

Falling female labour force participation in Kerala: Empirical evidence of discouragement?

Shalina Susan MATHEW*

Abstract. *India's female employment and labour force participation have been declining since the mid-2000s. Kerala, traditionally its best-performing state on these indicators, has done worse than the country as a whole. This article examines the shifts that occurred in Kerala's female employment and participation between 2004 and 2012, by household income level, age group, level of education and occupational category. Those dropping out of the labour market are typically young, educated women qualified for professional occupations, suggesting a discouragement effect exacerbated by widening gender pay differentials in top occupations. These shifts have obliterated some of the hitherto defining features of Kerala's labour market.*

A disquieting feature of the labour market in India – and in South Asia more generally – has been the relatively low labour force participation of women, and its further decline in recent years. Studies on the region point to an array of complex, often interconnected forces driving female labour force participation down, including not only socio-cultural norms, but also economic, human capital and demographic determinants. Against this background, this article examines the changing labour market dynamics of female employment in urban Kerala.

Kerala makes an interesting case study indeed. On the strength of its historically impressive accomplishments in social and human development, this state in south-western India gained a place of prominence in the development discourse as the “Kerala model of development” (UN-DESA, 1975). Its performance on indicators of human well-being was not only far ahead of the

* Asia Research Centre, London School of Economics, email: shalinamathew@gmail.com. The research for this article was carried out during the author's post-doctoral fellowship at the Indian Statistical Institute, Bangalore Centre, in 2013–14. The comments of Madhura Swaminathan, V.K. Ramachandran (Indian Statistical Institute, Bangalore) and Vathsala Narasimhan (University of Hyderabad) on an earlier draft are gratefully acknowledged.

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national averages *despite* its slower economic growth, but also comparable with that of many middle-income countries.¹ While Kerala's development trajectory thus deviated from the conventional path of economic growth leading to human development, it had in fact been conditioned by a wide range of unique socio-political, cultural and historical processes.² Their development outcomes are still reflected in the state's low levels of infant mortality, long life expectancy, high levels of literacy, a sex ratio favourable to females, and low population growth (currently below the replacement rate). These accomplishments were hailed as a classic case of "welfare by public intervention" (Sato, 2004), whereby public action and state provisioning of public goods and basic needs offered an alternative path towards social development, despite low economic growth (Drèze and Sen, 1997).

These socio-demographic advances created an environment conducive to women's entry into the paid activities in the market on a considerable scale. While their educational attainments equipped them to seek work in highly paid service occupations, the state's socio-demographic progress provided further stimulus to their labour market attachment. This resulted in remarkably high rates of female labour force participation, particularly among higher educated women, by comparison with the rest of the country. Even among higher educated women across India, participation was lower, highlighting the influence of factors other than education and earnings in determining women's economic decisions.

Since 2004, however, female labour force participation in Kerala has trended downwards, as it has done throughout India. Comparatively, it is the magnitude of the decline and its spread across the female workforce that set Kerala apart. In an attempt to understand the dynamics underlying Kerala's departure from its long-term trend of high female labour force participation, the remainder of this article is organized into five sections. The first provides some background that contextualizes recent labour market developments, and the second briefly presents the data sources and concepts used in the study. The third section comparatively examines the compositional shifts in female employment and labour force participation in India and Kerala by level of household expenditure, educational attainment, and age, while the fourth section analyses the occupational characteristics of Kerala's female employment. The fifth section concludes with a summary of the study's main findings.

¹ In the absence of strong economic growth to sustain its social development and welfare policies, debates were raised on the sustainability of the Kerala model in the long run. Kerala's experience was thus referred to as a "paradox of development", the "paradox of social development and economic backwardness", "lopsided development" and so on (Chakraborty, 2005; George, 1998; Government of Kerala, 2006; Kannan, 2005; Panikar and Soman, 1984; Tharamangalam, 1998). Such concerns abated when Kerala's economy started to gain momentum in the 1980s (Ahluwalia, 2002; Chakraborty, 2005; Government of Kerala, 2006; Jeromi, 2003; Kannan, 2005; Pushpangadan, 2003). By the 1990s, however, Kerala had embarked on a high-growth phase which peaked in the 2000s, when its economy grew at a rate higher than the national average.

² For a detailed historical account, see Ramachandran (1997).

Background

Kerala's labour market trends and patterns of female participation in the post-reform period³ exhibit two distinct phases – from 1993–94 to 2004–05, and post-2004–05. The most striking features of the urban labour market up to 2004–05 were women's high labour force participation rate and low rate of employment,⁴ resulting in soaring unemployment. Among the higher educated, participation was in the range of 70 to 80 per cent – comparable with the rates observed in the developed countries – and more than double the rate averaged across the rest of the country. As a result of Kerala's low employment rates, however, unemployment among higher educated women remained as high as 20–30 per cent. Such high rates of female unemployment have been explained in terms of women's job preferences, overall high unemployment in the economy and constraints on skill utilization, lack of employable skills, etc. (Devi, 2002; Kodoth and Eapen, 2005; Mathew, 1995; Nagaraj, 1999).

In the subsequent phase, post-2004–05, female unemployment eased because of a marginal improvement in women's employment rates, coupled with an unprecedented fall in their labour force participation. These labour market adjustments are of interest on several accounts. First, Kerala's female employment rates improved during a period when the overall employment rate of women in India was in decline, generating debates over the economy's "jobless growth". Second, and more importantly, the increase in women's employment rates in Kerala was accompanied by shrinking female labour force participation, marking another departure from the patterns observed up to 2004–05. Given Kerala's long history of labour migration, women's shrinking participation raises questions about the possible role of female labour emigration to destinations outside the state. However, the Kerala Migration Survey data indicate that both male and female labour migration from Kerala peaked in 2003 and has since been declining. Moreover, the female share of total out-migration dropped from 34.9 per cent in 2003 to 32.7 per cent in 2011 (Zachariah and Rajan, 2012).

Against this backdrop, this study hypothesizes discouragement in explaining the observed compositional shifts in employment, particularly among Kerala's higher educated and relatively well-off women. Studies on the "discouraged worker effect" regard discouragement as a mechanism that hampers the occupational achievement of groups with poor chances on the labour market (van Ham, Mulder and Hooimeijer, 2001, p. 1734). Discouragement

³ Although India's economic liberalization had started in the 1980s, it was in 1991 that the country embarked upon systematic market-oriented reforms supported by the IMF and the World Bank in an attempt to tackle its balance-of-payments crisis and high inflation. The underlying policy objectives of stabilization and structural adjustment had far-reaching effects on the economy, including the labour market.

⁴ Although the National Sample Survey Office commonly uses the term "work-force participation rates" (WFPR) in reference to rates of employment, this article follows standard international usage and uses the latter term instead (see NSSO, 2014, for more detail on terminology and definitions).

has been widely researched across various groups in developed countries, such as women, migrants, inner-city African-American residents, etc., in terms of their spatial constraints on job search and local labour market conditions (see, for example, Browne and Misra, 2003; van Ham, Mulder and Hooimeijer, 2001; Hanson and Pratt, 1992; Kain, 1968). In many Asian countries also, reduced opportunities for productive employment since 1995 (due to sharp swings in capital flows) have led fewer women to report themselves as being part of the labour force, which amounts to the “discouraged worker effect” observed in the developed countries (Ghosh, 2007, p. 104). In short, the discouraged worker effect is more widespread among persons with relatively less chances of finding employment. This may stem either from low levels of skill and education, or from various constraints on job search, including spatial and gender constraints.

As the subsequent sections will demonstrate, conventional explanations for country-level specificities are inadequate to enlighten the Kerala case. Positing a causal relationship between the qualitative and quantitative shifts in employment and declining labour force participation, this study points to a discouraged worker effect operating in the female labour market in Kerala. In the absence of data on women’s labour market decisions per se, I attempt to construe them from the available data on compositional and qualitative shifts in the employment choices available to women workers.

Data sources and methodology

My empirical analysis is based on nationally representative data from the Employment and Unemployment Surveys (EUS) of the National Sample Survey Office (NSSO). The unit-level data from 2004–05 onwards are used extensively, while data going back to 1993–94 are used wherever necessary. In accordance with the concepts and definitions used in the National Sample Survey (NSS), this study applies the “usual principal status” measure of labour market activity status, i.e. the respondent’s predominant activity status during the reference period of 365 days preceding the date of the survey (NSSO, 2014). According to this measure, a person is considered to be in the labour force if s/he has spent at least six months of the reference period in employment or seeking work. This measure provides for the best possible assessment of occupational details.

In order to identify compositional shifts in female labour market participation, the latter is examined by level of household income and educational attainment. Based on monthly per capita consumption expenditure (MPCE), a proxy for household income, households are classified into quintiles so as to trace female labour market trends across MPCE quintiles. The same exercise is performed across levels of education, whereby women are classified as not literate, literate with primary, middle, secondary, higher-secondary and diploma/certificate-level education, and those with 15–17 years of formal education, i.e.

graduates and post-graduates.⁵ The prospects of acquiring a job matching one's qualifications and aspirations being a key determinant of active job search and remaining in the labour force, I also attempt to gain insights into "typically female" occupations. To this end, I make use of the National Classification of Occupations (NCO) governing the unit-level data of the EUS, which classifies occupations on the basis of educational and skill requirements.

Female employment and participation trends in India and Kerala

In the 1990s, the labour force participation and employment rates among women in urban Kerala were, given their higher levels of education, significantly higher than in the rest of India (table 1). Their labour force participation increased steadily until 2004–05, whereupon it began to decline, not only in Kerala but also throughout the country. However, the decline in Kerala was greater than the national average, from 33 to 25 per cent as against 20.4 to 17.8 per cent, respectively, between 2004–05 and 2011–12. Meanwhile, Kerala's female employment rates improved minimally during the long-term period from 1993–94 to 2011–12. Between 2004–05 and 2011–12, the phase of significant labour market changes, the rate grew from 19.1 to 20.3 per cent. During the same period, India's female employment rates declined from 18.5 to 16.7 per cent.

This evoked mixed responses, ranging from criticism of the economy's "jobless growth" and scepticism regarding the reliability of the data and data collection processes, to soothing remarks about women's pursuit of higher education and "income effects" (*Economic and Political Weekly*, 2011; Planning Commission of India, 2011; Rangarajan, Kaul and Seema, 2011). However, several studies confirm that education and income effects are partial at best in accounting for the withdrawal of women from paid employment. Kannan and Raveendran (2012) establish that only 27 per cent of the decline between 2004–05 and 2009–10 was accounted for by additional enrolment in education. Chowdhury (2011) shows that while male participation declined mainly in the age groups 15–19 and 20–24 because of educational enrolment, female participation decreased in all age groups. Chandrasekhar and Ghosh's (2011) estimation of age-specific participation rates also points to a drop in female employment in the 25–59 age group during the period from 2004–05 to 2009–10, whereas male employment increased significantly in the same age group.⁶

The most widely cited observation about women's labour market participation has been its U-shaped relationship with economic development, which

⁵ Diploma or certificate courses include general education, technical education and vocational education, below graduation level.

⁶ For further studies on female employment in India after 2004–05, see Himanshu (2011), Klasen and Pieters (2012 and 2013), Lahoti and Swaminathan (2013), Rustagi (2013) and Thomas (2012).

Table 1. Female employment and labour force participation rates in urban Kerala and India between 1993–94 and 2011–12 (percentages)

Year	Employment		Labour force participation	
	Kerala	India	Kerala	India
1993–94	20.1	17.5	26.5	19.1
1999–2000	20.2	16.6	27.4	17.9
2004–05	19.1	18.5	33.4	20.4
2011–12	20.3	16.7	25.1	17.8

Note: Women aged 15+ by usual principal activity status.
Source: Author's estimates based on NSSO unit-level data.

has been documented both across countries and over time (Boserup, 1970; Çağatay and Özler, 1995; Goldin, 1995; Mammen and Paxson, 2000; Pampel and Tanaka, 1986; Tam, 2011). The U-shaped relationship has also been observed to hold between female participation and economic or educational status (Klasen and Pieters, 2013). In developing economies, labour force participation rates are indeed high among less educated women from poor households and among higher educated women eligible for white-collar jobs. While the former's participation is driven by household subsistence needs, the latter's is driven by the weaker social stigma associated with clerical and other service jobs among higher educated women.

A widespread explanation for women's changing labour market activity in developing economies is that the earnings of women are transitory and supplementary in nature, and that the fluctuations in their labour market participation are therefore related to fluctuations in household income. The decision of women to participate thus largely becomes a household decision. Following this argument, women's labour market decisions depend on the household "income effect": an increase in the income earned by the members of the household is negatively related to the labour force participation of women. The underlying assumption is that women have weaker attachment to the labour market. In other words, women withdraw from the labour market when their household no longer requires the income they can earn. Inherent in the perceived secondary importance of women's work is the assumption that their human capital or skills are lower, making their work less remunerative. In the context of South Asian developing countries, the prevailing social norms and notions of family status also drive women to withdraw from the labour market when the family income rises.

Arguing that the "income effect" is at work in urban India, Klasen and Pieters (2012) show that rising male incomes reduced female labour force participation as rising household incomes spared them the urgent need to work. On closer inspection of the available data on Kerala, however, the picture that emerges is not so clear-cut, as other factors appear to be at play as well.

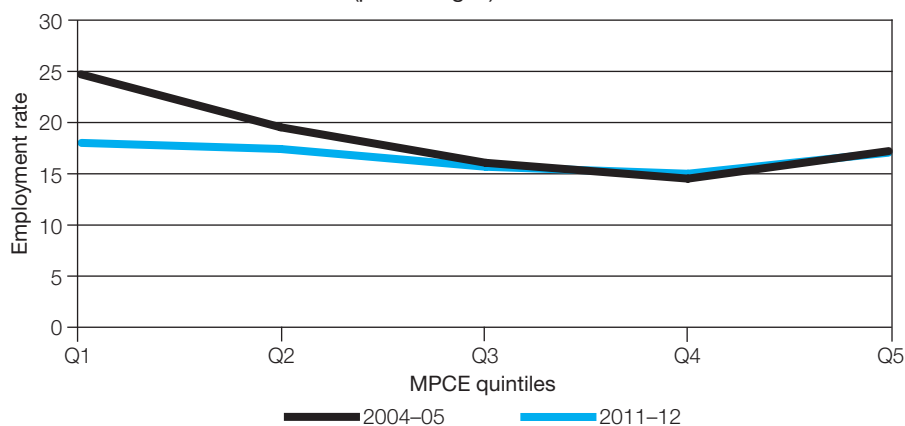
Activity status by income level

Taking the household MPCE as a proxy for income, this section examines the changing patterns in female employment and labour force participation across MPCE quintiles in Kerala and India.

In India as a whole, the employment rates among urban women show a clear U-shaped association with household MPCE, particularly in 2004–05. While the highest employment rates are observed among women from the poorest households, women from the highest MPCE households also actively engaged in gainful employment, probably in better-off and well-paying occupations, as reflected in the upward sloping part of the curve in figure 1. By 2011–12, however, India's female employment rates had undergone a significant decline, especially in the first two quintiles, driving the overall decline in urban female employment rates from 18.5 to 16.7 per cent and producing a shallow U-shaped labour supply curve. As shown in figure 1 and Appendix table A1, the rate dropped by about 7 percentage points in the lowest MPCE quintile but only by 0.2 percentage points in the highest.

India's female labour force participation rates also exhibited a U-shaped relationship with MPCE, which broadly followed the movements in employment rates over the period under study, with a disproportionate decline in the lowest MPCE quintiles (figure 2 and Appendix table A1). Between 2004–05 and 2011–12, the female participation rate declined by 2.6 percentage points, from 20.4 to 17.8 per cent on average, while it fell by 7 percentage points, from 26.1 to 18.9 per cent, in the first quintile (table 1 and Appendix table A1). In the fifth quintile, by contrast, the rate declined by about 1 percentage point, from 19.4 to 18.2 per cent.

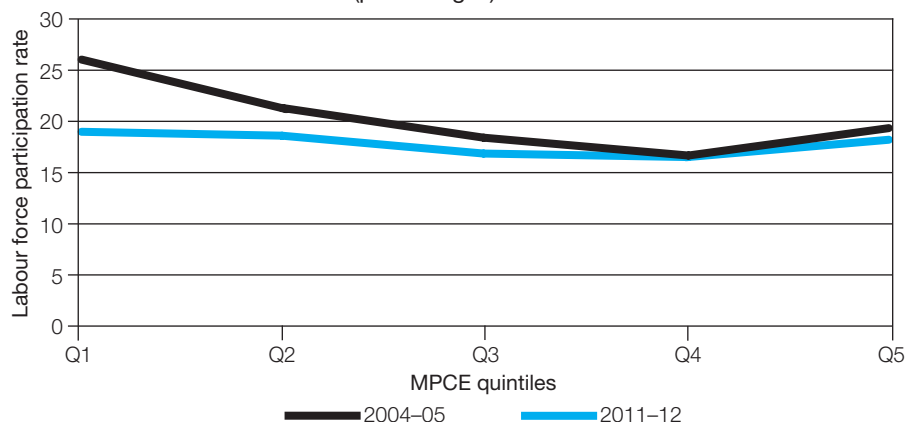
Figure 1. Female employment rates by MPCE quintile in urban India, 2004–05 and 2011–12 (percentages)



Note: Women aged 15+ by usual principal activity status.

Source: Author's calculations based on NSSO data.

Figure 2. Female labour force participation rates by MPCE quintile in urban India, 2004–05 and 2011–12 (percentages)



Note: Women aged 15+ by usual principal activity status.

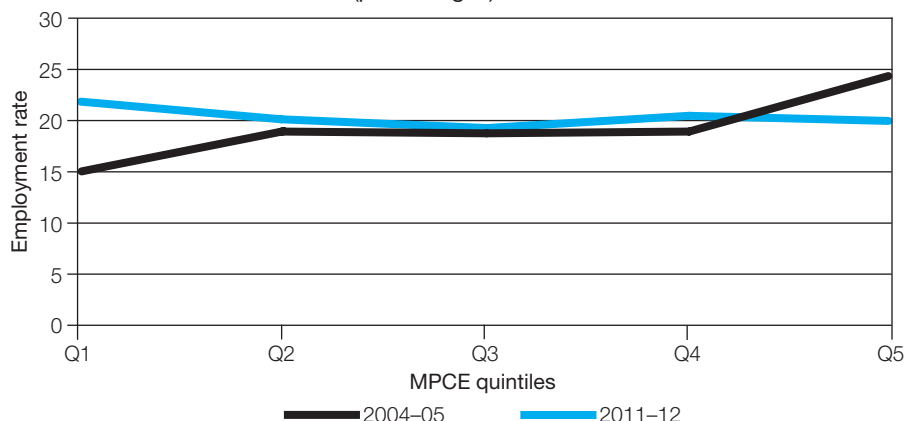
Source: Author's calculations based on NSSO data.

Compared to the all-India pattern, women's employment and labour force participation by household income quintile in Kerala present a more complex picture (figures 3 and 4, and Appendix table A2). First, these indicators do not follow a clear U-shaped relationship with the MPCE distribution. Second, their movements across the distribution in 2004–05 and 2011–12 were in opposite directions, especially at the lower end of the distribution.

In Kerala, the absence of a clear U-shape relationship between MPCE and female employment rates was particularly evident in 2004–05, when the employment curve sloped upwards at both ends of the distribution, while flat-lining across the middle three quintiles (figure 3). Among women from the poorest households, the employment rate was as low as 15 per cent, while rising to about 24 per cent in reasonably well-off households. By 2011–12, however, this pattern was reversed, with substantially higher female employment among poorer households (some 22 per cent), and rates well below those recorded in 2004–05 in the highest MPCE quintile. Between 2004–05 and 2011–12, the female employment rate in the first MPCE quintile thus increased by nearly 7 percentage points, from 14.9 to 21.8 per cent. At the all-India level, by contrast, this quintile witnessed the sharpest decline in female employment, by about 7 percentage points, from 24.8 to 18 per cent. Conversely, while India's female employment in the fifth quintile remained more or less stable over this period, with a mere 0.2 percentage point decline, Kerala's experienced its single largest decline in this quintile. In short, the period under study saw major alterations in employment rates among women from the richest and poorest households in Kerala. While marking a crucial departure from previous trends in this state, this also stands in contradiction to the patterns observed country-wide.

As shown in figure 4 and Appendix table A2, Kerala's female labour force participation pattern was also reversed during the period under study.

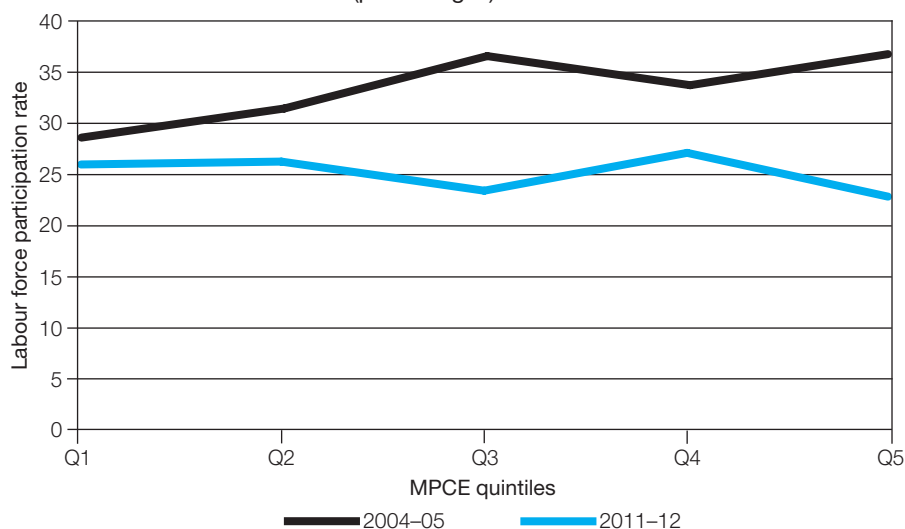
Figure 3. Female employment rates by MPCE quintile in urban Kerala, 2004–05 and 2011–12 (percentages)



Note: Women aged 15+ by usual principal activity status.

Source: Author's calculations based on NSSO data.

Figure 4. Female labour force participation rates by MPCE quintile in urban Kerala, 2004–05 and 2011–12 (percentages)



Note: Women aged 15+ by usual principal activity status.

Source: Author's calculations based on NSSO data.

In a departure from the positive relationship that existed between this indicator and household incomes in 2004–05, a sizeable proportion of women from upper MPCE households appear to have withdrawn from the labour market by 2011–12, as reflected in the downward sloping curve for those years. Also, from being substantially higher than the all-India average in 2004–05, female

labour force participation in Kerala fell from 33.4 to 25.1 per cent between 2004–05 and 2011–12, with most of the decline concentrated in the fifth quintile, where the participation rate slumped to 22.7 per cent – the lowest of the entire distribution. Interestingly, the combined effects of these shifts in patterns of female employment and labour force participation have contributed to moderating Kerala’s hitherto high rates of female unemployment.

Education-specific activity status

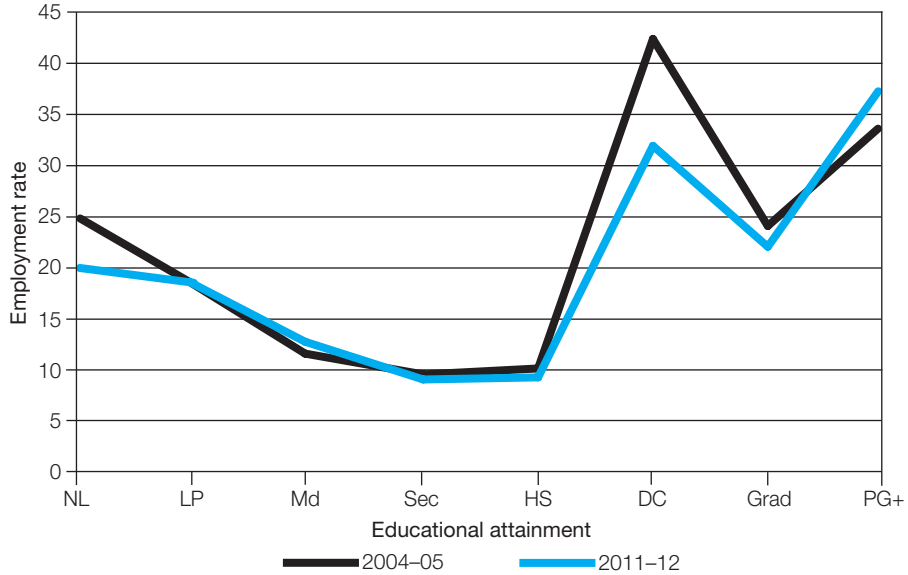
This section examines female employment and labour force participation by level of educational attainment in urban India and Kerala. For India as a whole, both variables exhibit a U-shaped relationship with educational attainment except for huge spikes in the participation and employment of diploma/certificate holders (see figures 5 and 6, and Appendix table A3).⁷ Also at the all-India level, the education-specific variations in female employment and labour market participation rates were not drastic between 2004–05 and 2011–12, with the most pronounced shifts occurring among the illiterate and diploma holders: employment declined by about 5 percentage points among the former and by about 10 percentage points among the latter. Participation broadly followed the same pattern.

Here again, the relationships capturing the employment and participation behaviour of women in Kerala are more complex than they are on the national average. Significantly, the shifts in their employment and participation behaviour are dissimilar (see figures 7 and 8, and Appendix table A4). As observed in the case of women’s labour market behaviour by income level, the major shifts in their employment and labour force participation by educational level took place at the top and bottom ends of the spectrum – among women with the lowest and highest educational attainments. Most notable is the fall in the employment and labour force participation of those with higher education. Between 2004–05 and 2011–12, Kerala’s overall urban female employment rates rose from 19.1 to 20.3 per cent, driven mostly by women with intermediate levels of education, particularly at the higher secondary and diploma levels (figure 7).

During the period under study, Kerala’s overall female labour force participation rate dropped from 33.4 to 25.1 per cent, with much of the decline concentrated among the higher educated. Thus, while it is interesting to note that female participation declined across all educational categories, graduates and post-graduates appear to exhibit a particularly strong disinterest in the labour market, reflected in declines of 20 and 31 percentage points, respectively (Appendix table A4 and figure 8). It may also be noted that prior to this drop, participation among Kerala’s female post-graduates was about 88 per cent – a rate comparable with those of the developed countries of east Asia or even Iceland and Denmark. At the all-India level, despite the overall reduction in

⁷ Diplomas and certificates are mostly job-oriented or vocational, and a greater share of diploma holders can therefore be expected to enter the labour market.

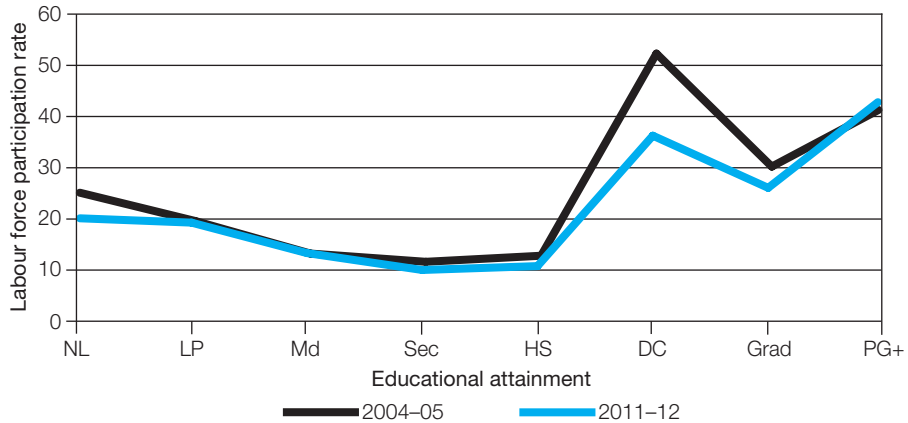
Figure 5. Female employment rates by level of educational attainment in urban India, 2004-05 and 2011-12 (percentages)



Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

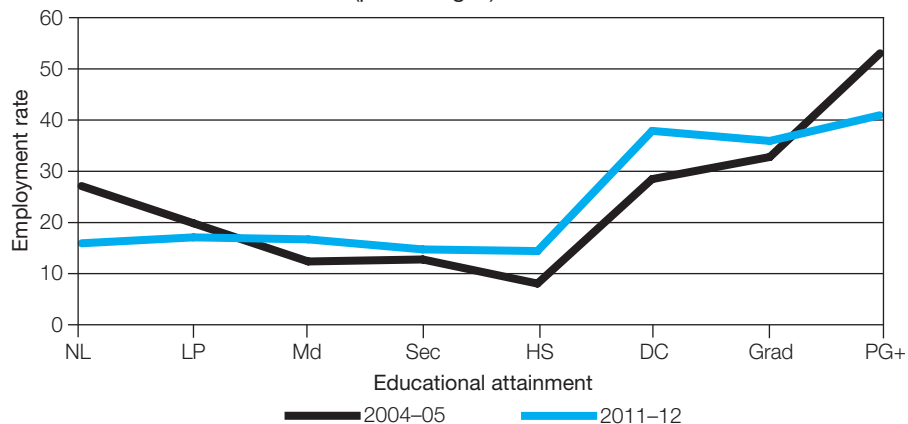
Figure 6. Female labour force participation rates by level of educational attainment in urban India, 2004-05 and 2011-12 (percentages)



Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

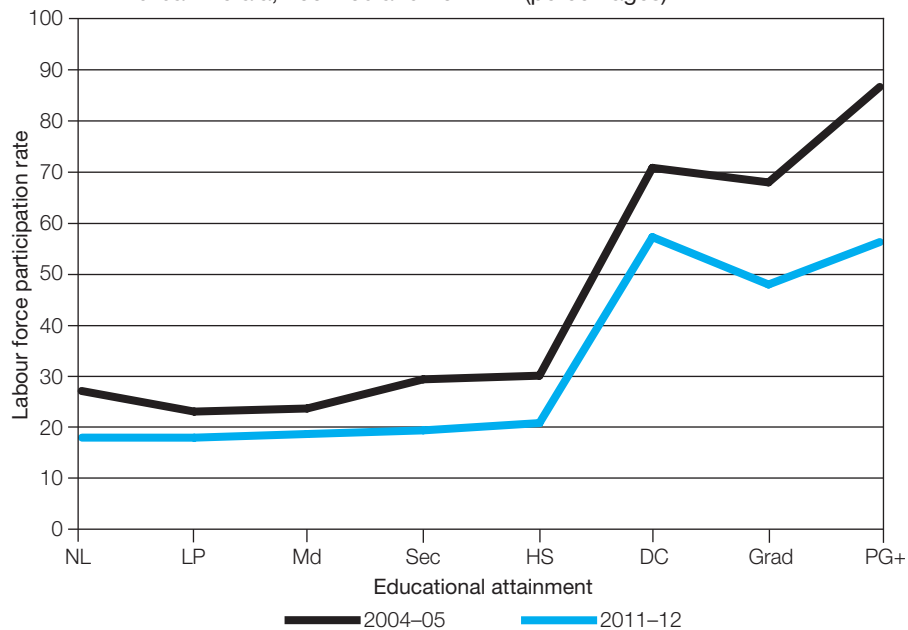
Figure 7. Female employment rates by level of educational attainment in urban Kerala, 2004–05 and 2011–12 (percentages)



Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

Figure 8. Female labour force participation rates by level of educational attainment in urban Kerala, 2004–05 and 2011–12 (percentages)



Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

Table 2. Urban female population aged 15+ by level of educational attainment in Kerala, 2004–05 and 2011–12

	2004–05	2011–12
Not literate	9.1	6.3
Literate/up to primary	23.5	17.0
Middle	26.8	26.2
Secondary	15.7	18.7
Higher secondary	8.2	12.3
Diploma/certificate course	5.7	3.4
Graduate	8.2	12.0
Post-graduate and above	2.8	4.1
All	100.0	100.0

Source: Author's calculations based on NSSO unit-level data.

female labour force participation, participation among post-graduate women increased marginally, from 41.6 to 42.9 per cent over the period (Appendix table A3). Similarly, among graduate women, the fall in participation was only about 4 percentage points nationwide, as against 20 percentage points in Kerala (Appendix table A4). Given the increasing proportion of higher educated women in Kerala (table 2), and this state's past record of high labour force participation among educated women, this substantial drop in female participation will be examined in greater detail below.

Age-specific activity status

The foregoing overview thus suggests that relatively well-educated and well-off women in Kerala are becoming detached from the labour market. Particularly disquieting is the fact that the downward movements in female participation have been brought about primarily by the weakened activity of younger women (table 3). While about half of Kerala's working-age female population in the age groups 20–24 and 25–29 participated in the labour force in 2004–05, participation among women in these age groups had dropped by about 20 percentage points by 2011–12, suggesting that new jobseekers and/or young workers may have been discouraged from active participation in the labour market. Indeed, the shifts in participation among the older age cohorts have been moderate, particularly among women aged 30–44 years. Among these older age groups, the changes in rates of employment and participation have also been more consistent, possibly reflecting a comparatively smaller proportion of unsuccessful jobseekers in these age groups.

At the all-India level, by contrast, the decline in female labour force participation was more or less evenly spread across all age groups, averaging some 2–3 percentage points. In India as a whole, moreover, it was the older age group of 55–59 years that experienced the steepest decline, by 4 percentage points.

Table 3. Female employment and labour force participation rates by age group in Kerala and India, 2004–05 and 2011–12 (percentages)

Age group	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60+	15+
Kerala										
2004–05										
Employment rate	16.7	15.7	21.5	24.1	28.8	31.4	33.2	17.5	10.1	19.1
Labour force participation rate	51.8	51.2	43.8	40.6	34.5	32.3	36.0	17.6	10.2	33.4
2011–12										
Employment rate	13.8	20.5	31.1	33.6	33.4	25.0	24.9	24.3	5.9	20.3
Labour force participation rate	29.7	33.5	42.3	37.5	34.4	25.7	26.6	24.3	6.4	25.1
India										
2004–05										
Employment rate	15.5	18.6	23.6	26.5	26.2	22.7	22.4	19.2	8.6	18.5
Labour force participation rate	20.9	22.1	25.5	27.8	26.7	22.9	22.6	19.2	8.6	20.4
2011–12										
Employment rate	14.0	19.9	21.1	23.6	23.7	21.1	19.5	15.3	6.7	16.7
Labour force participation rate	17.8	22.3	22.4	23.9	23.9	21.2	19.6	15.3	6.7	17.8

Source: Author's estimates based on NSSO unit-level data.

In summary, the consideration of female labour market activity by MPCE quintile, educational attainment level and age group essentially highlights Kerala's divergence from the all-India patterns. Rather than income and substitution effects or increased enrolment in education, labour market developments in Kerala point to a discouragement effect among young, educated and economically well-off women. In order to explore these dynamics further, the next section examines the nature of female employment in Kerala from the perspective of occupational distribution.

Occupational distribution of female employment

In 2004–05, the NSSO still applied the NCO-68 national classification of occupations, which was replaced by the NCO-2004 classification from the 64th round onwards. For comparability between the 61st and 68th rounds of the survey (i.e. 2004–05 and 2011–12), the occupational categories of the NCO-68 have been regrouped and restructured in line with those of NCO-2004, whose one-digit-level occupational classification is used in this study. Its broad occupational “divisions” and corresponding skill levels are as follows:

- Division 1 – Legislators, Senior officials and Managers (skill level not specified);
- Division 2 – Professionals (more than 15 years of formal education/post-graduate university degree);
- Division 3 – Technicians and Associate professionals (14–15 years of formal education/first university degree);

- Division 4 – Clerks (11–13 years of formal education/secondary education);
- Division 5 – Service workers and Shop and market sales workers (11–13 years of formal education/secondary education);
- Division 6 – Skilled agricultural and fishery workers (11–13 years of formal education/secondary education);
- Division 7 – Craft and related trades workers (11–13 years of formal education/secondary education);
- Division 8 – Plant and machine operators and assemblers (11–13 years of formal education/secondary education);
- Division 9 – Elementary occupations (up to 10 years of formal education and/or informal skills/primary education).

Table 4 shows the occupational distribution of female employment in Kerala between 1993–94 and 2011–12. The most notable distributional shift over this period is the substantial increase in Division 9. Between 2004–05 and 2011–12, the proportion of female workers in elementary occupations more than doubled, from 9.4 to 20.1 per cent, making it the single largest occupational category of female employment. This trend should be considered in conjunction with the significant increase (observed above) in the employment rates of women from households in the lowest MPCE quintiles during the same period. This pattern suggests that a large proportion of female workers are turning to elementary occupations for employment in the last resort. Indeed, in the absence of this shift, it may be assumed that female employment rates in Kerala would have remained lower.

The rise in the proportion of female workers in elementary occupations was accompanied by a fall in the proportion of those in Divisions 6 to 8, thereby confining the bulk of women's employment to fewer occupations and increasing occupational segregation. At the other end of the spectrum, in occupations normally requiring post-graduate and graduate levels of education, the rising share of women in Division 2 superficially suggests a positive development, but it is women with lower educational attainment who are moving into this occupational category, confirming the shrinking presence of graduate and post-graduate women in the workforce (table 5). Division 3 also witnessed a drop in its percentage of graduate and post graduate women, though the overall share of female employment actually declined in this category: the 11.2 per cent proportion of women employed in Division 3 is the lowest on record since 1993–94. As shown in table 5, the percentage of graduate and post-graduate women fell from 85 to 79 per cent in Division 2 and from 54 to 47 per cent in Division 3. In response to the general decline in the proportion of higher educated women in the workforce, an increasing share of workers with higher secondary and diploma-level education were absorbed into Division 2, while Divisions 4 to 9 exhibit a larger proportion of women with higher education than in the previous period, particularly in Division 4 (i.e. clerks). The marginal increase in the share of graduates and post-graduates employed in elementary occupations (Division 9) indicates that higher-educated women

Table 4. Female employment across one-digit-level occupational divisions in urban Kerala between 1993–94 and 2011–12 (percentages)

	Percentage female			
	1993–94	1999–2000	2004–05	2011–12
Division 1	1.3	4.8	4.2	9.4
Division 2	7.0	4.8	9.3	17.4
Division 3	11.4	13.0	13.5	11.2
Division 4	6.9	5.8	8.9	8.6
Division 5	12.7	18.9	25.3	16.1
Division 6	14.0	6.9	7.0	3.5
Division 7	25.9	28.5	17.4	13.0
Division 8	8.7	5.9	5.0	0.7
Division 9	12.1	11.4	9.4	20.1

Source: Author's estimates based on NSSO unit-level data.

Table 5. Female employment by level of education and occupational division in urban Kerala, 2004–05 and 2011–12

	2004–05				2011–12			
	NL, LP	Md, Sec	HS, DC	Grad, PG	NL, LP	Md, Sec	HS, DC	Grad, PG
Division 1	16.5	47.4	9.4	26.7	14.1	48.2	12.3	25.4
Division 2	4.1	5.3	5.8	84.8	0.0	6.5	14.8	78.7
Division 3	2.3	6.7	37.1	54.0	0.0	15.1	37.8	47.1
Division 4	0.0	13.6	33.7	52.7	0.0	9.5	23.1	67.4
Division 5	62.1	31.5	3.4	3.0	18.8	57.3	15.1	8.8
Division 6	44.0	39.5	12.0	4.5	49.7	28.5	14.3	7.5
Division 7	44.1	51.3	3.9	0.7	33.4	52.5	9.0	5.1
Division 8	55.5	37.5	7.0	0.0	0.0	64.4	35.6	0.0
Division 9	75.9	20.6	3.5	0.0	46.1	49.0	4.4	0.5

Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

are increasingly being employed in jobs that do not match their education, suggesting increased participation among women from lower MPCE households. These shifts also reflect the general rise in the levels of literacy and education among Kerala's female population (see table 2 above).

Table 6 shows the age distribution of the graduate and post-graduate women employed in Divisions 2 and 3, in which the proportion of higher educated women declined.⁸ The data point to a falling share of young workers, particularly among new entrants aged 20–29 and those aged 30–34 years.

⁸ This exercise is not carried out for all educational categories across all occupational divisions because such disaggregation leads to problems of sample size.

Table 6. Age composition of the graduate/post-graduate female workforce in the professional/technician and associate professional categories in urban Kerala, 2004–05 and 2011–12

Age group	2004–05				2011–12			
	20–29	30–34	35–49	50+	20–29	30–34	35–49	50+
Graduate+	30.1	17.8	28.1	23.9	27.8	15.4	45.5	11.3

Source: Author's calculations based on NSSO unit-level data and NCO-2004 Divisions 2 and 3.

Table 7. Real wages by sex and female-to-male wage ratios across NCO-2004 occupational divisions in urban Kerala, 2004–05 and 2011–12

	Div 1	Div 2	Div 3	Div 4	Div 5	Div 6	Div 7	Div 8	Div 9	Weighted average
2004–05										
Male	396.3	331.9	214.2	200.2	134.1	n.a.	150.0	154.0	124.8	174.4
Female	488.4	298.7	199.0	193.1	65.9	n.a.	64.4	68.0	79.2	149.6
Ratio	1.23	0.90	0.93	0.97	0.49	n.a.	0.43	0.44	0.64	0.86
2011–12										
Male	492.4	644.8	437.4	242.3	179.8	n.a.	211.1	194.1	199.1	261.9
Female	436.5	415.5	284.7	225.0	86.8	n.a.	111.4	58.2	94.7	206.4
Ratio	0.89	0.64	0.65	0.93	0.48	n.a.	0.53	0.30	0.47	0.79

Notes: On the exclusion of Division 6, see footnote 9. Real wages are the average daily earnings from workers' usual principal activity in Indian rupees (INR).

Source: Author's estimates based on NSSO unit-level data and the consumer price index of the Department of Economics and Statistics of the Government of Kerala.

From 48 per cent in 2004–05, the combined share of these two age groups declined to 43 per cent in 2011–12. Meanwhile, the proportion of those in the 35–49 age group increased sharply, from 28 to almost 46 per cent. This corroborates the disquieting labour market trend whereby young professionals and paraprofessionals are increasingly “missing” from the workforce. Again, the substantial fall in the representation of higher educated, young females in the labour market points to a discouragement effect.

In the context of Kerala's falling rates of female labour force participation, it is also interesting to consider the above changes in women's occupational and age distribution from the perspective of the wage rates paid to male and female workers across occupational divisions. Table 7 provides estimates of the real wage rates and female-to-male wage ratios for each occupational division in urban Kerala in 2004–05 and 2011–12, while accounting for differences in skill levels so as to eliminate biases.⁹ Over this period, average real wages increased by about 1.5 times for both men and women, while the average female-to-male wage ratio deteriorated marginally, from 0.86 to 0.79. However, the occupational wage data show that the gender pay

⁹ The wage data for Division 6 are excluded because the majority of the workers in this division were self-employed, and the residual sample of wage earners (regular and casual) was too small.

gap widened drastically in the high-skilled occupations of Divisions 2 and 3 as a result of the dampened growth of female wages compounded by a substantial rise in male wages, although both of these occupational divisions had a high wage ratio of 0.9 in 2004–05. Another occupational division that witnessed a particularly sharp deterioration in its female-to-male wage ratio was Division 9 (elementary occupations), whose wage ratio dropped from 0.64 to 0.47; this division also saw an increased concentration of female workers in 2011–12. In fact, the wage ratios worsened in all the occupational divisions except Division 7 (crafts and related trades), which experienced a steady decline in its share of female workers. Kerala's worsening gender wage gaps could thus be a major factor discouraging prospective female workers from labour market participation, especially in the light of women's job aspirations and preferences.

Conclusion

Against the background of India's falling female labour force participation rates and shifting patterns of female employment, this article has examined women's labour market behaviour in Kerala since the mid-2000s. The period between 2004 and 2012 saw Kerala depart from its traditional pattern of high female labour force participation, and shift towards the low rates of female participation observed at the all-India level. However, given the former uniqueness of Kerala's labour market in terms of female participation, this shift cannot be passed off as the fallout of the country-wide decline in women's labour market participation. Contrasting the labour market patterns in Kerala with those obtaining in the rest of the country, the study has shown that the explanations mooted for changes in female labour market behaviour at the all-India level are inadequate to explain the trends observed in Kerala.

Examining the qualitative shifts in Kerala's female employment and labour force participation, the article has highlighted the disproportionate decline in participation among higher educated and relatively well-off women. Also of particular significance in this regard is the drop in participation rates among women in the younger age groups. Apparently discouraged by labour market conditions, younger women are delaying their entry into the labour market, increasing the time they spend in education when they can afford to do so, or giving up on the labour market altogether. Since the quality of employment plays a major role in workers' labour force participation decisions, especially among women with higher education and high reservation wages, I suggest that prospective female workers are being discouraged from seeking paid employment, not least by Kerala's widening gender pay gaps. This is corroborated by the fact that the widening of male/female wage differentials has been the greatest in those occupations that the higher educated aspire to.

Since the available data provide no information on women's labour market decisions per se, I have attempted to construe them from the data on qualitative shifts in female employment. While this is a limitation of this study, the

investigation of women's labour force participation decisions could be pursued through future research, by primary-level studies and specific survey questions on the withdrawal of women from paid activities in the labour market.

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Appendix

Table A1. Female employment and labour force participation rates by MPCE quintile in urban India, 2004–05 and 2011–12 (percentages)

Activity status	MPCE quintiles				
	0–20	20–40	40–60	60–80	80–100
	2004–05				
Employment	24.8	19.5	16.1	14.5	17.2
Labour force participation	26.1	21.2	18.3	16.6	19.4
	2011–12				
Employment	18.0	17.5	15.6	15.0	17.0
Labour force participation	18.9	18.6	16.9	16.5	18.2

Note: Women aged 15+ by usual principal activity status.
Source: Author's estimates based on NSSO unit-level data.

Table A2. Female employment and labour force participation rates by MPCE quintile in urban Kerala, 2004–05 and 2011–12 (percentages)

Activity status	MPCE quintiles				
	0–20	20–40	40–60	60–80	80–100
	2004–05				
Employment	14.9	18.9	18.7	18.9	24.3
Labour force participation	28.5	31.4	36.7	33.8	36.9
	2011–12				
Employment	21.8	20.1	19.1	20.3	19.9
Labour force participation	25.9	26.4	23.4	27.1	22.7

Note: Women aged 15+ by usual principal activity status.
Source: Author's estimates based on NSSO unit-level data.

Table A3. Female employment and labour force participation by level of educational attainment in urban India, 2004–05 and 2011–12 (percentages)

	Educational attainment								
	NL	LP	Md	Sec	HS	DC	Grad	PG+	All
	2004–05								
Employment	25.0	18.6	11.7	9.5	10.3	42.3	24.1	34.0	18.5
Labour force participation	25.1	19.4	13.2	11.6	12.7	52.4	30.2	41.6	20.4
	2011–12								
Employment	19.9	18.7	12.7	9.1	9.4	32.0	22.1	37.6	16.7
Labour force participation	20.1	19.0	13.4	9.9	10.5	36.1	26.0	42.9	17.8

Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.

Table A4. Female employment and labour force participation by level of educational attainment in urban Kerala, 2004–05 and 2011–12 (percentages)

	Educational attainment								All
	NL	LP	Md	Sec	HS	DC	Grad	PG+	
	2004–05								
Employment	27.3	20.1	12.5	12.8	8.2	28.6	33.1	53.6	19.1
Labour force participation	27.4	23.0	23.8	29.4	30.3	70.9	67.9	87.5	33.4
	2011–12								
Employment	16.2	17.4	16.9	14.8	14.6	38.1	36.0	41.1	20.3
Labour force participation	17.8	17.8	18.3	19.2	20.7	56.9	47.9	56.8	25.1

Notes: Women aged 15+ by usual principal activity status. NL = not literate; LP = literate and up to primary; Md = middle; Sec = secondary; HS = higher secondary; DC = diploma/certificate; Grad = graduate; PG+ = post-graduate and above.

Source: Author's estimates based on NSSO unit-level data.