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Odisha@100: The Challenges and Opportunities of Demographic Change

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Abstract

The fact that the eastern Indian state of Odisha has achieved below-replacement fertility must be astonishing for some including the social scientists. Not only the reduction of fertility below the ideal number of 2.1 per woman in reproductive age, but Odisha has also performed well on various demographic parameters, shedding its BIMARUO tag. However, it is important not to become overly content with this accomplishment, since the recent demographic changes have presented both formidable challenges and a multitude of opportunities for Odisha. As the state prepares to celebrate its 100th year as a separate state in 2036, policymakers must remain aware of these challenges and opportunities and implement the necessary course corrections to accelerate progress in line with the agenda of sustainable development goals.

Keywords: Demographic change, Demographic Dividend, Ageing, Urbanisation, Migration, Odisha

1. Introduction

With a population of around 4.5 crores and a geographical area of 155,707 square km, the eastern Indian state of Odisha remains in the limelight for its rich culture and reserves of natural resources, and unfortunately for natural disasters and economic impoverishment. However, the state has made significant strides on many fronts, and the achievement on the demographic front is also noteworthy. The spectacular decline in fertility—from 2.92 children per woman in 1992-93 to 1.82 in 2019-20 (IIPS and ICF, 2021) in an economically not-so-well-off state—is prominent. The reduction of fertility along with achievements on other demographic parameters has helped Odisha in shedding its BIMARUO tag. It implies that the state has outperformed other BIMARU states—Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh—in terms of various demographic parameters. More Importantly, Odisha's demographic transition has positioned it among states such as Kerala, Tamil Nadu, Karnataka, Himachal Pradesh, Maharashtra, and Punjab, which are known for their better development outcomes. The recent demographic changes have presented both formidable challenges and a multitude of opportunities for Odisha carrying significant bearing on future economic and social development (Das and Bera,2020). As the state prepares to celebrate its 100th year as a separate state in 2036, policymakers must remain aware of these challenges and opportunities and implement the necessary course corrections to accelerate socioeconomic progress in line with sustainable development goals. With this background, this paper examines the demographic changes and identifies the emergent issues, challenges, and opportunities that have resulted from the changes in population structure in Odisha.

2. Data and Methods

This paper traces the demographic changes and flags the emerging issues, challenges, and opportunities arising out of the changes in population structure by using data from a variety of sources—official and others—such as the Census of India, the National Family Health Survey, the Sample Registration System, and central and state government reports, existing literature, and

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narratives based on some emerging public issues. This paper is descriptive yet uses facts and figures from the relevant sources.

3. Findings and Discussion

The demographic transition is related to changes in population dynamics, such as decline in birth and death rates, which lead to longer life expectancies, lower family sizes, and changes in age structure, ultimately stabilizing population growth. The countries in the advanced stage of this transition or those that have already completed it, experience the challenges of aging, labour shortages, and immigration, while the countries caught in the early and middle phases of this process grapple with issues of high fertility, accelerated population growth, outmigration and high dependency. With only 4.87 % of the nation's total geographical space, Odisha has displayed regional heterogeneities in terms of its environmental, social, economic, and demographic aspects and indicators. This state, with regional heterogeneities in demographic change, is also experiencing a number of opportunities and challenges which need to be brought to the policy makers for planning for the future development.

Table 1: Estimated Changes in Demographic Parameters, 2021-2036

Parameters	**Value in and around 2011**	**Projected Figures (for 2036 and around)**
Population size (in 000)	41974 (2011)	49,025 (2036)
Population growth rate	9.3 (2011-15)	3.1 (2031-35)
Population Density (Number of people living per 1000 square kilometres of geographical area)	270 (2011)	315 (2036)
Urban Population size (in 000)	7,004 (2011)	10,434 (2036)
Level of urbanisation (% urban population to total population)	16.69 (2011)	21.28 (2036)
Crude Birth Rate (No of live birth per one thousand mid-year population)	18.0 (SRS 2011-15)	2031-35 (12.6)
Crude Death Rate (No of deaths per one thousand mid-year population)	7.9 (SRS 2011-15)	(8.7) (2031-35)
Total Fertility Rate (Average number of children a woman would have throughout her lifetime)	2.30 (SRS 2009-11)	1.71 (SRS 2031-35)
Infant Mortality Rate (Number of deaths per 1000 live births in a year)	53 (SRS2011-15)	35 (SRS 2031-35)
Under-Five Mortality Rate (Number of deaths per 1,000 live births for children under five years old)	69 (SRS 2011-15)	46 (SRS 2031-35)
% of total population in 0-14 Age group	28.9 (2011)	18.9 (2036)
% of total population in 15-59 Age group (Working age)	61.9 (2011)	64.1 (2036)
% of total population in 60 + Age group (Elderly)	9.3 (2011)	17.0 (2036)
Median Age of population	26.55 (2011)	36.35 (2036)
Young Dependency Ratio (the number of children aged 0-14 years per 100 people of working age (15-59 years)	466 (2011)	295 (2036)

Old Dependency Ratio (the number of persons aged 60 and above per 100 people of working age (15-59 years)	150 (2011)	266 (2036)
Total dependency Ratio (young and old)	616 (2011)	561 (2036)
Life Expectancy at birth (the average years a newborn can expect to live if current mortality rates remain constant throughout their lives) (Male)	(62.9) (SRS 2009-11)	70.6 (2031-35)
Life Expectancy at birth in years (Female)	64.5 (SRS 2009-11)	73.7 (2031-35)
Net-Migration Rate (the difference between the number of in-migrants and outmigrants in a specific area over a certain period, expressed as a rate per 1,000 people) (Male)	-0.09 (2001-11)	-0.09 (2031-35)
Net-Migration Rate (Per 100) (Female)	-0.06 (2001-11)	-0.06 (2031-35)

Note: Figures in Parenthesis represents year**.**

Source: Government of India. (2020). *Population Projections for India and States, 2011-36,* National Commission on Population, Ministry of Health and Family Welfare. New Delhi: Government of India.

Falling Fertility amid higher poverty and infant mortality

Often demographers get puzzled at the unsynchronous demographic, social and economic outcomes. Most importantly, they have been looking for an evidence-based, apt explanation for a demographic dilemma—the coexistence of high poverty, high child mortality, and low fertility in Odisha—for a long time. According to Government of India report 32.59 percent of Odisha's population were below poverty line in 2011-12 (Government of Odisha, 2017), while the infant mortality rate and total fertility rate stood at 42 per thousand live births and 2.1 children per woman respectively (Registrar General of India, 2013). This implies that the state had achieved a below replacement total fertility rate in 2012, while the neighbouring states with similar socioeconomic setting-Jharkhand, Chhattisgarh, Bihar and Madhya Pradesh are struggling to attain this desired goal even now. Amidst this both the Sample Registration System report of 2020 (Government of India, 2022) and the fifth round of National Family Health Survey Report, 2019-21 (IIPS and ICF, 2022) indicated that the TFR of Odisha had fallen further and reached 1.8 in 2020. Infant mortality, on the hand, though has declined in Odisha, the state's figure is much above many states including that of Jharkhand, Chhattisgarh, and Bihar (Government of India, 2022). Hence, the current higher IMR (36) remains a matter of concern. The state has also recorded the second highest neonatal mortality rate (28) among all states, with Madhya Pradesh having the highest (31).

Though fertility declined in all sections of society, the current fertility rate varies greatly by socioeconomic group. Inter-district fertility variation is also pronounced; southern districts are lagging behind. Fertility remains higher in rural areas than in urban areas; the rural-urban gap has narrowed over time reflecting higher pace of decline in fertility in rural areas than in urban areas. At the same time, the fertility rate is substantially high among tribes and women with lower levels of education (Bera and Das, 2024). Perhaps this is why the fertility rate is highest in rural southern Odisha, characterised by educational backwardness and a higher degree of tribal concentration.

The low fertility in the state might have some connection with high contraceptive prevalence, as the latest NFHS report says that a substantially high proportion of women are currently using at least one type of family planning method. The rate of use of modern contraceptive methods is found to be higher in rural areas and the social groups characterised by higher fertility rates. With ongoing

socioeconomic development and increasing acceptance of modern contraceptive methods in high-fertility regions and groups, fertility will continue to decline in the state. As the current total fertility rate in Odisha is below replacement level and is expected to fall further, the famous old slogan of the family planning campaign '*Hum Do, Hamare Do'* (we are two, we have two) has lost its relevance and the phrase '*Hum Do, Hamare Ek'* (We are two, we have one) is gaining prominence in the state.

Changing Age Structure, declining young dependency and the Onset of Ageing

The Surprising, yet continuous decline in fertility along with improvement in longevity in the state over the years has resulted in a decline in the percentage of the child population and an increase in the percentage of the population in the working age (Das and Bera, 2020). The resultant decline in the share of children along with increase in longevity has also culminated in onset of ageing in the state; the census data reveal that the share of elderly population above the age of 60 increased from 8.3 percent to 9.5 percent during 2001 and 2011.Projected figures for 2021 stands at 11.5 percent; further it is estimated that around 17.1 percent of Odisha's population will be termed as 'Aged' by 2036(Government of India, 2020), the year which marks the 100th anniversary of Odisha as an Independent state. This is also evident from the estimates of the median age of the population in the state, which will increase from 26.6 years to 36.4 years during 2011-36. The demographic data reveal that women in the state may expect to live an additional 19.8 years after reaching the age of 60, which is somewhat longer than the life expectancy of men at 60 (18.1 years). The phenomenon of feminization of ageing, which refers to the fact that older ladies tend to live longer than males, has sparked worries regarding their economic and social well-being. Overall, the ageing process itself will put tremendous economic and social burden in the state, as the first wave of Longitudinal Ageing Survey of India revealed that among aged population, 19.4 percent had restricted activities of daily living, 17.2 percent had multimorbidity, 34.6 percent were living in poverty and 17.3 percent had no income in 2020(Government of India, 2020). Though some baby steps like the provision of old-age pensions have been taken, including the recent enhancement of pensions from month to Rs. 3,500 per month for elderly people aged 80 years and above, a lot more have to be integrated into existing social and safety mechanisms, taking the issues of shelter and health and facilitating the desired goal of achieving healthy and happy aging.

On the other hand, the growing working-age population presents significant opportunities to capitalize on the "demographic dividend"—the economic advantages derived from the demographic structure. However, converting expanding workforces into economic gain for a state does not take place naturally; it requires consistent investment in key areas—education, health, skill development, and employment generation. The snail pace of improvement in education, skill development, and health of the population, particularly those belonging to deprived places and deprived groups including tribes, poses formidable challenges and provides an ample scope for the government to take necessary steps that will facilitate the process of capitalization of the demographic dividend. Consequences of these demographic changes will also reflect in the slowing of population growth. According to the census of India, Odisha's population size was 4.1 crores in 2011, which accounted for 3.47 percent of India's population. The estimated figures reveal the population size of the state will reach 4.9 crores, accounting for 3.2 % of the country's population by 2036 (Table 1).

Persistent Outmigration

Because of the inadequacies in the programs and planning for socioeconomic and infrastructural development attempted so far, Odisha has been persistently branded as an out-migrating state, with outmigrants outnumbering in-migrants. Odisha will remain an out-migrating state even in 2036, as the net migration rate will continue to be on the negative side (Table 1). This clearly reflects weak pull factors in Odisha, particularly in the urban areas. According to the estimates based on the 2011 census, Chhattisgarh, Andhra Pradesh, Gujarat and West Bengal together accounted for nearly 60 percent of the total number of out migrants from Odisha. However, Gujarat,

Maharashtra, Andhra Pradesh, Karnataka and West Bengal are the top five destination for outmigrants from Odisha for employment related reasons (Registrar General of India, 2011).

Distressed and seasonal migration remains a major problem in the state. Seasonal migrants from Odisha face distinct obstacles when they travel to these states without necessary documentation, job security, and social safety. The COVID 19 has unleashed the real plights of Odia migrants in different parts of the country. Furthermore, the Periodic Labour Force Survey (PLFS) report on migration in India, which was conducted from July 2020 to June 2021 in the midst of the pandemic, plainly demonstrates a sudden increase in COVID-induced return migrants, as indicated by a higher number of in-migrants than outmigrants (Government of India, 2022). Consequently, the pandemic period had seen an upsurge in the unemployment as well as loss of livelihood in the state. There was a huge opportunity to gainfully integrate these large return workforces into the regional economy of Odisha following COVID 19 period; however, this could not happen as there were reports of return migrant workers returning to their place of work in the absence of suitable and consistent work in the state. The evidence of COVID-19-induced return migrants going back to their previous workplaces suggests that there are inadequate mechanisms in place to effectively utilize human resources.

The poor enforcement of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, along with the migrant-unfriendly policies in states with a high number of migrants, such as Delhi, Gujarat, Haryana, Kerala, Maharashtra, Punjab, and Tamil Nadu (Aggarwal et al., 2019), in India will act as a hindrance to the inter-state migration. More importantly, there has been a trend in various states to implement laws, ordinances, or administrative orders that reserve jobs in specific categories for locals or those with language proficiency in the public and private sectors. This trend is likely to restrict interstate migration, which could have negative effects on out-migrating states such as Odisha. Therefore, developing and strengthening data management systems for migrants living outside the state as well as the return migrants and their skills on one hand and expanding locally suitable and sustainable livelihood opportunities on the other hand will help in mitigating the future crisis related to outmigration and the return migration in the state. Consequently, it is imperative to implement measures to mitigate the agrarian crisis, strengthen the MSME (Micro, Small, and Medium Enterprises) sector, and prioritise skill development in order to generate and sustain employment opportunities for a significant size of disadvantaged population in general.

Low, yet Uneven and slower pace of Urbanisation

Urbanization is regarded as a saviour to lift people from the traps of poverty, unemployment, and underdevelopment in general to some extent. However, the persistently low level of urbanization and the wide interstate regional variations in its level pose significant challenges (Das, 2018). Census 2001 counted only 16 percent of Odisha's population living in urban areas, and the number of towns is also quite low. Under the prevailing conditions, the urbanisation rate continues to be at a lower level as projected figures tell that only 21 percent of Odisha shall be living in urban places of the state by 2036 (Table 1). Accelerating planned urbanisation, with a focus on small and medium-sized towns, will significantly improve development indicators in the state. This plan can only be realised if huge investments can be poured in the state in the infrastructure development in the sectors such as road and transportation; small and large industries, and tourism.

Rising Non-Communicable Diseases

Along with the demographic transition, the state has witnessed an epidemiological transition implying a gradual shift in the leading causes of death from infectious diseases to non-communicable diseases, such as hypertension, high blood sugar, and cancer (Debnath and Das, 2020). The statistical evidence indicates an increasing prevalence of overnutrition and obesity. Around Fifty-two percent

of women have normal blood pressure while thirty-three percent of men have normal blood pressure. According to the fifth and the latest round of NFHS, in Odisha, 13% of women aged 15 to 49 have hypertension, whereas 18% of males have hypertension. Blood glucose levels are normal in 91% of women and 89% of males aged 15 to 49. More than half (55%) of males and 13% of women aged 15 to 49 use tobacco products (IIPS and ICF, 2021). These transitions will intensify as urbanization increases, and therefore, steps should be taken for healthcare reforms and spreading awareness regarding healthy lifestyles.

Documenting Undocumented Migrants

The issue of refugee and illegal and undocumented migration presents a significant challenge in Odisha, which has received insufficient attention. There is a limited amount of information available regarding the status, whereabouts, and activities of these refugees. According to an estimate, around 2,700 Tibetans are living in five camps in different places of Odisha, namely, Chandragiri, Labarsing, Tikillipadar, Jirang, and Mahendragarh. In 1963, their ancestors moved to Chandragiri, which is also known as "Mini Tibet," with help from the famous leader Biju Patnaik. Based on replies in Odisha Assembly, ThePRINT magazine, reported in 2023 that there was a total of 157,432 Bangladeshi refugees residing in Odisha, with 3,740 individuals living within the state illegally (ThePRINT,2023). Of the illegal Bangladeshi migrants, the Kendrapara district has the highest number of illegal Bangladeshi migrants, with a total of 1,649 individuals. This is followed by 1,112 migrants in Jagatsinghpur, 655 in Malkangiri, 199 in Bhadrak, 106 in Nabarangpur, 17 in Khurda, and two individuals in Baragarh district. Almost similar figures were reported by another Odia daily, the *Sambad*, in 2025 (Pradhan, 2025). There are 1,53,692 resettled refugees living in Malkanagiri, compared to 46, 848 and 4,653 in Nabarangapur and Khurda, respectively. A proper assessment of them and steps to address the challenges will have significant positive effects.

Surprisingly declining Child Sex Ratio

The declining child sex ratio in Odisha is yet another population concern. According to the censuses of 1961 and 1971, Odisha's population had a "female surplus." However, from the 1970s onward, a situation of "female deficit" begun to emerge. Child sex ratio (CSR) was higher than the normal level of 952 until 2001. The state's CSR went down by 12 points, from 953 in 2001 to 941 in 2011. This means that it is 11 points below the normal level of 952. Hence the latest 2011 census figure on CSR raises worry and concern in the state which was once more neutral about the sex composition of children. The imbalance is not only worsening, but it is also spreading to new regions and social groups that were previously more gender-neutral regarding the birth and upbringing of children (Das, 2018). It is worth noting that tribal districts and tribal communities have begun to experience this declining trend. With the exception of nine districts, all other districts in the state have witnessed a decline. Nayagarh district recorded the lowest CSR (855) in 2011.

The broad regional pattern reveals that a belt that includes all districts in the coastal region and extends to relatively prosperous north-western districts through Dhenkanal and Angul forms a space of low sex ratio. The downward trend indicates that there is female foeticide in the state. The situation is going to worsen in the future as sex-detection technologies spread to rural and tribal areas known for better sex ratios. Surprisingly, socioeconomic prosperity in terms of education and income has contributed to the decline in the child-sex ratio. The proper implementation of the Government of India's *Beti Bachao Beti Padhao* (Save a girl child, educate a girl child) scheme and the Odisha Government's *Biju Kanya Ratna* scheme with the tagline "*Amari jhia, amari shakti*" (Our daughters, our strength) has great potential to check the declining child sex ratio.

Higher Child Mortality and Fertility among tribes

The most recent round of NFHS, as well as the available literature, shows that Scheduled Tribes have greater childhood mortality and fertility rates than other social groups. According to NFHS-5 (2019-21), STs have the greatest TFR (2.11), followed by SCs (1.85), OBC (1.7), and others

(1.59) (IIPS and ICF, 2021). A similar pattern has been observed for all parameters of childhood mortality. Tribes are also disadvantaged in terms of nutrition and health indicators. Though differences have narrowed, tribes continue to be adversely placed in terms of fertility, death, and health.

Regional Differences

Regional variation in demographic transition as well as regionally differentiated economic development poses formidable challenges for achieving the desired goals of sustainable development. Broad regional patterns reveal that the southern part of Odisha, inhabited by a substantial proportion of the tribal population, is lagging behind in terms of demographic transition (Das, 2018; Bera and Das, 2020) as well as economic development (Das, 2017). The Aspirational Districts Programme (ADP), launched by the Indian government in 2018, including 12 districts of Odisha, viz., Balangir, Dhenkanal, Gajapati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nabarangapur, Nuapada, and Rayagada, is expected to help in fostering growth and improvements in demographic, health, and other social indicators of development.

4. Conclusion

Odisha has made some progress in terms of decline in population growth rate, fertility, and mortality, with varying rates of progress by region. This state, which lagged in terms of economic, social, and demographic backwardness, has lifted itself from its BIMARUO tag by outperforming other BIMARUO states—Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh—in terms of various demographic parameters. Overall, a fertility rate below replacement level and its continuous fall in all sections of the society makes all believe that population increase is not a cause of concern in Odisha. However, with the present pace of fertility drop, it is not surprising that Odisha's TFR will be quite low and comparable to that of many wealthy countries within a few years to come. Recent studies have presented an alarmist view on the negative economic implications of ultralow fertility in industrialized countries, as well as the view that moderately low fertility and population decline benefit the overall material standard of life (Lee et al., 2014; Skirbekk, 2023). Further, the state's diminishing population share can have political ramifications, particularly in terms of parliamentary representation and the possibility for reduced influence in decision-making processes in the country. Here the question remains: Is moderately low, not very low, fertility required in the state? This necessitates in-depth research on the required level of fertility given the current level and the pace of decline therein, the population size and density, and the available resource base for maintaining sustainable economic development in the state.

Speeding up the pace of urbanization in the state through planned interventions can have positive economic and social outcomes. On the other hand, proper documentation of illegal migrants and their engagements in different spheres is necessary for taking course correction measures for national security and human well-being in line with sustainable development goals. There is an ample scope for further reduction of infant and neonatal mortality, particularly among vulnerable communities, including tribes in the state. The double burden of malnutrition, poor health conditions, the rise of non-communicable diseases, aging and the feminization of aging, and declining child sex ratio are some of other emerging issues. Further, regional variation in population scenarios is conspicuous; the southern region of the state is lagging behind in demographic transition. The same is true for many development indicators.

The decline in fertility along with the rise in life expectancy has resulted in the change of age structure wherein the share of the elderly as well as the working population is expanding and the share of the children's population is shrinking. The general trends in the age distribution of the population have presented the state with both possibilities and challenges in achieving sustainable development goals. Realizing the demographic dividend will be dependent on appropriate arrangements for high-quality and skill-oriented education beginning from the primary level, good

health care, and employment generation. On the other hand, the state must have adequate social safety nets for the elderly to promote healthy aging.

Effective steps for health, education and empowerment of women will also lead to better demographic and health outcomes. It is imperative to revamp health systems by considering demographic and epidemiological transitions. Needless to say, the adoption of the 2020 national education policy and the convergence and strengthening of existing policies of health and human wellbeing, as well as skill development, will certainly facilitate the process of achieving the demographic dividend. The theoretical and empirical spontaneity of demographic transition and socioeconomic transformation suggests that managing demographic parameters and socioeconomic indicators together is necessary to achieve the desired goal of development. Attempts to bridge the regional gaps on various demographic, social, and economic fronts will yield better results. Above all, the provision of requisite state-sponsored mechanisms for efficient and continuous data collection, management, and analysis of data on various aspects of Odisha's population at the micro level is necessary to track, understand, and disseminate the findings for policy formulations. The necessary steps in this direction will facilitate the inching towards the motto of 'leave no one behind'—the ultimate goal of SDGs.

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