

Trends and Patterns of Fertility and Contraception in Odisha

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Abstract

This study examines the changing fertility patterns and family planning practices in the eastern Indian state of Odisha, utilising data from the Census of India and the National Family Health Survey. The findings indicate that Odisha has made significant strides in addressing fertility concerns. The state has successfully achieved a below-replacement level fertility rate, and the current trajectory of declining fertility and increasing contraceptive use is expected to lead to further reductions in the fertility rate. However, despite these optimistic developments, the persistence of inter-district and rural-urban disparities in fertility and contraceptive prevalence remains a concern.

Keywords: crude birth rate, total fertility rate, birth order, birth interval, contraception, spatial dimension

Introduction

In a demographic sense, fertility is the product or output of reproduction, and a woman's fertility is generally understood as the number of live births a woman bears during her reproductive age. Like mortality and migration, fertility is one of the most powerful components of population growth. Fertility is also accountable for the biological replacement and maintains human society (Bhende & Kanitkar, 2015), and on the other hand, the changing behaviour of society influences

fertility (Fayyad, 2012). According to Bongaarts (1978), the biological and behavioural factors (called intermediate fertility variables) are the set of factors through which socioeconomic, cultural and environmental variables (indirect determinants) affect fertility. In contrast, the intermediate fertility variables (direct determinants) directly influence fertility. If an intermediate fertility variable changes, then fertility necessarily changes, which is not essential in the case of an indirect determinant. The

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fertility pattern differs from one geographical area to another and varies over time. With the worldwide mortality rate declining dramatically, analysing reproductive patterns and family structure has become increasingly crucial in population studies. However, discussing fertility is important to understanding demographic behaviour and vital in assessing the human condition and social structure (Fayyad, 2012).

Researchers and policymakers have expressed concern over the rising population size and appreciably high population growth rate since the independence of India. To prevent rapid population growth, the government has taken many steps. India was the first country to introduce an official family planning programme way back in 1952 and to provide free family planning benefits for married couples (Ministry of Health and Family Welfare, 2002). Slogans in Hindi, such as "*Hum Do, Hamare Do*" (We are two, we have two) and "*Chota Parivar Sukhi Parivar*" (Small family is a happy family), have been used for a long to spread awareness about the benefits of small family and population stabilisation. The government programmes have emphasised stabilising the population and improving reproductive and child health.

According to reports of the National Family Health Survey (NFHS), the Total Fertility Rate

(TFR) in India has declined from 3.4 in 1992-93 (NFHS-1) to 2.0 in 2019-21 (NFHS-5). A TFR of 1.6 children per woman was observed in urban India and 2.1 in rural India in 2019-21 (NFHS-5). While it is true that India has embarked upon a process of fertility decline, there is a wide inter-state and rural-urban variation in fertility (Guilmoto & Rajan, 2013). The eastern Indian state of Odisha has experienced a noteworthy decline in TFR from 2.92 children per woman in 1992-93 (NFHS-1) to 1.82 in 2019-21 (NFHS-5). It clearly shows that Odisha's TFR figure is below the replacement level fertility (2.1). This has happened without a similar success rate in socioeconomic development and mortality decline (Das, 2018). Therefore, it is essential to study the fertility trajectory in Odisha, a socioeconomically lagging state of India. Secondly, an analysis of trends in contraceptive use will give an idea about the family planning practices in the state. The present study aims to analyse fertility trends and spatial patterns and the use of family planning in Odisha.

Data and Methods

The present study is primarily based on data from the Census of India and the National Family Health Surveys (NFHS). NFHS reports provide information on different parameters of fertility and contraception but do not provide district-level data on fertility indicators like the total fertility rate. Hence, the analysis of

district-level fertility indicators relies on the author's calculation based on the Census of India's 'F' series data on Children Ever Born. Again, the data for 2021 has yet to be published by the Census of India; therefore, Census of India 2011 data have been used to show the district-level variation of fertility. Total Fertility Rate has been calculated as $TFR=5\sum ASFR_a$ (for 5-year age groups), where $ASFR_a$ stands for Age Specific Fertility Rate for women in a

defined age group a . In addition, districts of Odisha are grouped into three broad agro-climatic regions following the National Sample Survey Organisation (NSSO) (Table 1).

The study used simple descriptive statistics to describe the data and a correlation coefficient to determine the relationship between contraception use and the total fertility rate at the district level in Odisha. The indicators used in the study are represented in Table 2.

Table 1

Agro-Climatic regions of Odisha

Region	Name of District
Coastal	Baleshwar, Bhadrak, Kendrapara, Jagatshingapur, Cuttack, Jajapur, Nayagarh, Khordha, and Puri
Northern	Bargarh, Jharsuguda, Sambalpur, Debagarh, Sundargarh, Kendujhar, Mayurbhanj, Dhenkanal, Anugul, and Balangir
Southern	Kandhamal, Baudh, Subarnapur, Ganjam, Gajapati, Nuapada, Kalahandi, Rayagada, Nabarangapur, Koraput and Malkanagiri

Source: NSS 75th round

Table 2

Description of the Indicators

Parameters/Indicators	Definition
Crude Birth Rate (CBR)	Total registered live births per 1000 mid-year population in a geographical area in a particular year.
Age Specific Fertility Rate (ASFR)	The number of births to women of a particular age group per 1000 women in that age group.
Total Fertility Rate (TFR)	Total number of children born per woman over her childbearing years according to the current schedule of age-specific fertility rates.
Birth Order	The order of a child born to a mother, first-born and second-born, are examples.
Birth Interval	The time between two successive live births indicates the pace of childbearing.
Contraceptive Prevalence Rate	The proportion of currently married women aged 15-49 years who are or whose husbands are currently using at least one contraceptive method.

Trends in Fertility in Odisha, 1992-93 to 2019-21

Crude Birth Rate (CBR)

The crude birth rate (CBR) is an important measure of fertility as it reflects fertility's contribution to the population's growth (Bhende & Kanitkar, 2015). The trend of CBR reflected in Table 3 and Figure 1 suggests a gradual decline of CBR in Odisha since 1992-93 (NFHS-1).

It shows that the crude birth rate (CBR) at all Odisha levels declined from 26.5 births per 1000 mid-year population in 1992-93 (NFHS-1) to 15.9 in 2019-21 (NFHS-5), registering a fall of about 40 per cent (10.6 points). The CBR has remained higher in rural areas than urban areas in the last three decades.

The CBR in urban areas declined from 23.9 in 1992-93 (NFHS-1) to 13.1 in 2019-21 (NFHS-5), and in rural areas, it declined from 27.0 in 1992-93 (NFHS-1) to 16.5 in 2019-21 (NFHS-5).

Between 1992-93 (NFHS-1) and 1998-99 (NFHS-2), the annual change of CBR was -2.77 per cent in Odisha. Notably, a similar pattern of CBR (22.1) was observed in 1998-99 (NFHS-2) and 2005-06 (NFHS-3), while at the same time, the CBR in rural areas increased by 0.38 per cent per annum, and the CBR decreased with an annual change of -1.71 per cent in urban areas. Further, from 2005-06 to 2015-16, the annual change of CBR was -1.81 per cent and -2.43 per cent between 2015-16 and 2019-21.

Table 3

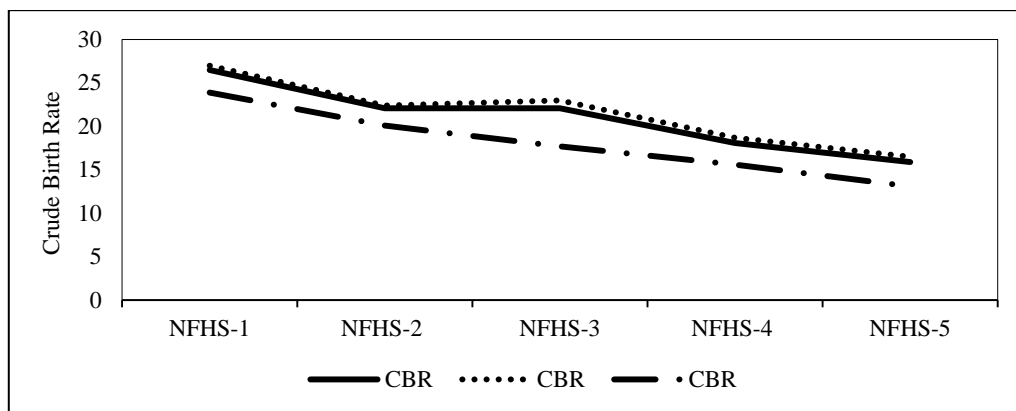
Trend in Crude Birth Rate for the Three Years Preceding the Survey in Odisha, 1992-93 to 2019-21

NFHS rounds	Crude Birth Rate (CBR)					
	Total	Annual change (in percent)	Rural	Annual change (in percent)	Urban	Annual change (in percent)
NFHS-1 (1992-93) *	26.5	-	27.0	-	23.9	-
NFHS-2 (1998-99) **	22.1	-2.77	22.4	-2.84	20.1	-2.65
NFHS-3 (2005-06) ***	22.1	0.00	23.0	0.38	17.7	-1.71
NFHS-4 (2015-16) ****	18.1	-1.81	18.7	-1.87	15.6	-1.19
NFHS-5 (2019-21) *****	15.9	-2.43	16.5	-2.35	13.1	-3.21

Source: *International Institute for Population Sciences (1995), ** International Institute for Population Sciences and ORC Macro (2001), *** International Institute for Population Sciences and Macro International (2008), **** International Institute of Population Sciences and ICF (2017), ***** International Institute of Population Sciences and ICF (2021)

Figure 1

Trends of Crude Birth Rate in Odisha, 1992-93 to 2019-21



Source: Based on Table 3

Total Fertility Rate (TFR)

In the last three decades, the state of Odisha has experienced a remarkable decline in TFR. Different rounds of NFHS show that TFR declined from 2.92 births per woman in 1992-93 (NFHS-1) to 1.82 in 2019-21 (NFHS-5). Although a TFR of 2.1 children per woman is desirable for replacing their parents from a demographic point of view, Odisha, despite being a socioeconomically less developed state of India, has achieved a TFR level (1.82 children per woman), much below the replacement level of fertility.

Though India has also achieved replacement-level fertility, the TFR of the nation (2.0) was higher than the state of Odisha (1.82) in 2019-21. Like CBR, the TFR in urban areas has been lower than the TFR in rural areas over the years. The TFR in rural Odisha decreased from 3.0 children

per woman in 1992-93 to 1.89 children per woman in 2019-21, a decline of 37 per cent. In contrast, the corresponding decline in urban areas is from 2.53 children per woman to 1.48 children per woman, registering a decline of 41.5 per cent during the same period. During the period between the first and second NFHS (1992-93 and 1998-99), TFR declined by 0.46 points with an annual change of -2.63 per cent, and TFR reduced by 0.09 points with an annual change of -0.52 per cent during the second inter-survey period (during 1998-99 to 2005-06). During the third and fourth surveys (2005-06 and 2015-16), TFR decreased by 0.32 points with an annual change of -1.35 per cent. Further, the period between 2015-16 (NFHS-4) and 2019-21 (NFHS-5) witnessed a decline of TFR in Odisha by 0.23 points with an annual change of -2.24 per cent.

Age-specific fertility rates (ASFRs) are lower at all ages in urban areas than in rural areas. A substantial proportion of births has occurred in the age group of 20-29. According to NFHS 5, 68.0 per cent of total births are concentrated in the 20-29 age group, while the corresponding figures for rural and

urban areas are 53.9 per cent and 68.6 per cent, respectively. Births in the age group of 15-19 account for 10.72 per cent of the total births, while the corresponding figures for rural and urban areas are 8.78 per cent and 9.12 per cent, respectively. A lower proportion of births occurs in those below 20 and above 34.

Table 4

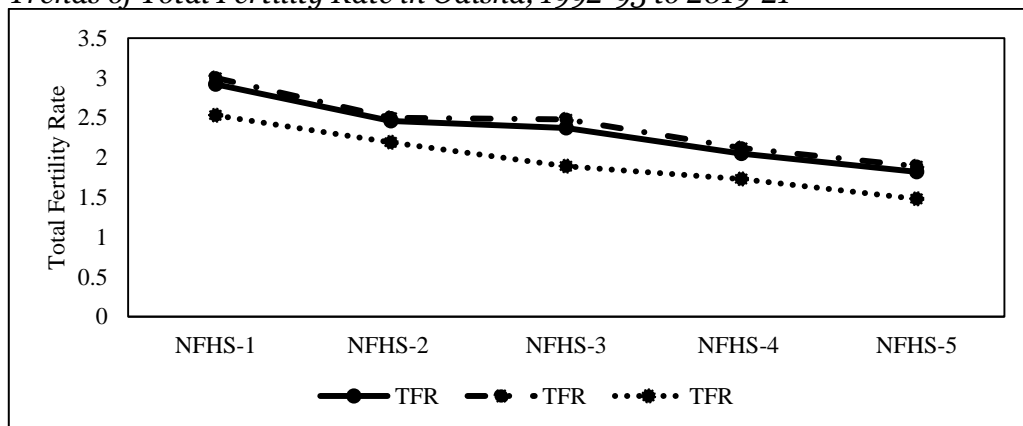
Trend in Total Fertility Rate for the Three Years Preceding the Survey in Odisha, 1992-93 to 2019-21

NFHS rounds	Total Fertility Rate (TFR)					
	Total	Annual change (in percent)	Rural	Annual change (in percent)	Urban	Annual change (in percent)
NFHS-1 (1992-93) *	2.92	-	3.00	-	2.53	-
NFHS-2 (1998-99) **	2.46	-2.63	2.50	-2.78	2.19	-2.24
NFHS-3 (2005-06) ***	2.37	-0.52	2.48	-0.11	1.89	-1.96
NFHS-4 (2015-16) ****	2.05	-1.35	2.12	-1.45	1.73	-0.85
NFHS-5 (2019-21) *****	1.82	-2.24	1.89	-2.17	1.48	-2.89

Source: * International Institute for Population Sciences (1995), ** International Institute for Population Sciences and ORC Macro (2001), *** International Institute for Population Sciences and Macro International (2008), **** International Institute of Population Sciences and ICF (2017), ***** International Institute of Population Sciences and ICF (2021)

Figure 2

Trends of Total Fertility Rate in Odisha, 1992-93 to 2019-21



Source: Based on Table 4

Fertility by Background Characteristics

NFHS also provides data on fertility differentials based on major socioeconomic characteristics like education, religion, and caste. Fertility varies greatly by the level of education of the mothers. It is generally observed that an increase in the educational level of women is associated with delayed birth, lower fertility, and smaller family size (Norville et al., 2003). As per NFHS-5 (2019-21), the fertility rate is 32 per cent lower among women who have completed 12 or more years of schooling than illiterate women.

Table 5 also represents a declining fertility trend with women's increasing educational status in Odisha. As expected, literate women have maintained a lower fertility rate than illiterate women.

Fertility rates have declined among all religions from 2015-16 (NFHS-4) to 2019-21 (NFHS-5). According to NFHS-5 (2019-21), the TFR is high among Christians (2.33) and 'other' religions, including Sikhs, Buddhists, Jains and others (2.53). Although Muslims have higher fertility than Hindus in Odisha, the Hindu-Muslim differential is not too wide.

Table 5

Trend in Total Fertility Rate for the Three Years Preceding the Survey by Background Characteristics in Odisha, 1998-99 to 2019-21

Background characteristic	NFHS-2 (1998-99)*	NFHS-3 (2005-06)**	NFHS-4 (2015-16) ***	NFHS-5 (2019-21) ****
Schooling				
No schooling	2.87	3.13	2.66	2.43
<5 years complete	2.42	2.24	2.42	2.05
5-9 years complete	1.96	2.01	2.03	1.89
10-11 years complete	1.62	1.89	1.85	1.85
12 or more years complete	-	-	1.60	1.65
Religion				
Hindu	2.45	2.35	2.04	1.80
Muslim	3.01	-	2.00	1.85
Christian	2.43	-	2.38	2.33
Other	-	-	3.73	2.53
Caste				
Scheduled Caste`	2.85	2.30	2.13	1.85
Scheduled Tribe	2.66	3.14	2.46	2.11
Other Backward Class	2.47	2.25	1.87	1.70
Other	2.07	2.01	1.87	1.59
Do not know	-	-	2.16	1.79

Source: *International Institute for Population Sciences and ORC Macro (2001), **International Institute for Population Sciences and Macro International (2008), ***International Institute of Population Sciences and ICF (2017), ****International Institute of Population Sciences and ICF (2021)

The reasons for higher fertility among Christians in Odisha need a special discussion, which does not form a matter of investigation for this paper. Caste is an important indicator of social status, and differentials in fertility by caste are wide. As per NFHS-5 (2019-21), the TFR among STs is the highest, followed by SCs, OBC and others.

The distribution of births by birth order is yet another way to view fertility differentials. As expected, the proportion of births in each order is larger than in the next higher order. According to NFHS-5 (2019-21), 44.3

per cent of all births are first-order births, 36.1 per cent are second-order births, 12.5 per cent are third-order births, and 7.0 per cent are fourth-order births or higher in Odisha.

It is to be noted that the proportion of women with birth orders 3 and 4 or more has decreased over time. On the other hand, the proportion of women with birth orders 1 and 2 has increased over time. This indicates a falling fertility rate and squeezing family size. However, a lesser degree of differential is observed by place of residence.

Table 6

Percentage Distribution of Birth to Women for the Three Years Preceding the Survey by Birth Order in Odisha, 1992-93 to 2019-21

Residence	Birth order	NFHS-1 (1992-93) *	NFHS-2 (1998-99) **	NFHS-3 (2005-06) ***	NFHS-4 (2015-16) ****	NFHS-5 (2019-21) *****
Total	1	27.4	29.0	34.8	43.4	44.3
	2	24.6	28.1	28.5	33.4	36.1
	3	19.8	18.4	16.6	13.0	12.5
	Four or more	28.2	24.5	20.1	10.2	7.0
Rural	1	-	28.9	34.0	42.7	43.9
	2	-	28.0	28.2	33.0	35.4
	3	-	18.6	16.9	13.1	13.0
	Four or more	-	24.5	20.9	11.1	7.7
Urban	1	-	29.7	39.9	47.4	46.7
	2	-	28.3	30.6	35.7	40.1
	3	-	17.0	14.7	11.9	9.9
	Four or more	-	24.9	14.7	5.1	3.3

Source: *International Institute for Population Sciences (1995), **International Institute for Population Sciences and ORC Macro (2001), ***International Institute for Population Sciences and Macro International (2008), ****International Institute of Population Sciences and ICF (2017), *****International Institute of Population Sciences and ICF (2021).

Spatial Patterns of Fertility in Odisha, 2011

Table 7 demonstrates the region-wise comparison of census-based estimates of fertility in 2011. The TFR was 2.0 in the state in 2011, below the replacement level fertility (2.1). At the

same time, it was 2.1 in rural areas and 1.6 in urban areas. There was diversity in TFR among the regions and individual districts in Odisha. TFR was low in the coastal and northern parts and high in the southern part of Odisha.

Table 7

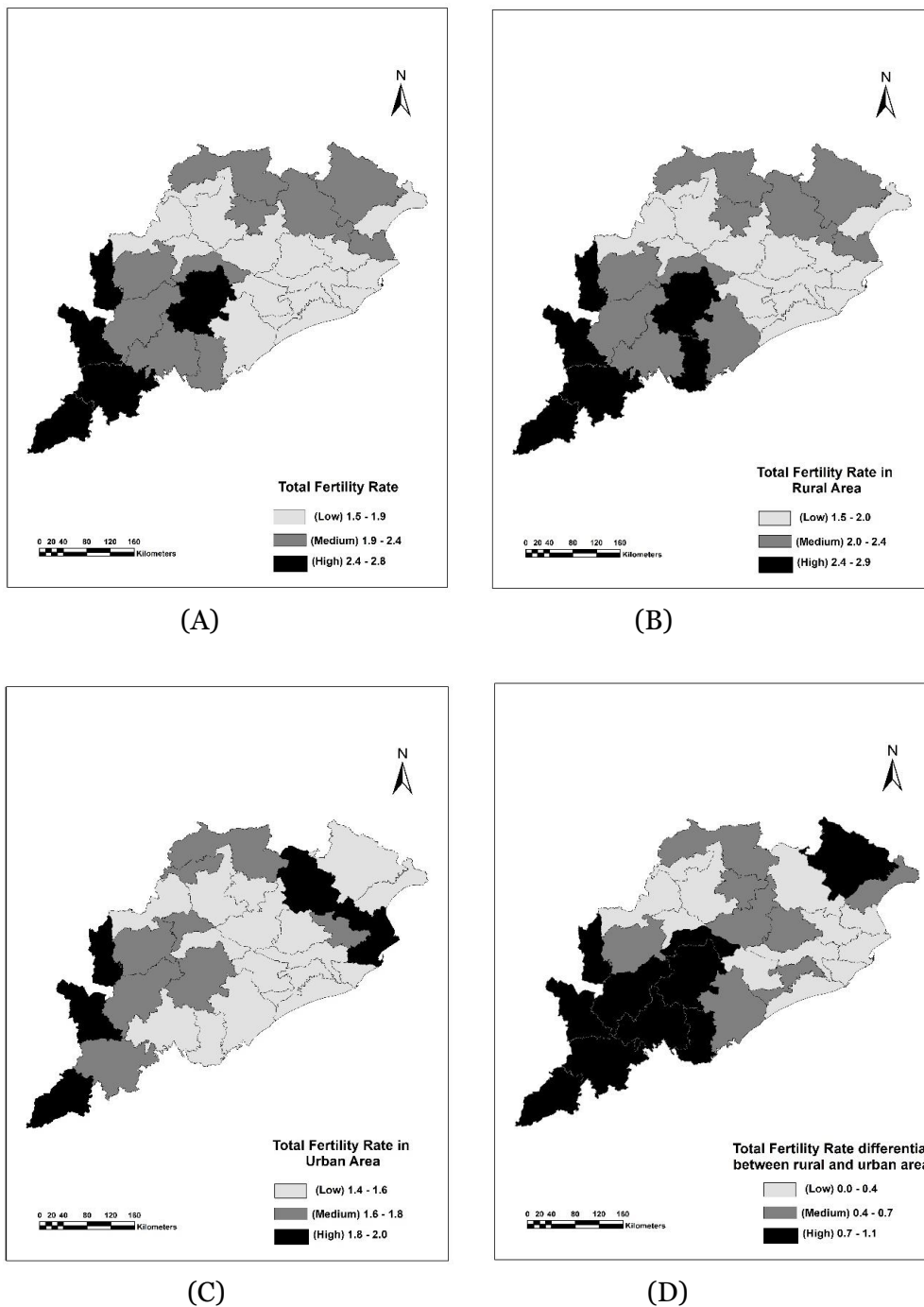
Region-wise Total Fertility Rate in Odisha, 2011

Region	Name of the District	Total Fertility Rate (TFR)			
		Total	Rural	Urban	Gap between Rural and Urban
Coastal	All	1.8	1.8	1.6	0.2
	Baleswar	1.9	1.9	1.5	0.4
	Bhadrak	2.0	2.0	1.9	0.1
	Kendrapara	1.8	1.8	1.8	0.0
	Jagatsinghapur	1.5	1.5	1.4	0.1
	Cuttack	1.7	1.8	1.4	0.4
	Jajapur	1.9	1.9	1.8	0.1
	Nayagarh	1.9	1.9	1.5	0.4
	Khordha	1.7	1.9	1.4	0.5
	Puri	1.7	1.7	1.4	0.3
Southern	All	2.3	2.4	1.7	0.7
	Ganjam	1.9	2.0	1.6	0.4
	Gajapati	2.3	2.5	1.6	0.9
	Kandhamal	2.6	2.7	1.7	1.0
	Baudh	2.3	2.3	1.4	0.9
	Subarnapur	1.9	1.9	1.7	0.2
	Balangir	2.2	2.3	1.6	0.7
	Nuapada	2.5	2.6	1.8	0.8
	Kalahandi	2.3	2.4	1.7	0.7
	Rayagada	2.1	2.2	1.5	0.7
	Nabarangapur	2.8	2.9	1.8	1.1
	Koraput	2.4	2.6	1.7	0.9
	Malkangiri	2.7	2.8	2.0	0.8
Northern	All	1.9	2.0	1.6	0.4
	Bargarh	1.7	1.8	1.5	0.3
	Jharsuguda	1.7	1.7	1.6	0.1
	Sambalpur	1.6	1.7	1.5	0.2
	Debagarh	2.0	2.0	1.5	0.5
	Sundargarh	2.0	2.1	1.7	0.4
	Kendujhar	2.1	2.3	2.0	0.3
	Mayurbhanj	2.1	2.2	1.4	0.8
	Dhenkanal	1.9	1.9	1.5	0.7
Anugul	1.9	1.9	1.6	0.3	
Odisha	2.0	2.1	1.6	0.5	

Source: Calculated based on F-Series data of Census of India, 2011

Figure 3

District-level Variation of Total Fertility Rate (A), Total Fertility Rate in Rural Areas (B), Total Fertility Rate in Urban Areas (C) and Total Fertility Rate Differential Between Rural And Urban Areas (D) in Odisha, 2011



It is important to note that the TFR was below replacement level in all coastal region districts, eight northern regions and two southern regions. TFR ranges between 1.5 in the Jagatsinghapur district of the coastal region and 2.8 in the Nabarangapur district of the southern region in Odisha. A lower figure of TFR was also observed in Sambalpur (1.6), Jharsuguda (1.7), Khordha (1.7), Puri (1.7) and Cuttack (1.7) and higher TFR was observed in Malkangiri (2.7), Kandhamal (2.6), Nuapada (2.5) and Koraput (2.4). Like CBR, the rural-urban gap in TFR was appreciably high in the southern region of Odisha.

Family Planning

It is widely known that the use of family planning methods leads to declining fertility. Therefore, this section covers the current use of family planning methods among women aged 15-49. As per NFHS-5 (2019-21), knowledge of contraception is almost universal in Odisha, as 99.6 per cent of all women in the reproductive age group and 100.0 per cent of currently married women knew about at least one method of contraception. However,

some methods of family planning are still little known. Twenty-four per cent of currently married women knew about female condoms, 6.1 per cent knew about the diaphragm, and 4.4 per cent knew about foam or jelly. There was a marginal rural-urban gap in terms of knowledge of contraception among currently married women. The knowledge of modern methods of contraception among currently married women is better known than the traditional methods of contraception.

In 2019-21, the contraceptive prevalence rate (CPR) among currently married women (15-49) in Odisha was 74.1 per cent, which was much higher than the national average (66.7 per cent). The rate has substantially increased from 36.3 per cent in 1992-93 (NFHS-1) to 74.1 per cent in 2019-21 (NFHS-5). Most of them used modern methods, although some practised traditional methods. Both the current use of modern and traditional contraception methods has increased over time. However, the rate of increase in the use of traditional methods is higher than that of modern methods.

Table 8

Percentage of Currently Married Women Aged 15-49 years by Current use of Contraception in Odisha, 1992-93 to 2019-21

Current use of contraception	NFHS-1 (1992-93) *	NFHS-2 (1998-99) **	NFHS-3 (2005-06) ***	NFHS-4 (2015-16) ****	NFHS-5 (2019-21) *****
Any method	36.3	46.8	50.7	57.3	74.1
Any modern method	34.7	40.3	44.7	45.4	48.8
Any traditional	1.2	5.6	6.1	11.9	25.4

method					
Modern methods					
Female sterilisation	28.3	33.9	33.1	28.2	28.0
Male sterilisation	3.4	1.7	1.0	0.2	0.3
Pill	0.9	3.0	7.0	12.0	10.8
IUD or PPIUD	1.5	0.8	0.5	1.1	2.6
Injectable	-	-	0.1	0.2	0.2
Condom/nirodh	0.6	0.9	3	3.4	5.5
Female condom	-	-	-	0.0	0.0
Emergency contraception	-	-	-	-	0.1
LAM	-	-	-	0.2	1.2
Other modern method	-	-	0.0	0.1	0.0
Traditional methods					
Rhythm/safe period	0.9	3.8	1.7	3.5	9.9
Withdrawal	0.3	1.8	3.3	8.4	15.4
Not currently using	63.7	53.2	49.3	42.7	25.9

Source: *International Institute for Population Sciences (1995), **International Institute for Population Sciences and ORC Macro (2001), ***International Institute for Population Sciences and Macro International (2008), ****International Institute of Population Sciences and ICF (2017), *****International Institute of Population Sciences and ICF (2021)

The share of female sterilisation in all modern methods of contraception remains the highest, but it has decreased from 1998-99 (NFHS-2) to 2019-21 (NFHS-5). The use of male sterilisation methods has also declined during the period 1992-93 and 2019-21. However, the current use of family planning methods like pills and condoms under modern methods and rhythm/safe periods and withdrawal under traditional methods during the period 1992-93 and 2019-21 have increased.

The use of contraceptives increases sharply with the increasing age of married women, but the use of

traditional methods decreases after the age of 39 in Odisha. The rural-urban gap in the current use of family planning methods in Odisha was only 3.4 percentage points in 2019-21 (NFHS-5). It is noted that the use of modern methods of contraception in urban areas is lower than in rural areas. In contrast, the use of traditional methods in urban areas is higher than in rural areas. The use of modern methods decreases with increasing years of schooling of women, but an inverse relationship is observed between mother's education level and the use of modern contraceptive methods.

Table 9

Percentage of Currently Married Women Aged 15-49 Years by Current Use of Contraception According to Background Characteristics in Odisha, 2019-21

Background characteristic	Any method	Any modern method	Any traditional method	Not currently using
Age				
15-19	40.4	20.0	20.4	59.6
20-29	56.6	33.3	23.3	43.4
30-39	72.0	44.9	27.1	28.0
40-49	74.5	53.2	21.3	25.5
Residence				
Urban	76.9	47.2	29.7	23.1
Rural	73.5	49.1	24.4	26.5
Mother's schooling				
No schooling	74.4	54.7	19.7	25.6
<5 years complete	75.3	54.2	21.1	24.7
5-9 years complete	75.6	48.7	26.8	24.4
10-11 years complete	70.4	42.9	27.6	29.6
12 or more years complete	72.0	39.5	32.5	28.0
Religion				
Hindu	74.2	49.0	25.2	25.8
Muslim	73.0	42.9	30.1	27.0
Christian	71.5	43.8	27.7	28.5
Other	80.0	53.3	26.6	20.0
Caste/tribe				
Scheduled caste	76.1	52.5	23.6	23.9
Scheduled tribe	71.4	47.0	24.4	28.6
Other backward class	74.2	49.6	24.6	25.8
Other	75.2	45.5	29.7	24.8

Source: NFHS-5 (2019-21): International Institute of Population Sciences and ICF (2021)

Differentials in the use of modern contraceptive methods by religion are

observed. As per NFHS 5, 49 per cent of currently married Hindu women

used modern methods, while the figures for Christians and Muslims are 43.8 per cent and 42.9 per cent, respectively. Similarly, the corresponding figures for SCs, STs, OBCs and the non-SC/ST/OBC population are 52.5 per cent, 47 per cent, 49.6 per cent and 45.5 per cent, respectively. Surprisingly, the figure is highest among SCs, STs, OBCs and General castes.

Spatial Patterns of Current Use of Contraceptive Methods, 2019-21

Table 10 shows the district-wise data on the percentage of currently

married women aged 15-49 years using contraceptive methods (contraceptive prevalence rate), one of the important proximate determinants of fertility. The proportion of women who used at least one contraception method or whose husbands used any contraception method varies across the districts. The pattern of any method of contraception, any modern method and any traditional method by currently married women aged 15-49 years based on district-level data reflects regional imbalances.

Table 10

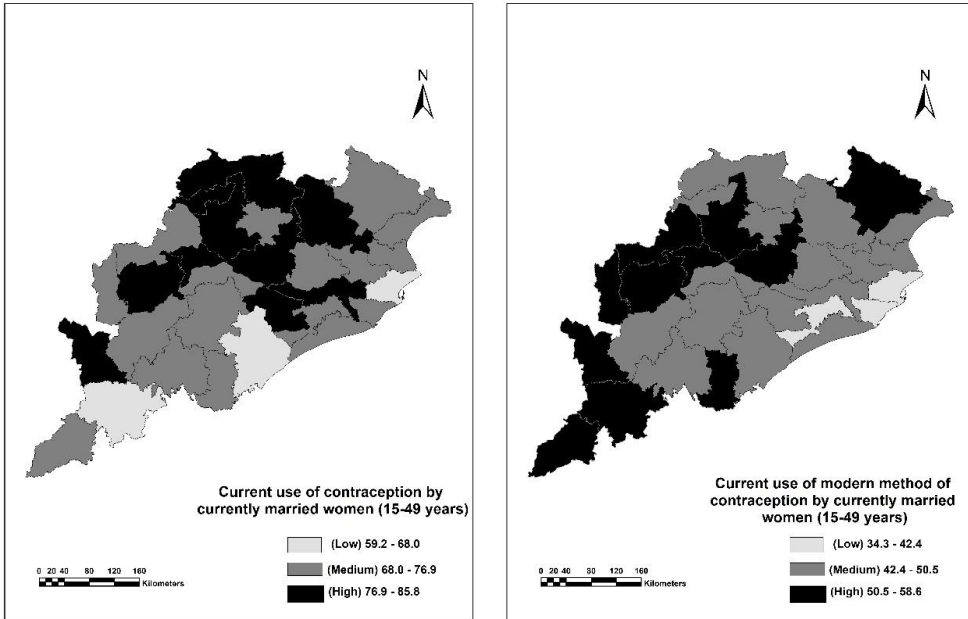
Percentage of Currently Married Women Aged 15-49 Years Using Contraceptive Method by District, Odisha, 2019-21

Name of the District	Current use of contraception			Name of the District	Current use of contraception		
	Any method	Any modern method	Any traditional method		Any method	Any modern method	Any traditional method
Bargarh	75.4	55.7	19.7	Nayagarh	78.2	43.7	34.5
Jharsuguda	81.4	50.3	31.0	Khordha	74.7	42.4	32.3
Sambalpur	77.1	58.1	19.0	Puri	74.4	48.6	25.7
Debagarh	74.1	42.8	31.3	Ganjam	59.2	46.7	12.5
Sundargarh	79.7	47.9	31.8	Gajapati	76.2	53.9	22.3
Kendujhar	77.6	45.8	31.8	Kandhamal	76.7	49.6	27.2
Mayurbhanj	76.3	50.8	25.5	Baudh	70.7	45.3	25.4
Baleshwar	68.3	49.7	18.6	Subarnapur	77.4	57.0	20.4
Bhadrak	72.0	50.4	21.6	Balangir	77.8	58.6	19.2
Kendrapara	64.7	34.3	30.4	Nuapada	71.4	54.9	16.6
Jagatsinghapur	71.9	38.8	33.1	Kalahandi	75.9	48.6	27.3
Cuttack	84.4	47.0	37.4	Rayagada	72.7	45.3	27.4
Jajapur	76.1	44.9	31.2	Nabarangapur	77.1	56.2	20.8
Dhenkanal	75.9	48.2	27.7	Koraput	65.4	56.0	9.4
Anugul	85.8	52.6	33.2	Malkangiri	74.1	53.4	20.6

Source: NFHS-5 (2019-21): International Institute of Population Sciences and ICF (2021)

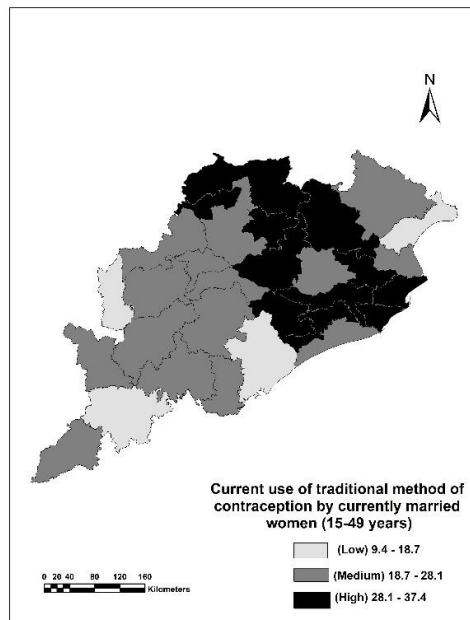
Figure 4

Percentage of Currently Married Women Aged 15-49 Years by Current use of Contraception (A), Current use of the Modern Method of Contraception (B) and Current use of the Traditional Method of Contraception (C) by District, Odisha, 2019-21



(A)

(B)



(C)

According to NFHS-5, Contraceptive Prevalence Rate (CPR) was lowest in the Ganjam district (59.2 per cent) and highest in the Anugul district (85.8 per cent). Higher CPR was also observed in Cuttack (84.4 per cent), Jharsuguda (81.4 per cent), Sundargarh (79.7 per cent) and Nayagarh (78.2 per cent). Of thirty, nine districts represent a CPR lower than the state average (74.1 per cent). These districts are Ganjam (59.2 per cent), Kendrapara (64.7 per cent), Koraput (65.4 per cent), Baleshwar (68.3 per cent), Boudh (70.7 per cent), Nuapada (71.4 per cent), Jagatsinghapur (71.9 per cent), Bhadrak (72.0 per cent) and Rayagada (72.7 per cent). The figure for modern family planning method is highest in Balangir district (58.6 per cent) followed by Sambalpur (58.1 per cent), Subarnapur (57.0 per cent), Nabarangapur (56.2 per cent), Koraput (56.0 per cent) and Bargarh (55.7 per cent) and lowest in Kendrapara (34.3 per cent) followed by Jagatsinghapur district (38.8 per cent). In contrast, traditional family planning method is highest in Cuttack district (37.4 per cent) followed by Nayagarh (34.5 per cent), Anugul (33.2 per cent), Jagatsinghapur (33.1 per cent) and Khordha (32.3 per cent) and lowest in Koraput district (9.4 per cent)

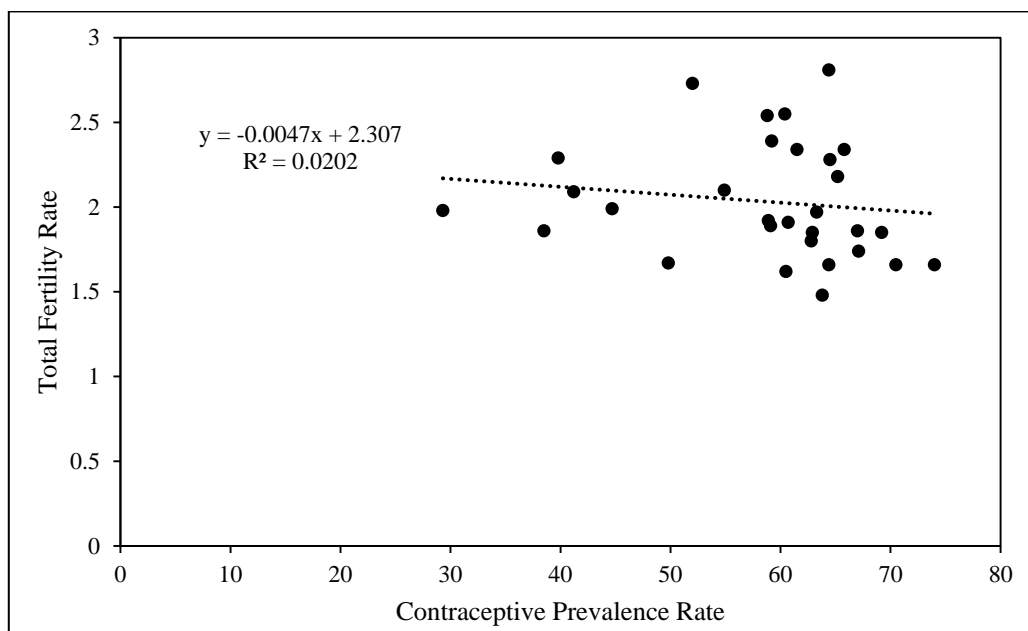
followed by Ganjam (12.5 per cent), Nuapada (16.6 per cent) and Baleshwar (18.6 per cent). Figure 4 shows that the magnitude of use of any method is high in the north-western part. In contrast, the use of modern methods of contraception is high in the southern as well as western parts, and the use of traditional methods is high in the northern part of the state.

Use of Contraception and Total Fertility Rate

The district-level pattern of use of contraception and TFR data show a wide range of regional variations in Odisha. According to Bongaarts (1978), the prevalence of contraception is one of the most powerful variables among 'intermediate fertility variables' and directly influences fertility. Therefore, an attempt was made to determine the relationship between the contraceptive prevalence rate and the total fertility rate in Odisha. The Census of India does not provide contraception data; district-level TFR data are unavailable in NFHS reports. Hence, the study used CPR data from NFHS-4 (2015-16) and TFR estimates based on the Census of India, 2011, to see if they are correlated. Figure 5 shows that the relationship between CPR and TFR is weak but negative ($r = -0.142$).

Figure 5

Relationship Between Contraceptive Prevalence Rate and Total Fertility Rate in Odisha



Source: Based on Appendix 1

Summary and Conclusion

Odisha has experienced a rapid decline in fertility in the recent past. As a result, the state has already achieved fertility levels below replacement levels. Though fertility declined in all sections of society, the current fertility rate varies greatly by socioeconomic group. Inter-district fertility variation is also pronounced (Behuria and Das, 2016). Though fertility remains higher in rural areas than in urban areas, the rural-urban gap has narrowed. This reflects that the pace of decline in fertility in rural areas is higher than in urban areas. At the same time, the fertility rate is

substantially high among tribes and women with lower levels of education. 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 high yet low pace of decline in fertility among Christians in the state needs special scrutiny.

Further, the analysis of data on contraception reveals that a substantially high proportion of women are currently using at least one type of family planning method. The extent of use of modern family planning methods in urban areas is

lower than in rural areas. In contrast, the use of traditional methods such as rhythm and withdrawal in urban areas is higher than in rural areas. This form is yet another issue that needs further inquiry. Nevertheless, a higher contraceptive prevalence rate is observed in the regions known to have higher fertility rates.

Similarly, the rate of use of modern contraceptive methods is found to be higher in the social groups characterised by higher fertility rates. Socioeconomic development, along with an increase in contraceptive prevalence, has resulted in a lowering of fertility. 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) will lose its relevance and the phrase '*Hum Do, Hamare Ek*' (We are two, we have one) will gain prominence in the state in times to come. However, to maintain the current rate of decline in fertility in the next few decades and to stabilise population growth, the government needs to keep on providing all types of family planning methods free of cost, allowing people from all sections of the population to use family planning methods of their

choice. At the same time, no one should forget the statement 'Development is the best contraceptive' by Dr Karan Singh, India's then health minister, at the World Population Conference in Bucharest in 1974.

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Appendix 1

District Level Pattern of Contraceptive Prevalence Rate and Total Fertility Rate in Odisha

Name of the District	CPR*	TFR**	Name of the District	CPR*	TFR**
Bargarh	67.1	1.7	Nayagarh	62.9	1.9
Jharsuguda	74.0	1.7	Khordha	64.4	1.7
Sambalpur	60.5	1.6	Puri	70.5	1.7
Debagarh	44.7	2.0	Ganjam	59.1	1.9
Sundargarh	63.3	2.0	Gajapati	65.8	2.3
Kendujhar	39.8	2.3	Kandhamal	60.4	2.6
Mayurbhanj	41.2	2.1	Baudh	64.5	2.3
Baleshwar	38.5	1.9	Subarnapur	60.7	1.9
Bhadrak	29.3	2.0	Balangir	65.2	2.2

Kendrapara	62.8	1.8	Nuapada	58.8	2.5
Jagatsinghapur	63.8	1.5	Kalahandi	61.5	2.3
Cuttack	49.8	1.7	Rayagada	54.9	2.1
Jajapur	58.9	1.9	Nabarangapur	64.4	2.8
Dhenkanal	69.2	1.9	Koraput	59.2	2.4
Anugul	67.0	1.9	Malkangiri	52.0	2.7

Source: * International Institute of Population Sciences and ICF (2017), **calculation based on Census of India, 2011

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