, 2024).

In this context, the gig economy holds out both promise and risk for Indian and global women. On one hand, it has opened up new opportunities for labour market entry, earnings, and entrepreneurship with more flexibility and reduced entry barriers in environments where women have limited access to formal employment. On the other hand, it threatens to solidify precarity if the underlying issues of care responsibilities, occupational segregation, skills, social protection and algorithmic control are left unaddressed. The extent to which the gig economy contributes to women's empowerment will ultimately depend on the effectiveness of systemic reforms aimed at tackling gendered inequalities. To unlock

its transformative potential, gig work must be accompanied by robust institutional support, including portable social protection, gender-sensitive skilling, safety mechanisms, algorithmic transparency, and public investment in care infrastructure. Only with such measures can the gig economy move from being a digital extension of informality to becoming a pathway for women's sustainable empowerment and equitable participation in the future of work.

3.6.2 Care Work and the Future of Employment

India presents both the potential and the challenges of care work as a significant labour market opportunity for women. The care economy in India remains largely informal and predominantly women, where they are disproportionately employed in low-paid, insecure, and unprotected roles. Formalising this sector could generate around 11 million jobs by 2030, mostly benefiting women (PTI, 2024)[24]. However, nearly 90 per cent of care workers are currently employed informally, which limits their access to social protection, skill development, and career advancement opportunities (ILO 2023; Kumar, 2024). These barriers become even more severe in rural areas where lower education levels, restricted mobility, and lack of institutional support deepen occupational segregation and reinforce persistent gendered economic vulnerabilities (Patel and Sethi, 2022; Kelkar, 2022). Although women in caregiving roles provide essential health, nutrition, and early childhood services, many are classified as volunteers who receive stipends below the minimum wage and lack basic benefits such as pensions and maternity leave (ILO, 2018; PIB, 2024). This situation reflects a broader undervaluation of care work, as formal care jobs in India pay approximately 30 per cent less than the national average. This so-called care pay penalty stems from structural biases that fail to recognize and adequately remunerate women's labour. Feminist scholars like Federici (2018) critique the capitalist economy's dependence on unpaid and underpaid reproductive labour, while Fraser (2016) argues for redistribution, recognition, and institutional transformation of the care economy.

The rise of digital technologies is beginning to reshape care work in India. Platforms such as e-Sanjeevani have expanded access to digital health services and created new avenues of care-related employment for women (MoHFW, 2024). Although these digital roles provide flexibility, they often replicate the precarity found in traditional care work because they lack labour protections. Increased mobile phone use and digital access among women facilitate entry into these jobs, but disparities in digital literacy and access, particularly in rural areas remain significant challenges. Therefore, while the digital shift presents new opportunities, it also risks perpetuating informal employment and exclusion from social protections. Labour rights and social protection gaps remain critical issues. For example, the long-pending National Policy on Domestic Workers is yet to be implemented and existing government schemes such as ASHA and Anganwadi workers are excluded from core entitlements.

On a global scale, the care economy is a vital source of women's employment and an essential foundation for sustainable economic development. The ILO defines the care economy as encompassing all forms of care work, including unpaid household and community care as well as paid employment in health, education, childcare, long-term care, and domestic work (ILO, 2018). Economists argue that excluding care work from labour market analysis distorts policy decisions because care sustains households, labour supply, and future generations, yet remains undervalued in national accounts (Waring 1990; Folbre 2006). Joan Tronto (2015) further conceptualizes care as a political and moral responsibility fundamental to democratic societies. Globally, the care economy employs 381 million people, with women comprising 65.3 per cent of the workforce and representing

[24] Press Trust of India. (2024, March 27). Public investment of 2% of GDP can create 11 mn jobs, majority for women. Business Standard. Retrieved October 02, 2025, from https://www.business-standard.com/industry/news/public-investment-of-2-of-gdp-can-create-11-mn-jobs-majority-for-women-124032700787_1.html

nearly one-fifth of all women employment (ILO, 2018). The macroeconomic simulations by ILO suggest that increased public investment aligned with the Sustainable Development Goals could create 475 million jobs globally by 2030, which is 117 million more than under a business-as-usual scenario (ILO, 2018). Importantly, public investment in quality care services not only generates direct employment but also stimulates significant indirect employment through backward economic linkages, acting as a fiscal multiplier that supports inclusive growth (ILO, 2018; Folbre 2006).

Despite this growth potential, care work worldwide remains characterised by precarity. The ILO notes a persistent care pay penalty where care jobs are systematically undervalued relative to other occupations requiring similar skills (ILO, 2018). Domestic and home-based care workers, around 70.1 million globally, experience particularly exploitative conditions, often exacerbated by informal employment, long working hours, and lack of protection from abuse (ILO, 2018). These conditions reflect the rise of the workers facing insecure, underpaid, and unregulated employment (Standing 2011). Economists have long criticised the exclusion of unpaid care work from GDP calculations despite its estimated global value of $11 trillion (ILO, 2018). International comparisons further underscore the benefits of public investment in care. For example, Sweden's publicly subsidised care system has been linked to a 15 per cent increase in female labour force participation (OECD 2024). Modeling studies also suggest that strategic investment in India's care infrastructure could boost GDP by up to 2.2 per cent while generating large-scale employment (ILO 2022).

Technological changes such as digital platforms and telemedicine continue to reshape care work but often lack sufficient labour protections, as many platform-based caregivers are classified as independent contractors outside formal labour law. The ILO warns that, left unregulated, these new employment forms threaten to exacerbate instead of end precarity (ILO, 2018). In addition, climate change deepens care needs by exacerbating health threats, food insecurity, and displacement, which then further burden caregivers in the absence of formal support and remuneration. These opportunities and challenges shape the way towards an inclusive digital future.

3.7 Summary

Women's engagement in the changing world of work is still held back by entrenched structural disadvantages, such as occupational segregation, digital exclusion, restricted access to STEM training, and undervalued care work. In emerging economies like India, digital change is generating new jobs while at the same time perpetuating existing inequalities. Industries like gig work, platform-based services, and digital technologies are characterised by flexibility, but in large part at the cost of precariousness through job insecurity, pay disparities, and poor protection. These are compounded by intersecting categories like caste, class, geography, age, and disability that affect women's access to digital instruments, training, and economic ascension. Both offline and online barriers also constrain women's full participation, and online spaces tend to mirror offline gender hierarchies. In the absence of transformative change in education, labour market systems, and cultural mindset, the digital revolution might strengthen inequalities instead of diminishing them. However, digital technologies possess great potential for inclusive development when shaped by intersectional and equity-oriented policies. High-growth sectors like e-commerce, healthcare tech, and renewables present new pathways for women's inclusion, especially when supported by targeted skilling, inclusive infrastructure, digital literacy, and strong social protections. While several Indian government and civil society initiatives are working to bridge the digital gender divide, these must be scaled and localised to address diverse needs such as language, care responsibilities, and safety. Addressing digital inequality requires systemic that redistribute unpaid care work, secure digital spaces, and build inclusive governance. Extending the ILO's vision of a just transition, integrated intersectional reforms can help build a digital economy that is not only innovative but inclusive, empowering women to lead and shape India's digital future by 2047 (ILO, 2019; WEF, 2024).

Chapter 4
Policy Mapping and Legislative Interventions

4.1 Context

India's policy frameworks have increasingly recognised that economic transformation, driven by globalisation, digitisation, automation, and integration into global value chains have gendered implications. Over the past decade, progress has been achieved through the expansion of digital infrastructure, targeted skilling programmes, financial inclusion, and social protection. Yet, women's participation in the labour market remains uneven, and their position in the future of work continues to be precarious.

At the international level, gender equity has emerged as a core dimension of sustainable development recognising that inclusive economic development is essential for shaping a just and resilient future of work. The G20 Summit in Argentina (2018) identified the future of work as a shared global priority, underscoring the importance of reskilling, technological adaptation, and inclusive social protection[25]. More recently, the G20 Delhi Leaders' Declaration (2023) advanced this agenda by supporting tools such as the ILO and OECD "Skills for Jobs" databases, endorsing a digital reskilling toolkit, and calling for universal social protection coverage with benefit portability. Importantly, it also highlighted protections for gig and platform workers and aligned with the UN Global Accelerator on Jobs and Social Protection for Just Transitions. These global commitments reflect an emerging consensus that certain sectors like digital, cultural and green sectors will be central to inclusive development[26].

As there has been an expansion of new sectors with promising employment opportunities and greater inclusion of women in the workforce, there is a need to understand the legal and regulatory frameworks for protecting women's employment in the transitions to future of work. In the absence of effective policy measures, women, may be exposed to new forms of exclusion, inequality, informality and vulnerability in the workplace. Ensuring inclusive and equitable growth, requires aligning of labour legislations, strengthening of gender responsive social protection policies and revisiting of existing policy frameworks that support women through these transitions.

With regard to legal protection of women workers, labour legislations particularly, the new labour reforms have promoted greater inclusion for women. The Ministry of Labour and Employment, under the labour reforms process has subsumed 29 labour laws under four labour codes (Code on Wages 2019, Industrial Relations Code 2020, Social Security Code 2020 and the Occupational, Safety, Health, and Working Conditions Code) which aims at extending coverage to majority of the workforce including the informal sector. Existing legislative frameworks such as the Equal Remuneration Act 1979 (now subsumed under Code on Wages 2019) the Maternity Benefit Amendment Act, 2017 (subsumed under the Social Security Code 2020) and the Sexual Harassment of Women at Workplace Act (Prevention, Prohibition and Redressal Act) 2013 have laid the foundation for promoting gender sensitive workplace policies. These legal instruments serve as critical enablers in addressing structural barriers hindering women's participation in the workforce and are essential in shaping responsive strategies for the future of work.

In addition, the government of India has undertaken significant strides in the policy landscape towards promoting women's employment, skilling, social security etc through implementation of various

[25]G20 Information Centre. (2018, September 7). Fostering opportunities for an inclusive, fair and sustainable future of work. University of Toronto. Retrieved October 02, 2025, from https://www.g20.utoronto.ca/2018/2018-09-07-employment.html
[26]Government of India. (2023, September 9–10). G20 New Delhi Leaders' Declaration. Ministry of External Affairs. Retrieved October 02, 2025, from https://www.mea.gov.in/Images/CPV/G20-New-Delhi-Leaders-Declaration.pdf

schemes both at the Centre and State level. Flagship programmes such as Skill India, Digital India, Stand-Up India, Start-Up India, the Atal Innovation Mission, alongside platforms like the Mahila-e-Haat, and the Women Entrepreneurship Platform (WEP) have sought to expand women's access to skills, entrepreneurship, and digital markets. Financial inclusion through the Pradhan Mantri Jan Dhan Yojana (PMJDY) and MUDRA loans, supported by digital public infrastructure such as Aadhaar, UPI and Jan Dhan, has significantly expanded access to credit, with women constituting over 56 per cent of PMJDY account holders and 68 per cent of MUDRA lean beneficiaries by 2025 (PIB, 2025). However, some studies have pointed out that access does promote agency as many women with bank accounts remain unable to exercise decision-making power over household resources, as patriarchal norms continue to structure financial autonomy (Kabeer, 2015).

Despite these institutional gains, structural and socio-cultural barriers continue to limit the transformative potential of policies. Women remain clustered in "feminised" vocational tracks such as beauty, tailoring, and caregiving, while being excluded from STEM, digital, and green economy sectors (ADB and ILO, 2022). Over 90 per cent of Indian women remain in informal employment, with limited access to maternity benefits, pensions, or wage parity (Sundari, 2020). Some of the studies have revealed about the challenges in maternity financing wherein employers have expressed their concern about providing 100 percent funding towards maternity protection as envisaged in India's Maternity Benefit (Amendment) Act (2017). It has resulted in unintended consequences, including hiring biases against women due to the perceived cost burden (Ratho, 2020)[27]. Further, the ILO has acknowledged that it would have financial implications for individual employer who bear the double costs of maternity leave and also the cost of employee replacement. The ILO standards have highlighted that employer may not be individually liable for direct cost of maternity and cash benefits rather it should be routed through social insurance or public funds or non-contributory social assistance particularly women in the informal sector and self-employed women (Samantroy and Tiwari, 2025)[28].

Several other challenges remain with regard to access and effective implementation of government programmes and schemes. Feminist economists have highlighted on the challenges associated with women's excessive participation in unpaid and care work. Along with promoting economic empowerment, there is a need for redistributing unpaid care work and recognising social reproduction as integral to development (Elson, 2017). Achieving this target is not only about increasing employment opportunities for women but also ensuring that their work is dignified, secure, and sustainable. Priority areas include gender-responsive skilling, redistribution of unpaid care work, algorithmic accountability, and universal social protection.

In this context, the chapter delves into how policies and institutions are responding to the convergence of gender, technology, and the future of work and their attention to existing gaps in making labour markets more inclusive and equitable. The discourse also turns to how national labour legislation can promote gender equality in work, particularly governmental initiatives that aim to increase women's labour market participation.

4.2 National Labour Laws and Gender Equality in Employment

India's legislative framework provides an important foundation for advancing gender equality at work. Legislation on payment, maternity protection, and occupational safety has opened avenues for equity, but inconsistent enforcement and the huge informality of women's employment continue to constrain their

[27]Ratho, A. (2023, May 11). Promoting female participation in urban India's labour force. Observer Research Foundation. https://www.orfonline.org/public/uploads/posts/pdf/20230511172923.pdf

[28]Samantroy and Tiwari (2025).Financing Maternity Rights in India. https://www.thehindubusinessline.com/profile/author/Ellina--Samantroy-26601/

effectiveness. This section thus presents the key pieces of legislation on gender equality enacted by the Government of India and analyses their effectiveness in enhancing women's workplace conditions. The legislative framework in India is based on constitutional principles, international labour standards and global commitments on promoting gender equality. As a founding member of the ILO, India has ratified 47 ILO conventions, including key gender-related conventions such as Equal Remuneration (C100) and Discrimination (Employment and Occupation) (C111). Also, the labour law reforms and the new Labour Codes have been drafted based on protection of labour rights. The labour reforms process has subsumed 29 labour laws into four labour codes namely; The Code on Wages 2019, The Industrial Relations Code 2020, The Code on Occupational Safety,health and Working Conditions 2020 and the Code on Social Security 2020. The Code on Social Security (2020) integrates maternity protections and social security entitlements, extending them to informal and gig workers. The Occupational Safety, Health and Working Conditions Code (2020) include provisions for safe night work and transportation for women. However, challenges of implementation persist, particularly within Micro, Small, and Medium Enterprises (MSMEs), and the informal sector where over 90 per cent of women workers are concentrated. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) POSH Act 2013, aligned in spirit with ILO's Violence and Harrasment Convention 2019 (C190), addresses sexual harassment at the workplace.

Though India's labour laws represent important progress towards gender equality in employment, their transformative potential is constrained by challenges in enforcement, informality, and socio-cultural barriers. These limitations highlight that legal reforms alone may not be able to address the deeply entrenched inequalities without understanding the structural shifts in how women's work is valued, protected, and supported across both formal and informal economies. Recognising these gaps, the labour codes have attempted to extend protections to informal sector workers including the gig and platform workers. The inclusion of nearly 10 million gig workers under the Social Security Code marks a significant milestone, particularly for women engaged in low-wage, insecure jobs on digital platforms such as food delivery and ride-hailing services (PIB, 2025)[29]. Judicial interventions have also played a key role, with the Supreme Court affirming maternity protection as a fundamental right. Nonetheless, enforcement remains a central challenge, especially in small digital platforms and informal enterprises where compliance is minimal.

The Code on Social Security 2020

In the evolving future of work, characterised by flexible, technology-driven employment, the Code on Social Security, 2020 marks a key step in recognising gig and platform workers. This growing sector, including delivery, ride-hailing, and digital freelancing, offers new employment opportunities especially for women seeking flexible, part-time, or remote work due to caregiving or mobility constraints. By legally including gig workers, the Code promotes greater economic inclusion particularly for women in semi-urban and rural areas. However, the Code attempts to shift India's labour framework from employer-employee dependency to a rights-based approach in social protection, particularly crucial for gig workers who are structurally outside formal employment. Despite these developments, most provisions have not been notified, delaying their real-world impact[30]. Moreover, implementation challenges such as defining aggregator liabilities, setting contribution norms, and ensuring compliance have yet to be resolved. Legal scholars have pointed out that enforcement mechanisms and dispute resolution procedures under the Code remain unclear, especially given the unequal power dynamics

[29]Ministry of Labour & Employment. (2025, February 2). Union Minister Dr. Mansukh Mandaviya lauds historic budgetary allocation for labour welfare; says social security for gig workers a transformative step. Press Information Bureau, Government of India. https://labour.gov.in/sites/default/files/pib2098901.pdf

[30]The New Indian Express. (2023, August 3). Centre says gig workers covered by social security code. The New Indian Express. https://www.newindianexpress.com/nation/2023/Aug/03/centre-says-gig-workers-covered-by-social-security-code-2601569.html

between large tech platforms and individual gig workers (Sarkar, 2024)[31]. For women in particular, legal recognition under this Code provides an opportunity to access social protection benefits like maternity entitlements, healthcare coverage and improved financial stability. However, effective enforcement of the legislations may determine whether the law is merely symbolic or serves as a powerful instrument of empowerment. In fact, the Social Security Code 2020 presents a progressive legal framework that aligns with the evolving nature of employment and emerging job opportunities.

Text Box:4.1 The Code on Social Security 2020
Social Security Code, 2020 is the first Indian legislation to legally define and extend social protection to workers (Section 2(35) and platform workers (Section 2(60), recognising them as distinct from traditional employees. Chapter IX, particularly Section 114, empowers the central government to formulate welfare schemes for these workers, addressing key gaps in India's fragmented labour protection regime (MoLE, 2020)[32]. It allows for schemes providing life and disability insurance, accident cover, maternity benefits, and more**,** gig to be funded through a combination of aggregator contributions (1 to 2 per cent of turnover), government support, and worker co-contributions.

Maternity Benefit (Amendment) Act, 2017

The Maternity Benefit Act as subsumed under the Social Security Code 2020 provides 26 weeks of maternity leave to women workers. The enhanced maternity provisions exceed the ILO's standard on Maternity Protection (C 183) which stipulates the 14-weeks of maternity leave. It also includes provisions for adoptive and commissioning mothers, work-from-home options, and mandatory crèche facilities. However, financing maternity leave remains the sole responsibility of employers, unlike in many ILO member countries where the responsibility is shared (Samantroy, 2022)[33].

It has also made provision of crèche facilities as mandatory while recognising the challenges of care work. However, implementation challenges remain with regard to implementation of the act in the informal sector where a large majority of women are still deprived of regular social protection. Moreover, this employer-centric model reflects what Frazer (2016) calls the "privatization of social reproduction", where the costs of care are shifted onto women and individual employers rather than being supported as a collective social responsibility.[34]

In the evolving future of work, marked by digitalisation and remote-first jobs, flexible working arrangements are crucial for enabling women's sustained workforce participation. Notably, section 5(5) of the Maternity Benefit (Amendment) Act, 2017 allows women to work from home post-maternity, subject to mutual agreement. This is especially relevant in emerging sectors like IT, digital education, and remote services, where physical presence is less critical. Flexible work helps women balance care responsibilities with paid employment, reduces post-maternity dropouts, and supports economic inclusion. However, the issue of maternity financing remains critical in the context of encouraging greater participation of women in the labour force.

[31]Sarkar, K. (2024, October 15). Ensuring a proper social safety net for the gig worker. The Hindu. https://www.thehindu.com/opinion/op-ed/ensuring-a-proper-social-safety-net-for-the-gig-worker/article68753585.ece

[32]Ministry of Labour & Employment. (2020). The Code on Social Security, 2020 (Act No. 36 of 2020). Government of India. https://labour.gov.in/sites/default/files/ss_code_gazette.pdf

[33]Samantroy, E. (2022). International labour standards and promotion of gender equality at the workplace in India (pp. 4753). In Role of Labour in India's Development. V.V. Giri National Labour Institute. Retrieved from https://vvgnli.gov.in/sites/default/files/Role_of_Labour_in_India_Development.pdf

[34]Ministry of Labour & Employment. (2017, March 28). The Maternity Benefit (Amendment) Act, 2017 (Act No. 6 of 2017). Government of India. https://labour.gov.in/sites/default/files/maternity_benefit_amendment_act2017_.pdf

Text Box:4.2 Maternity Benefit (Amendment) Act, 2017
The aim of this act is to safeguard maternity rights, ensure paid leave, and facilitate work-life balance for women. It aims to assist working women in balancing their professional and personal life without sacrificing their health or professional careers. The act is applicable to women employed in establishments with 10 or more workers, as long as they have worked for at least 80 days over the last 12 months. It is the responsibility of the Ministry of Labour and Employment to implement this policy, which is mostly employer-sponsored, although government refund facilities are available for specific sectors, especially those who need them. Its coverage is throughout the country with an emphasis on the formal sector, although issues continue to arise concerning its application in informal or rural settings. Principal advantages are 26 weeks of paid maternity leave, provision of crèche facilities, and a medical bonus to new mothers. For availing these benefits, employees have to submit in writing to their employer that they are pregnant, and can also file for maternity benefits through the Employees' State Insurance Corporation (ESIC) if they are eligible. The legislation now subsumed within the Code on Social Security 2020 seeks to simplify and augment maternity benefits, providing greater accessibility and inclusivity for women of all sectors.

Equal Remuneration Act, 1976 (subsumed under Code on Wages 2019)

The Equal Remuneration Act (1976) aims to guarantee equality in pay, addressing wage discrimination in both recruitment and promotion. The Act aligns with provisions in the Indian Constitution, notably Article 39(d), which mandates equal pay for equal work, and Article 14, which guarantees equality before the law, ensuring that both men and women are entitled to equal treatment in the workforce. Enforcement of this law is often a challenge because many women work in the informal sector. Over 80 per cent of Indian women are employed outside formal employment systems (Text box 1).This ongoing trend highlights the impact of socio-cultural gendered norms that promote occupational sex segregation with women concentrated in traditionally feminised sectors such as caregiving and service industries that remain undervalued reinforcing inequalities.

Text Box: 4.3 Equal Remuneration Act, 1976
The act ensures equal pay for work of equal value for both women and men, thus eliminating discrimination in wages based on gender in the workplace. It extends to all employees in organisations with 10 or more workers, both in the formal and informal sectors. The Government of India's Ministry of Labour and Employment is tasked with the enforcement of the act, while funding is through central budgetary allocations for enforcement and publicity drives. The act has universal coverage across India and extends benefits to workers in all sectors. It ensures equal remuneration for men and women doing the same job and prohibits discrimination in recruitment, promotion, and training, creating a just and equitable workplace culture. The Act is now brought under Code on Wages 2019 (MoLE, 2019)[35].

The Sexual Harrasment of Women at Workplace (Prevention,Prohibition and Redressal) Act, 2013

The POSH Act (Prevention of Sexual Harassment at Workplace) was a significant milestone toward creating safer workplaces. In light of the Constitution of India's commitment to gender equality, the POSH Act reflects the values outlined in Article 15, which prohibits discrimination on the grounds of sex, and Article 21, which guarantees the right to life and personal liberty, including the right to live with dignity, free from sexual harassment. Connell's (2009) framework of hegemonic masculinities

[35]Ministry of Labour & Employment. (2019, August 8). The Code on Wages, 2019 (Act No. 29 of 2019). Government of India. Retrieved October 08, 2025, from https://labour.gov.in/sites/default/files/the_code_on_wages_2019_no._29_of_2019.pdf

helps explains how workplaces remain gendered institutions where masculine norms of power are reproduced, often silencing women who attempt to challenge harassment.

Text Box:4.4 The Sexual Harrasment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013
The aim of this act is to prevent and address sexual harassment within workplaces so that women are provided with a secure and safe workplace environment. It is meant for all women workers within organised and unorganised sectors within the nation. The Ministry of Women and Child Development is the main implementing agency, with budgetary provisions in central and state budgets to fund training programs and the setting up of Internal Complaints Committees (ICCs). The policy extends to all enterprises with more than 10 employees across the country, providing women in various sectors with access to an effective system for complaint reporting and resolution. The main advantages of the program are the setting up of ICCs for dealing with grievances, an open redressal system, and continuous awareness schemes to teach employers and employees about avoiding harassment. Women employees can go to the ICC or the Local Complaints Committee and submit incident details, witness statements, and any supportive evidence to conduct investigations (MoWCD,2013)[36]. This integrated strategy seeks to produce a safer and more supportive work environment for women throughout India.

Occupational Safety, Health and Working Conditions Code, 2020

The Occupational Safety, Health and Working Conditions Code, 2020 consolidates 13 laws to provide safe and healthy workplaces, with special provisions for women, such as safe working conditions at night with transportation facilities and gender-sensitive facilities such as individual restrooms and changing rooms. Further provision of creche facilities are also extended to the Micro, Small, and Medium Enterprises (MSMEs) through pooling of resources as mandated under the OSH Code 2020. In the case of women, who experience distinct safety concerns in sectors like manufacturing and construction, the Code offers necessary protection but needs more effective enforcement to adequately bridge gaps in unorganised workspaces.

Text Box 4.5: Occupational Safety, Health and Working Conditions Code, 2020
The legislation aims to ensure safe and healthy working conditions, with specific provisions for women's safety and well-being, applying to establishments with 10 or more workers across both formal and informal sectors. Implemented by the Ministry of Labour and Employment with central government, it mandates safe night work conditions, allows employment of women before 6 AM or after 7 PM with their consent and prescribed safety measures, though transportation and security arrangements are delegated to state-level rules. It includes mandatory health check-ups, medical protections in dangerous processes, and welfare measures like crèche facilities for establishments with over 50 workers to support working mothers (MoLE, 2019)[37].

4.3 Schemes and Initiatives to promote women's employment

The question of women's work in India need to be analysed beyond employment inequalities to access to social protection and overall well-being. As recognised by the International Labour Organization

[36]Ministry of Women and Child Development. (2013). The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. Government of India. Retrieved October 08, 2025, from https://wcd.delhi.gov.in/wcd/sexual-harassment-women-workplaceprevention-prohibition-and-redressal-act-2013sh-act-2013a

[37]Ministry of Labour & Employment. (2019, July 23). The Occupational Safety, Health and Working Conditions Code, 2019 – As introduced in Lok Sabha. Government of India. Retrieved October 08, 2025, from https://labour.gov.in/sites/default/files/186_2019_ls_eng_0.pdf

(ILO), inclusive growth and gender equality are central to building resilient and equitable labour markets. India's interventions, therefore, cannot remain confined to short-term job creation but must address deeper structural barriers that shape women's labour market participation.

Over the past decade, the Government of India has initiated a series of programmes under employment, entrepreneurship, self-help groups, and integration into digital and platform economies for women. The initiatives are aimed at opening up opportunities but also addressing regional imbalances and socio-cultural circumstances that constrain women's agency. Rooted in the national vision of Viksit Bharat and aligned with international human-centric development agendas, these programmes reflect a dual ambition, to immediately deliver access to livelihoods and to facilitate long-term empowerment. In a broader context, women-focused schemes are not merely about skill development rather a part of a larger shift in labour markets in which digitalisation, automation, and the growth of platform work are redefining security and stability.

The following sections examine key national and state-level schemes that promote women's participation in employment. These include initiatives that connect women to formal work, extend social protection, and foster entrepreneurship. They also highlight the limits of current approaches, such as the persistence of gendered occupational segregation, exclusion from high-growth sectors, and the risk of "flexibility without security" in the platform economy. Situating these initiatives within contemporary discourses on precarity of women's work and the issue of integration of social reproduction into legislative and policy framework is essential towards identifying real pathways to dignified and sustainable livelihoods and transforming the gendered structure of India's labour market.

4.3.1 Employment Initiatives

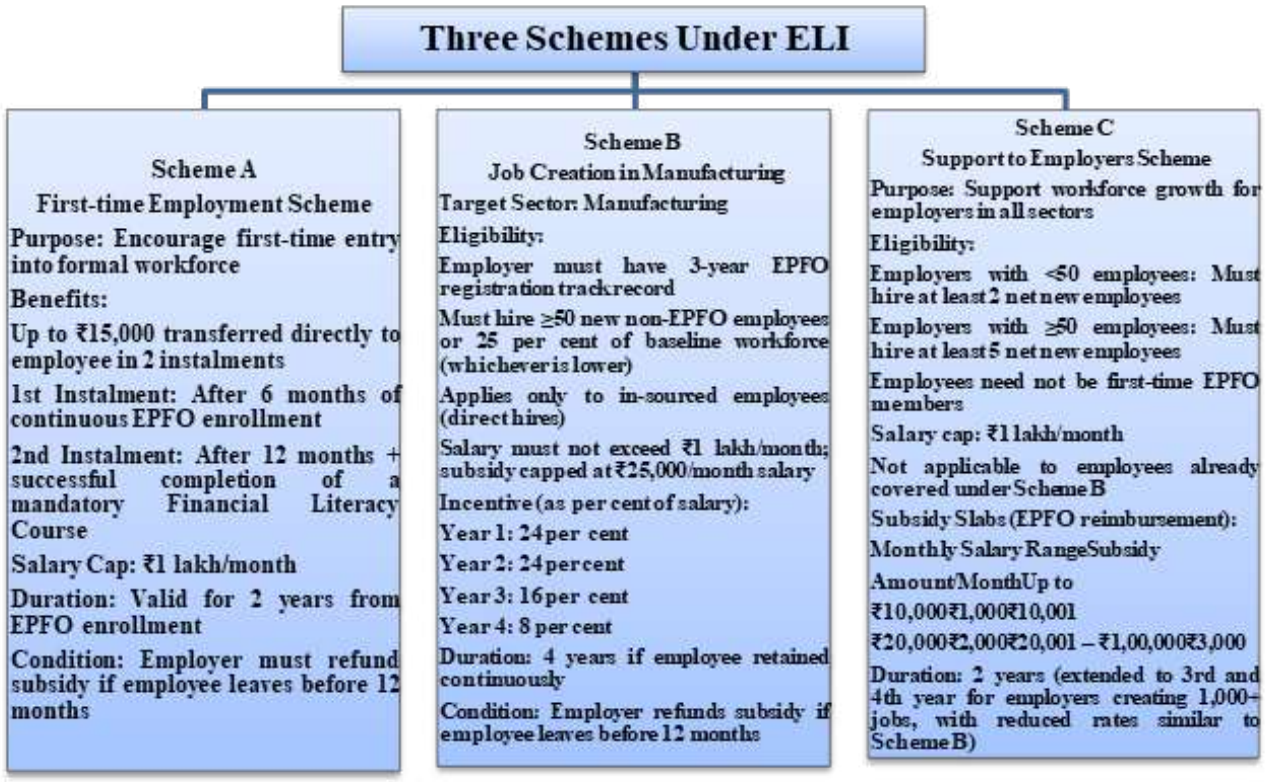
The Employment-Linked Incentive (ELI) scheme, approved by the Union Cabinet on July 1, 2025, and was subsequently renamed the PM Viksit Bharat Rozgar Yojana (PM-VBRY) represents a significant policy intervention aimed at expanding formal employment opportunities in India. The scheme provides wage support of up to ₹15,000 for first-time employees registered with the Employees' Provident Fund Organisation (EPFO), disbursed in two instalments contingent on the completion of financial literacy milestones. Employers are simultaneously incentivised through a monthly contribution of up to ₹3,000 for each new hire, with a particular emphasis on the manufacturing sector. Scheduled to be implemented between August 1, 2025 and July 31, 2027, the programme targets the creation of 3.5 crore jobs, of which approximately 19.2 million are designated for first-time entrants into the labour market.

Text Box:4.6 Pradhan Mantri Viksit Bharat Rozgar Yojana (ELI- Scheme)
The Employment Linked Incentive (ELI)[38] Scheme to support employment generation, enhance employability and social security across all sectors, with special focus on the manufacturing sector. Under the Scheme, while the first-time employees will get one month's wage (up to Rs 15,000/-), the employers will be given incentives for a period to two years for generating additional employment, with extended benefits for another two years for the manufacturing sector. The ELI Scheme was announced in the Union Budget 2024-25 as part of PM's package of five schemes to facilitate employment, skilling and other opportunities for 4.1 crores youth with a total budget outlay of Rs. 2 Lakh crores.

[38]PIB, Employment Linked Incentive Scheme: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2141127

With an outlay of Rs 99,446 crores, the ELI Scheme aims to incentivize the creation of more than 3.5 crores jobs in the country, over a period of 2 years. Out of these, 1.92 crores beneficiaries will be first timers, entering the workforce. The benefits of the Scheme would be applicable to jobs created between 01st August 2025 and 31st July, 2027.

The scheme holds particular significance for women, who constitute a majority of India's informal workforce, estimated at over 85 percent of female employment[39]. By offering pathways into formalised jobs and embedding social security provisions, ELI has the potential to address long-standing challenges of precariousness and informality in women's work. Early media reports have highlighted the efforts to ensure grassroots awareness and participation are evident, with regional EPFO offices, such as in Bhagalpur (Bihar)[40], conducting targeted campaigns to familiarise women and employers with the scheme's benefits and requirements. In this way, the ELI scheme not only advances the State's employment generation agenda but also intersects directly with ongoing efforts to promote gender equality in the future of work.



Source: GoI, 2025

While the ELI scheme focuses on incentivizing formal wage employment in urban and industrial sector, the **Mahatma Gandhi National Employment Guarantee Act (MGNREGA)**[41] addresses the rural dimension of employment security. Enacted in 2005, this remains one of the world's largest public works programmes, guaranteeing 100 days of wage employment per year to rural households willing to undertake unskilled manual labour. The scheme encourages a sense of community and collective responsibility by strengthening Panchayat Raj institutions. Promotes a bottom-up approach,

[39]Policy Circle, ELI scheme will boost female participation in manufacturing: https://www.policycircle.org/opinion/eli-scheme-female-employment/
[40]TNN. (2025, July 7). Bhagalpur EPFO starts awareness drive about ELI scheme ahead of its launch. Times of India. https://timesofindia.indiatimes.com/city/patna/bhagalpur-epfo-starts-awareness-drive-about-eli-scheme-ahead-of-its-launch/articleshow/122300593.cms
[41]Press Information Bureau. (n.d.). MGNREGA Home [Web page]. Government of India, Ministry of Rural Development. Retrieved from https://nrega.dord.gov.in/MGNREGA_new/Nrega_home.aspx

the scheme focuses on planning and execution, empowering local communities to take charge of their development. Through the creation of productive assets of prescribed quality and durability, the scheme addresses immediate economic needs while laying the foundation for long-term prosperity.

Text Box:4.7 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

MGNERA, launched in 2005, is a flagship programme that aims to enhance the livelihood security of rural households across the country by providing at least 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. Mahatma Gandhi NREGA recognises the importance of strengthening the livelihood resource base of the poor by reaching the most vulnerable sections of rural areas, including Scheduled Castes (SC), Scheduled Tribes (ST), women-headed households, and other marginalised groups.

In the Financial year 2025-26, the scheme allocated Rs. 86,000 crores, the highest since the scheme's inception.

With specific focus on women, the participation increased up to 58.15 per cent or 44.7 lakh in the financial year 2024-25.[42]

The scheme provides women with not only income but also greater visibility in the labour market. The direct transfer of wages into bank accounts have strengthened financial inclusion, while collective participation in worksites has fostered solidarity and recognition within rural communities. Research shows that participation in MGNERA enhances women's bargaining power within households, improves nutrition and health outcomes, and increases investment in children's education (Khera and Nayak, 2009). By providing women with an independent wage source, the scheme has challenged traditional structures of dependency and begins to revalue women's labour. As Elson (2017) argues, such programmes redistribute the costs of social reproduction by recognising women's contribution to household survival as a collective responsibility of the state.

Globally, MGNREGA resonates with policy debates in the G20 and BRICS around inclusive social protection and women's economic security. The G20 and Employment Ministers' Declaration (2023) called for universal and portable social protection frameworks, recognising that women in the informal economies face heightened risks of exclusion. Comparable programmes, such as Brazil's Bolsa Verde and South Africa's public works schemes, mirror MGNERA's design by combining income security with community asset creation (ILO and OECD, 2022)[43]. These parallels highlight how India's experience with MGNERA contribute to global policy discussions on employment guarantees as tools of resilience, equity and gender empowerment.

While MGNERA represents a rights-based guarantee of wage security, **Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM)**[44] focuses on gender-oriented rural livelihood programme, mobilising women into Self-help Groups (SHGs), and support them in income generation, formalisation of work, and resilience building.

[42]Press Information Bureau. (2025, August 26). MGNREGA: Building Rural Resilience — Pillar of Rural Livelihood Security [Press note]. Government of India. Retrieved from https://www.pib.gov.in/PressNoteDetails.aspx?id=155090&NoteId=155090&ModuleId=3
[43]International Labour Organization (ILO), & Organisation for Economic Co-operation and Development (OECD). (2022). Women at work in G20 countries: Policy action for gender equality and labour market inclusion. OECD Publishing.
[44]Press Information Bureau. (2025, March 18). Target achieved under Deendayal Antyodaya Yojana – National Rural Livelihoods Mission. Ministry of Rural Development, Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2112203

Text Box: 4.8 Deendayal Antyodaya Yojana- National Rural Livelihoods Mission (DAY-NRLM)

Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY – NRLM) works with the objective of organising the rural poor women households into Self Help Groups (SHGs) and continuously nurturing and supporting them till they attain appreciable increase in incomes over a period of time and improve their quality of life and come out of abject poverty.

As of 28th February 2025, the Mission is being implemented in 7144 blocks in 745 districts across 28 States and 6 UTs. Cumulatively, 10.05 crore rural women households have been mobilised into more than 90.90 lakh SHGs. A total of Rs. 51368.39 crores of capitalisation support (Revolving Funds and Community Investment Funds) has been provided to SHGs and their federations. From FY 2013-14, an amount of Rs. 10.20 lakh crores bank credit has been accessed by women SHGs under DAY-NRLM.

DAY-NRLM plays a pivotal role in shaping women's engagement with the future of work by transforming informal labour into structured livelihoods. Through Self-Help Groups (SHGs), rural women gain collective identity, access to financial services, and opportunities to convert non-formal income activities into micro-enterprises (PIB, 2025). The scheme promotes both farm and non-farm livelihoods, supporting micro-enterprise development, Start-up Village Entrepreneurship Programmes (SVEP), incubators, clusters, and transport-based initiatives like Aajeevika Grameen Express Yojana (AGEY) is a sub-scheme under the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM), implemented by the Ministry of Rural Development, Government of India. The scheme aims to provide safe, affordable, and community-driven rural transport services, enabling better connectivity for remote villages. It also offers a sustainable livelihood option for SHG members or Community-Based Organisations (CBOs), empowering women and promoting local economic development (PIB, 2017)[45], thereby creating pathways beyond traditional agrarian or casual work (PIB, 2025). SHG membership also fosters empowerment, social security, and resilience, as women gain voice, networks, and tools to manage production risks and market fluctuations. Participation has demonstrated multiplier effects, including increased income, savings, access to credit, and enhanced negotiation power in households and communities (PIB, 2025).

Comparable programmes in G20 and BRICS countries integrate digital job platforms, micro-enterprise support, and skill-development for women in underserved areas. For example, Brazil's Bolsa Família-linked entrepreneurship schemes, such as Pronatec vocational training and the formalisation of Microempreendedores Individuais (MEI), combine conditional cash transfers with skills development and self-employment support to improve women's labour force participation among low-income households[46]. Similarly, Indonesia's youth employment programmes, including the Kartu Prakerja voucher scheme and the ILO-supported EAST project, offer subsidised training and entrepreneurship modules to unemployed youth, particularly targeting women in informal sectors (ILO, 2012)[47]. While the OECD-ILO report highlights targeted apprenticeships, mentoring, and job-matching programmes in G20 countries to reduce gender gaps in formal employment (ILO and OECD, 2022). These parallels underscore the potential for community-based interventions like DAY-NRLM to not only strengthen rural livelihoods in India but also align with broader global strategies for women's economic empowerment and inclusion in the future of work.

[45]Ministry of Rural Development. (2017, August 10). Aajeevika Grameen Express Yojana (AGEY). Press Information Bureau. Government of India, https://www.pib.gov.in/newsite/printrelease.aspx?relid=169804

[46]Centre for Public Impact. (2017, March 24). Bolsa Família in Brazil. https://centreforpublicimpact.org/public-impact-fundamentals/bolsa-familia-in-brazil/

[47]International Labour Organization. (2012). what works: Good practices from the ILO Education and Skills Training for Youth Employment in Indonesia (EAST) project. https://www.ilo.org/jakarta/whatwedo/publications/WCMS_191929/lang--en/index.htm

The **National Career Service (NCS),** under the Ministry of Labour and Employment is a digital platform that seeks to connect job seekers, skill providers, employers and career counsellors under one roof. By mid-2025, it had mobilised over 6.43 crore vacancies, registered nearly 48 lakh employers, and entered into more than 25 MoUs with prominent private and public platforms[48] including Swiggy, Amazon, Rapido etc. Its functions include job matching, career counselling (both online and offline), guidance on skill development, and employability enhancement.

Text Box: 4.9 National Career Service (NCS) Portal
National Career Service (NCS) Portal[49] is a one-stop solution for providing career-related services including information on jobs from private and government sectors, information on online and offline job fairs, job search and matching, career counselling, vocational guidance, information on skill development courses, employability enhancement programmes etc. through a digital platform. NCS Portal provides online/offline career counselling and vocational guidance services to its registered users including SC/ST candidates. More than 1182 Career Counsellors have been on boarded on NCS portal. Till date, more than 41 lakh online/ offline career guidance sessions have been conducted.

The National Career Service (NCS) platform plays a crucial role in shaping the future of women's work by addressing structural barriers such as limited mobility, information gaps, and restrictive gender norms that often marginalise women, particularly those from rural and socially disadvantaged communities. By offering multilingual interfaces, call-centre services, and career counselling, NCS reduces information asymmetries and broadens women's access to formalised employment opportunities, while its partnerships with private platforms enhance visibility and integration into regulated work (PIB, 2025). Beyond job-matching, the counselling and skilling components act as social interventions that challenge gendered occupational segregation, supporting women returning to the labour force after career breaks and facilitating their transition into technology- or platform-based work. The multiplier effects of women's formal employment, providing greater household autonomy, enhanced bargaining power, and intergenerational benefits in education and health, underscore the social value of such interventions.

Comparable initiatives within the G20 reflect similar trends like Canada's expanded apprenticeships for women, the UK's Skills Bootcamps for returnees, and Australia's STEM pathways illustrate targeted investments in women's employability[50].While Brazil and Indonesia combine digital job portals with youth-focused training for young women (ILO and OECD, 2022; G20 Labour and Employment Ministers' Declaration, 2025). These comparisons highlight how platforms like NCS, if strengthened with gender-responsive design, could serve as critical institutional levers in advancing women's participation in the future of work.

While platforms such as the NCS seek to expand access to jobs and reduce informational barriers, India's policy landscape has also recognised that women's economic participation requires not only entry into wage employment but also pathways into entrepreneurship.

STAND-UP India

The scheme was launched in April 2016 that promotes entrepreneurship at grassroots level focusing on economic empowerment and job creation. Recognising the challenges of the SC, ST and women

[48]Press Information Bureau. (2025, August 4). National Career Service (NCS) portal: Over 6.43 crore vacancies mobilised on NCS portal; More than 48 lakh employers registered on the portal; Over 25 MoUs signed with prominent companies to enhance employment opportunities. Ministry of Labour & Employment, Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2152151
[49]National Career Service. (n.d.). National Career Service – Career guidance and jobs in India and related services. Ministry of Labour & Employment, Government of India. Retrieved September 12, 2025, from https://www.ncs.gov.in/
[50] ILO & OECD. (2022). Women at Work in G20 Countries: Progress and Policy Action. ILO-OECD report

entrepreneurs in converting their dream into reality, the scheme helps them in starting a green-field enterprise in manufacturing, services or trading sectors and activities allied to agriculture.

Text Box: 4.10 STAND- UP INDIA

Stand Up India Scheme[51], by Ministry of Finance for financing SC/ST and/or Women Entrepreneurs by facilitating bank loans for setting up a greenfield project enterprise in manufacturing, services, trading sector and activities allied to agriculture. The objective of this scheme is to facilitate bank loans between Rs. 10 lakh and Rs. 1 Crore to at least one Scheduled Castes (SC) or Scheduled Tribes (ST) borrower and at least one-woman borrower per bank branch for setting up a greenfield enterprise. In case of non-individual enterprises, at least 51 per cent of the shareholding and controlling stake should be held by either an SC/ST or Woman entrepreneur. In the year 2023, the scheme sanctioned Rs. 40,710 crores to 180,636 accounts since its inception[52]. As of 2021, more than 81per cent i.e., 91,109 accounts with an amount of Rs. 20,749 crore have been sanctioned to women entrepreneurs under the Scheme.[53]

By March 2025, more than 2.2 lakh loans have been sanctioned under the scheme, with women constituting nearly 80 per cent of the beneficiaries (PIB, 2025). The programme supports both working capital in terms of loans, with guarantee cover provided through the Credit Guarantee Fund Scheme for Stand-Up India (CGFSI). In addition, convergence with complementary initiatives such as MUDRA[54] and the Women Entrepreneurship Platform (WEP)[55] strengthens its ecosystem by offering mentorship, training, and market linkages for women entrepreneurs (PIB, 2023).

The Stand-Up India scheme plays a pivotal role in shaping women's engagement with the future of work by enabling transitions from job-seeking to job-creating roles. It specifically focuses on aspiring women and first-generation entrepreneurs who are often excluded from microfinance on one end and large-scale institutional finance on the other. Therefore, this scheme acknowledges that access to credit is not only an economic resource but also a pathway to agency, mobility and bargaining power.

Globally, the scheme resonated with initiative in the G20 that focuses on inclusive entrepreneurship and women-led development. Under India's G20 Presidency, women's economic empowerment was highlighted as a central theme, and Stand-Up India was explicitly cited in the Start Up 20 Communique (2023)[56] as an example of national-level programmes supporting women and marginalised entrepreneurs. Moreover, comparable initiatives include Brazil's Bolsa Familia-linked entrepreneurship programmes, the EU's women entrepreneurs Finance initiative and Canada's women-focused venture funding scheme, which all seek to close gender gaps in access to capital (ILO and OECD, 2022)[57]. These parallels underline how Stand-Up India contributed not only to domestic policy priorities but also to the global agenda of fostering inclusive growth and reducing structural inequalities in access to entrepreneurship.

[51]Government of India, Ministry of Electronics & Information Technology. (n.d.). Stand-Up India (SUI) scheme. MyScheme. Retrieved September 17, 2025, from https://www.myscheme.gov.in/schemes/sui

[52]Press Information Bureau. (2023, April 5). More than Rs. 40,700 crores sanctioned to over 1,80,630 accounts under Stand-Up India Scheme in 7 years [Press release]. Ministry of Finance, Government of India. Retrieved from https://www.pib.gov.in/PressReleasePage.aspx?PRID=1913705

[53] Press Information Bureau. (2021, February 26). More than 81% account holders are women under Stand-Up India Scheme [Press release]. Ministry of Finance, Government of India. Retrieved from https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1703083

[54]https://www.pib.gov.in/PressReleasePage.aspx?PRID=2119954

[55]NITI Aayog. (2025). Annual report (2024-25). NITI Aayog. https://niti.gov.in/sites/default/files/2025-02/Annual%20Report%202024-25%20English_FINAL_LOW%20RES_0.pdf

[56]Startup20 Communiqué. (2023). G20 Startup20 Communiqué: Policy recommendations to strengthen entrepreneurship ecosystems. Atal Innovation Mission, NITI Aayog. https://aim.gov.in/pdf/Startup20_Communique_2023_India.pdf

[57]International Labour Organization (ILO), & Organisation for Economic Co-operation and Development (OECD). (2022). Women at work in G20 countries: Policy action for gender equality and labour market inclusion. OECD Publishing.

Broadening this vision, **the Start- up India** initiative emphasises on fostering national ecosystem of innovation, investment and high-growth enterprises. The programme simplifies regulations, provides financial and tax incentives, facilitates incubation, and fosters linkages between startups, investors, and government agencies. Its flagship interventions include the Funds for Startups managed by SIDBI, the Start-Up India Hub as a single-window platform, and various measures to reduce compliance burdens and improve access to finance (Ministry of Commerce and Industry, 2025)[58].

Text Box: 4.11 START-UP INDIA

Start-Up India is a flagship initiative launched by the Government of India on 16th January, 2016, building a strong and nurturing ecosystem of innovation and startups in the country that will drive economic growth and generate employment opportunities. The scheme facilitated bank loans from Scheduled Commercial Banks (SCBs) between Rs. 10 lakhs to Rs. 1 Crore to at least one Scheduled Castes (SC) or Scheduled Tribes (ST) and one woman per bank branch for setting up a greenfield enterprise in trading, services or manufacturing sector.

In the year 2024, India established itself as the third-largest ecosystem in the world with over 1.57 lakh certificated issued by the Department for Promotion of Industry and Internal Trade (DPIIT) for recognition of startups. Furthermore, it also created over 17.28 lakh direct jobs.[59]

The **SERB-POWER** initiative focusses on the structural barriers women face in scientific research. To address gendered exclusions in academia and research ecosystem, SERB- POWER (Promoting Opportunities for Women in Explanatory Research) was launched in 2020 by the Science and Engineering Research Board (SERB) under the Department of Science and Technology.

Text Box:4.12 SERB-POWER

The Science and Engineering Research Board (SERB)[60], a Statutory body of the Department of Science and Technology (DST), Government of India has launched a Scheme titled "SERB-POWER (Promoting Opportunities for Women in Exploratory Research)". The Scheme is aimed to mitigate gender disparity in science and engineering research funding in various S&T programs in Indian academic institutions and research and development (R&D) laboratories, address comparatively lower participation of women scientists in research activities and to identify and support competitive women researchers in the country. SERB – POWER provides structured support in research to ensure equal access and weighted opportunities for Indian women scientists engaged in R&D activities. The R&D support to women scientists is provided through two components, namely: SERB POWER Fellowships & SERB POWER Research Grants.

As per latest Research and Development Statistics, 2019-20 of DST, India has 16.6 per cent women researchers directly engaged in R&D activities.[61] There are several reasons for lower participation of women in R&D. This includes familial issues like marriage, family responsibility, relocation due to transferable job of spouse etc. These reasons attribute to dropout from higher studies, career break,

[58]Ministry of Commerce & Industry. (2025). Start-Up India action plan and progress reports. Government of India. https://www.startupindia.gov.in

[59]Press Information Bureau. (2024, December 31). Recognised startups have created more than 17.28 lakh jobs in India. Ministry of Commerce & Industry, Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2098452

[60]Science and Engineering Research Board (SERB), Department of Science & Technology. (n.d.). SERB-POWER (Promoting Opportunities for Women in Exploratory Research). Government of India. Retrieved from https://serb.gov.in/page/serb_power

[61]Press Information Bureau. (2021, February 2). Government has taken several corrective steps to encourage women scientists in research activities: Dr. Harsh Vardhan [Press release]. Ministry of Science & Technology, Government of India. Retrieved from https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1694537

overage for scientific jobs and prolonged absence from place of work or even resignation from the job. Therefore, by institutionalising fellowships and grants, the scheme attempts to counteract entrenched hierarchies and gendered gatekeeping in scientific communities and embedding gender equity in scientific funding structures, making it essential for driving inclusive and sustainable innovation.

Similarly, **Women in Science and Engineering- KIRAN (WISE-KIRAN)**[62] programme, administered by the Department of Science and Technology (DST), aims to increase the participation of women in science, technology, engineering, mathematics (STEM) by addressing the multiple points at which gender disparities emerge.

Text Box:4.13 Women in Science and Engineering- KIRAN (WISE-KIRAN)
The Department of Science and Technology (DST) is implementing a dedicated scheme 'Women in Science and Engineering-KIRAN (WISE-KIRAN)' [63] to cater women of all walks of life in order to enhance their participation in the field of Science and Technology (S&T) with ultimate goal to bring gender parity. The WISE-KIRAN Scheme is a holistic approach to address various challenges faced by women in their scientific journey through different kinds of programmes.

Its flagship components include WISE-PhD for doctoral research, WISE-PDF for post-doctoral opportunities, WISE-SCOPE for translational and societal applications of research, WISE-IPR internships to diversify women's career paths through training in intellectual property rights, and WIDUSHI, which supports senior women scientists to continue contributing after retirement or career breaks (PIB, 2025)[64]. The scheme reflects on the institutional recognition of women's under-representation in science which is not simply a matter of individual merit but of structural barriers.

The discussion makes it clear that women's work in India cannot be understood only through present employment gaps, but as part of a broader transition in the world of work. As labour markets are reshaped by digitalisation, automation, and new forms of employment, women stand at the centre of both the opportunities and the risks these changes bring. On one hand, the expansion of pathways into formal jobs, entrepreneurship, and digital platforms signals a gradual shift towards greater inclusion. On the other, deep-rooted inequalities tied to caste, class, and gender still shape whose labour is recognised and rewarded.

What emerges is a future where women's participation is no longer marginal but integral to economic and social development. The challenge is to ensure that inclusion does not mean precariousness, but dignity, security, and agency. If current efforts continue to evolve with a focus on equity, social protection, and recognition of care work, women's labour will not only transform their own lives but also redefine the meaning of growth and resilience for India as a whole.

4.3.2 Skilling Initiatives

On one hand, employment-oriented initiatives expand access to work and entrepreneurship, but on the other hand, skilling policies form the foundation that enables women to participate meaningfully in these opportunities. By focusing on training, capacity-building, and future-ready skills, such programmes address the deeper structural barriers that limit women's employability in a rapidly changing economy.

[62]Press Information Bureau. (2025, July 23). Participation of women in research and development [Press release]. Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2147237

[63]Department of Science & Technology (DST), Government of India. (n.d.). Women in Science and Engineering-KIRAN (WISE-KIRAN). Retrieved from https://dst.gov.in/scientific-programmes/wise-kiran

[64]Press Information Bureau. (2025, March 20). Parliament question: Support mechanisms for women scientists facing career breaks. Ministry of Science & Technology, Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2113278

Launched in 2015 under the Ministry of Skill Development and Entrepreneurship (MSDE), the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** is India's flagship skilling initiative aimed at enabling youth to acquire industry-relevant skills and improve their employability. The scheme operates through short-term training (STT), recognition of prior learning (RPL), and special projects that address sector-specific and regional needs. Training is delivered through accredited centres aligned with the National Skills Qualification Framework (NSQF), ensuring standardisation and certification (MSDE, 2024)[65].

Text Box:4.14 Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
Pradhan Mantri Kaushal Vikas Yojana 4.0 launched in 2015, is a skill development initiative of the Ministry of Skill Development and Entrepreneurship (MSDE), designed to equip youth with industry-relevant skills to enhance employability. With a special focus on inclusivity by ensuring that SC, ST, women, and other marginalised communities can undertake skill training and eventually gain wage and self-employment. PMKVY 4.0 is a program that will help India's workforce become highly skilled, expand employment opportunities, and promote entrepreneurship.

As of 2025, more than 1.6 crore candidates had been trained under PMKVY across diverse sectors, with women accounting for over 45 per cent of total enrolments along with SC, ST and OBC. The scheme also introduced targeted components such as *Skill India Digital* and *Special Projects for Women* to improve access for marginalised groups. By linking skilling programmes with industry partners and apprenticeship models, PMKVY seeks to bridge the persistent gap between education and employability. (PIB, 2025)[66].

PMKVY remains a significant framework for skilling, not only as an economic resource but also as a market of social mobility and aspiration. For women, in particular, certification under PMKVY often legitimises entry into male-dominated trades, challenges traditional gender norms, and fosters self-confidence in negotiating work outside the home. However, structural challenges remain: women continue to be channelled disproportionately into stereotypically "feminised" sectors such as beauty, wellness, and tailoring, reflecting the persistence of occupational segregation. Moreover, the absence of childcare, mobility support, and post-placement retention mechanisms limits the transformative potential of training.

Globally, PMKVY resonates with skilling frameworks emphasised by the G20 and OECD, which prioritise *lifelong learning*, *digital readiness*, and *gender-responsive skilling pathways*. Similar programmes, such as Germany's dual vocational training system, Canada's Women in Skilled Trades initiative, and South Korea's digital skilling drives, highlight international efforts to equip women for future labour markets (ILO and OECD, 2022)[67]. By embedding gender-sensitive design more strongly into its implementation, PMKVY has the potential to evolve into a critical lever for advancing women's participation in the future of work.

While PMKVY equips youth across India with short-term, industry-relevant skills, another recent scheme, NAVYA focusses on adolescent girls in underserved districts, intervening earlier in their life course to reshape aspirations and expand access to non-traditional vocational opportunities.

[65]Ministry of Skill Development & Entrepreneurship (MSDE). (2024). PMKVY annual report 2023–24. Government of India. https://www.pmkvyofficial.org

[66]Press Information Bureau. (2025, July 14). A decade of building skills & empowering dreams: 10 years of Pradhan Mantri Kaushal Vikas Yojana [Backgrounder]. Government of India. Retrieved from https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=154880&ModuleId=3

[67]International Labour Organization (ILO), & Organisation for Economic Co-operation and Development (OECD). (2022). Women at work in G20 countries: Policy action for gender equality and labour market inclusion. OECD Publishing.

Text Box: 4.15 Nurturing Aspirations through Vocational training for Young Adolescent Girls (NAVYA)

The NAVYA (Nurturing Aspirations through Vocational training for Young Adolescent Girls)[68], a joint initiative of the Ministry of Skill Development and Entrepreneurship and the Ministry of Women and Child Development, was launched in June 2025, aims to empower adolescent girls (AGs) aged 16–18 years in aspirational districts by equipping them with relevant skills for socio-economic independence.

Training under NAVYA is delivered through existing Pradhan Mantri Kaushal Vikas Yojana (PMKVY) centres and other affiliated institutions. Unlike general skill development schemes, NAVYA emphasises non-traditional and emerging job roles such as graphic design, drone assembly, smartphone and CCTV installation, telecom services, and financial services (Economic Times, 2025)[69]. NAVYA interventions become a critical stage in the life course when gendered norms around mobility, marriage, and "suitable" work often restrict opportunities for girls. By legitimising entry into non-traditional trades, the scheme challenges entrenched stereotypes and expands the horizon of what rural and semi-urban adolescent girls can aspire to. It positions skills not only as economic assets but also as instruments of agency, identity formation, and future aspirations.

In addition, the **Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY**) was launched on 25th September 2014 as part of the National Rural Livelihood Mission (NRLM), which tasked with the dual objectives of adding diversity to the incomes of rural poor families and cater to the career aspirations of rural youth.

Text Box:4.16 Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU- GKY)

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)[70] aims to skill rural youth who are poor and provide them with jobs having regular monthly wages or above the minimum wages. It is one of the cluster of initiatives of the Ministry of Rural Development, Government of India that seeks to promote rural livelihoods. It is a part of the National Rural Livelihood Mission (NRLM) - the Mission for poverty reduction called Aajeevika. The scheme will benefit more than 55 million poor rural youth who are ready to be skilled by providing sustainable employment. This scheme derives importance from its potential to reduce poverty. It is also designed to be a major contributor to the Prime Minister's 'Make in India' campaign.

Under DDU-GKY, a total of 17.51 lakh candidates has been trained, out of which 9.05 lakh women (51.7 per cent) have been trained, since inception till June 2025.[71]

In terms of opportunities, the scheme has helped in reducing information asymmetries and geographical barriers, as rural women gain access to market-relevant skills and placement support. It also reshaped subjectivities, enabling young women to imagine work beyond traditional gender norms and domestic confines. In addition, the Skill Impact Bond (SIB) introduces a new financing model that ties success to measurable outcomes like placement and retention.

[68]Press Information Bureau. (2025, August 18). NAVYA initiative launched to empower adolescent girls in aspirational districts with vocational training [Press release]. Ministry of Skill Development & Entrepreneurship, Government of India. Retrieved from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2157512

[69]Economic Times. (2025, June 24). Government launches NAVYA initiative for empowering adolescent girls with vocational skills. https://government.economictimes.indiatimes.com/news/governance/government-launches-navya-initiative-for-empowering-adolescent-girls-with-vocational-skills/122036796

70National Portal of India. (n.d.). Deen Dayal Upadhyaya Grameen Kaushalya Yojana. Government of India. Retrieved from https://www.india.gov.in/spotlight/deen-dayal-upadhyaya-grameen-kaushalya-yojana

[71]Press Information Bureau. (2025, August 12). Skill upgradation of women [Press release]. Ministry of Rural Development, Government of India. Retrieved from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2155665

Text Box:4.17 Skill Impact Bond (SIB)
Skill Impact Bond is the first development impact bond in India dedicated to skills training and job placement. Its objective is to benefit 50,000 young Indians over four years, with 60 per cent of the beneficiaries being women. This innovative outcomes-based financing tool uses private sector capital and expertise, focusing on job placement and retention rather than merely on training and certification. The collaboration also seeks to enhance India's technical and vocational education ecosystem through knowledge exchange, data generation, and the mainstreaming of best practices[72].

From a sociological perspective, SIB represents a shift in how skilling is framed: it's not just acquiring skills but *sustaining work* and navigating post-training life. For many women, especially from rural or marginalised backgrounds, retention in employment is as constrained by mobility, care responsibilities, and social norms as by skill gaps. SIB's model attempts to address these constraints by linking incentives to retention, pushing employers to ensure supportive conditions, and making visible the importance of sustained participation rather than drop-off. It thus intervenes in both structural inequality and informal norms that usually make women's employment fragile.

Text Box:4.18 SKILL INDIA Mission (SIM)
Launched in 2015, the National Policy for Skill Development and Entrepreneurship (NPSDE) envisioned creation of an ecosystem of empowerment by skilling on a large scale at speed with high standards and to promote a culture of innovation-based entrepreneurship which could generate wealth and employment so as to ensure sustainable livelihoods for all citizens in the country[73]. • Ministry of Skill Development and Entrepreneurship has empowered over 6 crore Indians through its various schemes since 2014. • Over 1.6 crore youth trained nationwide since 2015 under PMKVY. • Courses expanded to emerging fields like AI, Robotics, and IoT. • As of July 11, 2025, over 25 lakh candidates have been trained under PMKVY 4.0[74].

Skill India underscores the reconfiguration of skill as a form of capital within the neoliberal economy, where employability is increasingly seen as an individual responsibility rather than a collective right.

Indian skilling initiatives represent more than mere technical exercise; they capture a broader transformation in how the state and society think about work, aspiration, and social mobility. For women, in particular, exposure to formal training is not only about employability but about negotiating new roles within household, community, and labour markets long dominated by patriarchal conventions. Although these programs have opened up spaces for engagement, they also reveal the limits of policy where more deep barriers in the form of occupational segregation, mobility restrictions, and unequal care responsibilities, remain unaddressed.

In the context of the future of work, skilling is not only about preparing for future jobs but about a process of transformation, one that reworks identities and opens up possibilities. The increasing focus on digital skills, non-traditional trades, and outcomes-based approaches is a testimony to broader debates across the world about equity and resilience in labour markets. The key challenge in the future

[72]National Skill Development Corporation (NSDC). (n.d.). Skill Impact Bond (SIB). Government of India. Retrieved from https://nsdcindia.org/sib

[73]Press Information Bureau. (2025, July 28). Skill India Mission: Details of beneficiaries under PMKVY, JSS, NAPS, CTS & NCVET regulatory framework [Press release]. Ministry of Skill Development & Entrepreneurship, Government of India. Retrieved from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2149328

[74]Press Information Bureau. (2025a, July 14). A decade of building skills & empowering dreams: 10 years of Pradhan Mantri Kaushal Vikas Yojana [Backgrounder]. Government of India. https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=154880&ModuleId=3

is to ensure that training translates into decent and lasting work, allowing women not just to enter but to flourish in changing economies. In this regard, the course of skilling will determine whether the future of work is an environment of empowerment or one of ongoing inequality.

4.3.3 Financial Empowerment and Gender Equality Initiatives

While skilling programmes impart women with the capability to engage in economic activities, financial empowerment and gender equality programs offer the resources and institutional assistance required to convert skills into sustainable livelihoods. By improving access to credit, banking, and entrepreneurial ventures, these programs overcome structural constraints that limit women's economic agency, especially in a setting where gendered norms of control over finances and mobility are still entrenched. They are not just economic measures but also means of restructuring the power relations within households and communities, autonomy, and challenging deeply entrenched inequalities.

Text Box: 4.19 Pradhan Mantri Jan Dhan Yojana (PMJDY)
Launched by the Ministry of Finance in 2014, the Pradhan Mantri Jan Dhan Yojana (PMJDY) is India's flagship program for financial inclusion. Simple and yet powerful, its objective is to enable every individual, particularly the marginalised sections of society, to have access to basic banking services. By enabling zero-balance bank accounts, as well as overdraft, credit, insurance, and pension facilities, the scheme brings entry to the formal financial system for millions hitherto outside its doors. A high priority is given to reaching out to rural and semi-urban areas, with particular emphasis on women, which help to reduce the gender gap in financial inclusion and to empower them economically (GoI, 2025).

As of 2025, PMJDY has enabled more than 55 crore bank accounts to be opened, with women constituting about 56 per cent of the account holders. This has significantly increased women's access to savings, credit, and insurance, allowing for improved financial control (PIB, 2025). The integration of the scheme with digital platforms such as UPI and RuPay cards has also empowered women to participate in cashless transactions, promoting economic empowerment. For most women, especially in rural India, PMJDY account serves as a portal to formal financial systems and validates their economic identity and facilitates access to other government schemes such as MUDRA and DBT (Direct Benefit Transfer). However, several challenges like limited financial knowledge, physical and digital exclusion in rural areas, and social attitudes that discourage women from exercising economic autonomy still restrict the scheme's potential to transform. In spite of such obstacles, PMJDY has reshaped financial inclusion as an underpinning of women's empowerment, synchronising with international agendas such as the UN's Sustainable Development Goals (SDGs), where gender equality and economic inclusion are given top priority (UN Women, 2023).

Text Box: 4.20 Micro Units Development and Refinance Agency (MUDRA)
Launched in 8 April 2015 as a part of the Pradhan Mantri MUDRA Yojana (PMMY), the Micro Units Development and Refinance Agency, or MUDRA, was established by the Ministry of Finance to finance small entrepreneurs and micro-units all over India. Under the monitoring of the Department of Financial Services, MUDRA was established with the goal of improving the financial access of those who are usually excluded, particularly women and vulnerable groups. It operates through a large network of banks, NBFCs, and microfinance institutions to provide low-cost loans. These are categorised under three: Shishu, Kishore, and Tarun, between ₹50,000 to ₹10 lakh, supporting

individuals at different stages of their entrepreneurial life. Basically, MUDRA is all about developing self-employment, supporting small businesses, and nurturing aspirations to root and grow (PIB, 2025)[75].

As of 2025, MUDRA has given out more than ₹33.65 lakh crore worth of loans, with more than 70 per cent of the beneficiaries being women entrepreneurs. Through the scheme, women have been able to open micro-enterprises in industries like handicrafts, food processing, and retail, promoting economic empowerment and community-level outcomes. By connecting women with credit without collateral, MUDRA mitigates financial constraints and empowers women to transact in male-dominated entrepreneurial environments. Further, the scheme being synergistic with skilling programs such as PMKVY allows women to receive training and funding simultaneously, fostering a symbiotic ecosystem for economic participation (PIB, 2025).

However, MUDRA's effect is moderated by issues like high interest rates, low awareness of products of loans, and inadequate post-loan support for business survival. In women, further inhibitions such as domestic chores and mobility constraints add to the complexities of entrepreneurial success. Internationally, MUDRA fits into efforts like the World Bank's Women Entrepreneurs Finance Initiative (We-Fi), which aims at access to finance as a key driver of gender equality in entrepreneurship (World Bank, 2023).

Text Box: 4.21 Women Entrepreneurship Platform (WEP)

Introduced by NITI Aayog in 2018, the Women Entrepreneurship Platform (WEP) is a dynamic initiative that inspires women from all parts of India to make their business ideas a reality. Serving as a one-stop digital platform, WEP brings together women entrepreneurs with the necessary resources, be it mentorship, funding, incubation facilities, or access to the market. In addition to offering tools, the platform further aims to influence gender-sensitive policy formulation and develop competencies that enable women to overcome the specific obstacles of entrepreneurship. NITI Aayog not only came up with the idea but is still driving its implementation, making WEP an exemplary effort to promote women-led enterprises in the nation (NITI Aayog, 2025)[76].

Through collaborations with private and public stakeholders, including Urban Company and New Shop, WEP has engaged thousands of women entrepreneurs, with initiatives like the Award to Reward (ATR) program targeting first-time business owners in retail and services to scale outreach across urban and semi-urban areas (PIB, 2024; PIB, 2025)[77, 78]. The platform prioritises women in non-traditional industries, including retail technology and sustainable services, combating occupational segregation and broadening aspirational horizons through state-level workshops and sector-specific training (PIB, 2025)[79]. Through personalised mentorship and networking, such as the SEHER credit education program and Empow-HER Biz workshops, WEP enables women to grow their businesses

[75]Press Information Bureau. (2025, April 8). Pradhan Mantri Mudra Yojana (PMMY) completes 10 glorious years of empowering small and micro entrepreneurs. Government of India. Retrieved October 09, 2025, from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2119954

[76]NITI Aayog. (2025). Annual report (2024-25). NITI Aayog. https://niti.gov.in/sites/default/files/2025-02/Annual%20Report%202024-25%20English_FINAL_LOW%20RES_0.pdf

[77]Press Information Bureau. (2025, January 8). WEP of NITI Aayog partners with India's largest convenience retail chain New Shop to empower women retail business owners. Government of India. Retrieved September 08, 2025, from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2091175

[78]Press Information Bureau. (2024, November 15). Women Entrepreneurship Platform partners with Urban Company to empower women salon and beauty parlor owners. Government of India. Retrieved September 08, 2025, from https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2073622

[79]Press Information Bureau. (2025, February 28). Women Entrepreneurship Platform - NITI Aayog State Workshop on Enabling Women-Led Development through Entrepreneurship: A Remarkable Success in Mizoram. Government of India. Retrieved September 09, 2025, from https://www.pib.gov.in/PressReleasePage.aspx?PRID=2106956

and overcome systemic obstacles like access to markets and capital, offering training in financial literacy and business development. The platform's emphasis on e-commerce and digital literacy has empowered women from rural and semi-urban locations, providing skills in digital tools and market linkages to connect with wider opportunities, as highlighted in State workshops and partnership programs (PIB, 2024; PIB, 2025)[80].

Though successful, WEP has several challenges with regard to scaling outreach to underserved areas and securing long-term support for early-stage founders. Social norms limiting women's mobility and decision-making power further inhibit engagement. Around the world, WEP finds resonance in efforts such as the EU's WE-gate platform, the Asia-Pacific Economic Cooperation's Women in Business initiatives, and Canada's Women Entrepreneurship Strategy (WES), focusing on building ecosystems for women entrepreneurs (APEC, 2023; Government of Canada, 2023).

Financial inclusion and gender empowerment programmes such as PMJDY, MUDRA, and WEP are a paradigm shift in the way economic inclusion is framed. For women, these schemes are not merely about resource access but about redefining agency, pushing against patriarchal norms, and rewriting aspirations. Through the inclusion of women in formal financial mechanisms, facilitating access to credit, and the development of entrepreneurial ecosystems, these programmes open doors of economic and social mobility.

Yet, their potential for change is constrained by structural limitations such as economic illiteracy, limitations in mobility, and gendered labour market segregation. The lack of strong support systems like childcare and post-loan guidance further detracts from long-term participation. Across the world, these programmes correspond with agendas like the G20 agenda on women's economic empowerment and the OECD agenda on inclusive finance, which underscore the importance of gender-responsive policies to deliver equal access to economic opportunities (OECD, 2023).

For the future of work, these programmes highlight the need for financial empowerment as the touchstone of gender equality. By eradicating systemic constraints and creating an enabling environment, they can help redefine women's roles in India's economy. The test is in making sure that these programmes go beyond access to create sustained, dignified, and equitable opportunities, which allow women to not just participate but prosper in a changing economic environment.

4.4 Summary

India's policy environment is negotiating the gendered effects of economic transformation caused by globalisation, digitisation, and automation, with women, largely in insecure and informal employment, exposed to increased risk of technological displacement and limited social protection. International frameworks, including G20 commitments, highlight reskilling, digitalisation, and universal social protection as key to gender equality, aligning with India's initiative to close the digital gender gap and respond to the overrepresentation of women in automation-susceptible sectors like clerical and service work. National labour legislation, such as provisions for equal pay, maternity leave, and safety in the workplace, seeks to promote fairness and the fact that the majority of women are employed informally. New legislation, such as the Code on Social Security, extends protections to gig and platform workers. Job-related measures, such as wage incentives and rural employment guarantees, improve women's financial inclusion and bargaining power, especially at the rural level, and self-help group programs promote collective entrepreneurship and resilience. Digital platforms and entrepreneurship initiatives empower women by opening up access to work, credit, and markets, but tend to reaffirm gendered

[80]Press Information Bureau. (2024, July 5). Women Entrepreneurship Platform and TransUnion CIBIL partner to launch SEHER program to empower women entrepreneurs [Press release]. Retrieved October 02, 2025, from https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2031097

occupational segregation through the channelling of women into historically "feminized" occupations. Skilling initiatives are designed to prepare women for future jobs, but structural impediments such as unpaid care work, mobility restrictions, and patriarchal attitudes limit their effectiveness. Financial inclusion initiatives, in enlarging women's access to banking and loans, battle social conventions that limit financial independence. However, to strengthen these policies and align them with the future of work, India needs to integrate gender-responsive digital infrastructure, future-oriented skilling, and universal social protection frameworks. Greater investment in the care economy, data-driven policymaking, and women's entrepreneurship in emerging sectors can bridge structural gaps. Such measures will ensure women's meaningful inclusion as active agents in a rapidly evolving, technology-driven economy.

Chapter 5
Conclusion and Policy Recommendations

India's labour market is undergoing a rapid transition, but women's participation remains a persistent problem that limits inclusive growth. Despite education and training, women face extensive challenges to economic engagement. This is reflected in the lower Labour Force Participation Rate (LFPR) for women relative to men. These disparities are most pronounced in urban areas and among educated youth. Women remain disproportionately represented in low-productivity sectors like agriculture, manufacturing and services sector and largely excluded from high-growth sectors like engineering, renewable energy, technology, and the green economy. The emergence of digital platforms and the gig sector has also created opportunities for flexible work. However these opportunities come with less bargaining power, insecurity, and limited access to digital technologies, especially in rural areas. These are compounded by deep-rooted inequalities of access to resources, online proficiency, and the cost of technology to further reinforce the gender divide.

The demographic dividend, the technological advancement at a rapid transition, and the global shift towards new models of employment offer a unique chance to close these gender gaps and achieve inclusive economic development in India. However, unless targeted interventions such as gender-sensitive policies and infrastructure development are undertaken, these transitions may subconsciously perpetuate current inequalities. In the policy, various interventions have sought to promote women's work. Programs like PMKVY, DDU-GKY, and Startup India offer significant scope for increasing economic engagement of women. However, these programs need to better align to the new labour market transitions. As evident from the earlier chapters, there is concentration of women in conventional skill-based occupations such as tailoring and childcare, whereas there has been less representation of women in areas such as technology, engineering, etc. These limitations reinforce the need for a holistic, evidence-based strategy that tackles systemic limitations like the unrecognised work of women, unpaid care work and unequal access to formal employment.

In order to realize the India's labour market potential and enhance economic growth, the participation of women needs to grow. This means that a gender-sensitive policy interventions from policymakers perspective, ranging from ensuring facilitation of women's entry into rapidly expanding sectors, social protections and labour rights for women, tackling unpaid domestic work, as well as improvement of women's access to digital infrastructure, needs to be integrated into a coherent policy framework. Ultimately, bringing women into the workforce is not just an issue of social justice, but a strategic necessity towards achieving Vision 2047. A human-centered agenda for work has to focus on gender equality to prevent women from being left behind in India's changing economy (ILO, 2019).

Based on the discussion in the previous chapters the present chapters provide policy recommendations towards promoting inclusion of women in the future of work. A systemic, evidence-based approach is essential to unlocking their potential, particularly in emerging new forms of employment in digital labour platforms and the growing care economy. These recommendations offer a roadmap to a more inclusive, productive, and gender-equal economy, ensuring a sustainable future of work in India by 2047.

Strengthening Gender-Disaggregated Data Collection on Digital Access

As discussed earlier, there has been wide disparity in terms of access to digital technology from the household level data analysed for this study. However, the study was only able to capture digital access at the household level, which significantly limits the ability to conduct a detailed analysis of individual

access, particularly the differentiated access of men and women to digital devices and the internet. For a strong and evidence-driven analysis, data regarding individual-level access needs to be obtained, differentiated by age, sex, geography, and socio-economic status. These data will serve as the key to understanding the varied experiences of workers and facilitating an inclusive transition to the future of work.

Some scholars have often reminded us, it is not only the physical availability of digital technology but also meaningful autonomy, control and agency of use that is at stake (Haraway, 1988; Gurumurthy and Chami, 2017). Without gender-disaggregated as well as intersectional data, various facets of women's lived reality continue to remain invisible thus subjecting them to the potential of extending and deepening pre-existing inequalities. In order to achieve, national data collection systems need to be strengthened through the integration of individual-level, gender-disaggregated information on digital access and use.

Strengthening Gender-Responsive Skilling and Educational programmes

As evident from the study, amongst the persistent challenges in the context of women's participation in the labour market has been the mismatch between increasing educational achievement and resultant employment. There have been gender gaps in WPR inspite of improved access to education. This disparity reflects on structural obstacles in educational-to-employment transition where women's are disproportionately enrolled in general education courses with low employability and are underrepresented in vocational, technical, and STEM courses (Sangar, 2014). Indeed, digital literacy and future skills today are crucial drivers of access to high-growth areas, such as platform work, IT-enabled services, e-commerce etc. The restricted entry of women to training on the internet, in addition to issues of safety and infrastructure constraints, validates the structural exclusion. The data from the earlier chapters depicts a continuum of the structural and technological constraints limiting women's transition from learning to productive and future-oriented employment.

To address these gaps, it is necessary to reform curricula within the National Skill Qualification Framework (NSQF) to emphasise future skills, ensure focused scholarships for women, set up community skill centers with women trainers and child care, promote apprenticeships with industry linkages that are gender-inclusive, and introduce mentorship schemes to ensure retention of women in non-traditional occupations. Along with this, it is necessary to institutionalise gender responsive monitoring and training ensuring successful implementation of flagship programmes like PMKVY and DDU-GKY. Although these efforts have increased access to training, there is still a requirement to enhance their impact by incorporating gender-sensitive measures like childcare assistance, secure transportation, flexible hours etc. (Aggarwal, 2023; Kshatriya and Kurien, 2022).

Enhancing the Quality of Women's Employment

As evident from pervious chapters, women's participation in India continues to be concentrated in agriculture and informal services, which have some of the lowest productivity and earnings across the economy. This reflects a system of entrenched labour market segmentation that systematically denies women opportunities to participate in high-productivity, high-growth sectors of the economy, such as ICT, renewables, and advanced manufacturing (Aggarwal, 2023). Automation and digitisation are already initiating changes in the labour market, but the lack of pathways for women to enter the labour market will reproduce exclusion in emerging jobs (Radhakrishnan and Singha Roy, 2023). Feminist perspectives have emphasised on the need for both redistribution of resources and recognition of women's contributions for promoting equitable employment outcomes (Fraser, 2016).

Policy measures need to prioritise structural transformations that expand women's access to decent work. Sectoral investments in women-dominated sectors should be improved through regular job contacts, access to social security and so forth. By embedding gender equality in sectoral growth strategies, and recognising women's labour as central to economic advancement, policy can transform women's work from an isolated moment of informal employment to central to India economic transition (Sahu and Behera, 2025).

Bridging Rural–Urban Divides in Women's Employment and Mobility

The analysis from pervious chapters highlighted sharp contrasts between rural and urban women's employment, with rural women concentrated mostly in agricultural work while women in urban areas were concentrated in services sector. While digital employment growth is concentrated in urban hubs, rural women remain excluded from opportunities linked to technology and innovation (Ramasamy et al., 2024). Bridging these gaps necessitates the need for promoting better access to opportunities in rural areas and policies facilitating safe and supported mobility. Region specific skilling interventions in agro-processing, crafts, and renewable energy through DDU-GKY and PMKVY has the potential to create place-specific employment opportunities in local areas. Further, increased digital literacy and connectivity would similarly empower rural women to link to online platforms for economic opportunities (Kshatriya and Kurien, 2022). Investing in the rural economy must be a priority because it will determine the future of much of the global labour force. The investment in quality physical and digital infrastructure is necessary to close gaps in availability and access to quality services (ILO, 2019). Investments of this kind would permit rural women access to digital platforms and high-growth sectors, limiting gaps in disparities, and encourage inclusive economic development. There is a need to harness the opportunities at a regional level along with appropriate access to mobility.

Promoting Digital Inclusion and Algorithmic Fairness

As we have emphasised in the previous chapters, the growth of digital platforms in India has created new options for women's economic engagement via gig work, e-commerce, and teleworking jobs. Digital technologies offered women more flexible working and income-generating opportunities (Kshatriya and Kurien, 2022; NITI Ayog, 2022). However, significant gender inequalities continue to limit women's access to digital technologies due to low ownership of smartphones, poor connectivity, and low digital skills, especially among women living in rural areas and marginalised communities (Mehta and Mehta, 2025; World Bank, 2023). These barriers amplify existing structures of inequality and also reduce women's bargaining power and presence in the platform economy (Rani and Dhir, 2022). Algorithmic management systems also reinforce discrimination when women are penalised for limited timeframes due to caregiving responsibilities or discriminatory customer reviews (OECD, 2025). In order to counter these issues, a comprehensive policy framework is required to enable universal access to digital technologies, inclusive skilling, and governance of algorithms.

The AI mission of the Government of India launched on 7th March 2024, aims to establish a comprehensive ecosystem catalysing AI innovation through strategic programs and partnerships across the public and private sectors. The Ministry of Electronics and Information Technology (MeitY) is the nodal Ministry for promoting AI governance under this mission. The Ministry has constituted a sub-committee in 2023 to develop a comprehensive framework for AI governance. The Committee had recognised the need to address AI led biases and discrimination through adoption of biased recruitment tools. The committee had recommended for an inter-ministerial AI governance committee.[81] Such initiatives need to be promoted to review and strengthen the existing mechanisms on AI governance.

[81]IndiaAI. (2024, December 26). Subcommittee report on AI governance and guidelines development. Ministry of Electronics and Information Technology. Retrieved October 24, 2025, from https://indiaai.s3.ap-south-1.amazonaws.com/docs/subcommittee-report-dec26.pdf

Further, several initiatives have been undertaken towards AI governance that need to be strengthened. The NITI Aayog's Discussion paper on National Strategy on Artificial Intelligence in 2018[82] has outlined several principles (safety and reliability; equality; inclusivity and non-discrimination; privacy and security; transparency and accountability and protection and reinforcement of positive human values) on responsible AI management that need to be further deliberated towards promoting ethical considerations in AI management including promoting gender equality and inclusion audits. Embedding these mechanisms within India's digital and labour policy frameworks would advance gender-equitable digital transformation and ensure inclusive, rights-based growth in the emerging economy.

Promoting Women's Entrepreneurship and Access to Finance

It is evident that the recent growth in the labour force participation of women has been primarily due to rising self-employment, particularly among rural women. The growth has not been opportunity-led, with women largely found in low-income, own-account work or unpaid family labour. While women are entering entrepreneurial activities, challenges with regard to limited access to credit, markets, technology, and social protection have been reported. Governmental interventions for entrepreneurship promotion can play a prominent role in addressing gendered vulnerabilities of women for participation in gainful enterprise. However, it has been reported by scholars that policies like MUDRA Yojana and Startup India have immense potential but challenges with regard to collateral requirements, bureaucratic hurdles and limited mentorship need to be addressed (NITI Aayog, 2024). Also, there has been systematic undervaluation of women's businesses, continuing structures of inequality and women's entrepreneurial activities often remain unrecognised extensions of unpaid or under-compensated reproductive work, leaving their contributions outside of formal economic measures (Federici, 2012).

To promote women's entrepreneurship, there is a need to integrate policy support which addresses both financial access and institutional support. Linking women entrepreneurs to government procurement programs via Stand-Up India as well as building market linkage through digital platforms would increase demand while situating them within value chains. Feminist digital justice is concerned with empowering women entrepreneurs through digital tools, in a way that enhances autonomy without simply replicating exclusion (Gurumurthy and Chami, 2017). Incubation centers and mentorship programs, especially in non-traditional industries such as green ventures, would help women not be limited to low-growth entrepreneurship. By bringing together financial inclusion, group empowerment, and digital capacity building initiatives, women entrepreneurship can be part of both gender justice and economic transformation at the national level.

Strengthening Employment Opportunities in STEM Fields

Despite progress in education and technological advancement, women's participation in emerging STEM-related employment remains limited. As discussed earlier, women's enrolment in STEM disciplines has been lower and persistent gender gaps are witnessed in emerging fields like AI and data science. There is no denying the fact that the rapid expansion of sectors such as artificial intelligence, data analytics, biotechnology, renewable energy, robotics, and digital finance provides significant opportunities for employment of women. However, structural constraints like restricted access to higher technical education, institutional mentorship gaps and the intensity of unpaid care work still limit women's entry and retention (Aggarwal, 2023). Also, with regard to vocational training, women were mostly pursuing training in traditional fields other than technical fields. Therefore, there is a need to align policy frameworks that align women's skilling and education with the emerging STEM sectors.

[82]NITI Aayog. (2021, February). Responsible AI #AIForAll. Government of India. Retrieved October 24, 2025, from https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf

In addition, formalisation and scaling up of STEM-based skill development projects under PMKVY, Pradhan Mantri National Apprenticeship Promotion Scheme (PM NAPS), and projects under Skill development Mission aligned to industry specific requirements and emerging skill areas like AI and robotics, green jobs, biotech etc. will enhance employability of women.

Recognising and Investing in the Care Economy

The study has explicitly shown regarding the excessive involvement of women in unpaid care work which discourages women from engaging in gainful economic activities. This uneven burden, sustaining households and communities, tends to be invisible outside the policy surfaces. With rising care responsibilities, the role of professional care givers has become of paramount significance. As evident in the previous discussion, the increase in automation of conventional careers creates the possibility for care work to emerge as a developing employment sector.

There is a need to reorient care work as a legitimate, official sector through raising public investment in care infrastructure such as universal childcare centers, centers for elderly care, and disability support service which will generate countless job opportunities for women and also allow them to engage in paid work. In addition, employer-led interventions like tax benefits for offering in-work childcare and flexible work schedules can redistribute care obligations between men and women and promote women's participation in the labour force (ILO, 2018). Additionally, making professional care certifications part of national training programs like PMKVY would institutionalise domestic and community care careers, enhance employment quality, and provide social security coverage. In combination, these strategies provide a holistic strategy for incorporating care work into the formal economy, promoting gender equity, and informing national development goals.

Enhance Social Protection for Women Workers

As evidenced in the earlier chapters, women's integration into the labour market is hampered by structural exclusion, digital precarity, and policy gaps. Women remain over-represented in the informal economy, with no formal contracts, pensions, health insurance, and maternity protection, which limits their economic security and opportunities for sustained work.

The Code on Social Security 2020 makes several provisions for the extension of protection to women workers, including informal, gig and platform workers. The provision for the formation of sectoral boards through the Code is a precious opportunity to tackle gender-specific issues at the state level. For example, under the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Act, 2023[83], platforms have to contribute towards workers' health and accident coverage under compulsory insurance schemes. In the meanwhile, the Rajasthan Unorganized Workers' Welfare Board associates E-Shram registration with maternity benefits access. In Karnataka, women are afforded welfare charges under the Karnataka Platform-Based Gig Workers (Social Security and Welfare) Act, 2025[84] that finance healthcare and financial aid through individual worker IDs, and childcare and skill development training arranged through the Karnataka Building and Other Construction Workers' Welfare Board.

The Bihar Platform-Based Gig Workers (Registration, Safety and Welfare) Act, 2025[85] similarly aims to ensure social protection, mandating platform contributions towards insurance and welfare funds

[83]AIOE. (2023). Gig workers bill 2023. AIOE. Retrieved October 19, 2025.from, https://aioe.in/wp-content/uploads/2023/09/Gig_Workers_Bill_2023_1690274461.pdf.
[84]Karnataka Legislative Assembly. (2023). The Karnataka State Universities (Amendment) Bill, 2023 (Bill No. 31E). Karnataka Legislative Assembly. Retrieved October 19, 2025, from https://kla.kar.nic.in/council/house/bills/156/31E.pdf
[85]Bihar Legislative Assembly. (2025). Act 8 of 2025 (Bihar). Retrieved October 21, 2025, from https://prsindia.org/files/bills_acts/acts_states/bihar/2025/Act8of2025BR.pdf

while extending safety nets for workers. These initiatives need to be strengthened towards designing of social welfare measures for these workers across various States. Since the State governments are in the process of drafting States rules under the Code, it is important to analyse specific social security needs of women workers across regions towards designing of targeted social protection interventions for women located across diverse geographical regions.

References

Aggarwal, S. C. (2023). Gig workers in India: An overview. *Indian Journal of Labour Studies*. https://www.researchgate.net/publication/372518684_%27Gig%27_workers_in_India_An_Overview

Anker, R. (2001). *Gender and jobs: Sex segregation of occupations in the world*. International Labour Organization. https://www.ilo.org/publications/gender-and-jobs-sex-segregation-occupations-world

Antunes, F., Pereira, L. F., Dias, Á. L., & Vinhas da Silva, R. (2023). Flexible labour policies as competitive advantage. *Global Journal of Flexible Systems Management, 24*(4), 563–590. https://doi.org/10.1007/s40171-023-00352-1

Antonio, A., & Tuffley, D. (2014). The gender digital divide in developing countries. *Future Internet, 6*(4), 673–687. https://doi.org/10.3390/fi6040673

Autor, D. H. (2022). *The labor market impacts of technological change: From unbridled enthusiasm to qualified optimism to vast uncertainty* (NBER Working Paper No. 30074; Revised July 2022). National Bureau of Economic Research. https://www.nber.org/papers/w30074

Ban, H. H., Bandyopadhyay, V., Barrantes, A., et al. (2023, August). *Care economy and gender-transformative social protection in India and the G20 countries* (T20 Policy Brief). T20 India. https://t20ind.org/research/care-economy-and-gender-transformative-social-protection-in-india/

Basole, A., Abraham, R., Lahoti, R., Kesar, S., Jha, M., Nath, P., Kapoor, R., Mandela, S. N., Shrivastava, A., Dasgupta, Z., Gupta, G., & Narayanan, R. (2021). *State of working India 2021: One year of COVID-19* (Research report). Azim Premji University. https://publications.azimpremjiuniversity.edu.in/id/eprint/2649

Breene, K. (2016, January 18). What is the future of work? World Economic Forum. https://www.weforum.org/stories/2016/01/what-is-the-future-of-work

Brussevich, M., Dabla-Norris, E., Kamunge, C., Karnane, P., Khalid, S., & Kochhar, K. (2018, October). *Gender, technology, and the future of work* (IMF Staff Discussion Note No. SDN/18/07). International Monetary Fund. https://www.imf.org/en/Publications/Staff-Discussion-Notes

Buteau, S., Sreenivasan, V., Narasimhan, M., & Arun Kumar, J. V. (2023). *From margins to mainstream: State and private initiatives shaping women's collectives in the digital economy* (Learning note). LEAD at Krea University. https://ifmrlead.org/wp-content/uploads/2023/06/Womens-Collectives-and-Ecommerce_Learning-Note_Final.pdf

Chakraborty, S., & Chatterjee, P. (2021). Women entrepreneurs in India: Where do they stand? *The Indian Journal of Labour Economics, 64*(4), 1069–1092. https://doi.org/10.1007/s41027-021-00344-8

Charles, M., & Grusky, D. B. (2004). *Occupational ghettos: The worldwide segregation of women and men*. Stanford University Press. https://www.sup.org/books/title/?id=8080

Chatterjee, E., Desai, S., & Vanneman, R. (2018). Indian paradox: Rising education, declining women's employment. *Demographic Research, 38*, 855–878. https://doi.org/10.4054/DemRes.2018.38.31

Chinen, M., De Hoop, T., Alcázar, L., Balarin, M., & Sennett, J. (2017). Vocational and business training to improve women's labour market outcomes in low-and middle-income countries: A systematic review. *Campbell Systematic Reviews, 13*(1), 1–195. https://doi.org/10.4073/csr.2017.16

Confederation of Indian Industry. (2023). *Report on women in STEM*. https://www.ciitechnology.in/pdf/report-on-women-in-stem.pdf

Connell, R. (2009). The question of gender. In *Gender: In world perspective* (2nd ed., pp. 11–21). Polity Press. Retrieved September 07, 2025, from https://genderandmasculinities.wordpress.com/wpcontent/uploads/2017/02/connell-2009-ch1-the-question-of-gender.pdf

David, W. (2024, August). *Empowering girls in STEM education: Strategies to address gender disparities*. Kiu Publication Extension, Kampala International University, Uganda.

D'Ignazio, C., & Klein, L. F. (2020). *Data feminism*. The MIT Press. https://rasterisvaster.net/wp-content/uploads/2025/01/data_feminism_chapter.pdf

Dastin, J. (2018, October 10). Amazon scraps secret AI recruiting tool that showed bias against women. *Reuters*. https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G

De Stefano, V. (2015). The rise of the 'just-in-time workforce': On-demand work, crowd work and labour protection in the 'gig-economy'. *Comparative Labor Law & Policy Journal, 37*(3), 471–502. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2682602

Dewan, S., & Sanyal, K. (Eds.). (2023). *Empowerment or exploitation: Global perspectives on women's work in the platform economy*. JustJobs Network. https://www.justjobsnetwork.org/files/empowerment-or-exploitation-global-perspectives-on-womens-work-in-the-platform-economy_may-2023.pdf

Directorate General of Employment. (2023, May). *Female labour utilization in India: April 2023*. Ministry of Labour and Employment, Government of India. https://dge.gov.in/dge/sites/default/files/2023-05/Female_Labour_Utilization_in_India_April_2023_final__1_-pages-1-2-merged__1_.pdf

Dixon, P. (2017). A failure to "do no harm"- India's Aadhaar biometric ID program and its inability to protect privacy in relation to measures in Europe and the U.S. *Health Technologies (Berl), 7*(4), 539–567. https://doi.org/10.1007/s12553-017-0202-6

Drèze, J. (2023, May 30). The rural wage rule GOI must relinquish. *The Times of India*. https://timesofindia.indiatimes.com/blogs/toi-edit-page/the-rural-wage-rule-goi-must-relinquish/

Elson, D. (2017). Recognize, reduce, and redistribute unpaid care work: How to close the gender gap. *New Labour Forum, 26*(2), 52–61. https://doi.org/10.1177/1095796017700135

European Commission. (2022). *2022 report on gender equality in the EU*. https://commission.europa.eu/system/files/2023-03/annual_report_GE_2022_printable_EN.pdf

Fairwork. (2024). *Fairwork India Ratings 2024: Labour standards in the platform economy*. https://fair.work/en/fw/publications/fairwork-india-ratings-2024-labour-standards-in-the-platform-economy/

Federici, S. (2012). *Revolution at point zero: Housework, reproduction, and feminist struggle*. PM Press. https://www.pmpress.org/index.php?l=product_detail&p=384

Federici, S. (2018). *Re-enchanting the world: Feminism and the politics of the commons*. PM Press. https://eclass.aegean.gr/modules/document/file.php/GEO-PPS366/silviafederichiCommons.pdf

Fernandez, C., Puri, H., & Prakash, S. (2024, February 4). *Digital technology as an instrument to bridge the gender gaps in access to labour markets: Policy brief #31*. UNDP India & ICRIER. https://www.undp.org/sites/g/files/zskgke326/files/2025-02/undp-icrier_policy_brief_31.pdf

Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of Human Development and Capabilities, 7*(2), 183–199. https://doi.org/10.1080/14649880600768512

Folbre, N. (2012). *The rise and decline of patriarchal capitalism* (Working Paper No. 298). Political Economy Research Institute, University of Massachusetts Amherst. https://peri.umass.edu/wp-content/uploads/joomla/images/publication/WP298.pdf

Fraser, N. (2009). Feminism, capitalism and the cunning of history. *New Left Review, 56*, (P.97–117).

Fraser, N. (2016). Contradictions of capital and care. *New Left Review, VoI. II*(100), (P.99–117). https://newleftreview.org/issues/ii100/articles/nancy-fraser-contradictions-of-capital-and-care

Friedrich-Ebert-Stiftung. (2024). *Annual report 2023 / Outlook 2024*. Retrieved July28, 2025, from https://library.fes.de/pdf-files/fes/17941/ar-2023.pdf

Ghosh, J. (2021, December). *Gender concerns in debt relief* (Issue Paper). International Institute for Environment and Development. https://www.iied.org/20691iied

Goldin, C. (2020). *Career and family: Women's century-long journey toward equity*. Princeton University Press. https://press.princeton.edu/books/hardcover/9780691201788/career-and-family

Goldin, I. (2020, December). *Inequality and exclusion: Technology and the future of work*. Pathfinders for Peaceful, Just and Inclusive Societies. https://www.sdg16.plus/wp-content/uploads/sites/3/2020/12/cic_technology_and_the_future_of_work_2020.pdf

Government of India. (2024). *Economic Survey 2023–24* (Vol. 1). Ministry of Finance. https://www.indiabudget.gov.in/economicsurvey/doc/echapter.pdf

Government of India. (2025, August 21). *Employment Linked Incentive (ELI) Scheme – Parliamentary Question No. 3300*. Ministry of Labour and Employment. Retrieved October 28, 2025, from https://sansad.in/getFile/annex/268/AU3300_CYjQ4Y.pdf?source=pqars

Grau-Sarabia, M., & Fuster-Morell, M. (2021). Gender approaches in the study of the digital economy: A systematic literature review. *Humanities and Social Sciences Communications, 8*(1), Article 201. https://doi.org/10.1057/s41599-021-00875-x

Gray, C. (2023). More than extraction: Rethinking data's colonial political economy. *International Political Sociology, 17*(2), Article olad007. https://doi.org/10.1093/ips/olad007

GSMA. (2023). *The Mobile gender gap report 2023*. https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/the-mobile-gender-gap-report-2023/

Gurumurthy, A., & Chami, N. (2017). *A feminist framework on development and digital technologies*. IT for Change. https://doi.org/10.13140/RG.2.2.28305.33129

Gurumurthy, A. (2023). Towards feminist futures in the platform economy: Four stories from India. In S. Author & T. Author (Eds.), *Epistemic rights in the era of digital disruption* (pp. 113–126). Springer. https://doi.org/10.1007/978-3-031-45976-4_8

Haraway, D. J. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies, 14*(3), 575–599. https://doi.org/10.2307/3178066

Haraway, D. J. (1991). A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In *Simians, cyborgs and women: The reinvention of nature* (pp. 149–181). Routledge. https://www.sfu.ca/~decaste/OISE/page2/files/HarawayCyborg.pdf

Hegewisch, A., Childers, C., & Hartmann, H. (2019). *Women, automation, and the future of work*. Institute for Women's Policy Research. https://iwpr.org/women-automation-and-the-future-of-work/

Henry, N., Vasil, S., & Witt, A. (2021). Digital citizenship in a global society: A feminist approach. *Feminist Media Studies, 22*(2), 1–18. https://doi.org/10.1080/14680777.2021.1937269

Highet, C., & Appaya, S. (2025, March 12). Sowing the seeds of resilience: Can AI empower women in agriculture? CGAP. https://futureofwork.fes.de/our-projects/artificial-intelligence-and-gender-equality.html

Institute for What Works to Advance Gender Equality (IWWAGE). (2023, June). *Gender in focus – June 2023*. https://iwwage.org/wp-content/uploads/2023/06/Gender-in-focus_June-2023.pdf

Institute for What Works to Advance Gender Equality (IWWAGE). (2023). *From evidence to action: Shaping the future for women at work* (Compendium 1). https://iwwage.org/wp-content/uploads/2023/04/IWWAGE_compendium-1.pdf

International Labour Organization. (2002). *Managing disability in the workplace: ILO code of practice*. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/documents/publication/wcms_838653.pdf

International Labour Organization. (2010). *A skilled workforce for strong, sustainable and balanced growth: A G20 training strategy*. https://www.ilo.org/publications/skilled-workforce-strong-sustainable-and-balanced-growth-0

International Labour Organization. (2015). *World employment and social outlook 2015: The changing nature of jobs* (Report No. WCMS 368626). Geneva: ILO. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_368626.pdf

International Labour Organization. (2018). *Emerging technologies and the future of work in India*. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40asia/%40ro-bangkok/%40sro-new_delhi/documents/publication/wcms_631296.pdf

International Labour Organization. (2018). *Care work and care jobs for the future of decent work*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_633135.pdf

International Labour Organization. (2018). *Women and men in the informal economy: A statistical picture* (3rd ed.). https://www.ilo.org/publications/women-and-men-informal-economy-statistical-picture-third-edition

International Labour Organization. (2019). *Work for a brighter future: Report of the Global Commission on the Future of Work*. https://www.ilo.org/publications/work-brighter-future

International Labour Organization. (2021). *World Employment and Social Outlook: Trends 2021*. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_795453.pdf

International Labour Organization. (2021, September 1). *World social protection report 2020-22: Social protection at the crossroads – in pursuit of a better future*. https://www.ilo.org/publications/flagship-reports/world-social-protection-report-2020-22-social-protection-crossroads-%E2%80%93

International Labour Organization. (2022). *World Employment and Social Outlook: Trends 2022*. Geneva: International Labour Office. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_834081.pdf

International Labour Organization. (2023). *Digital labour platforms and the future of work: Gender equality in focus*. https://www.ilo.org/media/414716/download

International Labour Organization. (2024). *Expansion of the gig and platform economy in India: Opportunities for employer and business member organizations*. https://www.ilo.org/publications/expansion-gig-and-platform-economy-india-opportunities-employer-and

International Labour Organization. (2024). *World Employment and Social Outlook: Trends 2024*. https://www.ilo.org/publications/flagship-reports/world-employment-and-social-outlook-trends-2024

International Labour Organization. (2025, April 25). ILO calls BRICS to strengthen efforts on social justice as groundbreaking LEMM declaration on AI and Just Transition is adopted. https://www.ilo.org/resource/news/ilo-calls-brics-strengthen-efforts-social-justice-groundbreaking-lemm

International Labour Organization. (2025, May 20). *Generative AI and jobs: A refined global index of occupational exposure* (ILO Working Paper No. 140). https://www.ilo.org/resource/news/one-four-jobs-risk-being-transformed-genai-new-ilo%E2%80%93nask-global-index-shows

International Labour Organization. (2025, October 27). G20 Social Summit: Shaping the future of work through decent work. https://www.ilo.org/resource/news/g20-social-summit-shaping-future-work-through-decent-work

International Monetary Fund. (2019). *IMF Annual Report 2019: Our Connected World* (pp. 29–30). https://www.imf.org/external/pubs/ft/ar/2019/eng/assets/pdf/imf-ar-2019-what-we-do.pdf

Jena, B., & Paltasingh, T. (2024). Digital literacy among older adults: A systematic review in Indian context. *Educational Gerontology*, 371–386. https://doi.org/10.1080/03601277.2024.2397428

Jeon, H., & Dauletova, U. (2021, November 25). *Cyberviolence disempowers women and girls and threatens their fundamental rights*. UNDP Eurasia. Retrieved September 07, 2025, from https://www.undp.org/eurasia/blog/cyberviolence-disempowers-women-and-girls-and-threatens-their-fundamental-rights

Kabeer, N. (2015). Gender, poverty, and inequality: A brief history of feminist contributions in the field of international development. *Gender & Development, 23*(2), 189–205. https://doi.org/10.1080/13552074.2015.1062300

Kabeer, N. (2017, November 1). Women's empowerment in business and the labour force. *Policy Options*. https://policyoptions.irpp.org/magazines/november-2017/womens-empowerment-in-business-and-the-labour-force/

Kamat, A. R. (1976, August). Women's education and social change in India. *Social Scientist*, 5(1), 3–27. https://doi.org/10.2307/3516600

Kanjilal-Bhaduri, S., & Pastore, F. (2017). *Returns to education and female participation nexus: Evidence from India* (IZA Discussion Paper No. 11209). Institute of Labor Economics. https://docs.iza.org/dp11209.pdf

Kelkar, G. (2022, June). *Patriarchal discrimination and capitalist relations: The gender question in the gig economy*. GenDev Centre for Research and Innovation. https://ruralindiaonline.org/en/library/resource/patriarchal-discrimination-and-capitalist-relations-the-gender-question-in-the-gig-economy/

Khera, R., & Nayak, N. (2009). Women workers and perceptions of the National Rural Employment Guarantee Act. *Economic and Political Weekly, 44*(43), 49–57.

Kshatriya, N., & Kurien, D. (2022). Gig workers in India: Emerging opportunities in the new economy. *Liberal Studies, 7*(1). https://www.researchgate.net/profile/Neelam-Kshatriya-3/publication/367090787_Gig_workers_in_India/links/63c1097eeab5ff0149ab6362/Gig-workers-in-India.pdf

Kumar, A. (2024, March 27). Unemployment hurting Indian youth, most jobs informal, says ILO Report. *Business Standard*. https://www.business-standard.com/india-news/unemployment-hurting-indian-youth-most-jobs-informal-says-ilo-report-124032700635_1.html

Kumar, S. (2024, January 24). Women and STEM: The inexplicable gap between education and workforce participation. *Observer Research Foundation*. https://www.orfonline.org/expert-speak/women-and-stem-the-inexplicable-gap-between-education-and-workforce-participation

Kwan, S. (2022). Feminist visions of the futures of women's work: A systemic exploration of the past, present, and future of women at work in Canada. *Journal of Futures Studies, 27*(1), 15–28. https://doi.org/10.6531/JFS.202209_27(1).0002

Majumdar, S. (2008). *Workforce development in India: Policies and practices*. Asian Development Bank Institute. https://www.adb.org/sites/default/files/publication/159351/adbi-workforce-dev-india.pdf

Mehta, B. S. (2023). Changing nature of work and the gig economy: Theory and debate. *FIIB Business Review, 12*(3), 227–237. https://doi.org/10.1177/2319714520968294

Mehta, B. S., & Mehta, A. K. (2025). *Paid and unpaid care work: Gender inequities and policy pathways* (IHD-CGS Working Paper 1/2025). Institute for Human Development. https://www.ihdindia.org/working-papers-wp/IHD-CGS_WP_1_2025.pdf

Ministry of Education, Government of India. (2022). *All India Survey on Higher Education 2021–22*. https://aishe.gov.in

Ministry of Education, Government of India. (2023). *Annual Report 2022-23* (English). https://www.education.gov.in/sites/upload_files/mhrd/files/document-reports/Annual%20Report_2022-23_English.pdf

Ministry of Health and Family Welfare. (2024). *Annual Report 2024–25*. Government of India. https://www.mohfw.gov.in/sites/default/files/Final%20Printed%20English%20AR%202024-25.pdf

Ministry of Statistics and Programme Implementation. (2020, September 29). *Time use in India-2019*. Government of India. https://mospi.gov.in/publication/time-use-india-2019

Ministry of Statistics & Programme Implementation, Government of India. (2025). *Catalogue – CAMS* [Web page]. https://esankhyiki.mospi.gov.in/catalogue-main/catalogue?page=0&product=CAMS&searc

Ministry of Statistics and Programme Implementation. (2025, May 29). *Results of Comprehensive Modular Survey: Telecom, 2025 (January – March 2025)*. Press Information Bureau, Government of India. https://pib.gov.in/PressReleasePage.aspx?PRID=2132330

Ministry of Statistics and Programme Implementation. (2024, September 23). *Press note on Periodic Labour Force Survey (PLFS) Annual Report July 2023–June 2024*. Government of India.

Ministry of Statistics and Programme Implementation. (2024, October). *Annual report: Periodic Labour Force Survey (PLFS), 2023–24.* National Sample Survey Office, Government of India. https://dge.gov.in/dge/sites/default/files/2024-10/Annual_Report_Periodic_Labour_Force_Survey_23_24.pd

Ministry of Statistics and Programme Implementation. (2025). *Time use in India 2024*. Government of India. https://mospi.gov.in/publication/time-use-india-2024

Mona. (2022). *Gender bias in futuristic technologies: A probe into AI & inclusive solutions*. Feminist Internet Initiative. https://fii.org.in/articles/gender-bias-in-futuristic-technologies-a-probe-into-ai-inclusive-solutions

Munoz, I., Sawyer, S., & Dunn, M. (2022). New futures of work or continued marginalization? The rise of online freelance work and digital platforms. In *Proceedings of the 2022 Symposium on Human-Computer Interaction for Work (CHIWORK 2022)* (pp. 1–7). https://doi.org/10.1145/3533406.3533412

NASSCOM. (2020, March 7). *Future skilling for the digital economy*. NASSCOM Research. https://nasscom.in/knowledge-center/publications/future-skilling-digital-economy

National Family Health Survey (NFHS-5). (2021). *India report*. Ministry of Health and Family Welfare, Government of India. https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-I.pdf

Nigam, S. (2024, April 22). Ending online violence against women in India: Calling for an inclusive, comprehensive, and gender-sensitive law and policy framework. *IMPRI Impact and Policy Research Institute*. https://www.impriindia.com/insights/ending-online-violence-against-women-in-india-calling-for-an-inclusive-comprehensive-and-gender-sensitive-law-and-policy-framework/

NITI Aayog. (2018). *Strategy for New India @ 75*. Government of India.

NITI Aayog. (2022). *India's booming gig and platform economy*. Government of India. https://www.niti.gov.in/sites/default/files/2023-06/Policy_Brief_India%27s_Booming_Gig_and_Platform_Economy_27062022.pdf

NITI Aayog. (2022, October). *Decoding government support to women entrepreneurs in India: The anatomy of entrepreneurship support schemes.* https://www.niti.gov.in/sites/default/files/2023-03/Decoding-Government-Support-to-Women-Entrepreneurs-in-India.pdf

NITI Aayog. (2025). *Annual report 2024–25*. Government of India. https://www.niti.gov.in/sites/default/files/2025-02/Annual%20Report%202024-25%20English_FINAL_LOW%20RES_0.pdf

Njuki, J., & Gollub, A. (2024, April 2). Improving women's access to decent jobs. UN Women. https://www.unwomen.org/en/news-stories/op-ed/2024/04/op-ed-improving-womens-access-to-decent-jobs

Noble, S. U. (2019). *Algorithms of oppression: How search engines reinforce racism*. https://writing4engineers2019.commons.gc.cuny.edu/wp-content/blogs.dir/6105/files/2019/01/SAFIYA-NOBLE.pdf

OECD. (2021). *Pay transparency tools to close the gender wage gap*. OECD Publishing. https://doi.org/10.1787/eba5b91d-en

OECD. (2022). *Education at a Glance 2022: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/3197152b-en

OECD. (2022). *The effects of AI on the working lives of women*. OECD Publishing. https://doi.org/10.1787/14e9b92c-en

OECD. (2023). *Education at a Glance 2023: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/e13bef63-en

OECD. (2023, July 11). *OECD employment outlook 2023: Artificial intelligence and the labour market*. OECD Publishing. https://www.oecd.org/employment-outlook/2023

OECD. (2024). *Society at a Glance 2024: OECD Social Indicators*. OECD Publishing. https://doi.org/10.1787/918d8db3-en

Oxfam India. (2022, December 5). *India Inequality Report 2022: Digital divide.* https://www.oxfamindia.org/knowledgehub/workingpaper/india-inequality-report-2022-digital-divide

Patel, N., & Sethi, T. (2022, March 3). Rural women: Key to New India's agrarian revolution. NITI Aayog. https://www.niti.gov.in/sites/default/files/2022-03/Rural_Women_Neelam_Tanu_article_03032022.pdf

Petersen, B. K., Chowhan, J., Cooke, G. B., Gosine, R., & Warrian, P. J. (2023). Automation and the futu status. *Economic and Industrial Democracy, 44*(3), 703–727. https://doi.org/10.1177/0143831X221088301re of work: An intersectional study of the role of human capital, income, gender and visible minority

Press Information Bureau. (2024, February 7). *Government of India incentivizes & encourages Anganwadi Workers and Anganwadi Helpers, through various initiatives* [Press release]. Ministry of Women and Child Development. https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2003433

Rani, U., & Dhir, R. K. (2022). *Rise of the platform economy: Implications for labor and sustainable development in developing countries.* IT for Change. Retrieved October 29, 2025, from https://projects.itforchange.net/state-of-big-tech/rise-of-the-platform-economy-implications-for-labor-and-sustainable-development-in-developing-countries

Ramasamy, I., Sathish, A. S., Rangasamy, G., & Subramanian, D. (2024). Exploring the impact of digitalisation on rural women's socio-economic status: A bibliometric and scoping study. *Multidisciplinary Reviews, 8*(2), 2025063. https://doi.org/10.31893/multirev.2025063

Rasheed, N. (2021, April 27). How digital literacy can bring in more women to the workforce. United Nations Development Programme. https://www.in.undp.org/content/india/en/home/blog/how-digital-literacy-can-bring-in-more-women-to-the-workforce.html

Reskin, B. F., & Roos, P. A. (1990). *Job queues, gender queues: Explaining women's inroads into male occupations*. Temple University Press.

Richardson, L. (2016). Feminist geographies of digital work. *Progress in Human Geography, 42*(2), 244–263. https://doi.org/10.1177/0309132516677177

Rubery, J. (2018). A gender lens on the future of work. *Journal of International Affairs, 72*(1), 91–106. https://jia.sipa.columbia.edu/news/gender-lens-future-work

Sahu, P. R., & Behera, D. K. (2025). Barriers to women's empowerment in India's informal sector: Structural and socioeconomic constraints. *Discover Sustainability, 6*(1). https://doi.org/10.1007/s43621-025-01398-0

Sangar, S. (2014). Women's declining employment with access to higher education: Issues and challenges. *Higher Education for the Future, 1*(2), 155–171. https://doi.org/10.1177/2347631114539887

Singh, S., & Yadav, P. (2023). Unpaid care work and women's time poverty in India. *Indian Journal of Gender Studies, 30*(3), 301–319.

Radhakrishnan, A., & Singha Roy, N. (2023). *Gig economy workers' livelihood: A qualitative study of ride-hailing platforms in Bangalore City, India. Artha Vijnana: Journal of The Gokhale Institute of Politics & Economics*, 65(2), 171–187. https://doi.org/10.21648/OPST6018

Spencer, D. A. (2023). Technology and work: Past lessons and future directions. *Technology in Society, 74*(3), Article 102294. https://doi.org/10.1016/j.techsoc.2023.102294

Standing, G. (2011). *The precariat: The new dangerous class*. Bloomsbury Academic. https://creativecommons.org/licenses/by-nc/3.0/

Sundari, S. (2020). *Structural changes and quality of women's labour in India. Indian Journal of Labour Economics, 63*, 689–717. https://doi.org/10.1007/s41027-020-00245-2

Tewari, S. (2025, June 20). Why India needs to urgently address gender gap in digital skills. *IndiaSpend*. https://www.indiaspend.com/specials/gendercheck/why-india-needs-to-urgently-address-gender-gap-in-digital-skills

Tronto, J. C. (2015). *Caring democracy: Markets, equality, and justice*. New York University Press.

UN Women. (2017, January 30). *Women's economic empowerment in the changing world of work: Multi-stakeholder forum, 30 January 2017, Commission on the Status of Women (CSW61) concept note & discussion guide* [PDF]. https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/CSW/MSForumCSW61.pdf

UN Women. (2022, August). *Mapping the nexus between media reporting of violence against girls* (Report No. EGM/2022/01). https://www.unwomen.org/sites/default/files/2022-08/Evidence-review-Mapping-the-nexus-between-media-reporting-of-violence-against-girls-en.pdf

UN Women. (2023, February). *Findings and recommendations from the Expert Group Meeting on the priority theme: Innovation and technological change, and education in the digital age for achieving gender equality and the empowerment of all women and girls* (Report No. EGM/2022/01). https://www.unwomen.org/sites/default/files/2023-02/Report.pdf

UN Women. (2024, November). *FAQs: Trolling, stalking, doxing and other forms of violence against women in the digital age*. https://asiapacific.unwomen.org/en/stories/news/2024/11/faqs-trolling-stalking-doxing-and-other-forms-of-violence-against-women-in-the-digital-age

UN Women. (2025). *Progress on the Sustainable Development Goals: The Gender Snapshot 2025*. https://moldova.un.org/sites/default/files/2025-09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2025-en.pdf

UNESCO. (2022). *Cracking the code: Girls' and women's education in STEM*. https://doi.org/10.54675/QYHK2407

UNESCO. (2023). *UNESCO in action for gender equality: 2022–2023*. https://unesdoc.unesco.org/ark:/48223/pf0000387300

Van Dijk, J. A. G. M. (2020). *The digital divide*. Polity Press. https://research.utwente.nl/en/publications/the-digital-divide-2/

Waring, M. (1992). *If women counted: A new feminist economics* [Book review of the book *If women counted: A new feminist economics*, by M. Waring]. *Review of Income and Wealth, 38*(2), 237–240. Retrieved October 09, 2025, from https://www.roiw.org/1992/237.pdf

Woodcock, J., & Graham, M. (2019). *The gig economy: A critical introduction*. Polity. https://repository.essex.ac.uk/34613/1/The%20Limits%20of%20Algorithmic%20Management%20Preprint%20Woodcock.pdf

World Bank. (2023, March 8). *International Women's Day 2023: Accelerating equality and empowerment.* Retrieved September 01, 2025, from https://www.worldbank.org/en/topic/gender/brief/international-women-s-day-2023-accelerating-equality-and-empowerment

World Bank. (2024). *Women, Business and the Law 2024*. https://wbl.worldbank.org/en/wbl

World Bank. (2025, April 10). *Gender and inclusion in digital*. https://www.worldbank.org/en/topic/digitaldevelopment/brief/gender-and-inclusion-in-digital

World Economic Forum. (2023, April 30). *The Future of Jobs Report 2023*. https://www.weforum.org/publications/the-future-of-jobs-report-2023/

World Economic Forum. (2024). *Global gender gap report 2024*. https://www.weforum.org/publications/global-gender-gap-report-2024

World Economic Forum. (2025, January 7). *The Future of Jobs Report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

APPENDIX TABLES

Table 1: Labour Force Participation Rate (LFPR) of Men and Women – Rural and Urban - Age (15 – 59 years) – Usual Status

	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2017-18	80.2	26.6	80.1	22.4	80.2	25.3
2018-19	80.6	28.3	79.7	22.5	80.3	26.5
2019-20	81.5	35.4	80.6	25.7	81.2	32.3
2020-21	80.5	39.0	80.4	25.6	80.5	35.0
2021-22	82.1	39.3	81.2	26.5	81.8	35.6
2022-23	84.2	44.3	80.8	28.3	83.2	39.8
2023-24	84.3	51.3	81.9	31.2	83.5	45.2

Source: Calculated from unit level data of PLFS (2017-18 to 2023-24)

Table 2: Work Force Participation Rate (WPR) of Men and Women – Rural and Urban - Age (15 – 59 years) – Usual Status

	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2017-18	75.2	25.5	74.2	19.8	74.9	23.8
2018-19	75.8	27.2	73.8	20.2	75.1	25.0
2019-20	77.5	34.4	75.1	23.3	76.7	30.9
2020-21	77.0	38.1	75.3	23.3	76.5	33.7
2021-22	78.7	38.4	76.2	24.3	77.9	34.3
2022-23	81.7	43.4	76.8	26.0	80.2	38.5
2023-24	81.7	50.1	78.1	28.8	80.6	43.7

Source: Calculated from unit level data of PLFS (2017-18 to 2023-24)

Table 3: Percentage of Formal and Informal Workers (Men and Women) – Rural and Urban – Age (15 – 59 years)

	2023-24			
	Male		Female	
	Formal	Informal	Formal	Informal
Rural	8.9	91.1	6.8	93.2
Urban	30.1	69.9	28.6	71.4
Rural + Urban	16.7	83.3	12.2	87.8

Source: Calculated from unit level data of PLFS 2023-24

Table 4: Reasons for Non-Participation of Men and Women in the Workforce – Rural + Urban - Age (15 – 59 years)

Reason for not working	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
retrenchment/lay-off without pay-	0.7	0.0	1.3	0.2	1.0	0.1
end of contract/quit	10.1	2.8	14.9	5.8	12.5	4.0
not operating the unit	1.4	0.4	2.6	0.6	2.0	0.5
lack of work in the area	7.1	1.8	7.1	2.5	7.1	2.1
retirement	4.5	0.6	13.8	1.7	9.3	1.0
child care	0.1	24.7	0.6	20.6	0.4	23.1
household responsibilities other than child care	0.4	31.7	1.2	39.7	0.8	34.9
health related reasons	57.3	24.9	37.7	17.6	47.3	21.9
no financial need	0.3	0.4	3.2	1.0	1.8	0.7
others	18.0	12.8	17.7	10.3	17.9	11.8

Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Table 5: Percentage Distribution of Men and Women Workers by Status of Employment – Rural and Urban – Age (15 – 59 years)

Employment Status	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
Own account Worker	39.8	30.6	26.3	26.8	35.7	29.9
Employer	3.4	0.6	6.5	1.0	4.3	0.6
Unpaid Family Helper	13.2	42.1	4.7	13.3	10.6	36.4
Regular Worker	17.3	8.3	48.8	50.9	26.9	16.8
Casual Labour	26.3	18.4	13.7	8.1	22.4	16.3
2022-23						
Own account Worker	41.3	27.2	26.4	25.5	37.2	26.9
Employer	3.2	0.4	6.0	1.4	4.0	0.6
Unpaid Family Helper	11.8	42.9	4.7	12.4	9.8	37.2
Regular Worker	15.6	8.5	49.2	52.3	24.8	16.8
Casual Labour	28.2	21.0	13.8	8.5	24.2	18.6
2021-22						
Own account Worker	41.5	24.4	28.3	25.3	37.7	24.6
Employer	2.4	0.6	4.6	0.8	3.1	0.6
Unpaid Family Helper	12.1	42.6	4.6	12.3	9.9	36.4
Regular Worker	16.1	8.5	48.0	51.7	25.4	17.4
Casual Labour	27.9	23.9	14.4	9.9	23.9	21.0
2020-21						
Own account Worker	43.3	21.4	29.9	24.6	39.3	22.1
Employer	2.0	0.3	3.6	0.7	2.5	0.4
Unpaid Family Helper	11.8	42.5	4.6	12.2	9.7	36.2

Employment Status	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
Regular Worker	14.9	9.5	47.1	51.4	24.5	18.2
Casual Labour	28.0	26.2	14.8	11.1	24.0	23.1
2019-20						
Own account Worker	43.1	19.6	28.6	22.0	38.5	20.1
Employer	1.8	0.5	4.0	0.7	2.5	0.5
Unpaid Family Helper	11.1	42.6	4.2	10.7	8.9	35.0
Regular Worker	15.1	10.0	49.2	56.0	25.9	21.0
Casual Labour	28.9	27.4	14.0	10.7	24.2	23.4

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Table 6: Percentage Distribution of Men and Women Workers by Different Industrial Sectors – Rural and Urban – Age (15 – 59 years)

Industry	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
Agriculture	45.7	76.1	3.9	11.3	33.0	63.2
Mining	0.3	0.0	0.4	0.1	0.4	0.1
Manufacturing	8.6	9.0	19.6	24.6	11.9	12.1
Electricity, gas & water	0.6	0.1	1.3	0.5	0.8	0.2
Construction	19.3	3.7	13.6	3.1	17.6	3.6
Trade, hotel & restaurant	11.4	3.9	26.1	14.4	15.9	6.0
Transport, other	6.6	0.2	13.8	5.2	8.8	1.2
	7.6	6.9	21.4	40.9	11.8	13.6

Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Table 7: Percentage Distribution of Workers by Occupation – Rural and Urban – Age (15 – 59 Years) – Usual Status

	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
Managers	2.0	0.4	9.6	3.7	4.3	1.1
Professionals	3.0	2.5	11.5	19.1	5.5	5.8
Technicians and Associate Professionals	1.5	1.3	5.7	4.0	2.7	1.8
Clerks/Clerical Support Workers	1.8	0.6	4.8	5.2	2.7	1.5
Service and Sales Workers	10.5	4.8	22.0	18.2	14.0	7.5
Skilled, Agricultural, Forestry and Fishery Workers	38.0	61.7	3.1	8.0	27.4	51.0

	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
Craft and Related Trade Workers	10.9	7.7	17.0	17.8	12.8	9.7
Plant and Machine Operators and Assemblers	7.3	0.3	11.3	1.4	8.5	0.5
Elementary Occupations	25.2	20.5	15.0	22.7	22.1	21.0

Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Table 8: Percentage of Men and Women Workers Receiving Job Contract – All India – Age (15 – 59 years) – Usual Status

Job contract	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
No written contract	85.1	84.8	64.2	63.8	77.0	77.4
1 year or less	2.4	1.9	6.8	6.7	4.1	3.6
more than 1 and less than 3	2.0	1.6	5.2	5.5	3.2	3.0
more than 3 years	10.6	11.6	23.9	24.0	15.7	16.0
2022-23						
No written contract	87.3	85.9	64.6	62.4	79.2	78.3
1 year or less	2.1	2.4	6.8	7.0	3.8	3.9
more than 1 and less than 3	1.7	1.3	5.2	6.9	3.0	3.1
more than 3 years	8.9	10.5	23.4	23.8	14.0	14.8
2021-22						
No written contract	87.2	85.0	68.3	65.7	80.2	78.7
1 year or less	2.1	4.0	6.3	7.2	3.7	5.1
more than 1 and less than 3	1.4	1.5	4.2	5.2	2.5	2.7
more than 3 years	9.3	9.5	21.2	21.9	13.7	13.6
2020-21						
No written contract	84.7	70.9	70.5	67.3	78.3	69.1
1 year or less	3.8	9.8	6.2	6.7	4.8	8.3
more than 1 and less than 3	1.6	2.4	3.8	4.2	2.5	3.3
more than 3 years	10.0	17.0	19.6	21.8	14.3	19.4
2019-20						
No written contract	86.2	73.7	72.6	71.0	79.8	72.2
1 year or less	3.2	6.5	6.2	6.6	4.6	6.5
more than 1 and less than 3	1.5	2.1	2.9	3.8	2.1	3.1
more than 3 years	9.1	17.8	18.4	18.6	13.5	18.2

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Table 9: Percentage of Men and Women Workers having Social Security Benefits – All India – Age (15 – 59 years)

Social Security Benefit	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
Eligible	16.4	12.6	41.2	38.5	25.9	21.8
Not eligible	80.9	86.0	57.7	60.6	72.0	77.0
Not known	2.7	1.4	1.1	1.0	2.1	1.2
2022-23						
Eligible	13.9	11.4	40.1	40.0	23.2	20.7
Not eligible	83.4	87.0	58.2	58.7	74.5	77.8
Not known	2.7	1.6	1.7	1.3	2.4	1.5
2021-22						
Eligible	14.4	10.3	38.3	39.4	23.2	19.9
Not eligible	80.1	86.1	58.8	58.3	72.2	77.0
Not known	5.5	3.6	3.0	2.3	4.6	3.2
2020-21						
Eligible	17.6	21.7	37.6	39.5	26.6	30.4
Not eligible	78.2	76.7	59.3	58.3	69.7	67.7
Not known	4.2	1.7	3.1	2.2	3.7	1.9
2019-20						
Eligible	16.9	21.3	36.9	38.2	26.3	30.6
Not eligible	78.3	75.5	58.7	58.6	69.1	66.2
Not known	4.8	3.2	4.5	3.2	4.7	3.2

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Table 10: Labour Force Participation Rate by General Education Level of Men and Women – All India – Age (15 – 59 years)

Sex	Rural + Urban							
	Not literate	Literate upto primary	Middle	Secondary	Higher secondary	Diploma/ certificate	Graduate	Post graduate & above
2023-24								
Male	94.1	94.7	83.8	70.4	68.1	92.7	91.3	96.8
Female	64.1	55.4	39.5	30.1	25.5	59.6	39.7	53.4
2022-23								
Male	94.5	95.4	83.1	69.0	66.6	92.2	90.2	96.4
Female	55.0	45.3	34.2	26.8	23.0	54.4	36.8	51.8
2021-22								
Male	93.2	93.8	82.2	68.8	64.4	90.5	89.5	96.5
Female	51.1	42.4	28.5	20.9	19.7	56.6	34.4	47.4
2020-21								
Male	94.7	93.6	81.5	68.9	62.0	89.0	88.0	94.7
Female	49.7	41.6	29.0	21.0	18.2	51.4	32.3	48.7
2019-20								
Male	93.7	93.4	81.2	68.9	62.5	88.3	87.0	94.4
Female	44.9	35.7	25.7	19.4	17.5	48.4	33.3	49.2
2018-19								
Male	92.9	93.4	80.9	66.2	60.7	86.7	86.7	94.4
Female	35.4	29.7	20.4	15.8	13.9	49.1	29.7	47.9
2017-18								
Male	93.7	92.6	80.3	67.0	59.9	83.5	85.8	94.4
Female	33.9	26.9	18.1	15.1	13.6	48.6	30.2	47.8

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Table 11: Labour Force Participation Rate by Technical Education Level of Men and Women – All India – Age (15 – 59 years) – Usual Status Rural+Urban

	Rural				Urban				Rural + Urban			
	No technical education	Have technical degree	Below Graduate	Graduate and above	No technical education	Have technical degree	Below Graduate	Graduate and above	No technical education	Have technical degree	Below Graduate	Graduate and above
2023-24												
Male	83.9	94.4	92.6	96.9	80.4	95.9	94.0	93.9	82.9	95.5	93.2	95.1
Female	51.0	61.5	69.2	64.7	29.1	64.0	59.6	64.7	44.6	63.2	64.4	64.7
2022-23												
Male	83.9	95.5	92.5	92.5	79.3	94.3	93.2	96.6	82.6	94.6	92.8	94.7
Female	44.0	60.7	58.8	66.5	26.1	65.8	54.8	63.6	39.2	64.2	57.0	64.7
2021-22												
Male	81.8	94.0	92.8	90.7	79.9	93.6	92.8	91.9	81.3	93.7	92.8	91.4
Female	39.0	59.2	62.2	66.7	24.6	60.9	55.8	65.5	34.9	60.4	59.3	65.8
2020-21												
Male	81.1	91.3	89.5	91.7	79.9	93.2	89.8	94.1	80.8	92.5	89.7	93.1
Female	39.0	54.0	55.3	61.0	24.0	59.1	56.0	64.2	34.6	57.6	55.6	63.0
2019-20												
Male	81.3	91.7	90.5	92.9	79.7	92.2	87.5	92.3	80.8	92.1	88.9	92.5
Female	35.2	55.6	52.0	62.3	23.7	64.4	57.2	61.1	31.7	62.3	54.9	61.5

Source: Calculated from Periodic Labour Force Survey Data, 2019-20 to 2023-24

Table 12: Percentage distribution of persons in the age group 15-59 years who received formal Vocational/technical training by field of training for each broad usual status (ps+ss) Rural +Urban

Field of training	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
aerospace and aviation-1			0.1	0.0	0.0	0.0
agriculture, non-crop based agriculture, food processing-2	0.9	0.3	0.3	0.2	0.6	0.2

Field of training	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2023-24						
allied manufacturing- gems and jewelry, leather, rubber, furniture and fittings, printing-3	0.4	-	0.3	0.2	0.4	0.1
artisan/craftsman/handicraft/creative arts and cottage based production-4	0.4	1.9	0.4	1.9	0.4	1.9
Automotive-5	2.4	-	3.8	0.0	3.1	0.0
beauty and wellness-6	0.0	6.3	0.3	8.0	0.2	7.2
chemical engineering, hydrocarbons, chemicals and petrochemicals-7	0.5	-	0.8	0.1	0.6	0.1
civil engineering- construction, plumbing, paints and coatings-8	3.5	0.3	3.2	0.8	3.3	0.6
electrical, power and electronics-9	14.7	0.8	12.3	1.1	13.6	0.9
healthcare and life sciences-10	3.9	6.1	5.0	5.8	4.4	5.9
hospitality and tourism-11	0.6	1.0	1.1	0.9	0.8	1.0
iron and steel, mining, earthmoving and infra building-12	1.4	0.1	0.7	0.1	1.1	0.1
IT ITeS-13	36.2	24.6	37.8	31.9	37.0	28.4
Logistics-14	0.1	0.1	0.2	0.1	0.2	0.1
mechanical engineering-capital goods, strategic manufacturing-15	3.7	0.2	4.9	0.2	4.3	0.2
media-journalism, mass communication and entertainment-16	0.5	0.0	1.0	0.3	0.7	0.2
office and business related work-17	6.3	4.2	6.8	6.9	6.5	5.5
Security-18	0.8	-	0.8	0.1	0.8	0.1
Telecom-19	0.3	0.1	0.6	0.2	0.4	0.1
textiles and handlooms, apparels-20	1.4	32.6	1.7	23.0	1.5	27.6
work related to childcare, nutrition, pre-school and crèche-21	1.8	2.9	0.7	2.3	1.3	2.6
Other-99	20.6	18.7	17.2	16.2	19.0	17.4

Source: Calculated from Periodic Labour Force Survey Data, 2023-24

Table 13: Percentage Distribution of Urban and Rural Household-Level Digital Access (All India)

Indicator	Rural	Urban
Households with at least one smartphone	82.1	91.3
Households with internet access at home	83.3	91.6

Source: CMS:T 2025, MoSPI

Table 14: Percentage Distribution of Men and Women Access to Mobile and Internet (Age 15+, by Gender & Area), Percentage

Indicator	Rural		Urban	
	Male	Female	Male	Female
Used mobile in last 3 months	89.5	76.3	90	86.8
Own a mobile phone	80.7	48.4	90	71.8
Used internet in last 3 months	72.1	57.6	80	74
Sent messages with attachments	67.2	50.9	70	65.8

Source: CMS: T, (GoI, 2025)

Table 15: Percentage distribution of Men and Women ICT Skills – Messaging with Attachments (Age 15–29Years)

	Rural		Urban	
	Male	Female	Male	Female
2022–23	81	66.1	90.7	83.6
2025	87.7	78.7	91.1	86.2

Source: CMS: T 2025 vs CAMS 2022-23, (MoSPI)

ISBN: 978-93-57793-80-3

V.V. Giri National Labour Institute is a premier institution involved in research, training, education, publication and consultancy on labour and related issues. Set up in 1974, the Institute is an autonomous body of the Ministry of Labour and Employment, Government of India. It is committed to establishing labour and labour relations as a central feature in the development agenda through:

- Disseminating knowledge, skills and attitudes to major social partners and stakeholders concerned with labour and employment;
- Addressing issues of transformations in the world of work;
- Undertaking research studies and training interventions of world class standards; and
- Building understanding and partnerships with globally respected institutions involved with labour.

V.V. Giri National Labour Institute
(An Autonomous Body of Ministry of Labour and Employment, Government of India)
Sector 24, NOIDA-201307, Uttar Pradesh, India

Website: www.vvgnli.gov.in