

# ***Statistical study for Indian quasi-stable population***

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## **Introduction:**

During more than (50) years past, India has achieved considerable social and economic progress. It is also generally assumed that the future progress will be even more rapid and that India will be an important player in the global market. India has only (2.5) percent of global land whereas it has to provide home for one-sixth of world's population .On examining the past trends of India's population ,it may be observed that during the latter half of the twentieth century ,about (650) million populations were added to the country ,thus living in a country with a high population density and high growth rate , India in need a transition from high fertility high mortality to a low fertility low mortality and towards stable population situation .India was the first country in Asia which introduced family planning program in the national level in the year (1952) so if we look at fertility transition in comparison to infant mortality rate we get an idea of how India has experienced these transitions will make us understand the overall demographic changes in India .United Nations has projected the total fertility rates below replacement level as (2.1) children per women for India ,so it will be very important to look into details about the mortality – fertility transition and trends of life expectancy at birth of males & females .The declining fertility & mortality & high chance of survival contributions to change in age –composition of population ,India being the second most populous country in the world and having around (1.03) billion of population .The sex ratio in India is more skewed towards in recent decades ,in the decennial census the number of girls per 1000 boys aged (0 – 6) years was (962) in (1981),(945) in (1991) and (927)in (2001) and the discrepancy was more acute in urban area from (959 to 906)

between (1981-2001) than the rural area (963-934) ,and that because of the higher mortality rates in female than in male children .Low sex ratios have also been recorded in other Asian countries ,most notably China ,where (847-877) girls were born for every (1000 )boys in (2002) ,India has a higher fertility rates than China.

Demographic research over the past decades has confirmed that a preference for sons over daughters remains entrenched in many countries through the world in such setting, religious traditions and social norms coupled with economic discrimination against women & girls conspire to ensure that young boys have greater access to education, health care and even food than do their sisters, such neglect leads to markedly higher rates of illiteracy, malnutrition and poor health among girls. In its first phase of demographic transition, India experienced a steep fall in the mortality rate due to increasing availability and accessibility of improved health care, whereas the fall infertility rate was comparatively less and so the population grew at a rapid speed. In the next phase population continued to grow at a faster rate though the fall in mortality is not steep and fall in fertility continues, until the replacement level of fertility is achieved. Even if the replacement level of fertility is attained, then due to the “momentum” of population growth, it will take a long period to reach at the stable population situation. The reason behind this is that, the large number of people in the reproductive age group will not be so less at the same time.

The large number of people in the reproductive age group will not be so less at the same time, particular attention. The first is gender bias - the small number of females compared to males. The number of females per (1000) males is (933) in India compared to a figure of (1,050) for Europe and North America and (1,022) for Sub-Saharan Africa .The second feature is that the fertility rate of Muslim women is considerably higher than that for Hindu women. The latest findings of the National Family Health Survey (NFHS), show that for India as a whole, the Total Fertility Rate (TFR) was (2.8) for Hindus and (3.6) for Muslims. At its most shrill, the higher fertility of Muslim women is blamed on Indian Muslims for obeying the tenets of Islam - and also being driven by their ambition to “outnumber” Hindus - in rejecting family planning and embracing polygamy. The aim of this study to show the transitions and the challenges of Indian population through several decades and the prediction of the second population on the earth.

### **Data Analysis:**

As knowledge, India has a decade census officially and systematically started from (1901).

### **Table ( 1 ) :**

Expected total population, Male, Female of India (2001 – 2021) with index numbers.

Years	Persons	Index No.	Male	Index No.	Female	Index No.
2001	1028610	-	532157	-	496454	-
2002	1045547	1.02	540936	1.02	504611	1.01
2003	1062388	1.03	549671	1.03	512716	1.03
2004	1079117	1.05	558354	1.05	520763	1.04
2005	1095722	1.07	566976	1.07	528746	1.06
2006	1112186	1.08	575529	1.08	536657	1.08
2007	1128521	1.10	584019	1.10	544501	1.09
2008	1144734	1.11	592451	1.11	552283	1.11
2009	1160813	1.13	600816	1.12	889997	1.12
2010	1176742	1.14	609107	1.14	567634	1.14
2011	1192506	1.16	617316	1.16	575191	1.16
2012	1208116	1.17	625446	1.18	582670	1.17
2013	1223581	1.19	633505	1.19	590076	1.19
2014	1238887	1.20	641484	1.21	597403	1.21
2015	1254019	1.22	649374	1.22	604644	1.22
2016	1268961	1.23	657168	1.23	611793	1.23
2017	1283600	1.25	664802	1.24	618799	1.25
2018	1298041	1.26	672334	1.25	625707	1.26
2019	1312240	1.28	679741	1.26	632500	1.27
2020	1326155	1.29	686998	1.28	639157	1.29
2021	1339741	1.30	694080	1.30	645660	1.30

**Source:** [http://projected total population by sex on 1'st March \(2001-2006\), India, \(calculations by author\).](http://projected total population by sex on 1'st March (2001-2006), India, (calculations by author).)

From table (1) we produce the index numbers for this serious as (2001) is the foundation year, we observe that the annual growth rate is (1.01%) & the index number for total population, male, female is (1.3%), in the expected census (2021) the male population has (0.52) from the

total population while (0.48) for female, also male female sex ratio was (933).

**Table ( 2 ) :**

Census of India (1971- 2001) & the estimated census for (2011, 2021) (per thousand).

Census	Total	Male	Female	Moving index No.
1971	546159	284049	264110	-
1981	665287	343930	321357	1.22
1991	838568	435208	403360	1.26
2001	1028610	532157	496454	1.22
2011	1192506	617316	575191	1.16
2021	1238887	641484	597403	1.03

**Source:** "The dynamics of the population sex ratio in India 1971-1996". "Population Studies 56 (2002), 51-63, U K. (calculations by author).

It is clear that there is a decreasing in growth rate by about (0.06%) from the estimated census (2011) than the real census (2001) and (0.13%) in the estimated census (2021) than the estimated census (2011).

From table (2) by using Time Series Analysis to predict the total population of India as well as male female population up to (2051),the results as follows:

$$\hat{y} = 918336.2 + 237333.14 x \quad (\text{for total population})$$

$$\hat{y} = 475691 + 122573.3 x \quad (\text{for male population})$$

$$\hat{y} = 442979.2 + 114331.5 x \quad (\text{for female population})$$

**Table (3):**

Predicted Indian male, female & total population up to (2051)( per thousand)

Year	Total	Male	Female
2031	1393002	720837	671642
2041	1511669	782124	728808
2051	1630335	843411	785974

In (2007) the population of the world was (6671 million) India had (17%) from it, and (26%) from Asian population which was (4030 million), while Asian population has (60%) from the world population.

The demand for contraception was influenced by arrange of economic characteristics but the community effect on the demand for contraception operated entirely through differences between the religions ,Hindu,Muslims,and Dalit women in the change in their demand for contraception ,following an additional daughter or sun . The following table shows the age group ( 15 – 45 ) which is the age of fertility and giving birth at any time ,it shows the decreasing numbers from age 15 to age 45 .

**Table (4) :** Female age group (15 – 45);

Age group	No. Female
15 -	46275899
20 -	43442982
25 -	41864847
30 -	36912128
35 -	34535358
40 - 45	25859582

Source: census of India (2001), life tables.

**Table ( 5 ):**

The growth of Indian population (1901 – 2001)

Sl.No.	Census year	Population(in crore)	Decennial growth (%)
1	1901	23.84	-
2	1911	25.21	5.75
3	1921	25.13	(-1)0.31
4	1931	27.90	11.00
5	1941	31.87	14.22
6	1951	36.11	13.31
7	1961	43.92	21.51
8	1971	54.82	24.80
9	1981	68.33	24.64
10	1991	84.63	23.86
11	2001	102.86	21.54

**Source:** census of India (2001), Registrar General of India.

**Table ( 6 ):** Main Rates;

Total fertility rate	3.32 births per woman
Under 5 population	10.7%
Female ( 15 – 45 ) year age group	22.2%
Female literacy rate	54.3%
Average age at first marriage	16.8 years
Average age at first birth	19.6 years
Crude birth rate	23.8
Crude death rate	7.6
Infant mortality rate	57
Life expectancy for male	63
Life expectancy for female	65

**Source:** census of India 2001, Registrar General of India.

Table (5) shows the increasing in the growth from census (1901-2001) but that increasing is in a decreasing pattern which due to the government planning policy. Table (6) shows the main results of census (2001) were the total fertility rate equal to (3.32) births per woman and the female age (15-45) which can female gives birth was (22.2%),also life expectancy for female greater than male. Table (7) shows that the

youth age was the highest by (35.1), the lowest is the aging age (8%), the literacy rate for males higher than females and child sex ratio less than sex ratio for total population.

**Table (7 ):** Main Proportions;

Item	Person	Male	Female
Proportion of:			
Scheduled cast population	16.2	16.2	16.2
Scheduled tribes population	8.2	8	8.4
Proportion of population by broad age-group			
0 – 14	35.3	35.6	35.1
15 – 34	33.8	33.7	33.9
35 – 59	23.1	23.3	22.9
60 <sup>+</sup>	7.7	7.4	8.0
Sex ratio of total population			933
Child sex ratio ( 0 – 6 years )			927
Literacy rate	64.8	75.2	53.7
Work participation rate	39.1	51.7	25.6

**Source:** census of India (2001), life tables.

**Table (8):**

Sex ratio of elderly population & general population (1961 – 2001)

year	Age group (years)				
	60 -64	65 - 69	70 <sup>+</sup>	60 <sup>+</sup>	All ages
1961	969	962	1064	1000	941
1971	923	919	961	937	930
1981	936	986	976	950	935
1991	919	966	1038	971	941
2001	969	965	1022	987	947

**Source:** census of India (2001), Registrar General.

The sex ratio ( number of female per thousand male ) of the elderly population (70<sup>+</sup>) which was (1064) in(1961) decreased to(1022) in (2001) though comparatively higher than that of the general population in each decade ,the sex ratio is not weighted in favor of female occurs in more developed countries.

## **Religion :**

The population of India is diverse and includes many different religious groups. The majority of people are Hindu, but there are also large populations of Muslims, Christians, Sikhs, Buddhists and Jains.

### **Table ( 9 ):**

Population by religious community in India

	No. population	%
Hindu	827578868	80.5
Muslims	138188240	13.4
Christians	24080016	2.3
Sikhs	19215730	1.9
Buddhists	7955207	0.8
Jains	4225053	0.4
others	7367214	0.7
Total	1028610328	100

**Source:** Census of India 2001, office of the Registrar General.

Table (9) shows that Hindus accounted for (830 million) people (80%) of the population .Muslims formed the second largest religious community with (13%), the census counted (24 million) Christians, and Sikhs totaled over (19 million).

### **Emigration :**

Not only does India have a large population, but many people of Indian origin live abroad around the world, they are more than (15.5 million) formed (3%) from the total population. Indians began to migrate overseas in significant numbers in the (19<sup>th</sup> Century), driven by the economic compulsions generated by colonialism. Indians initially spread to Africa, Southeast Asia, Fiji and the Caribbean. A second wave of emigration took place in the second half of the last century, characterized by a steady outflow of skilled workers to developed countries and in the wake of the oil boom in West Asia and the Arab Gulf in the 1970s.

**Table ( 10 ) :**

Estimated size of overseas Indian community

Africa		Caribbean		Arab Gulf	
South Africa	1000000	Trinidad&Tobago	501000	Saudia Arabia	1500000
Mauritius	716000	Guyana	395000	U A E	950000
Reunion	220000	Suriname	150000	Oman	312000
Kenya	103000	South Asia & Pacific		Kuwait	295000
West				Qatar	131000
U S	1679000	Myanmar	2902000	Bahrain	130000
U K	1052000	Malaysia	1665000	Yemen	101000
Canada	851000	Fiji	337000		
Netherlands	217000	Singapore	307000		
Australia	190000				

**Source:** Census of India 2001, office of the Registrar General.

The historic connection between the UK and India has contributed to the evolution of a large Indian community in the UK. According to the (2001) UK Census, Indians formed the largest ethnic minority group totaling 1.1 million, representing around (2%) of the UK population. (46%) of Indians were born in the UK, (35%) in India and (16%) in Africa. The Indian population in the UK is concentrated in London (42%) and the Midlands (30%), particularly in Leicester and the London Boroughs of Harrow, Brent, Hounslow and Ealing. It is well documented that some ethnic minority households are more likely to contain both dependent children and extended families, and that consequently they have larger households. Home ownership is measures of relative advantage; (76%) of Indians in Britain are home owners, more than any other ethnic group in the population. Indians also do well in the labor market.

### **Literates:**

Literacy is among the most promising aspects of the latest census ,India's literacy rate increased by (13%) points from (52%)in (1991) to (65%) in(2001) ,(76%) of males & (54%) for females are now literate compared with levels of(64% & 39 %) respectively in (1991), table ( 11 ) shows more details.

**Table (11) :** No. & percent literates by level of education.

Level of education	Absolute No. ( 000)			Percent to literature		
	Population	Male	Female	Population	Male	Female
Literate	56688	336534	224154	100.0	100.	100.0
Without education level	20023	11361	8662	3.6	3.4	3.9
Below primary	144831	81148	63683	25.8	24.1	28.4
Primary	146740	83525	63215	26.2	24.8	28.2
Middle	90227	55940	34286	16.1	16.6	15.3
Secondary	79230	51202	28028	14.1	15.2	12.5
High secondary	37816	24596	13220	6.7	7.3	7.3
Non technical diploma	386	259	128	0.1	0.1	0.1
Diploma	3667	2901	766	0.7	0.9	0.9
Graduate &above	37670	25533	12137	6.7	7.6	7.6

**Source:** Census of India 2001, office of the Registrar General.

### **Conclusion:**

Through the advanced discussion we can conclude that;

- 1- Indian Population has a very high growth rate and its demographic features are showing signs of demographic transition.
- 2- The pattern of growth and demographic structure varies widely geographically as well as among communities and different religious and social groups.
- 3- Keeping such diversity in mind and considering the importance of small communication multi – cultural society as sources of potential socio – economic development in India , a key and unusual demographic feature of India is an imbalance in the sex ratio .The juvenile sex ratio , the ratio of females to males aged ( 0 – 6 ) years has been decling even more sharply , while most countries around the world have a small imbalance in their juvenile sex ratios for biological reasons ( i .e. there is a biological

tendency for more male than female babies to be born to compensate for the slightly higher risk of mortality among new born boys ).

- 4- The imbalance in India is acute and is indicative of prenatal selection and excess female infant and child mortality.
- 5- The annual growth rate is (1.01%), and the index number of the total population is (1.3%).
- 6- The main religion in India is Hindu by (80.5%), followed by Muslims (11.4%).
- 7- India has (3%) from its population as emigrants.

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## المستخلص Abstract

تحتل الهند ثاني اكبر دوله في قارة آسيا بعد جمهورية الصين وتسمى بشبه القارة الهندية لسعة مساحتها وحجم سكانها إضافة إلى كثرة مواردها وحجم أعماله التي بإمكانها إرساله إلى الدول الأخرى وخصوصا دول الخليج والدول المتقدمة الأخرى في العالم ، حيث تشكل الهند مع الصين حوالي 40% من سكان العالم ، وشهدت الهند تطورا ملحوظا خلال العقود الماضية وسارت على خطى زعيمها الراحل غاندي الذي أسس إلى آلية تنظيم الإنجاب في الخمسينات من القرن الماضي ، وعلى الرغم من ذلك فالهند حاليا بيت لحوالي (1.03) بليون نسمة وتمتاز بنسبة نمو عالية قياسا بالدول الاسيويه المجاوره مع وجود كثافة سكانية عالية وخصوصا في المناطق الحضرية (المدن).وبدأت الهند برنامجها بتحديد النسل وزيادة الخدمات الصحية والعلاجية لغرض التحول من معدلات خصوبة ووفيات عالية إلى العكس من ذلك وبدا مؤشر معدلات النمو بوتيرة منخفضة وخصوصا في العقود الخمسة القادمة حسب مؤشرات التنبؤ ألوارده في الدراسة . هذه الدراسة هي محاوله لتسليط الضوء على ديموغرافية بلد العجائب والغرائب وبعض المؤشرات الاحصائية أفعليه والتقديرية على بعض الفقرات الاساسيه لهذا المجتمع.