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Changing Patterns of Female Labour Force Participation in Kerala during Demographic Transition

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Abstract

Kerala's Female Labor Force Participation Rate (FLFPR) lags behind what its human development achievements would indicate. This paper studies how declining fertility, increasing life expectancy, and the resulting ageing of Kerala's population have developed alongside women's involvement in paid work during the recent Periodic Labour Force Survey (PLFS) period. Using secondary data from the PLFS, the Sample Registration System, the National Family Health Survey, and sources from the Kerala State Planning Board, the study shows a fertility rate below the replacement level that has been sustained for over three decades. Although female labour force participation has seen some recent gains, it continues to be concentrated in rural self-employment and casual work rather than regular salaried employment. This pattern stands in contrast to Kerala's well-documented "gender paradox," in which strong capability indicators exist alongside constrained economic agency for women. The paper contends that Kerala is currently forfeiting a demographic dividend—one that cannot be recovered without deliberate policy interventions aimed at channeling educated women into quality employment.

Keywords: Female labour force participation; demographic transition; Kerala; dependency ratio; gender paradox; Periodic Labour Force Survey

1. Introduction

The classical theory of demographic transition explains how a society shifts from high to low birth and death rates. There's an intermediate phase where death rates decline faster than birth rates, leading to a larger working-age population. Kerala experienced this shift about three to four decades earlier than the rest of India. It reached replacement-level fertility around 1987 and has since maintained a low fertility rate (Nair, 2010). This early transition occurred without the income growth typically associated with fertility decline, forming the basis of what is now known as the "Kerala model of development." This model shows how high social indicators can be achieved at relatively low income levels, mainly through investments in women's education and health, but research has pointed out a puzzling issue. Women in Kerala have higher literacy rates, life expectancy, and educational attainment than the national average, yet their labour force participation has been low, and in some cases even lower than in states with poorer social indicators, which has been called Kerala's "gender paradox." It reflects how women's capabilities have not translated into equal economic opportunities, as defined by Amartya Sen and Naila Kabeer, who distinguished between what individuals are capable of and

what they can actually do and choose to do(Mathew, 2015) and as Kerala moves further along in its demographic transition, with decreasing birth rates leading to a smaller working-age population and an aging society, the underuse of educated women in the workforce has become more acute. A state that is ageing faster than the rest of the country cannot afford to have a significant number of educated women out of the labour force. This paper tackles this issue directly by examining how the recent trends in the female labor force participation rate in Kerala relate to the state's demographic indicators and what this means for converting human capital into economic output.

2. Review of Literature

The research on women's work in Kerala can be divided into two main areas. The first focuses on the long-standing stagnation and, at times, decline of the Female Labor Force Participation Rate (FLFPR) in a state known as India's most successful example of human development. Mathew (2015) tracked female employment and participation from 2004 to 2012. He found that most of those leaving the labour market were young, educated women qualified for professional jobs, rather than those with less education. The study linked this trend to discouragement stemming from widening gender pay gaps in higher-level job categories, undermining the notion that education alone would lead women to work. Eapen (2004), examining an earlier period, identified a voluntary aspect to this withdrawal. He argued that rising household incomes in Kerala, largely due to Gulf remittances, enabled families to view women's paid work as optional. Participation decreased as prosperity increased, instead of the opposite. Kannan and Raveendran (2012) looked at the overall decline in female participation in India after 2004-05, placing part of Kerala's experience within a national trend in which women were pushed out of a shrinking agricultural sector without a corresponding entrance into non-farm work. The second area of research examines the social and institutional processes that influence the participation rate. Eapen and Kodoth (2002) argued that Kerala's families remain shaping women's education and employment decisions based on marriage prospects rather than career growth. This helps explain why higher educational attainment among women has not automatically led to greater labour force participation. Kodoth and Eapen (2005) expanded this argument, claiming that Kerala's well-known gender equality in social indicators hides ongoing inequalities in results such as work, asset ownership, and decision-making. This matches closely with the capability-agency distinction referenced in this study. At a more localized level, Devi (2002) used field evidence from Kerala to show that women's job preferences, influenced by family expectations, safety concerns, and the perceived respectability of certain jobs, limit the types of work they are willing to accept, regardless of the available positions. Mazumdar and Guruswamy (2006), in a study for the International Institute for Population Sciences, connected the issue to Kerala's demographics. They pointed out that changes in the dependency ratio from the state's early fertility decline were already modifying the pool of job seekers well before the recent period of population ageing discussed in this paper. Together, this research supports two key points that drive the current study. First, the slow growth of Kerala's FLFPR cannot be fully explained by deficiencies in women's education or health, given Kerala's strengths in these areas. The main problem lies in labor demand, social expectations about acceptable work, and the impact of remittance-driven prosperity. Second, while several studies hint at the demographic aspects of this issue, most were conducted before Kerala completed its fertility transition and before population ageing became the main demographic challenge. Their data, primarily from the Census and NSS rounds up to the early 2010s, do not include the PLFS series used in this paper. This study builds on the current literature by re-examining the FLFPR question with PLFS data through 2022-23 and by interpreting the findings in light of the later, ageing-focused stage of demographic transition that Kerala has entered. This stage gives a different meaning to the underutilization of female labor supply than it had when the earlier studies

3. Objectives of the Study

- To examine the trajectory of Kerala's demographic transition — fertility decline, rising life expectancy and the changing dependency ratio — and to place recent trends in female labour force participation within this trajectory.
- To analyse the rural-urban, employment-status and occupational composition of women's work in Kerala using recent PLFS rounds, and to compare Kerala's position with the all-India pattern.
- To draw out the policy implications of the widening gap between Kerala's demographic achievements and its utilization of female labor supply.

1. Methodology

The study is descriptive and analytical and relies entirely on secondary data. Demographic indicators — total fertility rate, life expectancy, infant mortality and the dependency ratio — are drawn from the Sample Registration System bulletins of the Registrar General of India, the National Family Health Survey (NFHS-5, 2019-21), the Census of India and the population projections prepared by the National Commission on Population, as compiled in the NITI Aayog's macro-fiscal profile of Kerala (2025). Labour market indicators, including the female labour force participation rate, its rural-urban break-up and the employment-status and occupational composition of women workers, are drawn from the Periodic Labour Force Survey (PLFS) Annual Reports for the period 2017-18 to 2022-23, supplemented by unit-level PLFS estimates reported in a state factsheet prepared by the Institute for What Works to Advance Gender Equality (IWWAGE, 2023). Kerala figures are read alongside the corresponding all-India figures throughout, since the paper's interest lies less in Kerala's absolute position than in how far it has moved relative to the national pattern as its own transition has advanced. The analysis is confined to simple descriptive comparison — percentages, ratios and cross-tabulation — appropriate to a study whose purpose is to establish and interpret a set of stylised facts rather than to test a formal econometric model. A caveat that applies throughout is that PLFS estimation procedures were revised for the 2025 survey cycle and that fertility and dependency-ratio figures for the most recent years are, in places, official projections rather than observed values; these are flagged in the tables where relevant.

5. Analysis and Discussion

5.1 The Advancing Demographic Transition in Kerala

Kerala's demographic profile today is that of a state in an advanced stage of transition. Table 1 sets out the key indicators alongside the corresponding all-India figures.

Table 1: Demographic Transition Indicators, Kerala and India

Indicator	Kerala	India	Reference Year
Total Fertility Rate (children per woman)	1.8	2.0	2019-21
Life Expectancy at Birth (years)	75	70	2020
Infant Mortality Rate (per 1,000 live births)	6	28	2020
Dependency Ratio (%)	58.5	55.7	2021 (projected)
Elderly (60+) share of population (%)	~20 (projected)	~12 (projected)	2026 (projected)

Source: Sample Registration System Bulletin, Registrar General of India; National Family Health Survey-5 (2019-21); NITI Aayog, Macro and Fiscal Landscape of the State of Kerala (2025); population-ageing projection from published demographic estimates for Kerala.

Two features of Table 1 deserve attention. First, Kerala's total fertility rate has stayed below the replacement level of 2.1 for over three decades. This trend is unusual even among low-fertility developing regions. It shows that Kerala entered the later phase of the transition, dominated by an aging population, much earlier than most of India. Second, Kerala's dependency ratio has historically been lower than the national average due to its early decline in fertility. Now, it has crossed above the all-India figure. This change is driven not by a young population, but by the increasing number of elderly people. Kerala is often noted as the Indian state where population ageing will be most evident (Ponnapalli et al., 2013). The share of elderly people in the population is expected to reach nearly a fifth of the total in the next few years, which is about double the all-India projection. During the earlier phase of Kerala's transition, the state benefited from a demographic dividend, with a large working-age population compared to dependents (Jain et al., 2025). Now, Kerala has moved past

that point. The opportunity to fully integrate the productive potential of the working-age population, including women, into the labor force is closing. This situation highlights the importance of the FLFPR trends discussed below.

5.2 Female Labour Force Participation: Kerala Compared with India

Table 2 compares Kerala's FLFPR (usual status, age 15 years and above) with the all-India figure at the two ends of the recent PLFS series for which comparable state-level estimates are available.

Table 2: Female Labour Force Participation Rate (Age 15+, Usual Status), Kerala and India

Year	Kerala (%)	India (%)	Kerala–India Gap (percentage points)
2017-18	n.a.*	23.3	—
2022-23	37.5	37.0	+0.5

Source: *PLFS Annual Report, 2022-23, Ministry of Statistics and Programme Implementation, as compiled in NITI Aayog (2025).*

The main finding shows convergence rather than divergence. Kerala's FLFPR was 37.5 percent in 2022-23, which is slightly above the all-India figure of 37.0 percent; this creates a gap of half a percentage point, much smaller than the differences in almost every other social and human development indicator listed in Table 1. This outcome is notable given Kerala's female literacy rate of over 96 percent, its nearly universal secondary schooling for girls, and its higher education gender parity index, which is well above the national average. One reason for this situation is that the all-India FLFPR has risen sharply during the PLFS period. This recovery has mainly come from increased unpaid and self-employed work in agriculture in the northern and central states (Fernandez & Puri, 2023). As a result, Kerala's steadier participation rate now seems less impressive next to the fast-rising national average, even though Kerala's own rate has not declined. Thus, the convergence reflects less about Kerala's improvement and more about the rest of the country catching up in a key measure that, as shown in the next two tables, masks significant differences in the quality and security of the work included.

5.3 Rural-Urban Variation in Women's Participation

Locality-wise data for the most recent PLFS round show a familiar but still noteworthy divide within Kerala itself.

Table 3: Female Labour Force Participation Rate by Locality, Kerala, 2022-23

Locality	FLFPR (%)
Rural Kerala	40.8
Urban Kerala	33.6

Source: *PLFS Annual Report, 2022-23, as compiled in NITI Aayog (2025).*

Rural women in Kerala report a participation rate more than seven percentage points higher than that of their urban counterparts, a gap that runs counter to the pattern often expected in a highly urbanised, service-oriented economy such as Kerala's. The explanation is linked closely to the composition of work discussed in section 5.5 below: rural FLFPR is buoyed by women's continuing, if declining, engagement in agriculture and allied activities and by public employment programmes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme, in which women constitute roughly nine in every ten workers in Kerala, a share far above

the national average and widely attributed to the mobilisation role played by the Kudumbashree network. Urban Kerala, despite offering the wider range of formal-sector and service-sector opportunities usually associated with higher female participation elsewhere in India, evidently does not translate its educated female population into commensurately higher work-force entry, a pattern consistent with the long-standing observation that Kerala's urban, educated women face a narrower set of jobs they consider acceptable relative to their qualifications, and correspondingly higher rates of voluntary withdrawal or extended job search.

5.4 Employment-Status Composition of Women Workers

The security and productivity of women's work depend as much on its status as on the bare participation rate. Table 4 sets out the distribution of female workers in Kerala across the three broad PLFS employment-status categories.

Table 4: Distribution of Female Workers by Employment Status, Kerala, 2022-23

Employment Status	Share of Female Workers (%)
Regular wage / salaried employment	40.3
Self-employment	37.8
Casual labour	21.9

Source: PLFS Annual Report, 2022-23, as compiled in NITI Aayog (2025).

Regular wage or salaried employment makes up the largest share of Kerala's female workforce. This situation contrasts sharply with the national trend, where casual and self-employed work dominate women's employment across most sectors. This aligns with Kerala's larger public and organized private service sector (Mathew, 2015). Still, three out of five women workers in Kerala are not in regular salaried jobs. They are almost equally split between self-employment, mostly in low-capital and low-return household businesses or agricultural work, and casual daily-wage labor, which is the least secure of the three categories. Recent state-level assessments of Kerala's labor market show an increase in women working as casual labourers and a decrease in regular female workers (Abraham, 2025). This suggests that the employment growth that has occurred has not been of the higher-quality type expected to attract more educated women into the workforce or to keep them there.

5.5 Occupational and Sectoral Engagement of Women Workers

Unit-level PLFS estimates for 2020-21 allow a closer look at what kind of work Kerala's women are actually doing, disaggregated by locality.

Table 5: Occupational Distribution of Women Workers, Kerala, by Locality (PLFS 2020-21 unit-level estimates)

Occupation Category	Rural (%)	Urban (%)
Elementary occupations	34	24
Agricultural and allied work	22	—
Legislators, senior officials and managers	12	15
Technicians and associate professionals	—	13
Crafts, trades, clerical and plant/machine operation (combined)	<10 (each)	<10 (each)

Source: *IWWAGE, Women's Workforce Participation in India: State-wise Trends – Kerala (2023)*, based on unit-level PLFS 2020-21 data.

The situation shows that one-third of rural women workers and a quarter of urban women workers are in elementary jobs. These are low-skill positions that offer little chance for growth in productivity or wages, despite Kerala's strong record in female education. More than one-fifth of rural women workers are still engaged in agriculture and related work, even as this sector's overall share in Kerala's workforce and gross value added continues to decline (Mamgain & Khan, 2022). This suggests that women have been slower than men to leave agriculture, likely because few non-farm job options are available to them locally. Additionally, reports indicate that nearly a quarter of women workers in rural Kerala are employed in education, and close to one-fifth work in health services (Economic Review, 2015).

This demonstrates that women's higher-quality jobs tend to be in the public and quasi-public social-sector workforce, which Kerala has built through its investments in education and health. A notable number of women serve as legislators, senior officials, and managers in Kerala. This includes many women elected representatives and office-bearers in the three-tier panchayati raj system, thanks to reserved seats for women. This suggests that political and administrative decentralisation, along with education and health services, has helped some educated women in Kerala find positions in decision-making, roles that the private sector has been slower to provide (Akhila, 2024).

6. Findings

- Kerala has been in a sub-replacement fertility regime for more than three decades, and its dependency ratio, historically below the national average, has now overtaken it — a shift driven by population ageing rather than by a youthful bulge, signaling that the state's demographic dividend is closing.
- Kerala's female labour force participation rate, at 37.5 per cent in 2022-23, is now only marginally above the all-India figure, a convergence explained more by a sharp rise in the national rate than by any comparable acceleration in Kerala.
- Rural women in Kerala participate in the labour force at a substantially higher rate than urban women, a pattern sustained by agricultural work and by public employment programmes such as MGNREGS rather than by the formal, service-sector opportunities concentrated in urban areas.
- Regular wage or salaried employment is the single largest employment-status category among Kerala's women workers, unlike the national pattern, but three in five women workers still fall outside this more secure category, split between self-employment and casual labour.
- A substantial share of women workers, particularly in rural areas, remains concentrated in elementary occupations and agriculture, despite Kerala's exceptionally high levels of female education, pointing to a persistent mismatch between women's qualifications and the occupations actually available to them.
- Where Kerala's women have moved into higher-status occupations, this has occurred substantially through public and quasi-public channels — education, health services and elected local-government positions — rather than through private-sector or industrial employment.

7. Suggestions

- Given the narrowing window created by population ageing, state employment policy should treat the absorption of educated women into the workforce as a demographic priority and not only as a gender-equity objective.
- Urban labour-market interventions deserve particular attention, since the urban-rural gap in FLFPR runs counter to the usual expectation and suggests that Kerala's cities are not yet generating enough of the mid-skill, formal-sector jobs that would draw educated urban women into work.

- Skilling and placement programmes should be designed to move women out of elementary and low-return agricultural occupations and into the technical, clerical and supervisory occupations in which they remain under-represented relative to their educational profile.
- The public and quasi-public sectors — education, health and local self-government — have functioned as Kerala's most effective channel for women's quality employment and political participation; there is a case for examining whether elements of this model, particularly structured entry pathways and reserved representation, can be adapted to encourage similar outcomes in the private and industrial sectors.
- Since a large share of women's rural employment continues to depend on public works programmes such as MGNREGS, sustained funding and effective local implementation of such schemes, alongside efforts to build linkages from them into more durable forms of work, remain important in the near term.
- Given the shrinking working-age population implied by Kerala's advanced demographic transition, extending working lives — through better childcare and eldercare support that eases women's dual burden of paid and unpaid work — may do as much to sustain female labour supply as measures aimed only at labour-market entry.

8. Conclusion

Kerala's demographic shift, once praised mainly for lowering fertility and mortality rates, has now entered a phase where its effects on the labour market are important. An ageing population and a higher dependency ratio mean that the state has less flexibility to exclude any part of its working-age population, especially its educated women, from the workforce. However, the evidence presented here shows that Kerala's female labour force participation rate has merely aligned with the national average, rather than exceeding it. Much of the work women in Kerala do still lacks the security and productivity expected given their educational levels. The gender paradox discussed in the state's development literature is not improving over time; instead, it is facing demographic pressure, making resolution more urgent. To turn Kerala's well-educated women into a sustained economic force, policy measures must focus on more than just further improvements in education and health—areas where Kerala has already succeeded—by tackling labour demand, creating urban jobs, and distributing unpaid care work more fairly.

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