

Kerala's Births Have Fallen Nearly 50% Since 1971 — What Happens Next?

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1. Personal Reflection:

I remember the first day I walked into my first school, or at least I think I remember. It's quite possible that my brain has recreated these events later, but my memories about my first school remain remarkably vivid. It was called the Thevalakkara Government LP School, also known as the Bathel School. The school was a sparse building of five or six rooms, buzzing with children. The first room housed the school office, and the remaining had four or five classrooms, each separated by temporary partitions. This was a government school in a lower middle-class rural setting. Everything was in short supply except the children. Our classes had at least 45 to 50 students each. We had a single teacher for each class, and if he or she did not turn up, most probably no one else did, so we whiled away the whole day chattering and making merry.

After two years in that school, in 1977 my family left for Ernakulam, where my father worked in Fertilizers and Chemicals Travancore Limited (FACT). I studied in the FACT Central UP School for four years until standard VII. There were three such schools up to the upper primary levels and a high school. All these operated under the state syllabus. There was another school which had classes all the way from first to tenth under the ICSE scheme. Compared to the modest facilities of my first school, my new school seemed opulent. It was a school run by a public sector undertaking. In those days, public sector units took serious care of their employees, so our school was lucky to receive that extra care.

From classes VIII to X, I studied at FACT Township High School - a school full of students. We had three classes: VIII, IX, and X, each with as many as 8-10 divisions. It was a school with all amenities we could ask for. These were the early 80s.

Today, FACT schools are shut. There aren't enough students. FACT had given up on its welfare orientation and leased out the school buildings to private organizations. With limited demand, those organizations eventually backed out. By the time the last of these schools finally shut its doors in 2023, there were less than 150 students. In about a generation, the student strength declined from a couple of thousand to less than a couple of hundred. The playgrounds that produced national players are now home to overgrown brambles and bushes.

Recently I was told that there were only four new admissions in my LP school at Thevalakkara. All the schools that I studied in Kerala till 10th standard are either

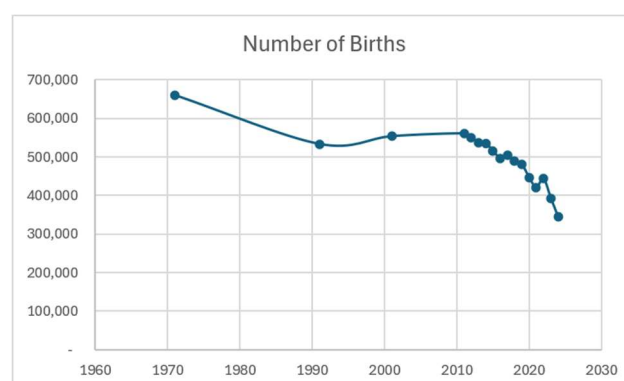
closed or on the verge of closure. Today, school closures have become common in Kerala. Decline of FACT as an employer has certainly contributed to the demise of FACT schools. But demographic decline appears to be the broader force affecting schools across Kerala. Declining fertility, migration of young people and an ageing population are slowly turning the classrooms silent.

2. The collapse in births

The number of live births in the state has been declining in the past decades. However, the pace of decline has accelerated in the recent past:

Table 1: Number of Births in Kerala

Year	Number of Births
1971	660,000
1991	533,000
2001	553,000
2011	560,268
2012	550,411
2013	536,352
2014	534,458
2015	516,013
2016	496,292
2017	503,597
2018	488,174
2019	480,113
2020	446,891
2021	419,767
2022	443,032
2023	393,231
2024	344,766



Source: 1971, 1991 and 2001: Authors' estimates, calculated by applying the respective years' SRS crude birth rates to Census population figures. 2011 onwards: Kerala Civil Registration System (CRS), births registered during each calendar year. The annual rates of decline are calculated separately within each series.

The annual decline in births between 1971 and 2001 was relatively modest, averaging around 0.44 percent per year. The decline accelerated to 1.95 percent during the subsequent period from 2011 to 2018. From 2018 to 2024, the decline further accelerated to 5.63 percent per year.

The pace of decline is striking even when compared to Japan, a country widely considered to be an ageing society. From 2011 to 2024, the total number of births in Japan declined by 34.7% compared to 38% in Kerala.

At least three overlapping factors appear to be driving the sharp decline in the number of live births in the state. This paper examines the relative importance of these factors and their implications for Kerala's demographic future.

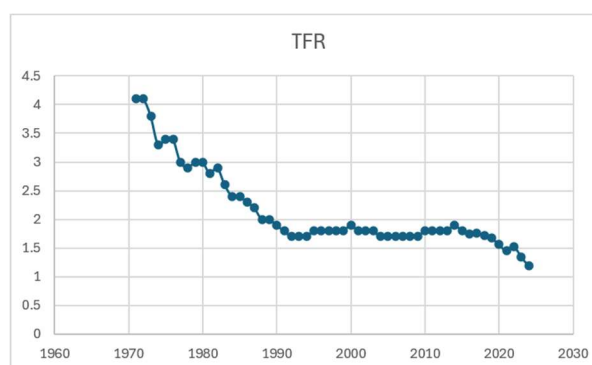
1. Persistently low fertility
2. The exhaustion of positive demographic momentum, and
3. Changing patterns of migration

3. Declining Total Fertility Rate (TFR)

Total Fertility Rate (TFR) has been trending down in Kerala over the past several decades. TFR is the average number of children a woman would have if she experienced the prevailing age-specific fertility rates throughout her reproductive years.

Table 2: Total fertility rates

Year	TFR
1971	4.10
1981	2.80
1991	1.80
2001	1.80
2011	1.80
2021	1.46
2024	1.19



Source: Government of Kerala, Department of Health Services, *Health at a Glance 2019–20* (1971–2015); Government of Kerala, Department of Economics & Statistics, *Annual Vital Statistics Reports (2016–2024)*, based on the Civil Registration System.

From a TFR of 4.1 in 1971, Kerala's TFR fell below the replacement level of 2.1 by the early 1990s. Kerala's TFR remained broadly stable at around 1.7–1.9 for almost two decades before beginning to decline more sharply in recent years.

Most societies tend to have fewer children as socioeconomic conditions improve. Kerala is no exception. Kerala traditionally had high levels of education and healthcare facilities for its population. Low infant mortality, higher levels of female education and urbanization are generally associated with lower fertility. Kerala's relatively high levels of education, healthcare and urbanization are therefore consistent with its early transition to low fertility.

Kerala's fertility rates are similar to many low fertility nations. European Union¹ average is around 1.34 in 2024. Japan reported a TFR of 1.15 for the same period. China and South Korea reported TFRs of 1.0 and 0.75 respectively for 2024. TFR reported in the Kerala Vital Statistics Report 2024 is 1.19, placing it squarely among the world's low fertility populations.

Reversing long- established low fertility rates is difficult. Experience from many low-fertility societies suggests that policy interventions have had limited success in raising fertility substantially.

But low fertility explains only part of Kerala's demographic transition. To understand the sharp decline in births after 2011, we must also consider demographic momentum.

4. Reversal of Demographic Momentum

For several decades, Kerala's age structure helped sustain the number of births despite falling fertility. This positive demographic momentum appears to have weakened substantially since around 2011, contributing to the rapid decline in births.

The number of births remained relatively stable until 2011, declining at an estimated annual rate of only 0.4 percent over the preceding four decades. During the same period, the Total Fertility Rate fell sharply, from 4.1 in 1971 to 1.8 in 2011. This divergence is consistent with substantial positive demographic momentum: the large cohorts born during the earlier high-fertility period were reaching reproductive age even as fertility declined. Their numbers helped cushion the effect of falling fertility on annual births.

The size of the female population aged 15–49 illustrates this process. In 1991, Kerala had approximately 8.09 million women in this age group. The number rose to 9.14 million in 2001 and 9.33 million in 2011, despite the sustained decline in fertility. However, as smaller cohorts entered reproductive age, this source of demographic support began to diminish. The age structure that had previously cushioned the decline in births was gradually changing.

The 2021 Census figures are not available, so the size of the reproductive-age population must be estimated. One approach is to follow the female cohort aged

¹ **International comparisons:** European Union: Eurostat, *Fertility statistics*, Total fertility rate, 2024. Japan: Ministry of Health, Labor and Welfare, *Vital Statistics of Japan, 2024*, Table 4-1, "Trends in live births, live birth rates, total fertility rates and sex ratio of live births: Japan" (TFR: **1.15**). South Korea: Statistics Korea, *Preliminary Results of Birth and Death Statistics in 2024* (TFR: **0.75**). China: United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects 2024*, Total fertility rate series (2024 estimate: **approximately 1.0**).

5–39 in 2011, which would have been approximately 15–49 in 2021. This cohort numbered 9.43 million in 2011. The two preceding intercensal periods recorded cohort attrition of 5.2 and 5.6 percent, respectively. Such attrition reflects mortality and migration, among other factors.

Applying the average attrition rate of 5.4 percent to the 2011 cohort gives an estimated 8.92 million women in the corresponding reproductive-age cohort in 2021. This is an extrapolation, not an observed Census count. Nevertheless, it points to a contraction in the population of reproductive age, which, alongside persistently low fertility, helps explain the accelerating decline in births.

Table 3:

	Women in Reproductive Cohort (Mn)			
Cohort	1991	2001	2011	2021E
05-39	9.64	9.89	9.43	
15-49	8.09	9.14	9.33	8.92
Attrition (%)		5.2%	5.6%	5.4%

Source: Office of the Registrar General & Census Commissioner, India, Population Census 1991, 2001 and 2011, age-sex population tables for Kerala; authors' calculations of cohort attrition and extrapolation for 2021.

5. Impact of Changes in Migration Trends

Kerala is not merely an ageing society. It is an ageing society that continuously exports part of its reproductive-age population. Keralites have migrated to various destinations for generations. But the composition of migration has significantly changed in the recent past.

The emigrant pool from the state is becoming younger and the proportion of women is rising. While temporary migration to the Middle East remains dominant, migration to Western countries is becoming increasingly important, particularly among younger, more highly educated and female migrants.

When young migrants establish families outside the state, their children are born and raised elsewhere. Thus, while low fertility is the primary driver of Kerala's demographic decline, sustained out-migration may amplify the process by further reducing the number of births occurring within the state.

Kerala's emigrant population increased rapidly until 2013, reaching about 2.4 million, before declining to 2.12 million in 2018. It inched up to about 2.15 million in 2023. The relative stability of the emigrant stock in recent years, however, masks changes in its composition. The continuing migration of young people is increasingly being accompanied by the migration of women and students, while earlier migrants return to the state.

Table 4: Kerala Emigrants Abroad

Year	Kerala emigrants abroad
1998	1.36 mn
2003	1.84 mn
2008	2.19 mn
2011	2.28 mn
2013	2.40 mn
2018	2.12 mn
2023	2.15 mn

Source: Centre for Development Studies (CDS), *Kerala Migration Surveys (1998, 2003, 2008, 2011)*; *Kerala Migration Survey 2023*, Gulati Institute of Finance and Taxation (GIFT) with technical support from the International Institute of Migration and Development (IIMAD)

A closer examination of the components of migration provides further evidence of this shift.

i. Student Migration

The number of students leaving the state for other Indian states for education has risen steadily between 1998 and 2011, adding to the outflow of young people from the state. Comparable statistics for international student migration are not available for the period up to 2011.

Table 5: Student Migration to Other Indian States

Year	Number of domestic student migrants	Estimated % of corresponding age cohort
1998	99,000	1.8%
2003	228,000	4.3%
2008	241,000	4.8%
2011	311,000	6.0%

Source: Centre for Development Studies (CDS), *Kerala Migration Survey 2011: Inflexion in Kerala's Gulf Connection*, reporting student out-migration from Kerala.

Student migrants are assumed to belong predominantly to the 18–25-year age group. The size of the corresponding age cohort was estimated from relevant Census data by interpolation. The percentage shown in the table is therefore an approximate measure of the proportion of the relevant age cohort studying outside Kerala in other Indian states.

The number of international student emigrants nearly doubled from 129,000 in 2018 to 250,000 in 2023. Including students studying in other Indian states, there were 382,356 student emigrants from the state in 2023.²

² **Source for 2018–2023:** *Kerala Migration Survey 2023*, International Institute of Migration and Development (IIMAD) / Gulati Institute of Finance and Taxation (GIFT).

Several factors contributed to the growth of international student migration. These include easier access to educational loans, increasingly favourable immigration and post-study work policies in destination countries, and the extensive marketing of overseas educational opportunities in Kerala. For many students, overseas education also became an attractive pathway to skilled employment and long-term settlement abroad.

ii. Female Migration

Female migration from Kerala has increased both in absolute numbers and as a share of total emigration. Female emigrants accounted for 14% of the total emigrants, rising to 19.1% in 2023, even as the overall stock of emigrants remained broadly stable.

Table 6: Female Migration

Year	Total Emigrants	Female Emigrants	Female Share
2011	2.28 mn	0.32 mn	14.0%
2018	2.12 mn	0.34 mn	15.8%
2023	2.15mn	0.41mn	19.1%

Source: Kerala Migration Survey 2011, Centre for Development Studies (CDS); Kerala Migration Survey 2023, Gulati Institute of Finance and Taxation (GIFT), with technical support from the International Institute for Migration and Development (IIMAD).

The proportion of women among student migrants also appears to be substantial. While the KMS series does not provide directly comparable estimates of female student migration across survey rounds, the reports consistently indicate that educational migration has become an increasingly important channel of migration for women from Kerala.

The Kerala Migration Survey 2023 also highlights the importance of nursing in female international migration. It reports that 51.6 percent of female emigrants were employed as nurses or nursing assistants, underlining the role of skilled employment in shaping women's migration from the state.

The implications extend beyond the changing composition of migration. When women of reproductive age settle outside Kerala, some establish families and have children elsewhere. Female migration may therefore reinforce the decline in births within the state, although the scale of this effect depends on migrants' ages, family circumstances and subsequent migration or return.

iii. Family Migration

An important feature of Kerala's changing migration pattern is the migration of entire families, rather than individual workers. The KMS 2023 reported that

approximately 4.2 lakh homes in Kerala were found locked because all family members had migrated. This is equivalent to around 4.3% of the estimated 97 lakh households in the state—approximately one in every 23 households. While homes and households are not strictly equivalent statistical units, the comparison provides a useful perspective on the scale of family migration from Kerala. The report notes that, whereas migration traditionally involved workers leaving their families behind, increasing educational attainment and access to skilled employment have contributed to more families migrating together.

Family migration has potentially important demographic implications. When entire families relocate, subsequent family formation and childbearing may take place outside Kerala. This could further reduce the number of births occurring within the state. However, KMS 2023 does not quantify the effect of family migration on Kerala's births, and the demographic implications cannot be established from these figures alone.

iv. Rise of Non GCC Countries as Destination

For over a generation the favourite destination of emigrant Keralites has been the middle east. However, the trend is changing with a growing number of emigrants moving to destinations outside GCC.

The proportion of Keralites in the middle east has remained broadly stable from 2003 to 2018, before falling significantly since 2018.

Table7: Share of Kerala Emigrants in GCC Countries

Year	Share of Kerala Emigrants in GCC Countries
1998	93.8%
2003	89.0%
2008	88.6%
2011	89.3%
2013	86.3%
2016	89.6%
2018	89.2%
2023	80.5%

Source: S. Irudaya Rajan, *Kerala Migration Survey 2023*, Table 3.8: "Country of Residence of Emigrants, 1998–2023," *Gulati Institute of Finance and Taxation (GIFT)*, with technical support from the *International Institute for Migration and Development (IIMAD)*, 2024.

Traditionally migration to the GCC countries has been temporary, primarily in search for employment. In many cases, the families would stay back in Kerala while the migrant worked in the middle east and eventually returned home. Migration to countries outside the GCC, particularly countries offering opportunities for long-term settlement, may follow a different pattern, with

greater scope for families to relocate together and establish permanent residence abroad.

v. Second-Generation Migration

An aspect of migration that merits closer examination is the possibility of onward migration by the children of Keralites who settled in the Middle East. Children who grew up and received their education in the Gulf may choose to move to countries such as Canada, Australia, New Zealand and those in Europe for higher education, employment and long-term settlement. Others who return to India may gravitate towards major urban centres such as Bengaluru, Delhi and Mumbai, rather than their parents' places of origin in Kerala.

At present, these patterns constitute an observation and a hypothesis rather than a conclusion established by migration data. Nevertheless, they raise an important question: could migration that was initially temporary, with workers expecting eventually to return to Kerala, gradually become permanent across generations? If migrants' children establish their education, careers and families elsewhere, the consequences of the original migration for Kerala's population may extend well beyond the first generation.

The Changing Migration Pattern and the Accelerating Decline in Births

The period since 2018 appears to mark a significant change in the nature of migration from Kerala. Four developments stand out.

- International student migration nearly doubled during the period from 2018 to 2023. That is annual growth of 14%. This means that a growing number of young people are leaving the state at an age they would otherwise begin their working lives and form families in the state.
- The number of female emigrants from the state grew at 0.87% annually from 2011 to 2018. The pace accelerated to 3.82% per annum for the period from 2018 to 2023. This points to a changing gender composition of migration, with potentially important implications for family formations within Kerala.
- Family migrations have become more visible. KMS 2023 report noted that 0.42 mn homes were found locked during the survey, as all the family members had migrated. However, the figure should be understood as reported cases of family migration, not necessarily as a count of distinct households newly emigrating during 2018–2023.
- Between 1998 and 2018, GCC countries consistently accounted for approximately 86 to 93% of Kerala migrant. Their share fell from 89.2% in 2018 to 80.5% in 2023, while the non-GCC share rose to 19.5%. This

suggests a shift in destination patterns, although the figures alone do not establish how many migrants will settle permanently outside the Gulf.

These developments coincide with a marked acceleration in the decline in births in Kerala. The annual rate of decline increased from approximately 1.95% between 2011 and 2018 to 4.23% between 2018 and 2023. Low fertility rates and reversal of demographic momentum remain important underlying factors. However, the changing nature of migration may also be contributing to the acceleration, by reducing the number of people living in Kerala during their prime reproductive years and shifting some family formation and childbearing outside the state. Migration may therefore be amplifying a demographic decline already under way.

6. Conclusion

The demographic forces described above are unlikely to be temporary. The women entering reproductive ages over the next two decades were born during Kerala's period of below-replacement fertility. The reproductive-age population is therefore likely to continue shrinking. At the same time, if the recent decline in TFR persists, the number of births will be affected by both a smaller number of potential mothers and fewer births per woman.

The effect of lower TFR was masked for decades by the relatively large cohorts of women in the reproductive ages. Fertility declined below replacement level in the early 1990s, but the smaller cohorts born during this period began entering reproductive ages only later. The effects of declining fertility on the size of the reproductive-age population became more apparent after around 2011. The benefits of positive demographic momentum may therefore have begun to wane around that time.

Changes in migration patterns could further reduce the population of young adults residing in Kerala. During the earlier period, migration was primarily for temporary employment in the Middle East, with families generally remaining in the state. Consequently, migration had a limited direct effect on the number of births within Kerala. Since around 2018, however, there have been visible changes in migration patterns, with emigrants becoming younger and the proportion of women among them increasing.

Increased migration among young adults, particularly women, could further reinforce the decline in births in the state.

Kerala achieved social indicators comparable to those of many developed economies while its income and wealth levels remained substantially lower. The state's demographic transition has closely tracked improvements in social

indicators, even though economic prosperity remained significantly below developed nations.

Lower fertility and the demographic momentum generated by past birth patterns are difficult to alter through policy in the short term. Their effects are therefore likely to persist for some time. Migration, however, is influenced in part by economic opportunities and public policy. A deeper understanding of the changing motivations and patterns of migration could help Kerala respond to this emerging challenge.

Kerala may experience the demographic profile of an advanced economy before attaining advanced-economy levels of income. The state's future prosperity may therefore depend less on population growth and more on productivity growth, labour force participation and technological adoption.

7. Policy Implications

Kerala is an aging society. In the decades ahead, Kerala will have fewer youngsters and the population itself could start declining. Policy interventions are unlikely to reverse this trend in the short to medium term. All planning should factor in this reality.

The evolving demographic profile should be a prime consideration in evaluating large, long-gestation projects. Projects with lower fixed, upfront costs might be better suited for the state's demographic profile. When the demand is uncertain, building flexibility and optionality would be beneficial.

The economic consequences of steady migration of youngsters from the state are a significant policy challenge. Kerala's aspirational youngsters will remain in the state if the state offers attractive career opportunities. Generally, only high productivity businesses can offer such opportunities. The state should therefore create ecosystems to attract and sustain such businesses. While everyone should have the right to live wherever he chooses to, the state should strive to be that natural choice.

A large and highly educated talent base is essential to attract high productivity businesses to the state. Investing heavily in quality higher education is one of the ways to build such a talent base. A renowned university or a research center can attract talent from across the world, in addition to keeping Kerala's own youngsters at home. Some of the graduates may go on to set up businesses that can absorb the aspirational youngsters who would otherwise migrate out of the state. High-quality centers of higher education can act as talent magnets for the state and seed entrepreneurial ventures. Such institutions create networks, a

knowledge base, ideas and entrepreneurial energy that will immensely benefit the state in a multitude of ways.

Culturally, the state must become a welcoming host. The strong cultural identity of Kerala should not stand in the way of creating cosmopolitan cities and centers that will be culturally open to people from around the world.

To sustain a high productivity business ecosystem, the state should be attractive to entrepreneurs and capital providers too. Providing a fair, level playing field will go a long way in achieving this objective.

Kerala could have fewer births. But if it can attract talent from outside the state, it could have a thriving economy with high-quality researchers, inventors, professionals and entrepreneurs.

With the declining working-age population, the state's finances are likely to remain stressed. Kerala cannot count on an expanding population to enhance its tax revenues. Instead, the focus should be to shore up its finances with improved productivity and higher value businesses.

The elderly population is likely to grow in the medium term. The state is taking steps to improve the welfare of this cohort. This is a step in the right direction. In an ageing society, elderly are not merely dependents. They are an important part of the economy. High-quality affordable medical facilities, retirement communities, and infrastructure for long-term care should be priorities.

Kerala should move away from a population-led growth model towards productivity- and talent-led growth. Kerala cannot hope to go back to the past. It must proactively adjust to the new demographic realities.