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A Comprehensive Analysis of Human Fertility Transition of South 24 Parganas District in West Bengal, India

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Abstract : *Since the 2000s, the nature of fertility has gone through a dramatic change more or less at all levels in the developing world, and South 24 Parganas district of West Bengal has experienced such change to a significant extent. The present paper contributes about the emerging trends and patterns of fertility (crude birth rate) of the district at subdivision and Block levels. The overall observation establishes about the fact of major decline of fertility, compared to the state and the country's status. The specific analysis (2008-2017) elucidates negative relationship of fertility with female literacy, female work force participation and urbanization and positive relationship with the proportion of Muslim population. In spite of having absolute increase of population, spectacular decline in decadal growth rate of people, consistent decline of child population (0-6 years of age) and growing proportion of population especially in working age group may be the consequences of fertility decline which has a considerable implication towards demographic dynamics of the district.*

Keywords : *Fertility decline, Crude birth rate, Muslim population, Female literacy*

Introduction

The developing world has started to experience the trajectory of demographic transition during the decades where India has stepped at the middle position of such journey by the declining fertility and mortality. As a vital event, fertility acts as one of the key controllers of demographic transition and also one of the three principal components of population dynamics, the others being mortality and migration (United Nations, 1973). It refers to the actual reproductive performance of people (Gurusamy, 1997 p.49) and their existence, growth and distribution (Sharma, 2012). The trends and differentials of fertility are influenced by several social, cultural, economic, political, psychological and demographic factors, though socio-economic factors have the principal role for its trends and differentials (Bongaarts and Potter, 1983). Some scholars argues that the main factor for the differential growth of

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population between Hindus and Muslims is fertility (Davis 1951, Bhagat 1998, Bhat 2004). There is a belief that the practice of fertility was completely independent and was not controlled but 'natural' before the transition, that may be the result of lack of knowledge and social acceptance about birth control or may be the result of a high target family size (Bengtsson and Dribe, 2014).

The Study Area

South 24 Parganas district, the largest and second most populated district in West Bengal is located in the southernmost part of the deltaic plains of Bengal. The district is situated between 21º 29' 00" North to 22º 33' 45" North of latitudes and 88 º 03' 45" East to 89º 04' 50" East of longitudes. On the 1st of March, 1986, the southern part of erstwhile 24 Parganas was carved out separately to form a new district named South 24 Parganas. Kolkata and North 24-Parganas lies to its north and north east and Bay of Bengal to its south. The study area is constituted by twenty-nine Blocks, bounded by an international boundary with Bangladesh to the east. On the west, the river Hooghly has demarcated the boundary proceeding from north to south separates it from the district of Howrah and Purba Medinipur.

Objectives of the Study

- To analyze the trends of fertility of the district with the state and the nation.
- To find out the C.D. Block wise patterns of fertility and their %age change over time.
- To investigate about the relationship between fertility and other socio-economic factors.

Material and Methods

The current fertility levels have been measured by Crude Birth Rate (CBR) which is calculated as CBR= (B÷P)×K where: B is the total number of live birth during a year, P is the total population in the middle of that year; and K is 1000. Birth statistics often suffers wide inaccuracy due to which a complete birth history has not been possible to provide. The present study has been conducted with the help of secondary data obtained from Sample Registration System (1984-2017) for State and Country level and the Annual Vital Statistics, collected from Chief Medical Officer of Health, Dy-II, South 24 Parganas from 2008-2017, though such data also suffers from a lot of discrepancy.

Results and Discussions

Demographic Background Factors

The district is an area of more than 8 million inhabitants (2011) where the decadal growth rate (18.17%) of population is somewhat higher than West Bengal State (13.93%) and majority of such growth has been contributed by urban area

(92.21%) than rural counterpart (4.36%) in 2001-2011. A remarkable flow of migration from rural to urban has been observed due to push factor of lower agricultural productivity in the source area and pull factor of multidimensional opportunities in destination. The average annual growth rate of the Muslim population is more than double (34.17%) than Hindus (15.13%) during 1991-2001. Literacy rate has profoundly increased in rural areas compared to the urban areas and gender gap in literacy has been decreased considerably from 2001(20.18%) to 2011(11.95%). The gradual shrinking of gender discrimination is very clear from the rapidly increasing trends of sex ratio in the study area. The increase in female work participation rate amounts to 3.41% in the corresponding decade to claim a good demographic sign. The trend of the proportion of non-agricultural population is being steadily increased. Indicating declining fertility, Age sex structure displays the increasing proportion of people in adult working age group by declining the share in the 0-14 year's age group in consecutive three decades.

Family Planning Programme on Fertility

The First Five Year Plan (1951-1956) underlined about the necessity of the reduction of population growth rate because increasing population pressure adversely affects development and social services. India is the first country in the world to launch family planning programme in 1952 with objective for reducing birth rate considering health and family welfare. The goal of the all successive Five Year Plans were for reducing crude birth rate, total fertility rate and improving family welfare services etc. by adopting differential strategies and measures. The Twelfth Five-year Plan (2012-17) has identified that the goal of Eleventh Plan of total fertility rate (TFR) to be reached at replacement level (i.e. 2.1), which has been achieved by nine states including West Bengal. In addition, crude birth rate and population growth rate have been observed as having a steeper declining pattern due to advanced and enhanced quality of service. The Twelfth Plan strategy has strongly emphasized on the Universal Health Coverage (UHC) for attaining a viable and long-term vision for health.

The district family planning programme under RCH (Reproductive and Child Health) has paid more attention on target-free promotion of contraceptive use for eligible couple as well as has made provision for choice of contraceptive methods (including condoms, oral pills, IUDs, and male and female sterilization) with assurance of high-quality care. It also emphasizes on adequate spacing of births with at least three years to ensure safe motherhood. The Block-wise data for 2006-2007 (District Human Development Report, 2009) present that tubectomy is a commonly practiced method of sterilization and the Sundarban areas recorded the highest position in practicing this method where Kultali, Canning-II, Patharpratima, and Basanti have attained highest record. A number of IUD (intrauterine device) devices, OP cycles and Nirodh pieces have also been distributed. A Block wise picture of sterilization

and other family welfare parameters display about higher cases of tubectomy than vasectomy due to Government initiatives.

Kanyashree Prakalpa and Fertility

The implementation of Kanyashree Prakalpa by the Government of West Bengal since 2013 might be a major influence on fertility because the objective of such Conditional Cash Transfer (CCT) Scheme (Kanyashree Prakalpa, 2013) incentivizes girl students to continue studies for a longer period of time without getting married because according to the Prohibition of Child Marriage Act, 2006 (PCMA), 18 years is the minimum constitutional age of marriage for girls. The objective of this discoursing policy was to fight against two major social challenges i.e., girls who are currently most at-risk for dropping out of school and for child marriage of adolescents between the ages of 13 and 18. Such welfare project was to make realize the women's social power and social esteem for the development and empowerment that might have a positive impact on the prevention of early child marriage of girls. This is considered to be as a key factor for fertility decline. A considerable number of researches have claimed that increasing the age of marriage of women plays a crucial role in fertility decline (Malhotra et al., 1995).

Trends of Fertility of South 24 Parganasdistrict (2008-17), West Bengal and India (1984-2017)

A comparative analysis of birth rate in the district, state and the country reveals a decline in a curvilinear manner. Jain and Adlakha (1982) corroborated that the changes in age-specific fertility is the primary cause for fertility decline. Shape of all the three curves of crude birth rate (CBR) has been gradually slowed down where nearly parallel trend is being seen between the state and the country. Interestingly, the status of their levels of birth rate has been followed by administrative hierarchy which means India contributes simultaneously higher CBR followed by the state and the district during the entire period (Table-1). The fact behind the rapid declining of fertility levels could be due to combined effects of numerous social and economic transformations across the district. The initial slowdown is clearly observed in 2011 when the midyear population has been extrapolated by the new geometric growth rate estimated by the population of Census 2001 and 2011.

Trends of Fertility of the District

The average crude birth rate of the district has become traditionally lower than the state and the national average. The average crude birth rate (2008-17) has been observed in the district as 11.00 where the state and the country registered as 16.27 and 21.34 respectively during this period. Crude birth rate is partially a reflection of the age-sex composition of a population (Hirschman and Fernandez, 1980). Due to

Table- 1. Crude birth rate of South 24 Parganas (2008-2017), West Bengal, and India (1984-2017)

Year	South 24 Parganas	West Bengal	India	Year	South 24 Parganas	West Bengal	India
1984	-	30.4	33.9	2001	-	20.6	25.4
1985	-	29.4	32.9	2002	-	20.5	25.0
1986	-	29.7	32.6	2003	-	20.3	24.8
1987	-	30.7	32.2	2004	-	19.3	24.1
1988	-	28.4	31.5	2005	-	18.8	23.8
1989	-	27.2	30.6	2006	-	18.4	23.5
1990	-	28.2	30.2	2007	-	17.9	23.1
1991	-	27	29.5	2008	14.55	17.5	22.8
1992	-	24.8	29.2	2009	14.92	17.2	22.5
1993	-	25.7	28.7	2010	13.15	16.8	22.1
1994	-	25.2	28.7	2011	11.67	16.3	21.8
1995	-	23.6	28.3	2012	12.83	16.1	21.6
1996	-	22.8	27.5	2013	11.3	16.0	21.4
1997	-	22.4	27.2	2014	8.11	15.6	21.0
1998	-	21.3	26.5	2015	11.12	15.5	20.8
1999	-	20.7	26.1	2016	7.05	15.4	20.4
2000	-	20.7	25.8	2017	5.52	-	19.0

Source: Chief Medical Officer of Health, Dy-II, South 24 Parganas, Annual Vital Statistics, 2008-2017 and Sample Registration System, 1984-2017.Note: (-) means not available

rapid progress of educational awareness and accelerating proportion of female enrolment in education encourage females to be married above the standard age at marriage which is likely to enhance the lower level of fertility. As per the available obtained data, the analysis can be separated into two periods 1) the period of moderate decline (2008-2012) and the period of rapid decline (2013-2017). It has also been estimated that the average crude birth rate of the district per year was 13.43 during the period of 2008-2012 (Table 4) and it becomes 8.56 during 2013-2017, a decline in the average birth rate of 4.86 points with a fluctuating nature. Only 2012 and 2015 registered somewhat higher birth in the district. A substantial reduction of fertility has been observed in the course of ten years period (2008-2017).

Declining Child population under six (1991-2001 and 2001- 2011)

Due to the non-availability of proper Census data related to fertility, the data on the proportion of children under six years of age has been used to have an idea about the trend of fertility with the help of Census data. The most significant result that has come out from this observation that all the Blocks showed negative%age points of children from 1991-2001 and 2001- 2011 Census.

Table 2. Percentage Decline of Child Population (0-6 years of age) of South 24 Parganas

1991-2001			2001-2011		
Total	**Male**	**Female**	**Total**	**Male**	**Female**
-3.90	-3.46	-4.40	-2.64	-2.48	-2.81

Source: Primary Census Abstract, 1991, 2001 and 2011

Trends of Fertility by Subdivisions

The five subdivisions of the study area also continue to show a decline during this ten-year period (2008-2017). Diamond Harbour and Kakdwip are two contiguous southernmost subdivisions of the district, followed somewhat uniform declining trend of crude birth rate (Fig.2). Diamond Harbour and Kakdwip had the crude birth rate of 18.17 and 17.30 respectively, in 2008 (Table 2). Maintaining a declining trend during the decade, Kakdwip subdivision has still highest birth rate of 11.08 (2017) compared to other subdivisions, but Diamond Harbour subdivision presents the most striking feature among all the subdivisions which registers a steady decline in crude birth rate. These two rural based are as have presented differential rates.

Table-3. Distribution of crude birth rate by Subdivisions, 2008-2017

Subdivisions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alipore	11.73	10.53	5.28	3.94	14.46	9.26	2.99	4.46	1.56	1.51
Baruipur	13.86	13.62	12.15	12.48	12.46	11.74	9.39	10.95	11.83	8.03
Canning	9.96	14.72	16.09	10.51	6.39	4.61	3.38	12.34	2.37	2.31
Diamond Harbour	18.17	17.95	16.58	14.90	14.90	12.96	10.55	13.99	6.93	4.46
Kakdwip	17.30	17.84	16.67	15.68	14.29	15.20	12.77	13.82	8.97	11.08
South 24 Parganas	14.55	14.92	13.15	11.67	12.83	11.03	8.11	11.12	7.05	5.52

Source: Chief Medical Officer of Health, Dy-II, South 24 Parganas, Annual Vital Statistics, 2008-2017

Diamond Harbour sub-division started with crude birth rate of 18.17 persons per thousands and gently slows down till 2015 and after that creating a unique sharp decline reached at crude birth rate of 4.46. It signifies a better fertility transition across the district. Being adjacent to Diamond Harbour, Kakdwip also followed the same trend, but after 2016 it shows a sharp increase compared to the other remaining subdivisions which shows declining trends. The most fluctuating trend of crude birth rate is recorded in Alipore and Canning subdivisions and they experienced maximum birth rate in 2012 (Alipore) and 2015 (Canning) respectively. Only Baruipur contributes a remarkable steady decline witnessing minimum fluctuation.

Patterns of Fertility by Blocks

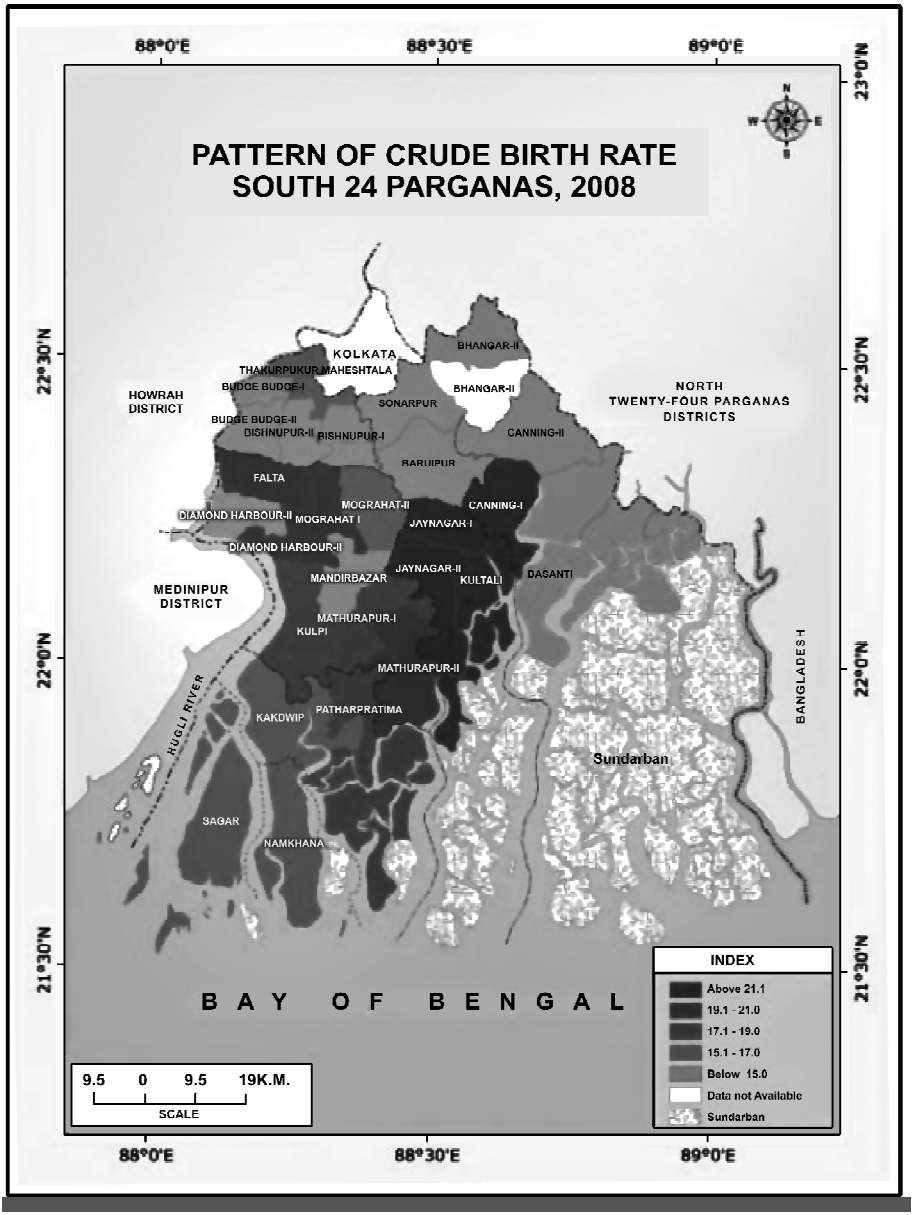
The first spatial interpretation of fertility was introduced by Guilmoto and Rajan (1998). The patterns of crude birth rate display a very diverse picture across the Blocks. The crude birth rate of 2008 shows high fertility was concentrated at the middle portion of the district where Jaynagar-I and II and Kultali are located. Such higher concentration has been extended up to Canning-I towards eastern part of the study area. Diamond Harbour-I shows as a very high proportion of crude birth rate. It is isolated in location in this context, because, no adjacent Blocks show such higher crude birth rate in its surroundings. It shows consistent high crude birth rate from 2009 to 2016 (Table 3). Jaynagar-I and Kultali have shown higher crude birth rate from 2008 to 2017. Such higher contribution in fertility of the aforesaid Blocks was continued till 2011 may be due to the higher proportion of rural population. After 2012, pockets of higher concentration of crude birth rates tend to be scattered. It was concentrated in some fringe Blocks like Bhangar-I, Thakurpukur Maheshtala and Kakdwip.

In 2013 the pattern of crude birth rates has revealed a spectacular change across the Blocks. Though, highest crude birth rate is contributed by Diamond Harbour-I (46.18) followed by Jaynagar–I, having crude birth rate of 22.65 which is lesser than half of the Diamond Harbour Block. A notable increase is seen in 2015 when Diamond Harbour-I, breaking all the previous records, contributed crude birth rate of above 50 per thousand population and the remaining Blocks have recorded crude birth rate below 21 per thousand population. In 2016 and 2017, the picture of fertility has changed considerably. A tremendous decline of crude birth rate was observed in all the Blocks. The newly emerged Sonarpur shows highest crude birth rate with 17.64 followed by Mograhat-II (15.89) and Diamond Harbour-I (15.46) and Jaynagar–I (14.75) etc. In 2017, Bhangar, the north eastern border Block revealed the highest crude birth rate with 16.34 per thousand populations.

Table-4.Pattern of Crude Birth Rate, of South 24 Parganas, 2008-2017

Blocks	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Thakurpukur-Maheshtala	16.18	14.48	4.07	1.97	24.02	11.32	0.68	3.53	0.34	0.02
Bishnupur-I	8.10	6.33	5.47	4.56	4.04	3.19	2.08	2.64	2.66	2.34
Bishnupur-II	1.43	3.83	4.26	6.05	7.62	7.76	6.91	7.59	2.10	0.05
Budge Budge-I	11.07	9.11	8.29	6.87	13.97	16.22	7.35	6.84	3.84	5.35
Budge Budge-II	11.97	9.83	7.31	3.80	3.93	3.29	2.34	3.52	1.13	2.72
Sonarpur	8.32	6.59	6.29	6.71	5.05	2.85	2.22	2.98	17.64	3.87
Jaynagar-I	25.00	22.91	20.45	20.59	23.53	22.65	17.30	20.54	14.75	15.35
Jaynagar-II	21.12	21.57	16.10	9.92	8.22	12.83	10.52	19.40	12.33	10.20
Kultali	22.66	22.68	23.50	21.49	20.35	21.38	16.47	16.01	12.93	14.72
Baruipur	14.60	14.00	11.02	11.94	12.19	10.96	5.63	4.40	2.22	1.27
Bhangar-I	N.A	6.58	11.96	13.69	19.27	15.84	17.70	19.13	11.43	16.34
Bhangar-II	14.34	13.49	8.57	12.16	9.41	9.53	10.25	12.41	10.52	6.94
Canning-I	25.89	24.05	20.88	22.23	13.82	9.46	9.23	20.55	0.06	N.A
Canning-II	3.68	15.22	17.53	8.61	3.98	2.29	1.56	18.90	9.98	10.03
Basanti	3.45	14.83	15.48	4.04	N.A	N.A	N.A	7.38	0.24	N.A
Gosaba	5.88	2.77	9.62	6.75	8.42	7.37	2.56	1.47	N.A	N.A
Mograhat-I	19.73	17.57	15.59	8.82	14.48	10.92	9.67	7.39	9.65	2.21
Mograhat-II	16.69	16.15	15.07	14.74	13.58	14.81	14.67	18.29	15.89	14.66
Mandirbazar	14.65	13.02	11.11	8.03	10.11	7.24	2.04	2.43	2.67	N.A
Kulpi	17.73	18.39	14.71	16.10	12.87	7.05	6.40	8.53	0.57	N.A
Falta	20.53	19.00	19.43	16.37	19.54	12.02	8.59	6.56	2.64	8.55
Diamond Harbour-I	20.48	23.88	24.75	40.07	39.02	46.18	36.75	50.09	15.46	2.29
Diamond Harbour-II	14.36	15.49	14.29	12.51	12.48	8.66	9.71	8.91	3.10	0.21
Mathurapur-I	18.52	19.38	17.09	15.23	14.44	14.02	9.17	10.61	10.29	9.17
Mathurapur-II	20.45	19.29	18.31	5.21	N.A	N.A	N.A	17.80	0.80	N.A
Kakdwip	16.87	18.73	19.20	19.45	20.50	20.69	18.47	21.25	3.96	9.00
Namkhana	16.80	14.42	12.24	8.24	3.84	10.35	5.47	4.76	8.99	7.12
Sagar	15.78	17.34	15.91	16.69	15.16	14.79	11.50	11.77	13.80	12.84
Patharpratima	18.95	19.31	17.43	15.92	14.20	13.44	12.71	13.72	10.20	13.92
South 24 Parganas	14.55	14.92	13.15	11.67	12.83	11.03	8.11	11.12	7.05	5.52

Source: Chief Medical Officer of Health, Dy-II, South 24 Parganas, Annual Vital Statistics, 2008-2017


PATTERN OF CRUDE BIRTH RATE
SOUTH 24 PARGANAS, 2008
88°0'E
88°30'E
89°0'E
23°0'N
22°30'N
22°0'N
21°30'N
KOLKATA
BHANGAR-II
THAKURPUKUR MAHESHTALA
BUDGE BUDGE-I
BHANGAR-II
HOWRAH DISTRICT
SONARPUR
NORTH TWENTY-FOUR PARGANAS DISTRICTS
BUDGE BUDGE-II
DISHNUPUR-II
BISHNUPUR-I
CANNING-II
BARUIPUR
FALTA
MOGRAHAT-II
CANNING-I
DIAMOND HARBOUR-II
MOGRAHAT I
JAYNAGAR I
DIAMOND HARBOUR-II
JAYNAGAR-II
MANDIRBAZAR
KULTALI
DASANTI
MEDINIPUR DISTRICT
MATHURAPUR-I
KULPI
MATHURAPUR-II
BANGLADESH
HUGLI RIVER
KAKDWIP
PATHARPRATIMA
Sundarban
SAGAR
NAMKHANA
BAY OF BENGAL
INDEX
Above 21.1
19.1 - 21.0
17.1 - 19.0
15.1 - 17.0
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Data not Available
Sundarban
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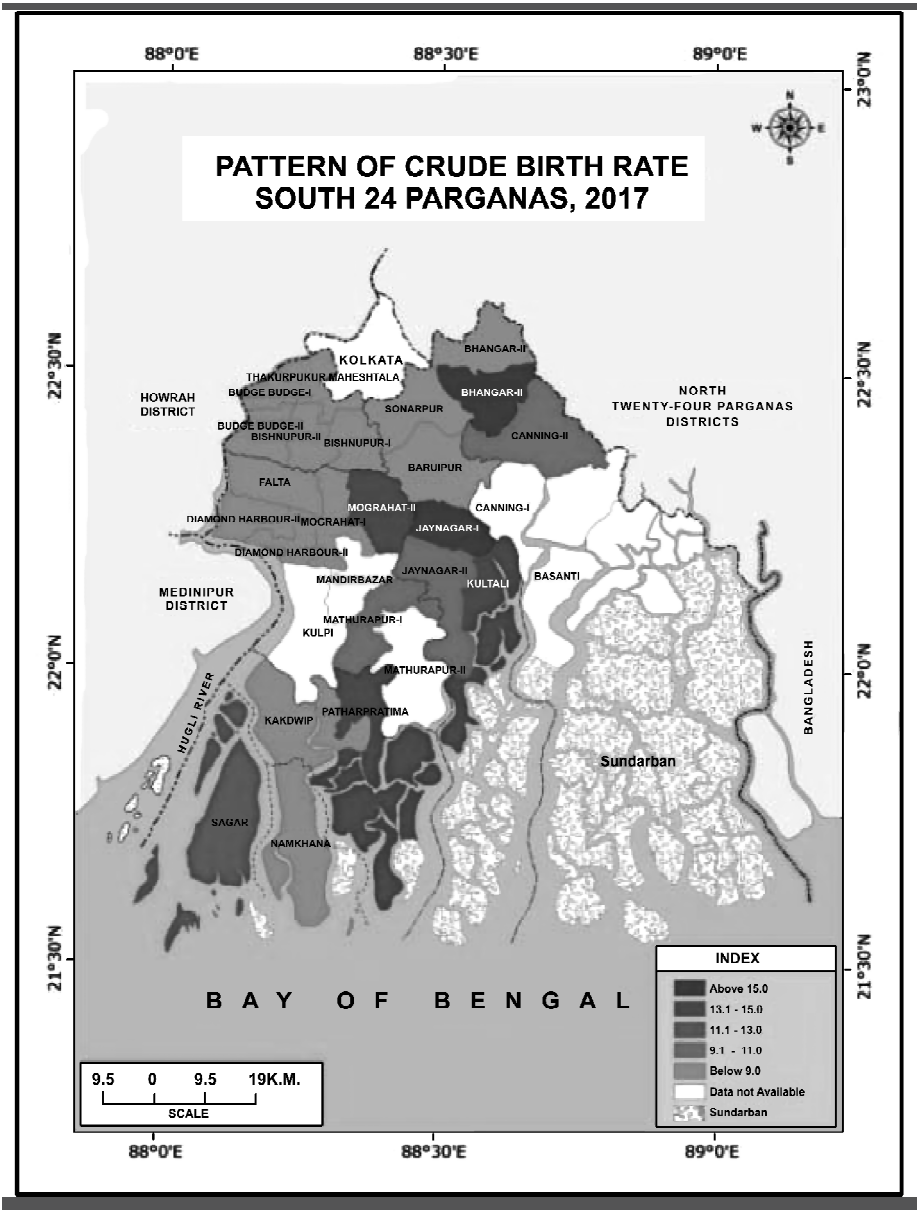
SCALE

Fig.1


PATTERN OF CRUDE BIRTH RATE
SOUTH 24 PARGANAS, 2017
88°0'E
88°30'E
89°0'E
23°0'N
22°30'N
22°0'N
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BHANGAR-II
THAKURPUKUR MAHESHTALA
BUDGE BUDGE-I
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CANNING-I
DIAMOND HARBOUR-II
MOGRAHAT-I
JAYNAGAR-I
DIAMOND HARBOUR-I
JAYNAGAR-II
MANDIRBAZAR
KULTALI
BASANTI
MEDINIPUR DISTRICT
MATHURAPUR-I
KULPI
MATHURAPUR-II
HUGLI RIVER
KAKDWIP
PATHARPRATIMA
BANGLADESH
Sundarban
SAGAR
NAMKHANA
B A Y O F B E N G A L
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Data not Available
Sundarban
9.5 0 9.5 19K.M.
SCALE

Fig. 2

Table-5:Average Crude Birth Rate between 2008-2012 and 2013-2017

Block	2008-2012	2013-2017	Change	Block	2008-2012	2013-2017	Change
Thakurpukur-Maheshtala	12.15	3.18	-8.97	Gosaba	6.69	N.A	N.A
Bishnupur-I	5.70	2.58	-3.12	Mograhat-I	15.24	7.97	-7.27
Bishnupur-II	4.64	4.88	0.24	Mograhat-II	15.24	15.66	0.42
Budge Budge-I	9.86	7.92	-1.94	Mandirbazar	11.38	N.A	N.A
Budge Budge-II	7.37	2.60	-4.77	Kulpi	15.96	N.A	N.A
Sonarpur	6.59	5.91	-0.68	Falta	18.97	7.67	-11.30
Jaynagar-I	22.49	18.12	-4.37	Diamond Harbour-I	29.64	30.16	0.52
Jaynagar-II	15.39	13.06	-2.33	Diamond Harbour-II	13.83	6.12	-7.71
Kultali	22.14	16.30	-5.84	Mathurapur-I	16.93	10.65	-6.28
Baruipur	12.75	4.90	-7.85	Mathurapur-II	N.A	N.A	N.A
Bhangar-I	N.A	16.09	N.A	Kakdwip	18.95	14.67	-4.28
Bhangar-II	11.60	9.93	-1.67	Namkhana	11.11	7.34	-3.77
Canning-I	21.37	N.A	N.A	Sagar	16.18	12.94	-3.24
Canning-II	9.81	8.55	-1.25	Patharpratima	17.16	12.80	-4.37
Basanti	N.A	N.A	N.A	South 24 Parganas	13.43	8.56	-4.86

Change in Average Crude Birth Rate between 2008-2012 and 2013-2017

Percentage change of crude birth rate gives the clear idea of dynamics of fertility over the period of time. It showed increasing and decreasing nature of the fertility pattern. The negative change means increasing nature and positive change indicates decreasing status of crude birth rate (Table 5). In this context, the changing patterns have been shown of average crude birth rate between the period of 2008-2012 and 2013-2017. Only three Blocks (10% of the total number of Blocks) has shown an increase in the birth rate. Bishnupur-II has experienced maximum increase of birth (5.20%) followed by Mograhat-II (2.75%) and Diamond Harbour-II (1.74%). About 19 Blocks (66%) have decreased their fertility rate (crude birth rate) in this period. Among the 19 Blocks, six have witnessed spectacular decline in its crude birth rate of above 50%. About 5 Blocks reduced its fertility ranges from 25% to 50% and eight were under 25%. The highest decrease was experienced by Thakurpukur Maheshtala (-73.83%) and followed by Budge Budge-II (-64.74%), Baruipur (-61.60%) and Falta (-59.57%).

Thakurpukur-Maheshtala presents to have a highest decline in fertility during the corresponding period. This area is characterized by the highest concentration

of urban population (Table 5), inhabited by multiple religious groups. This is the most industrialized and urbanized part of the district. Due to increasing commercialization, more exposure to media and greater cultural, economic and social interactions with the Kolkata Metropolitan city, the maximum decline of fertility has taken place here.

Effect of Female Literacy, Female Work Force Participation, Urbanization and Proportion of Muslims on Fertility

Attempts have been made to examine whether any relationship exists between fertility and other demographic variables. In order to fulfill the above objective, four variables have been considered to find out their relationship with the crude birth rate of the district.

The present analysis has proved that fertility (CBR) has weak negative relation with female literacy rate [Correlation coefficient (r) = -0.205], female work participation rate (r= -0.134) and Urbanisation (r= -0.195) and only weak positive relation has been found with Muslim population (r= 0.118)

Most of the Blocks have consistently experienced declining fertility trend because of their increasing rate of female literacy and female work participation (Table 7). Most of the Blocks under Alipore subdivision show lower level of fertility due to the major influence of urbanization and associated higher standard of living. Some traceable high fertility Blocks namely Jaynagar-I and II, Bhangar-I and II, Mograhat-I and II, Canning-II, and Diamond Harbour-I have the concentration of Muslim population which amounts to above 40% and female literacy is significantly low.

Consequence of Fertility Decline

As a result of fertility decline, decadal growth rate of population continues to decrease for some decades i.e. 32.93% (1981-1991), 21.50% (1991-2001) and 18.17% (2001-2011). Young dependency ratio presents consistently declining trend i.e.74.98% (1991), 62.20% (2001) and 45.55% (2011). Fertility decline is directly related to demographic aging i.e. the proportion of working population (15-59 years of age) has been increased from 4.34% (1991-2001) to 5.80% (2001-2011) and old age population (above 60 years) from 0.48% (1991-2001) to 1.08% (2001-2011) (Mandal, 2020). As a negative consequence, fertility decline may fall, because the number of young people is less interested in agricultureand building and constructional works which results in higher labour wage. Declining fertility increases the average capital investment for children which increases the provision for better health care and schooling. As such the scope for comprehensive family welfare issues are dealt with in a planned way. Declining fertility may also increase the women's work participation rate in market labor force which (6.18% in 1991, 11.83% in 2001 and15.24% in 2011) has been experienced in the study area for several decades.

Table- 7. Fertility and other socio economic parameters

Blocks	Average CBR, 2008-2017	Female Literacy (per cent) 2011	Female Work Participation Rate, 2011	Urban Population (per cent), 2011	Muslims (per cent), 2001	Blocks	Average CBR, 2008-2017	Female Literacy (per cent) 2011	Female WPR 2011	Per cent of Urban pop, 2011	Muslim (per cent), 2001
Thakurpukur-Maheshtala	7.66	78.62	13.49	25.59	36.72	Gosaba	4.48	71.22	29.15	0.00	8.48
Bishnupur-I	4.14	71.29	13.94	1.34	29.14	Mograhat-I	11.60	68.04	10.08	3.14	55.26
Bishnupur-II	4.76	76.05	14.61	3.62	35.43	Mograhat-II	15.45	70.84	10.85	4.13	47.47
Budge Budge-I	8.89	77.47	11.49	9.45	37.14	Mandirbazar	7.13	68.44	10.47	1.20	33.91
Budge Budge-II	4.98	74.26	12.79	2.72	29.57	Kulpi	10.24	68.91	10.58	0.79	36.35
Sonarpur	6.25	82.43	17.56	22.44	11.77	Falta	13.32	71.06	10.87	1.12	31.80
Jaynagar-I	20.31	67.65	13.02	2.22	40.89	Diamond Harbour-I	29.90	72.78	11.07	3.01	40.19
Jaynagar-II	14.22	61.55	19.30	1.83	47.84	Diamond Harbour-II	9.97	71.59	14.38	0.24	37.13
Kultali	19.22	59.14	20.71	0.00	26.66	Mathurapur-I	13.79	66.87	11.40	1.24	36.84
Baruipur	8.82	72.72	14.59	8.16	32.28	Mathurapur-II	8.19	69.98	14.59	0.00	13.91
Bhangar-I	13.19	66.83	9.14	0.99	65.23	Kakdwip	16.81	71.22	13.73	0.00	15.60
Bhangar-II	10.76	70.64	10.75	0.00	68.29	Namkhana	9.22	79.64	14.41	0.00	12.71
Canning-I	14.62	62.95	16.46	5.90	34.34	Sagar	14.56	77.39	22.29	0.00	10.91
Canning-II	9.18	59.61	14.03	0.54	63.17	Patharpratima	14.98	75.40	26.39	0.00	9.31
Basanti	4.54	60.62	22.87	0.32	41.18	South 24 Pgs.		71.40			

Source: District Census Hand Book: 2011, South 24 Parganas; Primary Census Abstract and Chief Medical Officer of Health, Dy-II, South 24 Parganas, Annual Vital Statistics, 2008-2017

Findings

- The trend of the crude birth rate (CBR) has gradually slowed down and this rate remains lower than the state and the country.
- The proportion of child population at the age of 0-6 years shows negativetrend with respect to the preceding Census reports.
- Rural parts of the district experiences relatively higher fertility compared to urban parts.
- Most of the Blocks show negative average crude birth rate from 2008-2012 to 2013-2017.
- Fertility experiences negative relationship with female literacy, female work force participation and urbanization and positive relationship with the proportion of Muslim population.
- Fertility decline has increased the proportion of working population to some extent.

Conclusion

From the beginning of the 21st century, the district demography witnesses a spectacular decline of fertility that gives an indication of fertility transition in future. With the adoption of family planning measures, progress of urbanization and improving socio-economic status of women in terms of literacy and work force participation, a new dynamism in the fertility pattern of thedistrict, namely declining CBD compared to the state and the country is evident. Although, the different Blocks do not exhibit a uniform decline of CBD, there are spatio-temporal variations depending on their socio-economic and demographic background yet, the overall decline in CBD is quite significant. As a consequence of substantial reduction of fertility and decline in decadal growth rate of population, it is expected that average expenditure on children's health care and schooling would further increase in future.

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