SOUTHERN VOICE

Southern perspectives. Global debates.

OCCASIONAL
PAPER
SERIES
N°
61

Will women be a part of India's future workforce? A quest for inclusive and sustainable growth in India

Meena Nair
Kritika Shah
Aparna Sivaraman

OCCASIONAL
PAPER
SERIES
N°
61

Will women be a part of India's future workforce? A quest for inclusive and sustainable growth in India

Meena Nair
Kritika Shah
Aparna Sivaraman

Publisher

Southern Voice

Website: www.southernvoice.org

E-mail: info@southernvoice.org

First Published May 2020

Disclaimer: The views expressed in this study are those of the authors alone and do not necessarily reflect the views of Southern Voice or any other organisation(s) with which the authors are affiliated.

ISSN 2307-9827 (Online)

ISSN 2307-681X (Print)

Preface

Southern Voice's flagship initiative on the State of the Sustainable Development Goals (SVSS) has generated country-level, evidence-based analysis to enrich the global dialogue on the 2030 Agenda. SVSS is neither a typical data-driven analysis of progress nor a traditional monitoring exercise of Sustainable Development Goals (SDGs). Instead, through this research initiative, we seek to identify the 'second-generation' challenges of the global agenda along with the policy responses to address them.

Our cross-country and regional analyses show that, on the one hand, national governments have made discernible progress in designing policy frameworks aligned with the Agenda. The governments have recognised the importance of not leaving the most vulnerable behind. On the other hand, weak coordination among relevant stakeholders and lack of horizontal coherence remain as challenges in achieving the Goals. Silo approaches continue to undermine national governments' ability to address systemic problems and create the necessary conditions to end poverty for all. Paucity of financial resources, along with no changes in the allocative priorities, are symptomatic of most of the developing countries' drive towards SDGs.

With these challenges in mind, the SVSS report identifies three layers of critical action and analysis. First, we explore who is potentially excluded from deriving the benefits of SDG delivery within the country's contextual realities. Second, we recognise that the Goals are not necessarily additive (even within a holistic agenda), and delve into the links among Goals and their interconnections, so as to maximise their synergies and fend the trade-offs. Third, we explore the implications of the current conduct of the global institutions and policies for the national efforts to implement SDGs.

This study explores India's low and declining female labour force participation which presents a challenge to India's journey to achieving the 2030 Agenda, particularly in SDG 4, 5 and 8.

We hope that this piece of Southern Voice's research will enlighten the thought process of the policy community and development practitioners in their efforts towards a fuller realisation of the 2030 Agenda.

Debapriya Bhattacharya, PhD
Team Leader, SVSS
Chair, Southern Voice and Distinguished Fellow, CPD

Acknowledgement

This country case study is an important step forward for India on its path towards the 2030 Agenda, and at a point of inflexion with respect to its development, given its recent status change to a low-middle income economy.

We would like to extend our sincere thanks to the Southern Voice Secretariat and Centre for Policy Dialogue, Dhaka—Bangladesh for their financial support and critical review during the development of this country case study. As an organisation, the Public Affairs Centre (PAC) has been privileged to participate in a cross-country effort to understand the Sustainable Development Goal progress within the Global South.

PAC's Centre for Open Data Research was instrumental to completing the data analysis for this study, a sizeable feat given the novel nature of inferential statistical analyses in the policy field. The team would also place on record our thanks to Ms Udita Dutta for her contribution to the development of the questionnaire and to Dr Annapoorna Ravichander, Akash Vadanan, J Mary Pushpa Kanthi, Priyanka Agarwal, Hari Dilip Kumar, Prakash and Poondla Karthik for assisting in the field visits.

Most importantly, we are indebted to the PAC leadership, G. Gurucharan (Director) for his guidance from the conception to delivery stages of this project. Last but not least, it was important for this study to surface the grassroots voices of India through a data-driven primary survey. To this end, this study could not be possible without Kantar Public's partnership in collecting this primary data, helping to echo the hidden voice of Indian women. And, lastly to all the women respondents who responded to our questions, honestly and with equanimity; we hope that spirit never extinguishes!

Abstract

This study examines India's low and declining female labour force participation in the context of Sustainable Development Goals (SDGs) 4 and 8, adapting the Rao-Kelleher Gender Framework to understand structure and agency issues impacting women. A mixed-method research approach was employed, with primary data from three districts of India, with different levels of female workforce participation, analysed to expose barriers to, and enablers of, labour and skilling. The study focuses specifically on the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) national skilling scheme. The study found that while the level of education and participation in a skilling program are not strongly linked to a woman's decision to join the workforce, factors such as marriage, safety during travel, and exposure to vulnerabilities from the informal/unorganised market were significant in female workforce participation. Findings show that gender-biased beliefs and norms within the household regarding menstruation and post-marital gender roles present important barriers. They constrain women's agency and choice, with decisions which are instead determined by household dynamics and workplace and societal structures.

Authors

Meena Nair is the head of research at the Public Affairs Centre (PAC), Bangalore. She has a PhD in urban social geography from Jawaharlal Nehru University.

Kritika Shah is a team lead at the Public Affairs Centre (PAC), Bangalore. She has a Bachelor's degree in economics from New York University.

Aparna Sivaraman is a programme officer at the Public Affairs Centre (PAC) and part of the project team studying the causes of India's declining female labour force.

Content

List of equations

List of figures

List of tables

Acronyms and abbreviations

4IR	Fourth Industrial Revolution
CFA	Confirmatory Factor Analysis
CRC	Citizen Report Card
DDU- GKY	Deen Dayal Upadhyay Grameen Kaushal Yojana
EFA	Exploratory Factor Analysis
FLFPR	Female Labour Force Participation Rate
GDP	Gross Domestic Product
LFPR	Labour Force Participation Rate
MSDE	Ministry of Skill Development and Entrepreneurship
NSSO	National Sample Survey Office
OBC	Other Backward Castes
PAC	Public Affairs Centre
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
PSU	Primary Sample Units
SC	Scheduled Caste
SDG	Sustainable Development Goals
SEM	Structural Equation Modelling
SHG	Self Help Groups
ST	Scheduled Tribe
SVSS	Southern Voice State of the SDGs
UNDP	United Nations Development Programme
UPSS	Usual Principal Subsidiary Status

Will women be a part of India's future workforce? A quest for inclusive and sustainable growth in India

Meena Nair
Kritika Shah
Aparna Sivaraman

Introduction

India is today one of the fastest-growing economies in the world. Yet, chronic agrarian distress, widespread malnutrition, poor school education outcomes, and growing inequality indicate that the foundations of progress remain fragile. The UNDP Human Development Report (2019) ranks India 129 out of 189 countries surveyed. The 2020 Global Nutrition Report shows that more than one in three children under five are stunted (approximately 38%), while one in two women of reproductive age is anaemic (approximately 51%). Over 92% of the working population are employed in the unorganised sector, leaving them out of any form of social security and protection. The World Inequality Report (2018) points to the unconscionable reality that the top 1% of earners receive 22% of income. There is, therefore, an urgent need to prioritise equity and inclusion in India's development strategy. Additionally, the severe mismatch between the supply of, and demand for, jobs threatens to turn a demographic dividend into a demographic disaster.

In India's quest for inclusive and sustainable growth, poverty, politics, and power matter. Work cannot be understood without examining how gender is embedded in all social relations. To understand women's exclusion and gender inequality, the political economy of development must be understood. The falling Female Labour Force Participation Rate (FLFPR) is a cause for concern in India's development trajectory. India has among the lowest FLFPR in the world, standing at approximately 43% in 2004–2005 for women 15 years old and above. By 2009–2010, this rate had fallen dramatically to approximately 33%, declining further to 31% in 2011–2012. Estimates from the 2018 Periodic Labour Force Survey (NSSO, 2018) peg FLFPR at approximately 23% in 2017–2018. This compares to 80% in Nepal, 58% in Bangladesh, and 35% in Sri Lanka. India ranks 120 on FLFPR among 131 countries (World Bank, 2018).

From 2004-2018, the share of working-age women who work or actively seek work declined by more than 10 percentage points, particularly in rural areas (falling from 49% to 36%). Today, in urban areas, only one in five working-age women are in the labour

force. Raising this rate is a high priority because it promotes women's empowerment and improved outcomes for children—core development objectives in their own right (Gerdeman, 2018). Full and productive employment also serves as a growth multiplier. GDP growth could be augmented by 1.5% if India were to halve its FLFPR gap with Nepal (World Bank, 2011). A study by McKinsey (2015) has estimated that if India were to close this FLFPR gap by 2025, 70 billion USD could be added to the economy. Additionally, the non-economic implications of increased participation are enormous. It would lead to economic and social empowerment of women, giving them greater voice and agency individually and at the community level. Such inclusive and empowered growth would also reflect the essence of the SDG framework—inclusive and sustainable development.

Many studies have attempted to explain this decline in the FLFPR. As family incomes rise, women tend to stop working since needs are being met by male incomes. Women earning incomes are seen as a stop-gap response, not a permanent solution. Additionally, unequal access to education for women places them on a lower level than men when it comes to employment opportunities. While rising incomes and low education levels can account for some decline in the FLFPR, evidence points to scarce jobs and gendered social norms as severely constraining women's agency, mobility and work (Chaudhary & Verick, 2014). Labour market inequality and discrimination is far more significant than mere numbers. It encompasses complex issues, including the quality of jobs, the gender wage gap, the higher presence of women in the informal economy, and the feminisation of work (Chaudhary & Verick, 2014). The World Bank has highlighted five critical elements of the political economy of women's work: access to and control over resources; freedom of movement; freedom from violence; decision making over family formation; and equal access to skills and employment (World Bank, 2011). In a patriarchal system, poverty and gender inequality coalesce, disproportionately burdening women and causing education inequality, health poverty, time poverty, and employment discrimination (Nussbaum, 2000). Given that more than 80% of employment in the manufacturing sector (a large employer of women) is informal, the '3D' (dirty, demeaning and dangerous) nature of such employment is unsustainable, despite any economic benefits. Women engaged in these livelihoods do not possess the skills to switch jobs or sectors, thus impeding labour mobility. This is exacerbated by the lack of geographic mobility arising from safety concerns during travel and outside the home, curbing the employment opportunities available to women (Gustafson, 2006).

On its current trajectory, it is unlikely that India will achieve SDG targets such as full and productive employment and decent work for all women (SDG Target 8.5), ensuring equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university (SDG Target 4.3), and the recognition of unpaid care and domestic work (SDG Target 5.4). If gender issues are not adequately

addressed, sustainable and inclusive growth will be seriously threatened. The challenge of ensuring gender inclusivity relates to two fundamental socio-economic processes: poor learning outcomes and unemployment. While there is literature that better educational outcomes will lead to higher participation of women in the labour force, there is a need to understand the actual impact of education on the decision of women to participate in the workforce. The pace and direction of India's progress in its pursuit of SDG 8 (decent work and economic growth) and SDG 4 (quality education), will depend on how soon and resolutely it addresses this challenge.

This country case study aims to understand the barriers and enablers of female participation in the workforce. It interrogates the declining FLFPR from the labour supply-side and the perspective of Indian women. Given India's recent emphasis on skilling, this study assesses the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), a national skilling programme focussed on attaining SDGs 4 and 8. By collecting data from households and PMKVY skill centres, this study attempts to identify underlying reasons for low FLFPRs in three districts in India: Coimbatore (Tamil Nadu), Saharanpur (Uttar Pradesh), and Mandi (Himachal Pradesh). A preliminary analysis concludes that women might not be primary decision-makers in issues of labour participation. Women's agency is impeded by limited access to resources and infrastructure, such as: appropriate education and skills, safe transport, decent working conditions, decent pay, and roles in family decisions. While informal structures and norms restrict mobility, formal norms also foster unsuitable working conditions for women. In this study, both the level of education and participation in the PMKVY skilling program was not a decisive factor in fostering women's labour participation or mobility. While this study sheds some light on the limitations of the PMKVY, further studies oriented towards societal and gender norms should be performed to investigate the reasons why the PMKVY did not play a significant role in enabling women to work.

Methodology

This study follows a mixed methodological approach, with a flexible research design. It includes a thorough primary data collection exercise to illuminate supply-side and demand-side issues faced by women concerning skilling and labour. This approach was chosen to holistically understand FLFPRs from the perspective of both labour supply (the role of society, education and informal institutions) and labour demand (the role of formal institutions and infrastructure). When collecting data, the demand- and supply-sides of the Indian labour market were interrogated separately to unearth barriers to, and enablers of, employment from the viewpoint of Indian women, (supply-side), and

the PMKVY (demand-side). Understanding how these enabling and constraining factors explain a woman's choice to work will help formulate targeted policy recommendations to increase the number of enablers, their impact, and effectiveness while correcting for barriers.

When examining the declining FLFPR in India, the following formula has been used:

Equation 1. Labour Force Participation Rate

$$Labour\ Force\ Participation\ Rate = \frac{Employed\ population + Job\ seeking\ population}{Working\ age\ population}$$

This measure of labour force participation accounts not only for employed people but also those who seek full-time employment.

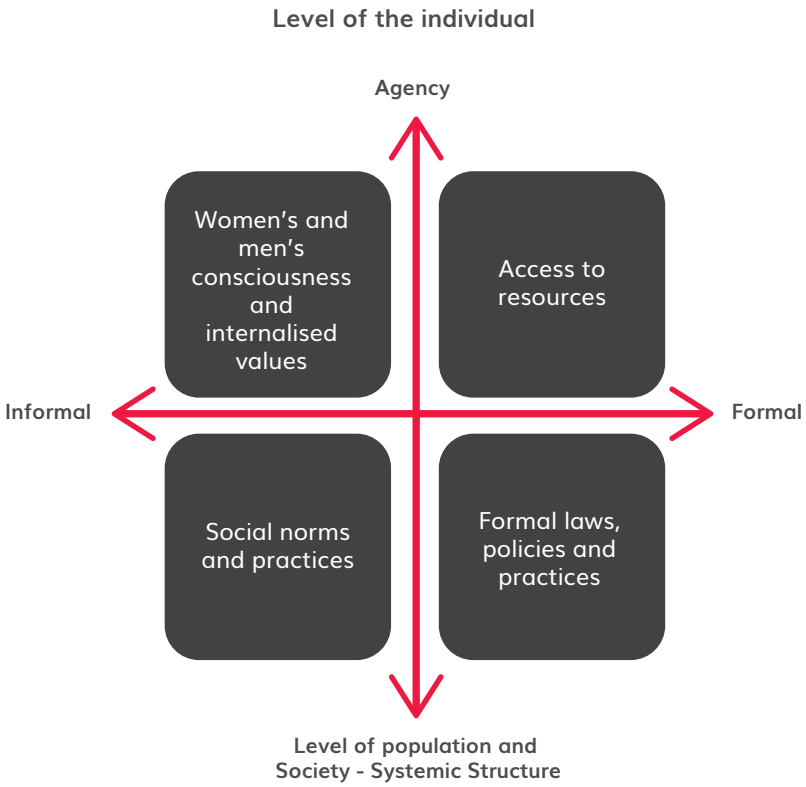
The supply-side examination of India's female workforce was informed by a household-level questionnaire based on the PAC's Citizen Report Card (CRC)[1] approach, an internationally acknowledged best practice social accountability tool. The questionnaire sought to understand issues of agency—defined at the individual level as one's ability to act independently, and structure, defined as formal and informal institutions, external to the individual but impacting their agency. According to the World Bank and gender specialists Aruna Rao and David Kelleher, structure and agency issues can enable labour mobility for women, a principle that aligns with the United Nations Convention on Elimination of Discrimination Against Women (Rao et al., 2016).

To understand the exact barriers to and enablers of labour and skilling, this study adopts the Rao-Kelleher Gender Framework (2001) to identify and categorise factors influencing gender-labour mobility. The framework is based on the following organisation:

- Quadrant I: Access to Resources
- Quadrant II: Consciousness and attitudes
- Quadrant III: Informal norms and practices
- Quadrant IV: Formal norms and practices

1 The Citizen Report Card (CRC) is a simple but powerful tool to provide public agencies with systematic feedback from users of public services. By collecting feedback on the quality and adequacy of public services from actual users, CRC provides a rigorous basis and a proactive agenda for communities, civil society organisations, or local governments to engage in a dialogue with service providers to improve the delivery of public services. See Appendix 2.

Figure 1. Rao Kelleher gender at work analytical framework (2001)



Source: Bebasari & Williams (2016).
Elaborated by the authors.

The identified structure-agency factors have been used to build a supply-side household questionnaire for women. For ease of administration, the questionnaire groups factors into respondents' life-stages, i.e. childhood, education, marriage, and so on. Data collected is also categorised into overarching themes, including safety and security, family dynamics, health, and involvement in self-help groups. Each parameter has been sorted into the Rao-Kelleher framework quadrants. Aside from this, the questionnaire considered respondents' profiles multi-dimensionally, collecting data on age, religion, caste, and income to help identify vulnerabilities vis-à-vis labour market inclusion. The questionnaire also addressed unique features of India's labour market; the informal sector, the feminisation of employment, and the emphasis on unpaid work. Respondent eligibility for the questionnaire was women who were 18 years or older. In the event of multiple 18-year-old women (or older) in a household, the youngest one answered the questionnaire, to focus on current and future education, skilling, and labour market developments in India.

To understand labour demand, this study considers employability through the prism of the PMKVY, a government-led initiative run by the Ministry of Skill Development and

Entrepreneurship (MSDE). Designed to achieve the skill development targets of SDG 4, it has the mandate to help 10 million Indian youth take up industry-relevant skill training to secure a better livelihood. The PMKVY is an important element of the research because it has been proclaimed as the solution to India's unemployment woes and provides the opportunity to address gender inclusivity in skilling and employment. The demand-side of this study thus considers whether PMKVY guidelines are effectively followed at skill training centres in the three geographical areas of focus, via an outcome-based checklist with questions about the scheme's objectives and implementation.

For primary data collection, this case study samples the population statistically, geographically, and culturally, given the population's diversity in India. Three districts with female worker populations at the 1st, 50th and 99th percentiles were chosen after 640 (2011 census) districts of India were statistically normalised. In this way, the effects of skilling infrastructure on female workforce participation were examined. To control for structural differences, rural and urban areas of the district were treated as separate geographies. Hence, three geographies of focus were identified (Table 1). The equation for female worker population is shown below:

Equation 2. Female worker population rates

$$\frac{Employed\ females * 1000}{Total\ female\ population}$$

Table 1. Geographies of focus

Percentile / Female Worker Population (Per 1000)	District/ State	Geographies of Focus
0.78 / 77.3206	Saharanpur / Uttar Pradesh	Saharanpur (Rural)
		Saharanpur (Urban)
49.69 / 280.446	Coimbatore / Tamil Nadu	Coimbatore (Rural)
		Coimbatore (Urban)
98.91 / 548.5358	Mandi / Himachal Pradesh	Mandi (Rural)
		Mandi (Urban)

Source: Census of India (2011).
Elaborated by the authors.

A sample of 800 respondents per district (400 for the rural geography; 400 for the urban geography) was decided upon, totalling 2400 respondents, based on the average size of the districts and using the 95% confidence interval and 5% confidence level. Multistage sampling was used in each district to select households. Systematic random sampling was used to identify primary sample units (PSU) of villages for rural geographies, while the PSU for urban geographies was the district headquarters. To choose households, random endpoints across the PSUs were assigned, and systematic random sampling was undertaken, intervals for which were decided based on the density of the settlements.

For the demand-side study, PMKVY training centres were selected through random sampling. The questionnaire (see Appendix 3) looked at barriers to, and enablers of, skilling. By using a mixed-method approach, such as textual and statistical analysis, the results of the questionnaire allowed the development of the profile of Indian women who are most vulnerable to being left behind.

To identify the enablers of, and barriers to, labour participation, the relationship between demand-and supply-side parameters was established using factor analysis. Factor analysis is a statistical method used to uncover the underlying structure of large variable sets and help identify latent factors or 'mental models' that group sets of observed variables. This helps shrink complex datasets into factors depicting similar response patterns. The loadings of a factor into its corresponding observed variables indicate the amount of variation in data they can explain. The mental models arising from factor analysis help identify patterns and explain the phenomena under question. Due to the large number of factors affecting the FLFPR, factor analysis was used to examine the influence of structure and agency issues on the rapidly declining FLFPR in India.

> **Potential enablers of, and barriers to, employment will affect Indian women's decision to participate in the labour market.**

First, an Exploratory Factor Analysis (EFA) was conducted to derive an exhaustive list of latent factors (henceforth referred to as mental models) that determine similar response patterns. This step helps condense the extensive list of demand and supply-side parameters to represent a smaller combination of indicators best explaining

female worker population rates across the geographies of focus. Next, a Confirmatory Factor Analysis (CFA) was used to arrive at the combination of factors best explaining the profile of working women and non-working women. This helps understand the factors that determine exclusion from the labour force. Finally, Structural Equation Modelling (SEM) was conducted to measure the relationship between the observed variables and mental models, using the current working status of the respondent as the dependent variable. This helps illustrate the current SDG synergies and trade-offs at play, informing national policy priorities.

Through their lifetime, potential enablers of, and barriers to, employment will affect Indian women's decision to participate in the labour market. This study analyses these at the life stages of childhood, education, livelihood, marriage, motherhood, and family dynamics. In addition, the overarching themes of safety, security, and health are used to categorise the Indian women most likely of being left behind on India's current path to SDG 8 achievement. CFA mental models and SEM results are supported by descriptive statistics to draw an empirically-driven picture of women most likely to be left behind, based on identified barriers to decent work and skilling.

Findings

The steady decline of the FLFPR highlights that India's female population are excluded from the country's economic progress. 66% of women surveyed had never been employed in their lifetime. In addition, approximately 80% were out of the labour force at the time of the survey. Ten dimensions were identified as most significant in determining labour participation rates, including education, livelihood, technology, safety, and skilling. These dimensions have been further examined to understand patterns of exclusion that may implicitly or explicitly emerge from the indicator and loading comparisons.[2] A summary of the main barriers to, and enablers of, decent work mapped against the Rao-Kelleher structure-agency framework can be found in Figure 3. Each barrier and enabler as it corresponds to the four Rao-Kelleher framework quadrants is explored.

The structure-agency framework and SEM techniques identified specific informal norms, the lack of formal structures, and obstructed access to labour-supportive resources as the most definitive factors excluding Indian women from the labour force. Marriage was the main reason for previously working women to quit their jobs

2 Final CFA findings and SEM for LNOB conclusions are in the technical note in Appendix 1.

(approximately 46%). There seems to be an innate societal priority on marriage and motherhood over employment and education, rather than an acceptance of the coexistence of both.[3] This illustrates that redefining gender roles is imperative for progress in the FLFPR, regardless of women's qualifications. Interestingly, the working status of respondents' parents in their childhood also played a role in their decision to work as an adult. Therefore, household dynamics must be taken into consideration when analysing the FLFPR.

Primary data analysis revealed that the posited link between greater educational outcomes and higher employment did not hold true in the context of the declining FLFPR. As outlined in the following section, the study showed that the level of education had limited bearing on women's decision to seek work.

A negative linkage was also observed between the FLFPR and restrictive socio-cultural practices surrounding menstruation. Though most women had access to menstruation supplies, norms restricting them from certain areas of the house, participating in activities with men, and touching others make it more difficult to leave home for work during menstruation. The general societal stigma around menstruation, therefore, needs to be debunked to boost the FLFPR.

Respondents noted that lack of access to safe transportation strongly affected their decision not to work. Without formal structures, such as enforced laws, company policies, or harassment response committees in place to prevent harassment, and informal structures, such as emotional support from colleagues, women may be dissuaded from work. Such harassment may be an informal practice that society is resigned to, persuading families to restrict female members from the workplace to protect them.

Positive attitudes about women at work were apparent in the majority of respondents, eliminating attitudes as a factor limiting agency. Economic factors such as salary, and social indicators of the historically oppressed, such as caste and religion, also did not have a significant impact on female labour force participation, emphasising the need for policy to focus on structure–agency barriers.

84.3% of women believed they could strike a work-life balance—there was no difference of opinion between currently working (approximately 87%) and non-working

3 Supplementary evidence suggests that since employment does not result in a reduction of domestic work for urban working women, it may render sustainable labour unfeasible (Ramu, 1989). Additionally, studies pointing to the correlation between a young Indian woman's status as newly employed and the risk of domestic violence at home rises by 80% compared to women who are unemployed in low-income communities, suggesting the prevalence of a gender-bias towards working women (Krishnan et al., 2009).

(approximately 84%) women. Similarly, 84% of female respondents felt women should work beyond the needs of household income, signalling that economic empowerment is a positively-held view by the majority. Among working women, 86% demonstrated this attitude, while 84% of non-working women did the same.

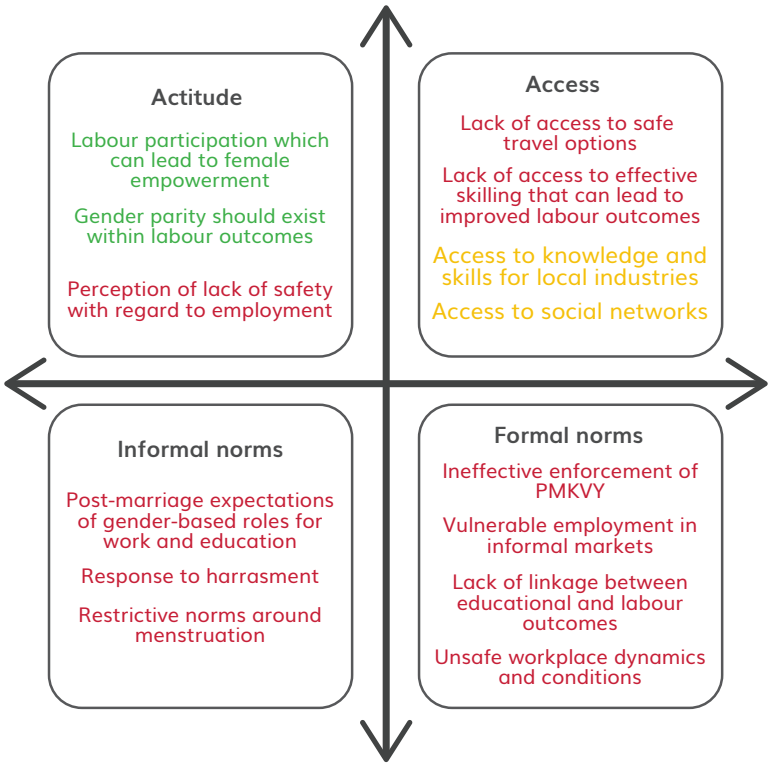
As for the PMKVY, skill centre-based demand-side variables did not have a significant relationship with livelihood choice. The scheme is not sufficiently significant to impact female labour force participation. It was hypothesised that education would be the most powerful enabler of labour, implying a synergy between SDGs 4 and 8, specifically between SDG Targets 4.3, 4.4, 4.5, and 8.5. However, primary data analysis revealed unrealised synergies between skill centre outcomes and the FLFPR. While education is, of course, necessary for gaining better opportunities, it does not seem to be a strong driver of a woman's decision to be employed. This could be attributed to the newness of the PMKVY, but the scheme needs to encourage labour participation better and make specific provisions for women. Without these improvements, all working-age Indians, men and women, may get left behind from achieving gainful employment in the 4IR, due to low employability. Furthermore, no potential synergies were found between SDG Targets 4.1 and 4.2 with 8.5.

Evaluating links between SDGs 4, 8, and others reiterated the need for better governance of urbanisation, water and sanitation, health, and poverty. SDG 8 (decent work and economic growth) has unrealised synergies with SDG 5 (gender equality), demonstrating that India's path to full employment may be at odds with its agenda for social inclusion. If women are not given the agency to decide to join the labour market, thus truly signifying gender inequality, and not provided with decent opportunities for employment, then the advancement in SDG 8 is not commensurate with an advancement in SDG 5. Macroeconomic factors play no role in determining the FLFPR with market-related SDGs, such as SDG 9 (industry, innovation and infrastrucutre), showing unfulfilled synergies with SDGs 4 and 8. What this translates into is that initiatives to foster industry and innovation are not focussed on ensuring that women are not being disproportionately left behind.

Feminisation of the workplace affects prescriptions of gender roles, causing invisible yet strong labour market segmentation, leading to women being left behind. Emphasising gender equality results in encouraging traditionally feminine occupations while creating barriers to traditionally masculine occupations. In India, this has manifested in a feminised informal sector, where 94% of the workforce are women. (Geetika et al., 2011). The informal sector creates vulnerabilities in poor working conditions, loose contractual agreements, and low, unreliable wages, resulting in an abundance of '3D' jobs (dirty, dangerous and demeaning), especially in urban areas where non-agricultural work prevails (Krishnan,

2015). This study confirms the hypothesis that the feminisation of India's informal market poses a serious threat, with approximately 56% of working women belonging to the informal sector. Thus, one could argue working women risk being left behind in the 4IR.

Figure 2. Influences (barriers / enablers) of structure and agency on female labour participation



Note. The colour codes are red: Currently shown as lacking (to ensure higher female labour force participation); green: Currently shown as progressing (to ensure higher female labour force participation); yellow: Currently shown as neither lacking nor progressing but needed (to ensure higher female labour force participation).
Elaborated by the authors.

Reasons for quitting their jobs as given by 13% of the 2503 respondents who had stopped working were closely examined. They included an increase in household income, having children, and other socio-economic changes and pressures. While having children resulted in 22% of previously working women quitting their jobs, 46% quit because they got married.[4] This section will delve deeper into the implications of the findings discussed above.

4 The remaing 32% is divided, among others, between rising family incomes, safety and security, etc.

Marriage and motherhood

Being a wife is seen as an additional responsibility for working Indian women. Previous studies have found that employment does not reduce the domestic work wives or daughters-in-law (considering India's extended family structure) are tasked with (Fletcher et al., 2017). Thus, employment acts as an added burden for married women.

Additionally, the risk of domestic violence at home rises by 80% for young, newly employed women, compared to those who are unemployed in low-income communities. This suggests a gender-bias against working women by their husbands (Krishnan et al., 2010). The traditional role of the wife is as a homemaker, caretaker, and mother, not as a financially contributing worker, even amongst working couples (Dutta, 2020). This is further emphasised by the lack of support working women receive to gain upward labour mobility through avenues such as skilling. Only 46% of working women felt their families would financially support skilling, while the majority (57%) of non-working women also felt the same way. Markedly, demand-side issues of working conditions or lay-offs were insignificant in forcing women to quit.

Though motherhood was a significant reason women quit their jobs, motherhood was not a defining characteristic of the unemployed group. Unemployed and employed respondent groups had similar percentages of mothers. However, amongst the working group (excluding the self-employed), only 6% had access to sick leave and 8% to maternity leave. The working woman's significant presence in the informal labour market limits access to paid maternity leave and support in the form of crèches, lactation rooms, and regular working hours. These labour conditions are especially discriminatory towards poor women in urban areas who need employment to survive (Otobe, 2017). Thus, the informal labour market is a barrier to sustainable female labour force participation.

Education

Formal schooling has been hypothesised as the most powerful enabler of employment due to the mobility that qualifications grant. Yet, unlike in other comparable global South countries like Bangladesh, education shows no defining relationship with the economic participation of women in India (Klansen & Pieters, 2015). 19% of surveyed women currently working have graduate degrees, and above, 18% had either passed high school or had diploma level education, 30% dropped out after middle school, 17% had dropped out after primary school, and 16% were not literate. Similarly, of the women surveyed who have never worked, 18% had graduate degrees or above, 25% were high-school graduates, 32% were middle school dropouts, 12% were primary school dropouts, and 13% were illiterate. Nef, Sen, and Kling (2012) have argued that this effect,

especially amongst rural woman, is the "education effect," where women are occupied in pursuing higher studies in place of labour. However, the posited effects of higher education—better economic opportunities—are not realised. Instead, our findings reveal that higher levels of education are used to leverage better marriage prospects. Illiterate women still comprise 16% of employed women, but those with a high school degree or above seem to have one of the highest contributions to the unemployed group.

As previous studies have indicated, the male-female education participation gap in India has become "less dramatic than it once was" (Nozaki, Aranha, Dominguez and Nakajima 2009). However, sustainable participation in education must be questioned, with high rates of middle school dropouts. Additionally, education outcomes do not seem to influence women's decision to participate in the labour market. In the factor analysis, marriage and motherhood rather than barriers to education seemed to have an effect on labour force participation. Lastly, it was hypothesised that, with the onset of the 4IR and dynamic labour market demands, the PMKVY would enable women to work. But in fact, 59.2% of all women who were part of the primary study had not even heard of the scheme.

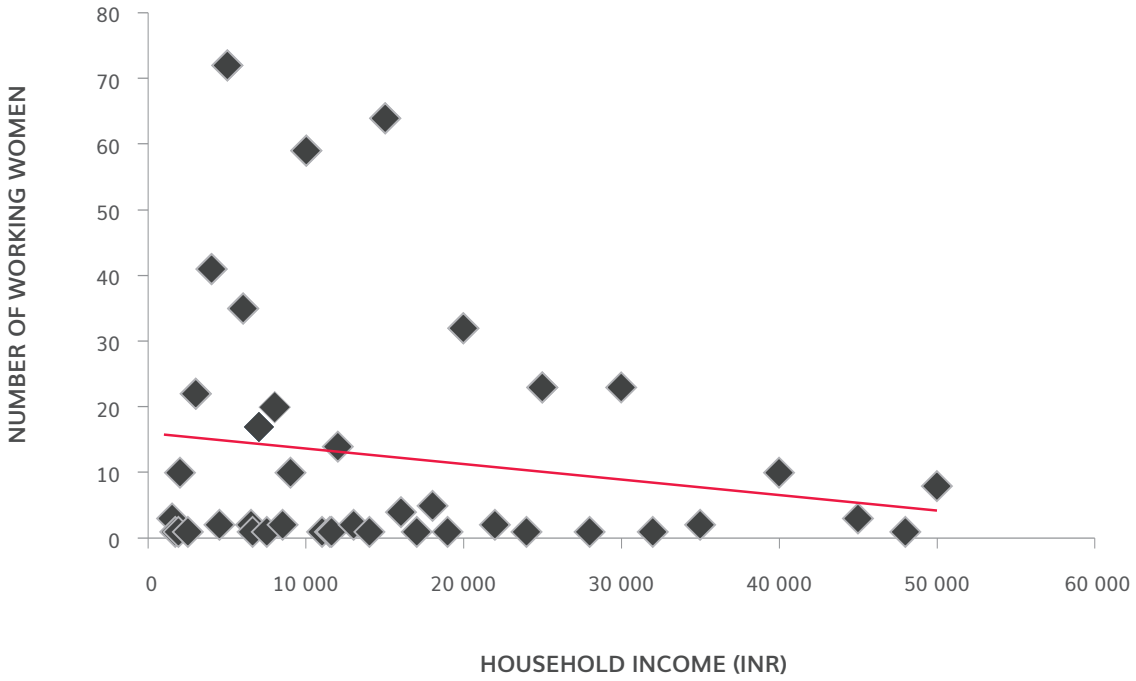
Sector of employment

Nearly one-fourth (23.4%) of the women surveyed worked in the agriculture and allied activities sector. This figure is lower than the national average; approximately 50% of India's workforce is involved in agriculture (Economic Survey, 2018). It is positive that fewer women surveyed work in this sector, given it has an unsustainable labour market, low crop yields, and is threatened by global warming and automation (FICCI and KPMG, 2015). Approximately 19% worked in manufacturing and 11% in domestic work. The 3D and informal nature of domestic and manufacturing work mean that women have little labour mobility, and their livelihoods are unsustainable (Krishna, 2015; Ghani, Kerr, & Segura, 2015). The third-highest percentage of jobs were in the wholesale, retail, trade work, hotels, and restaurants sector, at approximately 13%. Only 9% worked in finance, real estate or business activities. The image of urban women in traditional office settings, working jobs with minimal manual labour, thus does not apply to the majority of working women in India.

Level of family income

The number of working women in a household did not correlate with the salary amount. However, when considering the number of working women at various levels of household income, there was a slightly negative trend line (Figure 3). This indicates that women may enter the labour force due to income diversification pressures in lower-income households.

Figure 3. Number of working women at various levels of household Income



Source: Study findings.
Elaborated by the authors.

Working women enjoy greater economic autonomy in the household. 80% felt they could make purchases without consulting other family members, compared to 53% of non-working women. However, it is difficult to confirm whether a lack of agency is a barrier to, or a result of, participating or not in the labour force. Given the relationship between employment and economic autonomy in the household, non-working women may be excluded from economic agency and purchasing capacity. However, the familial structure does not seem to influence women to work. For example, the same proportion of working and non-working women live with their parents and parents-in-law.

Health

Restrictive norms around menstruation served as a barrier to work, as indicated by the SEM results. However, working women were 10% less likely to have restricted access to certain areas of the house and religious resources during menstruation. Though this may not limit their ability to work, it may increase the time needed to complete certain chores, which may curb the types of employment they can partake in. This is particularly so if work depends on accessing prohibited resources, or if it is inflexible in accomodating workaround menstruation.

Social identities

Caste and tribe identities have long been deemed oppressive in India, especially in accessing education, work, and quality of life. It was hypothesised that a disproportionately low number of scheduled caste and tribe women work due to wage discrimination and poorer labour outcomes imposed by the hierarchy of the caste system. However, Other Backward Classes (OBC) and Scheduled Castes (SC) (categorised as disadvantaged) were represented proportionately within currently working women. Approximately 34% of OBC women were currently working and represented 32% of the total sample. Similarly, 24% of SC women were currently working and represented 25% of the total sample. The effect of caste can be gauged from the level of reported job satisfaction. Approximately 27% and 25% working OBC and SC women respectively, were dissatisfied with their jobs, compared to just 15% of non-disadvantaged women. Findings show that rural women were more likely to be working than urban women. Work was potentially more feasible in urban areas, given access to supportive structures like transportation, available jobs, and social networks. But, in fact, rural women are more likely to be a part of India's labour force, with 23% of rural women currently working as compared to 18% of urban women working.

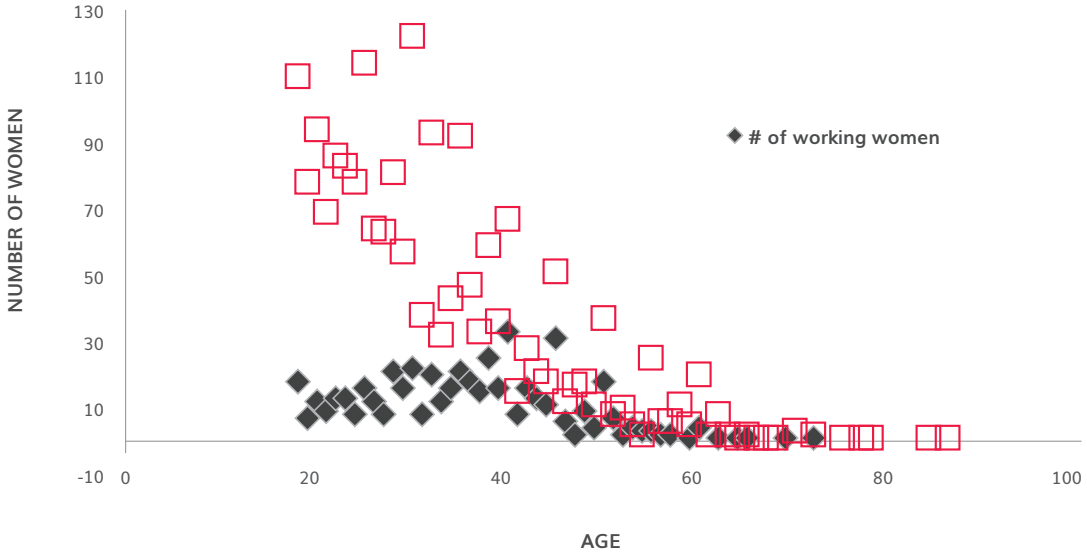
Caste and tribe identities have long been deemed oppressive in India, especially in accessing education, work, and quality of life.

Age

The average age of working women surveyed was 35.6 years. For non-working women, it was 31.7 years. This weakened the hypothesis that younger women participate more in the labour force, with labour participation diminishing approaching retirement. In figure 4, the distribution of non-working women by age skews much younger, with a mode of 30 years, compared to working women with a mode of 40 years.

There might be barriers and enablers to labour participation, faced by Indian women through the various stages of their lives, that may help to explain this trend of younger women not working. Further studies should be conducted to unveil what is behind this trend.

Figure 4. Working and non-working women by age



Source: Authors' survey.
Elaborated by the authors.

Working conditions and infrastructure

One important barrier for women is access to safe transport. Approximately 38% of respondents perceived that travel between the home and workplace was most unsafe. In fact, 39% of all women said they felt unsafe in all areas outside of the home. Regardless of crimes rates against women, the perception of danger in travel and outside the home discourages women from working or taking advantage of all opportunities for mobility in the workplace (Gustafson, 2006). As a result, work that requires travel (including a daily commute) may leave women behind.

A working woman is not likely to use her own vehicle to reach the workplace. Upwards of 80% of currently and previously working women took the bus (approximately 41%) or walked (41%) to work. Those living in areas with less safe public travel options or infrastructure may be left behind. More pointedly, of the women identifying transport as a barrier to working, approximately 52% cited lack of safety due to high crime rates as the main issue.

2% of currently and previously working women mentioned facing harassment (inclusive of mental, physical, sexual and emotional) at the workplace. While this is definitely an underreported figure, it still holds significance for female employment. Though there is scope for improvement for workplace regulations and structures to address these issues, safety stands as the single biggest barrier to access to work.

Family dynamics

Family structure—the number of siblings or their gender—did not play a part in deciding to work. Given that an individual's expectations of life are formed at an early stage, it was hypothesised that family perceptions on women working would play a significant role in defining later work choices as an adult. Approximately 26% of currently unemployed women said they were told to work towards employment in adulthood by a family member. For currently employed women, this was 34%. However, the labour participation of fathers seems to influence women to also work in their adulthood. Approximately 78% of current working women grew up with full-time working fathers, compared with 56% of non-working women. The same applies to the mother's labour force participation, with 31% of working women growing up with a working mother compared to 18% of non-working women.

Synergies and trade-offs

There are potential but unrealised synergies between access to education, skilling, and gender equality in terms of women's participation in the labour market. The employment of women can also realise good working conditions and transportation facilities (Target 11.2[5]), and agency to participate in the family business (Target 5.5[6]). There are also potential but unrealised synergies between the full participation of women in the workforce as well as job satisfaction (SDG Targets 8.5 and 4.4). The lack of quality skilling and training prevents the realisation of these synergies for both currently employed and unemployed women. Women nominated more skilling and on-the-job training as ways to improve job satisfaction, thereby also illustrating potential synergies between SDG Targets 8.3 and 4.3.

Inadequate infrastructure in training centres, such as accessible transportation, learning material in local languages, and day care may reduce the partici pation of women in skilling programmes. The audit of the skilling centres highlighted the absence of such enabling infrastructure. Many were not proximate to bus stops and lacked up-to-date equipment and learning material in local languages. Addressing these issues and improving access to training under the PMKVY to increase the employability of women is critical. This is particularly the case in light of the structural transformation

5 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

6 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life.

that the Indian economy is undergoing, shifting from agriculture to industry and service sectors—requiring the workforce to be provided with relevant skilling.

Findings from the study thus point towards potential but unrealised synergies between formal and informal on-the-job training and the employment of women. Women perceive that access to quality education and skills are enablers for employment opportunities (89% and 82% respectively) while their impact on the decision to participate in the workforce may not be as strong. If access to quality education and employability-driven skilling is expanded, especially to vulnerable lower-income households and minorities, in, the income gap between the rich and the poor can be reduced (Target 10.2[7]). Family pressures and attitudes towards motherhood and unpaid care work (Target 5.4) also manifest in unrealised synergies for women's employment. At present, women spend more time tending to their families as compared to engaging their skills in the labour market. Another unrealised synergy exists between inadequate access to healthcare facilities (Target 3.8[8]) and women's employment. Women who are not working are less aware of maternal health schemes and benefits, further highlighting this potential but unrealised synergy.

Findings revealed that women spend an average of 5 hours per day on unpaid care work, leaving little or no time to engage in paid work. Expecting women to manage domestic responsibilities and engaging in productive employment unfairly shifts the blame to women. Rather, the social construct that unpaid care work is the sole responsibility of women must be shattered. The fulfilment of this will also result in additional synergies such as reduced poverty across the population (Target 1.1[9]) as well as reduced income inequality (Target 10.1[10]). Through employment, women also become beneficiaries social protection systems such as pensions, paid sick leave (Target 1.3[11] and Target 10.4[12]), and maternity benefits.

---

7 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

9 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than USD 1.25 a day.

10 By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average

11 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.

12 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

Women's decision to work occurs at the intersection of social and economic pressures. The most prominent social factors are the impact of informal societal and gender norms, restricting women's agency to work. It can be concluded that a woman's decision to work is not currently hers to make. Systemic, patriarchal beliefs and limited support and resources at the household, workplace, and societal levels define the limitations of her role.

Conclusions and implications

This country case study found that the women most likely to be left behind lack access to formal resources at the workplace and are denied supportive familial conditions. Long-standing patriarchal notions of women's social role as caregivers play a far greater role in restricting the participation of women in the labour market. Additionally, women working in low skilled, precarious, and informal jobs are highly vulnerable to being left behind, particularly with the onset of the 4IR. Access to technology and labour-supportive benefits would facilitate more women to work. From the perspective of realising the 2030 Agenda, barriers include unsafe transportation, vulnerable working environments, lack of access to sanitation facilities, and poor infrastructure support for, and awareness of, vocational training opportunities. This is exacerbated by societal factors that put added pressure on women willing to work.

Reflecting problems identified in this study and the time required to implement sustainable, impactful solutions, recommendations have been divided into short, medium, and long-term opportunities for development. Short-term recommendations are transactional and may take 0–3 years for implementation, helping to improve FLFPRs by optimising existing policies. Medium-term recommendations may take 3–8 years to implement. Long-term recommendations will take longer than eight years to implement, and reflect the systemic nature of some deeper problems. Moreover, long-term SDG synergies will be maximised to build an inclusive and sustainable workforce that will support India's economic growth and meet 4IR challenges dynamically.

Short term

- Travel and safety are major interrelated issues preventing women from working. A market decentralisation strategy should be implemented at the national and sub-national levels. This can ensure that women are able to access jobs at the local level so that the issue of travel and safety is mitigated in the short term. Bangladesh has succeeded in improving women's labour participation, especially in rural areas, through the promotion of female entrepreneurship (Bhuiyan and

Abdullah, 2007). A South-South knowledge partnership to identify best practices to design such a program should be considered. To improve women's safety and perceptions of safety in travel in urban areas, women-only travel routes or areas must be designated. Currently, while large investments are being made to improve transportation infrastructure in urban India, they are currently "largely gender blind" (Shah, Vishwanathan, Vyas, and Gadepalli, 2017).

- The PMKVY has not been effective in influencing labour patterns in India. It must be amended to include the following enhancements to improved labour and skill development outcomes:

  - Courses must be designed based on the needs of the labour market. Beneficiaries must learn the skills needed to gain decent and sustainable employment. Stakeholder consultations with various employers must, therefore, be undertaken to impart relevant skills. To further support employability, sector-driven training syllabi must be agile enough to meet the labour market's dynamic skilling needs. Additionally, syllabi should be supplemented with employability components for trainees to transition to the labour market easily. These may include but are not limited to updated equipment, information, communication, and technology skill-building, soft skills for teamwork and communication, and financial literacy for business and personal finance management.

  - Placement procedures must be strengthened to ensure that beneficiaries are able to find opportunities to use their skills. This can happen through better public-private partnerships and multiple avenues for potential employer engagement through PMKVY centres.

  - To ensure sustainable, uniform and effective delivery of the PMKVY program across India, rigorous monitoring and evaluation mechanisms must be implemented.

- To specifically increase female participation in the PMKVY, the following measures should be considered:

  - PMKVY policy guidelines allow for female trainees to be compensated for travel, lodging expenses, and course fees. The PMKVY must implement these supportive structures for women.

  - Access to childcare and lactation rooms as well timetables suitable for women to balance household and childcare duties, need to be operationalised.

The PMKVY should enact measures to prevent gender-based safety issues at centres. Additionally, to increase female trainees' comfort level with their trainers, more female trainers should be deployed in courses.

- Industrial policy should encourage skilled work at home. Cottage and small-scale industries, where artisanal work is valued, must prioritise female employment. This kind of work may not be devalued with the onset of the 4IR, facilitating women's sustainable participation. Rural women will have difficulty accessing travel to the non-agriculture job market. Women should be supported to set up artisanal enterprises at home through credit for capital purchases, and supply chain mechanisms to deliver inputs and products to the home. By partnering with the Ministry of the Women and Child Development, the handicrafts industry can support these women to sell their handicrafts on the Mahila-E-Haat, a Women and Child Development initiative that creates an online product market for women entrepreneurs as part of the 'Make in India' initiative. Industries with artisanal work specific to India should be revived to generate employment in rural regions. One such programme in place that can more effectively include women is the scheme of fund regeneration of traditional industries, under the Ministry of Micro, Small, and Medium-scale Enterprises.

Medium term

- College graduates of all general education streams, including engineering and management, need to be skilled based on current and emerging labour market needs and industry knowledge (Padmini, 2012).

- The informal / unorganised market must be formalised. Structures that perpetuate negative labour outcomes, including unsafe working conditions, lack of social security benefits and welfare protection, and undependable wage payments must be eradicated. For example, in the Southern Indian state of Karnataka, the Karnataka State Unorganised Workers Social Security Board has been tasked with improving social security for the state's unorganised workers. Some of the ways the Board identified to formalise these markets include skills training of construction workers, formal certification of trainees, and contract design skills to negotiate terms and conditions with employers on their worksites.

- Social groups to help women gather and work collectively—especially in less-industrialised areas—must be created. In 1990, the National Bank for Agriculture and Rural Development initiated a scheme that allowed for 10–20 rural citizens to form intermediary financial committees. This scheme has enabled

women to become economically empowered and gain leadership skills, with over 80% of self-help groups (SHGs) being female. Moreover, improved school enrolment rates and nutrition levels can also be attributed to SHGs (Kaur and Kaur 2015). Industry policies need to facilitate the formation and institutionalisation of enterprise-based collectives for production and trade. Such collectives will allow women to overcome barriers to long-distance travel for work, making it an important enabler for work in rural areas.

Long term

- A long-term IEC campaign explaining the biology of menstruation and demystifying the process should be rolled out (Garg, Sharma and Sahay, 2001). This IEC campaign needs to be designed in a way that is not ignorant of potential religious or socio-cultural contexts of menstruation and yet, overcomes these contexts to be seen as a natural, healthy biological process.

- The potential for positive social and economic outcomes working women, their family, and society needs to be communicated through an IEC campaign to debunk restrictive gender norms and expectations. It should be tailored to change gender bias attitudes at the workplace and create a perception shift within industry. This campaign can be supplemented with industry regulations that introduce gender balance inside and outside the office. One such policy could be paternal leave, so that the responsibility of childcare is not limited to the mother. Moreover, this attitudinal change to gender norms needs to happen at an inter-generational level to be effective within families and sustainable long term. Gender sensitisation training at the school level must become mandatory. As has been effectively implemented in Zambia, a participatory module of gender sensitisation that exposes students to women and men working "socially-valued jobs" will "validate abstract messages of gender equality". Additionally, the module should hold discussions to challenge conceptions about "men and women's differing competence and status," altering gender expectations as a group (Evans, 2015). Gender sensitisation should be implemented in schools, workplaces, and society more broadly.

It should be noted that these recommendations need to be tailored to the needs of women with backgrounds of caste- and religion-based minorities. Barriers to livelihood and labour outcomes are likely to be exacerbated in their circumstances and must thus be managed accordingly.

References

Bebasari, P., & Williams, B. (2016). *How can your organisation be more gender equal?*. Retrieved from: https://www.ids.ac.uk/opinions/how-can-your-organisation-be-more-gender-equal/

Bhuiyan, BM.; Abdullah, R. (2007). Women Empowerment through Entrepreneurship Development: Bangaldesh Perspective. *DIU Journal of Business and Economics*, 2(2), 135-154. http://dspace.library.daffodilvarsity.edu.bd:8080/bitstream/handle/20.500.11948/641/Women%20empowerment%20through.pdf?sequence=1&isAllowed=y

Chaudhary, R., & Verick, S. (2014). *Female Labour Force Participation in India and Beyond* (ILO Asia Pacific Working Paper Series). Retreived from the ILO website: https://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new_delhi/documents/publication/wcms_324621.pdf

Cools, S., Fiva, J. H., & Kirkebøen, L. J. (2015, May 04). Causal Effects of Paternity Leave on Children and Parents. *The Scandinavian Journal of Economics 117*(3), 808–828. https://onlinelibrary.wiley.com/doi/abs/10.1111/sjoe.12113

Dutta, D. (2020). *Sexism in Economy: Women's Unpaid Care Work is Still not Acknowledged or Paid*. India Development Review. Retrieved from: https://feminisminindia.com/2020/02/13/sexism-economy-womens-unpaid-care-work-not-acknowledged-paid/

Evans, A. (2015). Gender sensitisation in the Zambian Copperbelt. *Geoforum 59*, 12-20. https://www.sciencedirect.com/science/article/pii/S0016718514002541

Fletcher, E., Pande, P., & Moore, C. (2017). *Women and Work in India: Descriptive Evidence and a Review of Potential Policies* (HKS Working Paper No. RWP18-004). Retrieved from: https:// papers.ssrn.com/sol3/papers.cfm?abstract_id=3116310

Garg, S., Sharma, N., & Sahay, R. (2001). Socio-cultural aspects of menstruation in an urban slum in Delhi, India. *Reproductive Health Matters 9*(17), 16-25. https://www.tandfonline.com/doi/abs/10.1016/S0968-8080(01)90004-7

Geetika, Singh, T., & Gupta, A. (2011). Women Working in Informal Sector in India: A saga of Lopsided Utilization of Human Capital, International Conference on Economics and Finance Research. Singapore: IACSIT Press. Retrieved from: https://www.researchgate.net/profile/Tripti_Singh2/publication/266806200_Women_Working_in_Informal_Sector_in_India_A_saga_of_Lopsided_Utilization_of_Human_Capital/links/543ccd7d0cf24ef33b763ae9.pdf

Gerdeman, G. (2018). *Kids of Working Moms Grow into Happy Adults*. Retrieved from https://hbswk.hbs.edu/item/kids-of-working-moms-grow-into-happy-adults

Ghani, E., Kerr, W., & Segura, A. (2015). *Rise of informality in India's tradable manufacturing sector.* Retrieved from https://www.ideasforindia.in/topics/macroeconomics/rise-of-informality-in-indias-tradable-manufacturing-sector.html.

Gustafson, P. (2006). Work-related travel, gender and family obligations. *Work, Employment and Society 20*(3), 513–530. https://journals.sagepub.com/doi/abs/10.1177/0950017006066999

International Food Policy Research Institute. (2016). Global Nutrition Report 2020: From Promise to Impact: Ending Malnutrition by 2030. Washington, DC. Retrieved from https://globalnutritionreport.org/resources/nutrition-profiles/asia/southern-asia/india/#map-section

Kashyap, R., Esteve, A., & Garcia-Roman, J. (2015). Potential (mis)match? Marriage Markets amidst Socio-Demographic Change in India, 2005-2050. *Demography 52*(1), 183-208. doi: 10.1007/s13524-014-0366-x.

Kaur, R., & Kaur, P. (2015). *Empowering Rural Women through Self- Help Groups in India.* Retrieved from https://www.gjimt.ac.in/wp-content/uploads/2017/10/Pawanjot-Kaur-Roopal_Empowering-Rural-Women-through-Self-Help-Groups-In-India.pdf

Klasen, S., & Pieters, J. (2015). What explains the stagnation of Female Labour Force Participation in Urban India. *World Bank Economic Review 29*(3), 449-478.

Krishnan, S., Rocca, C. H., Hubbard, A. E., Subbiah, K., Edmeades, J., & Padian, N. S. (2010). Do changes in spousal employment status lead to domestic violence? Insights from a prospective study in Bangalore, India. *Social Science & Medicine 70*(1), 136–143. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0277953609006170

Krishnan, K. (2015). Rape Culture and Sexism in Globalising India Voices. *Sur - International Journal on Human Rights 12*(22), 255–259. https://heinonline.org/HOL/LandingPage?handle=hein.journals/surij22&div=23&id=&page=

McKinsey Global Institute. (2016). *India's ascent: Five opportunities for growth and transformation (Rep.).* Retrieved January 26, 2019, from https://www.mckinsey.com/featured-insights/employment-and-growth/indias-ascent-five-opportunities-for-growth-and-transformation

Ministry of Home Affairs. (2011). *Census 2011*, Office of the Registrar General and Census Commissioner, Government of India. Retrieved from: http://censusindia.gov.in/

National Sample Survey Office. (2018). Periodic Labour Force Survey 2017-18, Government of India. Retrieved from: http://www.mospi.gov.in/sites/default/files/publication_reports/Annual%20Report%2C%20PLFS%202017-18_31052019.pdf

Nozaki, Y., Aranha, R., Dominguez, R., & Nakajima, Y. (2013). Gender gap and women's participation in higher education: Views from Japan, Mongolia, and India. *Gender, Equality and Education from International and Comparative Perspectives 10,* 217–254. https://www.emeraldinsight.com/doi/abs/10.1108/S1479-3679%282009%290000010010

Nussbaum, M (2000). Women's Capabilities and Social Justice. *Journal of Human Development*, 1(2), 219-247. doi: https://doi.org/10.1080/713678045

Padmini, I. (2012). *Education Vs Employability- the Need to Bridge the Skills Gap among the Engineering and Management Graduates in Andhra Pradesh*. Retrieved from https://s3.amazonaws.com/academia.edu.documents/33010088/ipadmini.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1554282680&Signature=zhUpoG29DZYKMUd1HhV6o3CI9do%3D&response-content-disposition=inline%3B%20filename%3DIpadmini.pdf

Rao, A., & Kelleher, D. (2002). *Unravelling Institutionalised Gender Inequality* (Occasional Paper Number 8 AWID). Retrieved from: https://www.genderatwork.org/wp-content/uploads/2017/10/Unravelling-Institutionalized-Gender-Inequality_AWID_Rao_A_D_Kelleher_ARTICLE.pdf

Rao, A., Sandler, J., Kelleher, D., & Miller, C. (2016). *Gender at Work: Theory and Practice for 21st Century Organisations*. New York: Routledge.

Shah, S., Viswanath, K., Vyas, S., & Gadepalli, S. (2017). *Women and Transport in Indian Cities*. Retrieved from http://www.itdp.in/wp-content/uploads/2017/12/171215_Women-and-Transport-in-Indian-Cities_Final.pdf

United Nations Development Programme. (2019). *Human Development Report 2016: Human Development for Everyone*. Retrieved from: http://hdr.undp.org/sites/default/files/hdr_2019_overview_-_english.pdf

World Bank. (2011). *World Development Report 2012 Chapter 4: Promoting Women's Agency.* Retrieved from https://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1315936222006/Complete-Report.pdf

World Bank. (2011). *World Development Report 2012 Chapter 5: Gender Differences and Why they Matter.* Retrieved from https://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1315936222006/Complete-Report.pdf

World Bank. (2018). Female Unemployment (% of Labour Force) [Data file]. Retrieved from https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.ZS?locations=IN

World Bank. (2018). Labour Force Participation Rate, female (% of female population ages 15+) [Data file]. Retrieved from https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS?locations=IN

World Inequality Lab. (2018). *World Inequality Report 2018*. Retrieved from https://wir2018.wid.world/files/download/wir2018-full-report-english.pdf

Appendices

Appendix 1

Technical Note

Rao-Kelleher Framework:

- Quadrant I: Access to Resources
- Quadrant II: Consciousness and attitudes
- Quadrant III: Informal norms and practices
- Quadrant IV: Formal norms and practices

The first two quadrants (top) refer to agency issues faced by women while the last two quadrants (bottom) refer to structure issues faced by women. Given that quadrants I (access to and control over public and private resources) and IV (formal norms) represent formal structures that influence gender mobility, bolstering policies can advance the agenda for gender mobility at work by addressing issues of access, labour, and labour-adjacent laws. To understand the declining FLFPR, a dialogue about informal norms at the community and household level must also be had. After all, "economic growth, formal institutions, informal institutions, and markets interact to enable or constrain women's agency" (World Bank, 2011).

Factor Analysis

Data Preparation

The skill centre data for each district was grouped through arithmetic and logical aggregation. The questionnaire data and skill centre data were then merged for women representing the respective districts. The resultant dataset had 351 variables and 2503 observations with a mixture of binary, ordinal and continuous data. Further examination of variables across respondents resulted in the removal of cases with uniform data across all respondents. The final sample contained 334 variables and 2503 observations.

Software

A factor analysis was performed using the programming language R 3.5, an open source software, for statistical computations and graphics. For Exploratory Factor

analysis, the packages psych and GPArotation were used while Confirmatory Factor Analysis models were built using the lavaan package.

Data Screening and Analysis

Exploratory Factor Analysis is a statistical method used to uncover the underlying structure of a relatively large set of variables, inclusive of demand-and supply-side variables. The number of factors to be included in each EFA was determined by Cattell's screen test.

For inclusion in the factor solution for each analysis, the minimum loading requirement of 0.3 was used. The fit indices used to estimate the model fits were the TLI (Tucker-Lewis Index) and RMSEA (Root Mean Square Error of Approximation). For the TLI, high scores indicate a better fit, while for RMSEA, lower scores indicate better fit.

Indicators that loaded on more than one mental model fit were also treated. The model with a significantly higher factor loading respective to the indicator was finally considered.

In the next step, significant latent variables that had loadings of >0.3 that emerged from the EFA were mapped to different Mental Models. Patterns emerging among the models allowed for the definition and potential domain-based significance of each model to be formulated. Models with similar domain-based significance were combined, trimming the number of Mental Models in total.

Confirmatory Factor Analysis

The mental models suggested by the EFA were analysed further using Confirmatory Factor Analysis to determine a concrete model that explains female labour force participation with a more concentrated set of variables. The mental models were first merged into similar factor groupings and loadings strictly greater than 0.7 were considered.

To be able to measure latent factors, all the latent factors were standardised (mean 0 and variance 1). The fit indices used to estimate the model fit are the CFI (Comparative Fit Index), TLI, and RMSEA. For both CLI and TLI, higher scores indicate better fits with a fit of >0.9 considered ideal. For RMSEA, lower scores indicate better fits with a score lower than 0.9 being ideal.

The results of the confirmatory factor analysis indicated the differences in the mental models and individual factors enabling or disabling female labour force participation

both from the demand as well as the supply side.

Further, the dataset was split into two based on the woman's current working status. The CFA was applied separately on these individual datasets. The fracture structures emerging from each dataset were examined for similarities and differences.

Structural Equation Modelling

Finally, Structure Equation Modelling (SEM) was performed to determine the exact factors influencing female labour participation. For the purpose of this study, a SEM with a combination of factor, regression, and path analyses were used.

A SEM enabled understanding of the various pathways/relationships between mental models, the observed variables, and the dependent variable. The strength of the relationship depicted by the regression coefficients determined the influence of the mental model on the dependent variable.

Analysis

Primary Data Analysis

The objective of the primary data analysis was to examine and recognise patterns that help understand the barriers to, and enablers of, female labour force participation in India through the analysis of demand- and supply-side data using both exploratory and confirmatory factor analysis. A total of 334 variables across 2503 observations were considered for analysis.

Comparing the female employment ratio generated from the study (20.37%) against the World Bank estimates (22.7%), an error margin of +/- 2.5% was calculated.

On the demand-side, data on skill centres implementing the PMKVY programme from the districts mentioned above was collected using a total of 60 variables. The data was gathered for 2 skill centres in each of the districts. This data included scores on popular training programs, sectors, women enrolment and placements.

The supply-side household questionnaire data was scaled and coded to quantitatively measure respondents' answers. Basic demographic details and other continuous numerical variables, such as distance information (e.g. Distance to the closest hospital) remained the same. Binary answers were coded 1 for yes, 0 for no, and –1 if the question was altogether skipped. Scales were developed for questions with multiple choices, leading to

the creating of ordinal data, and purely qualitative answers were maintained as the same and used only for descriptive statistical analyses purposes. All numerical responses, i.e., 291 variables, were used also for the multivariate statistical and factor analyses.[13]

For the analyses, the demand- and supply-side data was combined to observe the extent to which they could explain female labour force participation in tandem, per the hypothesis that labour market demand and supply converge to decide participation.

The final sample contained 334 variables and 2503 observations.

Exploratory Factor Analysis

An Exploratory Factor Analysis (EFA) with 15 factors groupings, i.e., mental models[14] gave a TLI of 0.964 and RMSEA of 0. 0574. The cumulative variance explained was 63%. The model fit is considered strong. Though the cut-off was an absolute value of 0.3, many variables had a high loading score of greater than the absolute value of 0.7. This suggests a strong factor contribution to the variables. The EFA also grouped the variables into 15 Mental Models. These models indicate a latent connection between the variables in determining labour force participation at the individual level. Domain knowledge on the linkages between various indicators was used to identify the models after being suggested by the exploratory factor analysis.

A thematic summary for each of the 15 Mental Models can be found.

Table 1.1 Mental models pre-compression

Mental Model Number	Number of Variables	Types of Variables	Supply-side/ Demand-side
1	27	PMKVY Skill Centre	Demand side
2	38	Livelihood and the workplace	Supply
3	16	PMKVY Skill Centre	Demand side

13 In order to ensure applicability of factor analysis on coded answers, a dummy dataset was treated with the factor analyses prior to questionnaire and coding finalization. The results from this exercise was discussed and verified by data analysts and domain experts while the coding system was also approved by them.

14 "Mental Models" and "latent constructs" are used interchangeably.

4	22	Household, Marriage and Family Dynamics	Supply
5	12	Social Groups	Supply
6	12	Barriers to Livelihood	Supply
7	11	Education	Supply
8	11	Dissatisfaction with employment	Supply
9	15	Technology and Automation	Supply
10	9	Barriers to Education	Supply
11	6	Barriers to Livelihood	Supply
12	6	Barriers to Livelihood	Supply
13	11	Awareness and Knowledge of Local Industries	Supply
14	9	Menstruation related restrictive norms	Supply
15	5	Social Security	Supply

The patterns emerging from the data could be meaningfully separated into 12 distinct factor groupings: education, barriers to education, technology and automation, social security, barriers to livelihood, dissatisfaction with employment, livelihood and workplace, household and family dynamics, social groups, industrial knowledge, menstruation-related restrictive norms, and PMKVY Skill Centres.

Confirmatory Factor Analysis

The final model comprised 11 factors namely: education, barriers to education, technology and automation, social security, barriers to livelihood, enablers of and barriers to livelihood, livelihood and workplace, household and family dynamics, social groups, awareness, and knowledge on local industries and menstruation-related restrictive norms. The model had a CFI of 0.899, TLI 0.896 and RMSEA of 0.064, and 90% Confidence Interval (0.063, 0.064). Considering the large sample size and variables, this model was accepted as the final model explaining the latent factors explaining the female workforce participation phenomenon.

Table 1.2 Latent models explaining female workforce participation

Rank	Latent Factor	Number of Variables
1	Menstruation-related restrictive norms	4
2	Social Group	12
3	Barriers to livelihood	11
4	Dissatisfaction with employment	10
5	Awareness and Knowledge on Local Industries	10
6	Technology and automation	8
7	Livelihood and the workplace	20
8	Social Security	4
9	Barriers to education	7
10	Education	10
11	Household, Marriage and Family Dynamics	15

Analysis of Structure Equation Modelling

The regression coefficients from the SEM model have been published below. A positive coefficient means that an increase in the predictor leads to an increase in the predicted probability. A negative coefficient means that an increase in the predictor leads to a decrease in the predicted probability.

Table 1.3. Regression output of SEM

Grouping	Estimate	P(>|z|)
Awareness and Knowledge on Local Industries	0.018	0.017
Household, Family Dynamics	0.049	0.001

Barriers and Enablers of Livelihood	0.074	0.000
Barriers to Livelihood	-1.471	0.000
Livelihood and Workplace	1.517	0.000
Menstruation-related restrictive norms	-0.033	0.001

Appendix 2

Due to the comprehensive nature of the supply side questionnaire, the entire questionnaire (20+ pages) has not been included in the occasional paper. However, the list of themes covered in the supply-side questionnaire, with a description of each theme has been provided below.

Theme	Indicators
Socio-Economic profile	• Age • Family income • Marital status • Religion • Current employment status • Nature of job • Level of education • Family demographics
Health	• Health issues (if any) • Health insurance • Menstruation • Workplace benefits (sick leave, paid leave and maternity benefit)
Safety and Security	• Harassment (sexual and non-sexual) • Safety while travelling • Workplace safety and security
Attitudes	Attitudes of respondents with regards to: • Female empowerment • Female labour force participation • Nature of work • Domestic responsibilities
Social group participation	Participation in self-help groups and youth groups: social, economic or political

Birth family/Childhood	• Respondent's childhood and youth • Family dynamics • Occupation of parents • Family attitude towards education
Education	• Level of education • Satisfaction with education
Livelihood, including skilling	• Current or previous occupation • Reasons for dropping out of the workforce • Level of skilling • Medium of skilling • Workplace conditions and dynamics • Pradhan Mantri Kaushal Vikas Yojana (PMKVY) skilling programme • Family support for participation in skilling programmes
Marriage and marital family dynamics	• Age of marriage • Family support in household activities • Balancing of marriage and employment
Motherhood	• Number and age of children • Impact of motherhood on participation in the workforce
Pension	• Access to social security benefits

The sub indicators for each of these themes related to the quadrants of access, perception, and formal and informal norms from the Rao-Kelleher Gender Framework.

Appendix 3

The demand side analysis focussed on the implementation of the Pradhan Mantri Kaushal Vikas Yojana, the national flagship skilling scheme. Due to the comprehensive nature of the demand side audit instrument, the entire tool (10+ pages) has not been included in the occasional paper. However, the list of themes covered in the audit, with a description of each theme has been provided below.

Theme	Indicators
PMKVY Centre details	• Number of years since PMKVY license • Nature of centre (government-run or private) • Number of training programmes conducted • Number of sector-specific skills imparted • Non sector-specific training imparted (inter-personal skills, soft skills)
Capacity and student profiles	• Training centre capacity • Gender wise number of enrolments • Gender wise centre visits • Total student enrolment since establishment (by gender) • Current enrolment (by gender) • Course wise enrolment details (by gender) • Total number of graduates (since the establishment of centre) (by gender) • Total number of placements (since the establishment of centre) (by gender) • Communication with placed students • Total employment of PMKVY graduates (by gender) • Course wise placement rates
Centre facilities and resources	• Sanitation facilities • Connectivity of centre from the nearest bus stop • Distance between centre and government-run childcare centre (Aanganwadi) • Number of PMKVY industry partners • Number of certified trainers (by gender) • Average years of experience of trainers • Number of centre assessors (by qualification) (by gender) • Number of courses with digital learning/ ICT component • Number of courses with financial literacy component • Number of courses with entrepreneurship component • Number of courses with English language component • Functioning of a centre run counselling centres • Quality and adequacy of course material • Training events held • Safety and security measures

southernvoice.org
SVoice2030
@SVoice2030