A Comparative Study on Fertility Patterns and Factors Affecting the Fertility Rates in Magpara Urban Slum and Gokalpura Village of Mahesana Block in Mahesana District of Gujarat

Internship Training
at
Integrated Child Development Services Department, Mahesana
Women and Child Development Ministry, Gujarat

By
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Under the guidance of
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Post Graduate Diploma in Hospital & Health Management
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TO WHOMSOEVER MAY CONCERN

This is to certify that Dr. Megha Ranjan student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone dissertation at. Integrated Child Development Services Department, Mahesana, Gujarat, from February 03, 2014 to May 03, 2014.

The candidate has successfully carried out the study designated to her during dissertation and her approach to the study has been sincere, scientific and analytical.

The internship is in fulfilment of the course requirements.

I wish her all success in all his future endeavours.

Dr. Ashok Kaushik

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I.C.D.S. SOCIETY

(District ICDS Society Management Unit-(Mahesana)
District Panchayat, Mahesana,Gujarat

Certificate of Internship Completion

This certificate is awarded to Dr. Megha Ranjan, District Program Coordinator, ICDS Society, Mahesana; in recognition of having successfully completed her internship in the department of Integrated Child Development Services, Mahesana and successfully completed her project on a Comparative study on Fertility patterns and factors affecting the fertility rates inMagparaUrban Slum and GokalpuraVillage of Mahesana Block in Mahesana district of Gujarat and other assigned projects by the department during the period of her internship.

She comes across as a committed, sincere and diligent person who has strong drive and zeal for learning. We wish her all the best for future endeavours.

12/5/2014

Date: 12-05-2014

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled A Comparative study on Fertility patterns and factors affecting the fertility rates in Magpara Urban Slum and Gokalpura Village of Mahesana Block in Mahesana district of Gujarat and submitted by Dr. Megha Ranjan Enrolment No. IIHMR/PGDHM/2012-14/17-1337 under the supervision of Prof. Dr. Monika Chaudhary for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 3rd February 2014 to 3rd May 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature: Megha Ranjan

Date: May 23, 2014

Acknowledgement

Every successful story is a result of an effective team work, a team which comprises of a good coach and good team players. Likewise this thesis report is no exception. This has been a meticulous effort of a group of people along with me. I want to take this opportunity to thank each and every one who has been a part of this report.

To start with, I wish to thank my mentor and guide Mrs. Monika Chaudhary. She has been a constant source of encouragement with her valuable inputs about the dissertation. Her timely advice helped me realize what was required to conduct the research and collect the data and helped me complete it in an effective baby.

Secondly, I wish to thank Mr A.T. Patel- Program Officer- ICDS-Gujarat Government. He was instrumental in providing me this opportunity and helping me in getting the relevant information.

Also, I wish to take this opportunity to thank all the block coordinators working at the ground level along with Mr.Dheeresh Chaudhary and Mr.Sumant Patel- Data Entry operator, ICDS- Mahesana for helping me in compiling all the collected data in this report.

Preface

I started off my internship with a vision in my mind so as to be able to learn about the practical aspects of healthcare delivery system on Nutrition in a more detailed manner. Hereby, I take this opportunity to express my deep sense of gratitude to all those who have been instrumental in successful completion of my internship.

Any accomplishment requires blessings and efforts of numerous individuals and this work is no exception. I thank god Almighty for giving me this great opportunity to study and learn at this prestigious organization and help me to implement my theoretical knowledge into practical aspect.

This report is my master thesis for the conclusion of my Post Graduate Diploma Program in Hospital and Health Management at Institute of Health Management Research, Jaipur. Moreover, it is also a conclusion of my internship at the Integrated Child Development Services, District Panchayat, Mahesana, Gujarat. I really appreciated many people who helped me at the project.

The report comprises of my original work on fertility patterns in urban slum and comparing it with that of the village in Mahesana block of Mahesana District in Gujarat. The text in the report has not been copied from anywhere.

At last,I take immense pleasure to thank **Dr. S. D. Gupta** (*Director- Institute of Health Management Research*) and **Brig. S. K. Puri** (*Dean, Institute of Health Management Research, Jaipur*) for placing me in such an esteemed organization (ICDS) to undertake my dissertation program. I would thank **Integrated Child Development Services (ICDS), Gujarat** to provide me with an opportunity to work with them, where I gained basic knowledge about working of health system and its functionaries.

Dr. Megha Ranjan

April 2014

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Abbreviations

MWRA	Married Women of Reproductive Age
EMWRA	Ever Married Women of Reproductive Age
SMAM	Singulate Mean age at Marriage
HIV	Human Immuno-Deficiency Virus
UNFPA	United Nations Populations Fund
UNICEF	United Nations Children's Fund
MDG	Millennium Development Goals
UNDP	United Nations Development Program
ASFR	Age Specific Fertility Rate
TFR	Total Fertility Rate
TMFR	Total Marital Fertility rate
NFHS	National Family Health Survey
CPR	Contraceptive Prevalence Rate
WHO	World Health Organization
PRI	Panchayati Raj Institution
ICDS	Integrated Child Development Services
BPL	Below Poverty Line
MIS	Management Information System
M&E	Monitoring and Evaluation
ECCE	Early Childhood Care and Education
CVN	Community Volunteer for Nutrition
NCV	Nutrition Community Volunteer
SNP	Supplementary Nutrition Program
AWC	Anganwadi Centre
AWW	Anganwadi Worker
AWH	Anganwadi Helper
PM	Program Manager
PO	Program Officer

List of Appendices

DISSERTATION REPORT

Title of the study: A Comparative study on Fertility patterns and factors affecting the fertility rates in Magpara Urban Slum and Gokalpura Village of Mahesana Block in Mahesana district of Gujarat.

1.1 Abstract

Introduction: India is one of the most populous countries of the world. Various efforts to control population growth in India are yet to reach the goal of stabilization of the population. Fertility indicators are the measures to know the direction of the population growth.

Background of Study: One-eighth of India's urban population i.e. approximately nine million people lives in slum according to data from the latest round of National Sample Survey Organization (69th Round)[6]. As per the report on Health and Living conditions in Eight Indian Cities [4], in seven out of the eight cities studied, contraceptive prevalence rate is lower in slum areas as compared to non-slum areas. Total Fertility Rate is higher by 0.2-0.5 children in slum areas than in non-slum areas in every city except Nagpur. Thus, a need is felt to determine the fertility rate in urban slums of Mahesana and compare it with that of the village.

Objectives of Study: To determine the total fertility rate of Magpara urban slum and gokalpura village and compare it with that of the Gujarat state and to examine the socio-economic factors affecting the fertility. To determine the mean age at marriage for sample women population of reproductive age (15-49 years) of Magpara urban slum and Gokalpura village of Mahesana block in the Mahesana district, Gujarat.

Methods: Present cross sectional study has been conducted to study the fertility indicators of a slum area of Mahesana city located in the northern part of state of Gujarat, India. The study was conducted amongst 90 Married Women of Reproductive Age of a slum area and compared with to the 90 Married Women of Reproductive Age living in the village, in the North Zone of Mahesana city, Gujarat, India.

Results: Total fertility rate in Magpara Urban slum is 4.62 as compared to 3.7 in Gokalpura Village which is higher than total fertility rate of Gujarat Urban and rural respectively. The total fertility rate in the study areas are directly related to level of education and knowledge about the contraceptives; among the sample married women of reproductive age.

Conclusion: It can be safely concluded from the study that fertility control measures need urgent attention in the urban slum areas.

Key Words: Total fertility rate, contraceptives, urban slum

1.2 Introduction to the Study

The twentieth century has been witness to remarkable changes in India's society, polity, and economy. The country became independent of foreign rule, there was economic development, and the society changed in many ways. The demographic transition also began and reached a level near completion during the century. While secular mortality decline began during the first quarter of the century, fertility decline followed with a lag, as normally happens, and by the end of the century the transition was at an advanced stage. The change from moderately high fertility, nearly unregulated within marriage, to fairly regulated low to moderate fertility has been impressive and has implications for the society, the economy, and broadly, livelihoods of the people of India. But the passage of the transition has not been smooth. Soon after the middle of the twentieth century, there was concern about India's rapid population growth as that of the developing world as a whole since substantial mortality decline had occurred but fertility continued to be at a fairly high level thereby causing high population growth. India experienced annual growth rates exceeding two percent for quite some time. Soon after independence, a population programme was introduced by the government primarily aimed at reducing fertility. But initially hardly any change in fertility was seen. In public debates, rapid population growth on account of high fertility was frequently cited as the principal hindrance to improving levels of living and overall development. There were apprehensions of food shortages and starvation and India did suffer from such shortages from time to time, the 1965-67 drought being the most damaging. This created a strong neo-Malthusian atmosphere and the family planning programme was strengthened. But high fertility was blamed on lack of development and apprehensions were expressed about the success of population programmes in the then socioeconomic setting (Davis, 1971). Forecasts of doom were commonly made in the 1960s and 70s. Drastic steps such as compulsory sterilisation were called for to curb fertility and come out of the vicious cycle of low development causing high fertility and in the opposite direction high fertility and population growth impeding development. India did take a position at Bucharest supporting development as the best contraceptive. But soon, in 1976, the programme was intensified stating that one cannot wait for development to take effect. This resulted in the emergency period disaster and the programme received a setback. The population programme continued on low key without much political support. By then some fertility decline was observed but further progress was uncertain and for some time in the 1980s stagnation was seen; hardly any rise in contraceptive use and no decline in fertility. Again, there was a mood of despair and frustration. Yet, by the end of the decade, impressive fertility decline was seen in many parts of the country and soon this became widely pervasive, covering all parts of India and all sections of population though to varying degrees. Progress towards low fertility is by now well established throughout the country and achieved in about half. The results of the 2011 census (India, Registrar General, 2011a) that revealed that India's population growth rate has also fallen dispelled any doubts media and civil society had about fertility decline. There are now hardly any apprehensions of India's achieving transition to low replacement level fertility and most probably moving further to below replacement fertility. It

is not easy to forecast when this would occur, that is, the timing, but the eventuality is taken for granted.

Thus, Fertility is the most important variable affecting population growth rate in most contemporary populations. The level of fertility in a population affects not only its current size, but also has a significant impact on its future rate of growth, as well as the current and future age structure of the population. However; "Mankind is now making attempts to prevent the tragedy of too many people. The debate on the cause and effect of too many inhabitants on this earth is centuries old but the effort to control the cause and mitigate the effect is only decade old."(Ram NV, 1974). Over last few decades, both fertility and mortality rates fell in India, but decline of mortality was strong enough to offset that of fertility. As a result, the decline in birth rate is now faster than the parallel decline in the mortality rates. However, the core problem is that majority of women suffer from unregulated fertility and its consequences. The factors playing role in transformation from high to low fertility rates are age at marriage, woman's health and nutrition, infant feeding practices, child survival rates, the nature of family as an institution, the status of women, the female literacy, religion and belief system, type of economic system, the level of urbanization, labour force participation among women and health care system, especially reproductive health care. In this dissertation report, I have compared the relationship of factors like mean age at marriage, sex of the first child, knowledge about the contraceptives and decision making power of the women in the household to that of the total fertility rate of women residing in the Gokalpura village and Magpara Urban slum of Mahesana in the Mahesana Block of Mahesana district of Gujarat.

1.3 Background of District Mahesana

Mahesana district is one of the 26 districts of Gujarat state in western India. The district is divided into 9 Talukas and 13 blocks. Mahesana city is the administrative headquarters of this district.

1.3.1 Socio-Economic and Demographic Profile of the district

In 2011, Mahesana had population of 20, 35,064 of which male and female were 1,056,520 and 978,544 respectively. In 2001 census, Mahesana had a population of 1,837,892 of which males were 953,842 and remaining 884,050 were females.

There was change of 10.73 percent in the population compared to population as per 2001. The initial provisional data released by census India 2011, shows that density of Mahesana district for 2011 is 462 people per sq. km. In 2001, Mahesana district density was at 421 people per sq. km. Mahesana district administers 4,401 square kilometers of areas.

Average literacy rate of Mahesana in 2011 were 83.61 compared to 75.22 of 2001. If things are looked out at gender wise, male and female literacy were 91.39 and 75.32 respectively. For 2001 census, same figures stood at 86.20 and 63.65 in Mahesana District.

With regards to Sex Ratio in Mahesana, it stood at 926 per 1000 male compared to 2001 census figure of 927. Child Sex Ratio as per census 2011 was 842 compared to 801 of census 2001. In 2011, Children under 0-6 formed 11.69 percent of Mahesana District compared to 14.05 percent of 2001.

In ICDS**, t**he district is divided into 13 blocks namely, Kadi-1, Kadi -2, Mahesana-1, Mahesana-2, Visnagar-1, Visnagar-2, Vijapur-1, Vijapur-2, Kheralu, Satlasana, Vadnagar, Becharaji, Unjha. The area that has been chosen for the study is Mahesana block.

1.4 Literature review

As per the report on Health and Living conditions in Eight Indian Cities [4], in seven out of the eight cities studied, contraceptive prevalence rate is lower in slum areas as compared to non-slum areas. Total Fertility Rate is higher by 0.2-0.5 children in slum areas than in non-slum areas in every city except Nagpur. In general, the poor have much higher fertility rates than the non-poor. Teenage fertility is also high among the slum women than in non-slum women (Kamla Gupta, Fred Arnold and H.Lhungdin). In another study of Fertility Indicators In Slum Areas of Ahemdabad City of Gujarat[5] (B.Puwar, T. Puwar and K. Trivedi), Total fertility rate in Urban slums of Ahmedabad city is 3.4 and Pregnancy Prevalence rate is 71.62 per thousand married women of reproductive age (15-49 years).

1.5 Rationale for the Study

One-eighth of India's urban population i.e. approximately nine million people lives in slum according to data from the latest round of National Sample Survey Organization (69^{th} Round)[6]. According to the report, Gujarat accounts for ten percent of the un-notified slums in Urban India. Twelve percent of the total population of Gujarat lives in these slum areas; still the urban slum population is not having well-structured health services as compared to rural population. All the studies so far in the area of fertility have been conducted in Ahmedabad and Surat areas. Therefore a need is being felt to assess the current fertility rate, fertility pattern and factors affecting them in the local urban slum and the village community of Mahesana which is one of the fast growing urban centre of Gujarat just 73Km from the capital city of Gandhinagar and largest district of Gujarat Ahmedabad. Mahesana being one of the fastest growing city has also seen the growth of 10% in urban slum settlements in past 5 years.

1.6 Research Question:

What is the total fertility rate of women of reproductive age and factors contributing to fertility rate of women living in Magpara Urban slum and Gokalpura village of Mahesana?

1.7 Objectives

i. To determine the fertility rate of women of reproductive age i.e. 15-49 years of age living in Magpara urban slum and Gokalpura village.
ii. To examine the socio-economic factors i.e. the mean age at marriage, female literacy, knowledge about the contraceptives; affecting the fertility of the women living in Magpara urban slum and Gokalpura village.
iii. To compare the fertility rates of women living in Magpara slum area with that of the Gokalpura village of Mahesana block.
iv. To compare the fertility rates of women living in Magpara slum and the Gokalpura village with that of the Gujarat state.

1.8 Methodology

1.8.1 Study Period: March 2014- April 2014

1.8.2 Study Design: Cross-sectional descriptive study

1.8.3 Study area: The study has been conducted in Magpara urban slum and Gokalpura village in the Mahesana Block of Mahesana district of Gujarat. The study area is confined to a these particularly selected areas. The reason of selecting these two areas for comparison is that both the areas have equal population size of 300 as per the Department of Statistics, District Panchayat, Mahesana and the areas are easily accessible for data collection purpose.

1.8.4 Study Group: Ever married women of Reproductive age group (MWRA) i.e. 15-49 years will constitute the study group. Ever married women have been selected as socio-cultural environment of Gujarat doesn't permit the birth of children out of wedlock. Also, the age group has been selected from 15 years as it is a common practise in Gujarat to get the children married earlier.

1.8.5 Operational Definitions

- **Urban Slum-**For operational purposes, slums were defined as follows as per the 69th Round of NSSO:

Areas notified as slums by the concerned municipalities, corporations, local bodies or development authorities were termed notified slums. Also, any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, was considered a slum by the survey, provided at least 20 households lived there. Such a settlement, if not a notified slum, was called a non-notified slum. (Note that while a non-notified slum had to consist of at least 20 households, no such restriction was imposed in case of notified slums.)

Slums: The word "slum" covered both notified slums and non-notified slums.

- **Village:** As per Census Board of India, all areas other than urban are rural areas. The basic unit of rural area is a revenue village as defined by the local administration. Census further considers those areas as rural where the population is below 5000 and the density of population less than 400 per square km. It further provides that in such areas at least 75% of the males of the working population are engaged in agricultural pursuits.

- **Mean Age at marriage:** Age at marriage is that point in the life span when a person moves from the single status to married status. The estimate of mean age at marriage is also termed as Singulate Mean Age at Marriage (SMAM). It is calculated through Census Synthetic Cohort Method devised by John Hajnal and given by the following formula:

$$\mathbf{SMAM = [15+ (\sum_{x=15}^{40} 5 \times {}_5S_x) - (45 \times S_{45})]/ (1\text{-}S_{45})}$$

Limitation of the study in calculation of this measure: The estimates by age may be affected by age misreporting. Marital status may be misreported, particularly in societies where divorce or separation is not socially acceptable. Data derived from surveys with small samples may be significantly affected by sampling variability.

- **Purpose:** This indicator can provide information on current status and trends over time in the age at which young women are entering marriage and consensual unions. Social expectations often put pressure on girls to marry and begin bearing children at early ages before they are emotionally and physically ready.

- Adolescent girls who are married often find it difficult to access reproductive health services, negotiate the use of family planning methods with their partners, and marriage to older men may make girls more vulnerable to sexually transmitted infections and HIV. About 14 million women and girls between ages 15 and 19 (both married and

unmarried) give birth each year and, for this age group, complications of pregnancy and childbirth are a leading cause of death, with unsafe abortion being a major factor (UNFPA, 2005). Adolescent mothers are more likely to have children with low birth weight, inadequate nutrition and anaemia, and these young women are more likely to develop cervical cancer later in life. Moreover, early childbearing is linked to obstetric fistula, a devastating and socially isolating condition that can leave women incontinent, disabled, and in chronic pain. An analysis of DHS data from 10 countries and related research show that early marriage is associated with gender-based violence (Hindin et al., 2008).

- Studies show that higher median age at first marriage directly correlates with higher rates of girls in school (UNICEF, 2005). Helping girls go to and stay in school may be one of the best ways to foster later, chosen marriage, and is in keeping with achieving MDG #3, to promote gender equality and empower women through seeking to eliminate gender disparity in primary and secondary education and improve ratios of females to males in tertiary education (UNDP, 2007).

- **Issue(s):** Since the median is based on all women, including those who have never been married or lived in a consensual union, if disaggregating by age groups (e.g., 15-19; 20-24 years) there may not be a median for younger cohorts of women (since fewer than 50 percent of the cohort may have been married or lived in a consensual union). More helpful indicators for tracking age of marriage trends for the younger age groups may be the percentage married before age 15 for those ages 15 to 19 years and the percentage married before age 18 for those ages 20 to 24 years.

- **Age Specific Fertility rate (ASFR):** The age specific fertility rate is the number of births per year per 1000 women of a specified age group of the specified population of a given geographic area during a given year. It is computed as follows:

$$\text{ASFR} = \frac{\textit{No. of live births in a particular age group of the population}}{\textit{Mid year female population of the same age group}} \times 1000$$

- **Purpose of computation of ASFR:** The ASFR has two primary uses: (1) as a measure of the age pattern of fertility, that is of the relative frequency of childbearing among women of different ages within the reproductive years, and (2) as an intermediate computation in the derivation of the total fertility rate (TFR).
  The ASFR is of particular interest in countries, cities, or districts with adolescent RH interventions designed to reduce unintended pregnancy. Although the ASFR is rarely used as an outcome measure in evaluating such programs (due to the human, financial, and logistic resources needed to collect the data), it is a variable that program administrators and policy makers track over time as a macro-level indicator of program effectiveness combined with non-program influences.
- **Issue(s):** Unlike the crude birth rate, the ASFR is unaffected by differences or changes in population age composition, and thus is more useful in comparing different populations or sub-groups and in measuring changes over time. The ASFR is, however,

affected by differences or changes in the number or percent of women exposed to the risk of pregnancy. Thus, changes in ASFRs may provide misleading information regarding the impact of family planning programs on fertility when other factors affecting risk of pregnancy are changing (for example, for the 15-19 and 20-24 age groups when age at marriage is rising quickly). However, because of it provides comprehensive information about the fertility equation among different age groups, the measure is widely used.

- **Total Fertility rate (TFR)**: It is defined as the average number of the children per woman assuming that the woman will complete the entire reproductive span of her life and will follow the fertility rate of the country. It is also defined as the sum of the age specific fertility rates of women by single years of age from 15-44 or 49 and is expressed per woman i.e. the sum is divided by 1000. If ASFRs are given for 5 year age intervals, the sum is to be multiplied by 5. It is expressed as follows:

$$\boldsymbol{TFR} = \sum_{\boldsymbol{x=15}}^{\boldsymbol{49}} \boldsymbol{Fx}$$

If TFR is computed for 5 year age interval, then

$$\boldsymbol{TFR} = \mathbf{5} \times \sum_{\boldsymbol{x=15}}^{\boldsymbol{44\ or\ 49}} {}_{\mathbf{5}}\boldsymbol{Fx}$$

- **Purpose:** The TFR is the most widely used fertility measure in program impact evaluations for two main reasons: (1) it is unaffected by differences or changes in age-sex composition, and (2) it provides an easily understandable measure of hypothetical completed fertility.
  Although derived from the ASFR, a period fertility rate, the TFR is a measure of the anticipated level of completed fertility per woman (or per 1,000 women) if she/ they were to pass through the reproductive years bearing children according to the current schedule of ASFRs. The TFR is only a **hypothetical measure** of completed fertility, and thus women of reproductive age at any given point in time could have completed family sizes considerably different from that implied by a current TFR, should age-specific fertility rates rise or fall in the future.

- **Issue(s):** Because the TFR is derived from a schedule of ASFRs, the comments and caveats regarding the ASFR also apply to the TFR (i.e., method of computation from different sources of data, effects of changing exposure to pregnancy, and implications of computation for currently married versus all women of reproductive age). As was also the case for the ASFR, the TFR may be computed for women who were continuously married or in union during the reference period of the measure in order to decrease the potentially confounding effects of differences in exposure to the risk of pregnancy (to the extent that differences are associated with marital status). This measure is known as the Total Marital Fertility Rate (TMFR).

- Note also that whereas the standard age range for the TFR is ages 15-49, TFRs for other age ranges (e.g., 15- 34) are sometimes used for analytic purposes, for example, in order to decrease the influences of truncation when examining cohort trends from birth history data.

- NOTE: The reproductive age of women has been taken from 15 years to 49 years in the current study keeping in view the economic status of the state and district. Despite India being the developing country, Gujarat has been economically advanced state of the country and the total fertility rate of the state is below the national rate. Hence, the reproductive age has been taken so.

1.9 Sampling Method: In ICDS**, t**he district is divided into 13 blocks namely, Kadi-1, Kadi -2, Mahesana-1, Mahesana-2, Visnagar-1, Visnagar-2, Vijapur-1, Vijapur-2, Kheralu, Satlasana, Vadnagar, Becharaji, Unjha. Mahesana 1 and 2 constitute Mahesana Taluka and Mahesana city is the administrative unit of the District. Since Mahesana block is the largest among all and is the administrative unit of the district; Mahesana block has been selected for the purpose of the study. In Mahesana Block, there are 10 discretely situated urban slums with the population size ranging from 300-500. There are 3 slum areas namely Magpara, Dhobighat, and Daferiya; which has the correct estimation of population size (i.e. 300) as per the Department of Statistics; District Panchayat, Mahesana. There are 116 villages in Mahesana block out of which 10 villages have the population size of 300. Random sampling i.e. Lottery Method has been done to select the urban slum and the village out of the 3 urban slums and 10 villages respectively for the comparison purpose.

To select a sample size representative of the population, 30% of the population size is taken as the sample. Therefore, the random sample of 90 women of reproductive age group i.e. 15-49 years each from the Magpara and Gokalpura has been taken for the study.

1.10 Methods: A pre-designed face to face interview schedule has been administered to collect the data regarding the fertility indicators of women of reproductive age from the selected community. All pregnancy and their outcomes taking place; between March, 2013 to March, 2014 will be recorded for computation of the fertility indicators. The scheduled questionnaire used in the study is attached in Annexure.

1.11Data type: Primary data i.e. Data has been collected directly from the study group and Secondary data i.e. data will be collected from the already available data reports generated by Ministry of Health and Family Welfare, Government of India.

1.12 Data Source: Scheduled Questionnaire for Primary data and National Family Health Survey-3 for Total Fertility rate of Gujarat to make the comparison.

1.13 Results and Discussion

1) Composition of sample population as per age groups

The total number of women who have been included in the study is 180 (90 each from Magpara and Gokalpura). The age distribution of the women interviewed is as follows:

Table 1: Table below shows the distribution of sample population of Magpara and Gokalpura as per the defined age groups (n=90)

Age group (in years)	Magpara	Gokalpura
15-19	15	18
20-24	23	33
25-29	09	19
30-34	16	11
35-39	21	4
40-44	4	5
45-49	2	0

Figure 1: Figure 1 shows the pie charts showing the composition of sample population as per the age groups in Magpara urban slum and Gokalpura village of Mahesana (n=90)

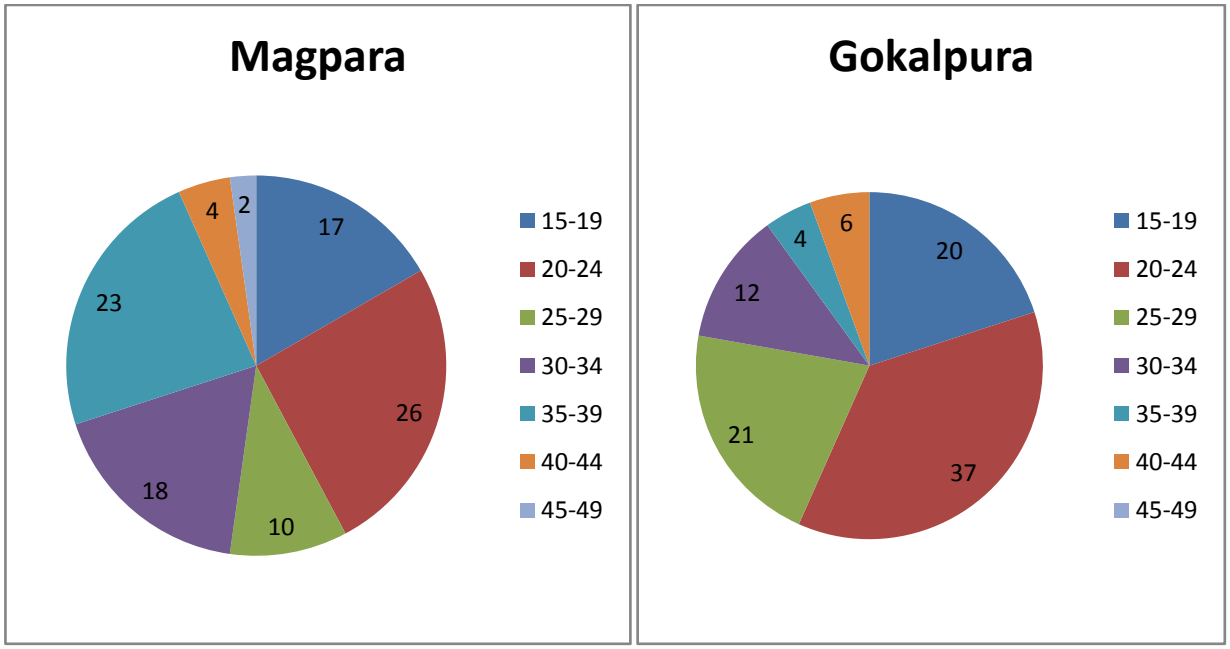
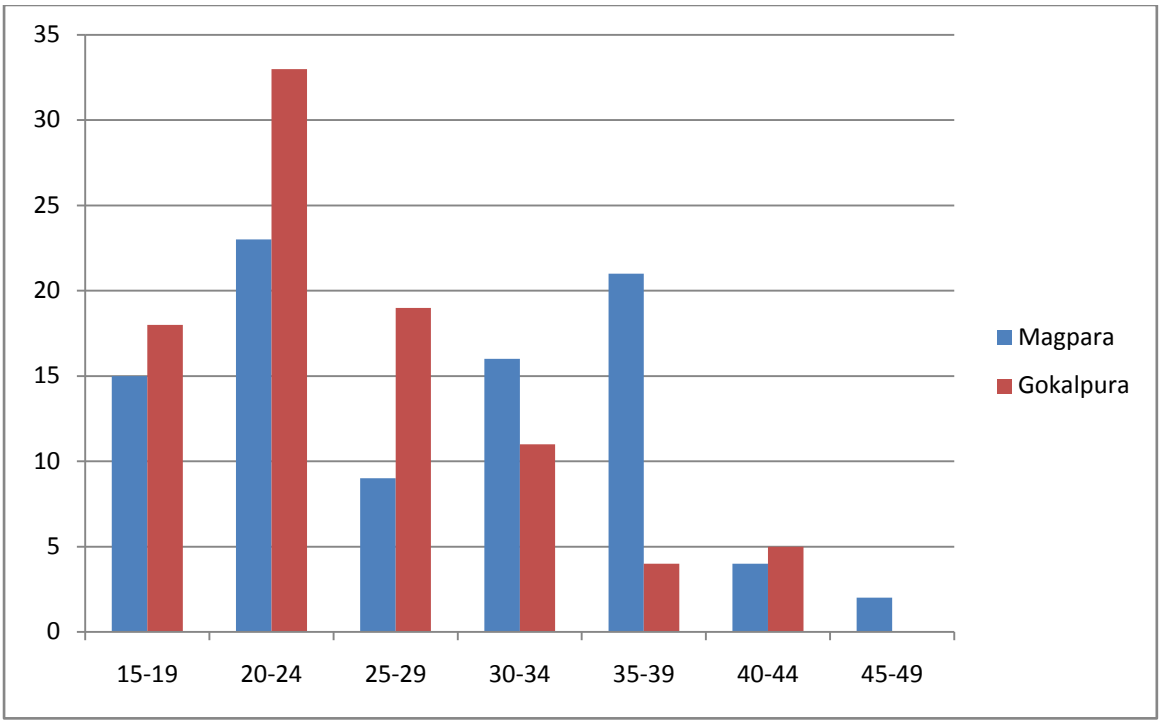


Figure 2: shows the age group distribution of sample population of Magpara and Gokalpura (n=90)



2) The level of education among different age groups of the sample population of Magpara and Gokalpura

Table 2: Table below shows the level of education among different age groups of sample population of Magpara (n=90)

Age Group/ Level of education	15-19 (n=15)	20-24 (n=23)	25-29 (n= 9)	30-34 (n=16)	35-39 (n=21)	40-44 (n=4)	45-49 (n=2)	Total
Illiterate	0	3	0	8	9	3	2	25
Can Read and write but no formal education	6	6	4	4	7	1	0	28
Primary education i.e. 5 years of education	9	10	2	2	3	0	0	26
Secondary education i.e. 10 years of education	0	3	3	2	2	0	0	10
Senior Secondary education i.e. 12 years of education	0	1	0	0	0	0	0	1
Graduation i.e. 15 years of education	0	0	0	0	0	0	0	0
Post Graduation i.e. 17 years of education	0	0	0	0	0	0	0	0
Total	15	23	09	16	21	04	02	90

Figure 3: Figure below shows the Level of education among the sample female population of Magpara (n=90)

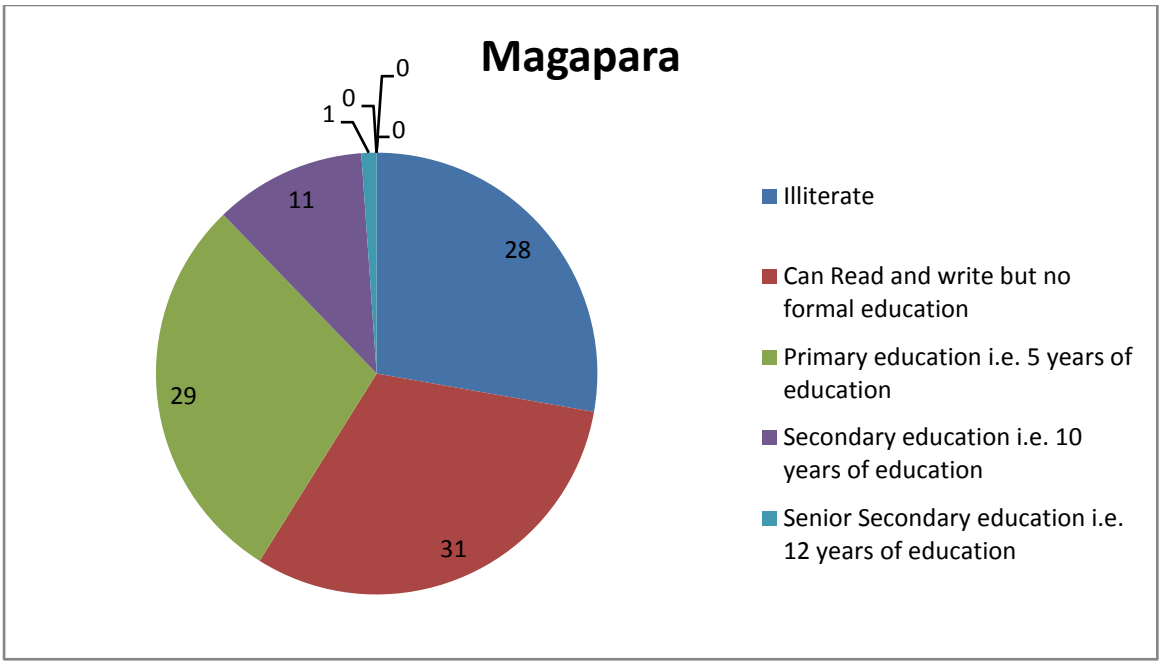


Table 3: Table below shows the level of education among different age groups of sample population of Gokalpura(n=90)

Age Group/ Level of education	15-19 (n=18)	20-24 (n=33)	25-29 (n= 19)	30-34 (n=11)	35-39 (n=04)	40-44 (n=05)	45-49 (n=0)	Total
Illiterate	0	1	0	1	1	2	0	5
Can Read and write but no formal education	1	1	2	1	3	2	0	10
Primary education i.e. 5 years of education	2	4	1	2	0	1	0	10
Secondary education i.e. 10 years of education	6	3	1	5	0	0	0	15
Senior Secondary education i.e. 12 years of education	9	13	4	1	0	0	0	27
Graduation i.e. 15 years of education	0	8	7	1	0	0	0	16
Post Graduation i.e. 17 years of education	0	3	4	0	0	0	0	7
Total	18	33	19	11	4	5	0	90

Figure 4: Figure below shows the Level of education among the sample female population of Gokalpura (n=90)

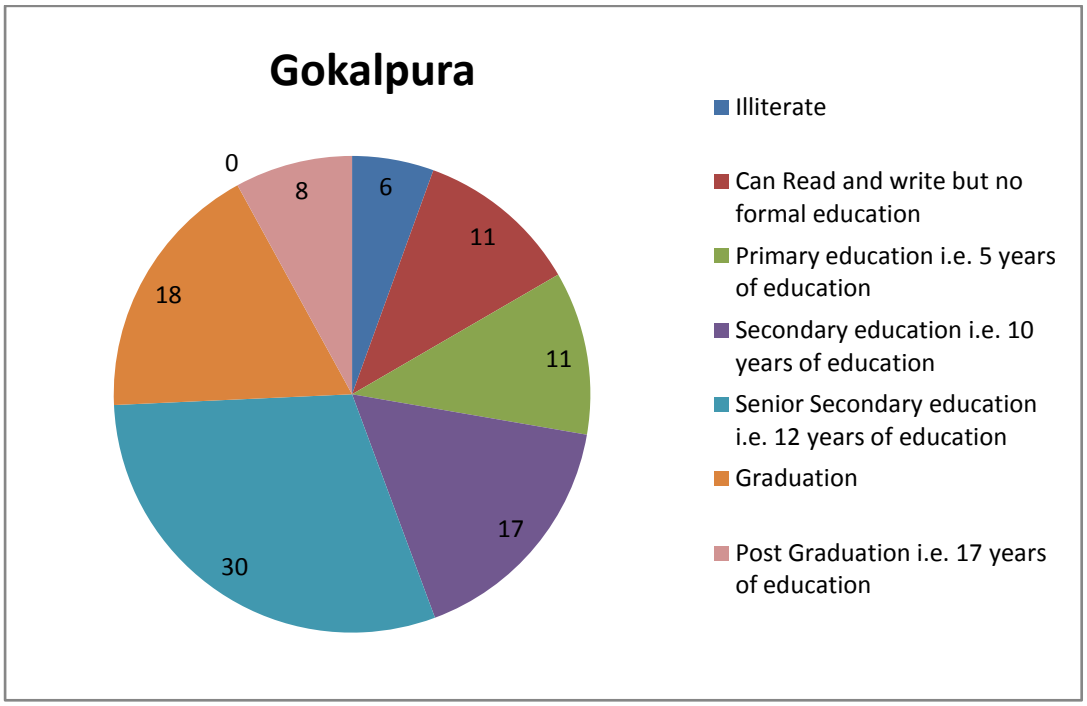
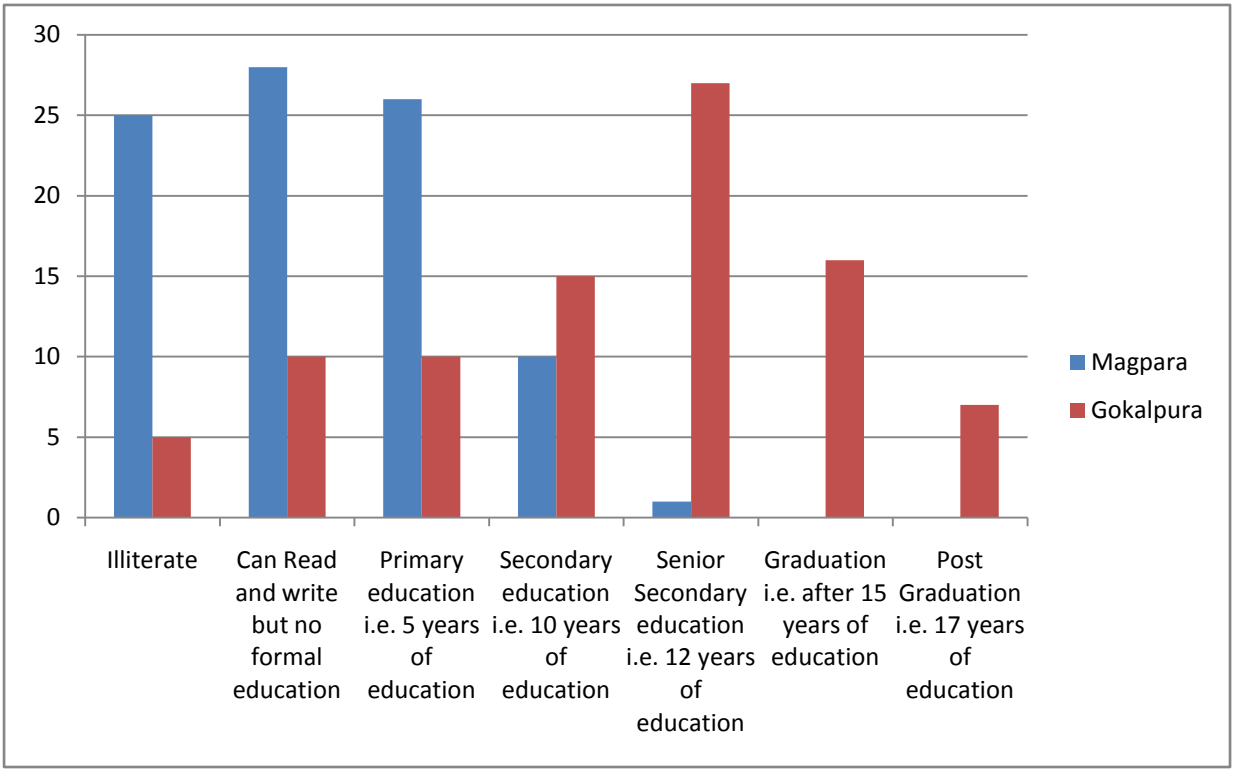


Figure 5: Figure below shows the comparison between the level of education among the sample female population of Magpara and Gokalpura



3) Number of Married women among different age groups in sample population of Magpara and Gokalpura

Table 4: Table below shows the number of married women among different age groups in the sample population of Magpara and Gokalpura (n=90)

Age Group	No. of women interviewed in Magpara	No. of women Married among the interviewed women	% of women married	No of women interviewed in Gokalpura	No. of women Married among the interviewed	% of women married
15-19	15	10	66	18	10	55.5
20-24	23	20	86.9	33	26	78.7
25-29	09	06	66.6	19	19	100
30-34	16	16	100	11	11	100
35-39	21	21	100	04	04	100
40-44	04	04	100	05	05	100
45-49	02	02	100	0	0	0
Total	90	79	88	90	75	83

4) **Mean age at Marriage:** Marriage in India marks the point in a woman's life when childbearing becomes socially acceptable. Age at first marriage has a profound impact on childbearing because women who marry early have on average a longer period of exposure to pregnancy and a greater number of lifetime births. Information on age at first marriage was obtained by asking respondents the month and year, or age, at which they got married.

Table 5: Table below shows the total female sample population of Magpara and Never married Population for the computation of Singulate Mean age at Marriage for Female whose first marriage has occurred before Age 45

Age Group **(1)**	**Total female population of Magpara** **(2)**	**Never Married Population** **(3)**	**Population Single, Magpara** **(4)= (3)/(2)**
15-19	15	5	0.3333
20-24	23	3	0.1304
25-29	09	3	0.3333
30-34	16	0	0
35-39	21	0	0
40-44	04	0	0
45-49	02	0	0

Therefore the Mean age at marriage (SMAM) for females of Magpara is 18.9 years.

Table 6: Table below shows the total female sample population of Gokalpura and Never married Population for the computation of Singulate Mean age at Marriage for Female whose first marriage has occurred before Age 45

Age Group (1)	Total female population of Gokalpura (2)	Never Married Population (3)	Population Single, Magpara (4)= (3)/(2)
15-19	18	08	0.4444
20-24	33	07	0.2121
25-29	19	0	0
30-34	11	0	0
35-39	04	0	0
40-44	05	0	0
45-49	0	0	0

Therefore the Mean age at marriage (SMAM) for females of Gokalpura is 18.2 years.

5) **Sex of the first child:** A strong preference for sons has been found to be pervasive in Indian society, affecting both attitudes and behavior with respect to children and the choice regarding number and sex composition of children (Das Gupta et al., 2003; Mishra et al., 2004; Bhat and Zavier, 2003; Arnold et al., 1998, 2002; Arokiasamy, 2002; Clark, 2000; Pande and Astone, 2007). As per the NFHS-3 report; Seventy-seven percent of women want at least one son among their children and nearly as many (74 percent) want at least one daughter. Among men age 15-49, 70 percent want at least one son and 65 percent want at least one daughter. One reason that a substantial proportion of women and men want to have at least one daughter despite having a preference for sons is to fulfil the Hindu religious obligation of kanyadan (giving a daughter away at the time of her marriage), which is one of the acts that enable the parents to acquire the highest level of merit (punya). Also, in most states, the proportion of women who want more daughters than sons is slightly higher than the corresponding proportion for men. The preference for more sons than daughters ranges from 6 percent of women in Tamil Nadu to 39 percent in Bihar. Among men, the proportion ranges from 8 percent in Tamil Nadu to 44 percent in Mizoram.

Thus, it was concluded that the sex of the child can affect the fertility rate and hence being explored in the current study.To explore the relationship, questions were asked on the sex of the first child and further married women were questioned “how many children they desire to be sons and daughters and sex does not matter?” and “if they desired more children because the first child was female and the reasons for it”.

Table 7: Table below shows the number of first child born as male or female to the sample female population of Magpara (n=79 ever married women among the interviewed 90 women) and Gokalpura (n=75 ever married women among the total of interviewed 90 women)

Sex/Area	Magpara (n= 79)	Gokalpura (n=75)
Male	26	33
Female	44	31

Mean family desired by the women in Magpara is 4 whereas Mean family size desired by women in Gokalpura is 2.8. Out of the 44 females in Magpara who had their first child as female, 100 percent women desired for more children to have at leastone son whereas only 20 percent of women among those having their first child as male desired for more children.

Table 8: Table below the mean ideal number of children women desire of either sex, percentage who want more sons and percentage who want more daughters (n=90) by Areas under study, Mahesana, April, 2014

Area	Mean ideal number of		% who want more sons	% of women for whom sex of child doesn't matter
	Sons	Daughters		
Magpara	1.4	1	82	18
Gokalpura	1.3	1	73	26

82 percent of women in Magpara want more sons as compared to only 73 percent women in Gokalpura want more sons than daughters. The reasons is common among the sample population of both Magpara and Gokalpura which is having more number of children help in the family income and investing on sons yield to generation of income later. Having more number of daughters add to the burden as when the girls are to be married which means huge expenditure to the family.

6) Knowledge about contraceptives

The provision of contraceptive information is fundamental to the ability of women and men (including adolescents) to make informed choices about reproductive health decisions. Knowledge about the contraceptives is the precondition to informed choice and hence affects the contraceptive prevalence rate (i.e. the use of any method of contraception by eligible couple) which in turn affects the total fertility rate. As per the report of WHO; "the total fertility rate (TFR) in countries with a low CPR is usually high, as the case in Cambodia, Lao People's Democratic Republic and Papua New Guinea at 3.3-4.1 in 2008".

Table 9: Table below shows the percentage of women having the knowledge of any method of contraception by areas under study (n=90), Mahesana, April 2014

Area	% of women having knowledge about contraception	% of women not having knowledge about contraception
Magpara	43	57
Gokalpura	47	53

Only 43 percent and 47 percent women in Magpara and Gokalpura have knowledge about any method of contraception.

7) Age Specific Fertility Rate (ASFR) and Total fertility rate (TFR) of the Reference period March, 2013- March 2014

Table 10: Table below shows the computation of Age Specific Fertility rate for Magpara urban slum of Mahesana block computed for the sample women population of reproductive age (15-49 years)(n=90)

S. No.	Age Groups (1)	Sample Population in Magpara (2)	Total no. of live births to women during March, 2013-March, 2014 (3)	ASFR Rate/Woman (4)= {(3)/(2)}
1	**15-19**	15	06	**0.40**
2	**20-24**	23	05	**0.21**
3	**25-29**	09	02	**0.22**
4	**30-34**	16	01	**0.06**
5	**35-39**	21	01	**0.04**
6	**40-44**	04	0	**0**
7	**45-49**	02	0	**0**

Total Fertility rate = 5* ∑ASFRs
Thus the total fertility rate of Gokalpura village is 4.62

Table 11: Table below shows the computation of Age Specific Fertility rate for Gokalpura village of Mahesana block computed for the sample women population of reproductive age (15-49 years)(n=90)

S. No.	Age Groups (1)	Sample Population in Gokalpura (2)	Total no. of live births to women during March, 2013-March, 2014 (3)	ASFR Rate/Woman (4)= {(3)/(2)}
1	**15-19**	18	04	**0.22**
2	**20-24**	33	07	**0.21**
3	**25-29**	19	06	**0.31**
4	**30-34**	11	0	**0**
5	**35-39**	04	0	**0**
6	**40-44**	05	0	**0**
7	**45-49**	0	0	**0**

Total Fertility rate = 5* ∑ASFRs
Thus the total fertility rate of Gokalpura village is 3.7

Figure 6: Comparison of Age Specific Fertility Rates of Magpara and Gokalpura by Age groups (15-49 years in 5 years intervals)

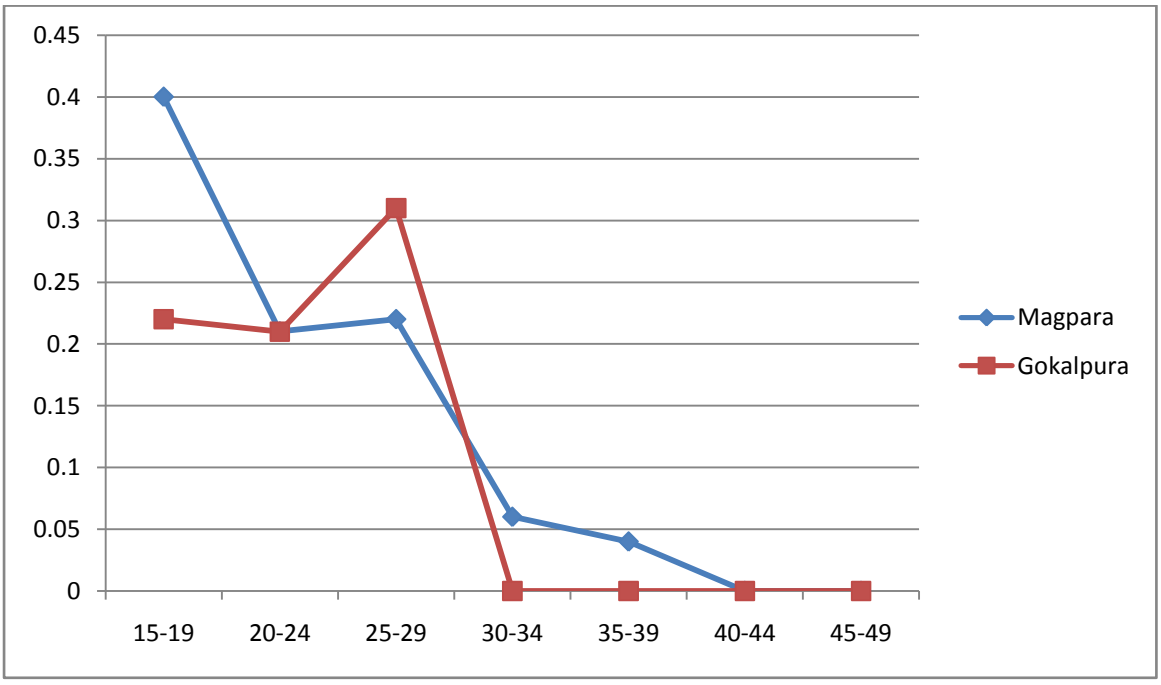


Table 12: Table below shows the comparison between the mean age at marriage and total fertility rate among the Magpara Urban slum, Gokalpura village and state of Gujarat

Indicator/Area	Magpara	Gokalpura	Gujarat (as per NFHS-3)
Mean age at marriage	**18.9**	**18.2**	**19**
Total fertility rate	**4.62**	**3.7**	**1.9 (Gujarat Urban)** **2.8 (Gujarat Rural)**

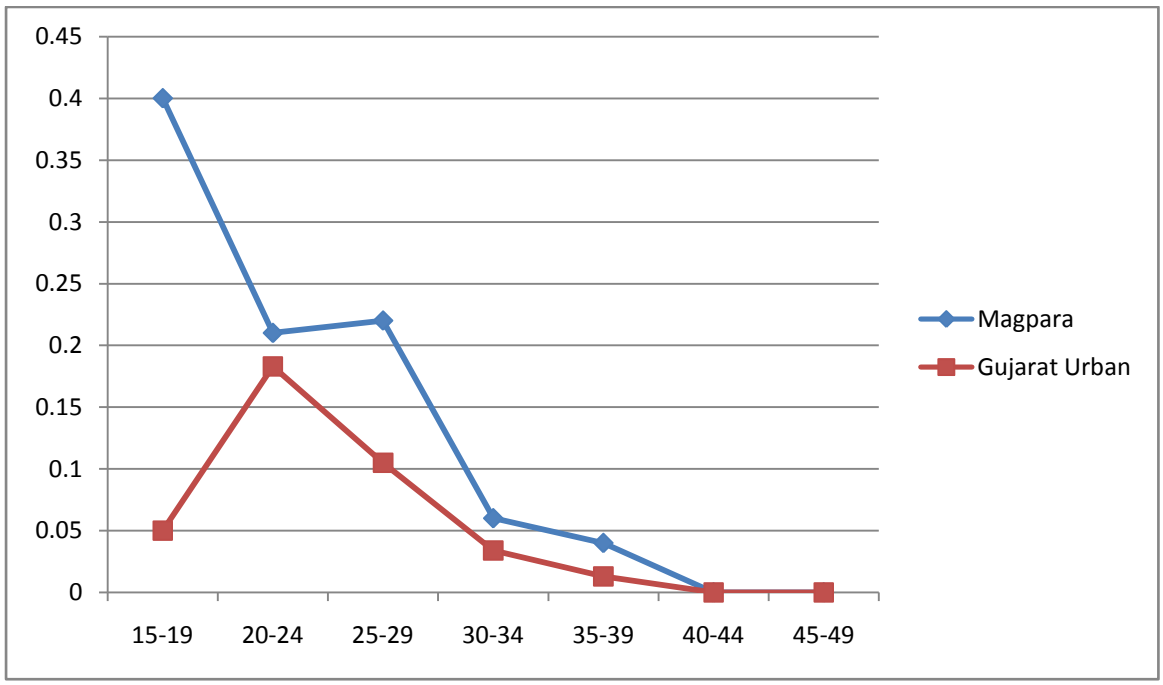
Though, from the review of literature, it has been concluded that the total fertility rate is indirectly proportional to the mean age at marriage; however, in the present study the above table clearly shows that it is not absolute. Magpara urban slum which has the TFR of 4.62 children per woman has the mean age at marriage at 18.9 years compared to mean age at marriage for Gokalpura village where TFR is 3.7 children per woman. Also, as per NFHS-3 data, the TFR for the age group of 15-49 years goes down to 1.9 in Gujarat Urban whereas for Gujarat Rural it is 2.8.

Table 13: Table below shows the comparison of age specific fertility rate of Magpara and Gokalpura with that of Gujarat as per NFHS-3 report, April-2014

Age Groups	Age Specific fertility rate			
	Magpara	Gokalpura	Gujarat (Urban)	Gujarat (Rural)
15-19	0.40	0.22	0.050	0.084
20-24	0.21	0.21	0.183	0.242
25-29	0.22	0.31	0.105	0.157
30-34	0.06	0	0.034	0.059
35-39	0.04	0	0.013	0.015
40-44	0	0	0.000	0.003
45-49	0	0	0.000	0.000

Age specific fertility rate for Magpara has been compared with that of Gujarat Urban and Gokalpura to that of Gujarat Rural. In the age group of 15-19 years, ASFR is almost double in both the cases. However as we move down the age groups, the ASFR for Magpara, age specific fertility rate is more as compared to that of Gujarat urban but in Gokalpura, ASFR is less than the Gujarat Rural.

Figure 7: Comparison of Age specific Fertility rate of Magpara and Gujarat Urban by Age groups (15-49 years in 5 years intervals)



From the above figure it can be inferred that across the age groups the age specific fertility rate is decreasing being highest in the age group of 15-19 years which concludes the higher number of adolescent pregnancies (teenage pregnancies). However, the data is skewed in nature in the study as more of the girls who have been interviewed in the age group of 15-19 years were of 19 years and therefore, inferring the age specific fertility rate this high for the whole group is not correct altogether. On comparing the figures with that of the Gujarat Urban age specific fertility rates are much lower as per the NFHS-3 data reports.

Figure 8: Comparison of Age specific Fertility rate of Gokalpura and Gujarat Rural by Age groups (15-49 years in 5 years intervals)

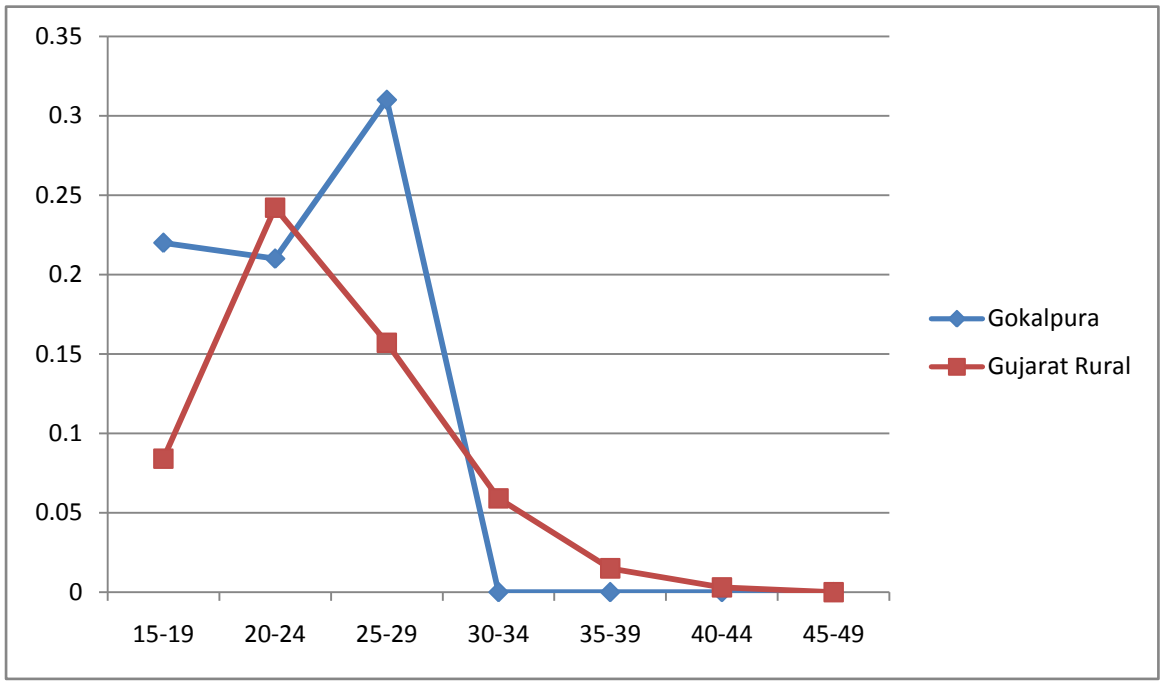


Table 14: Total Fertility Rate by Level of Education among the sample women population of Magpara and Gokalpura

Level of Education	Total Fertility Rate	
	Magpara	Gokalpura
No education	4.6	3.7
5 years of education	3.9	3.1
10 years of education	2.8	2.9
≥12 years of Education	2.6	2.5

In the above table, the level of education has been clubbed for No education in which illiterates and can read and write but no formal education categories have been merged and in the last category, graduates and post graduates have been merged.

There is a difference of 2units between TFR of women having no education and women having 12 or more education in Magpara Urban slum. In Gokalpura, there is a difference of 1.2 units between TFR of women having no education and women having 12 or more education.

Figure 9: Comparison of TFR of Magpara and Gokalpura by level of education

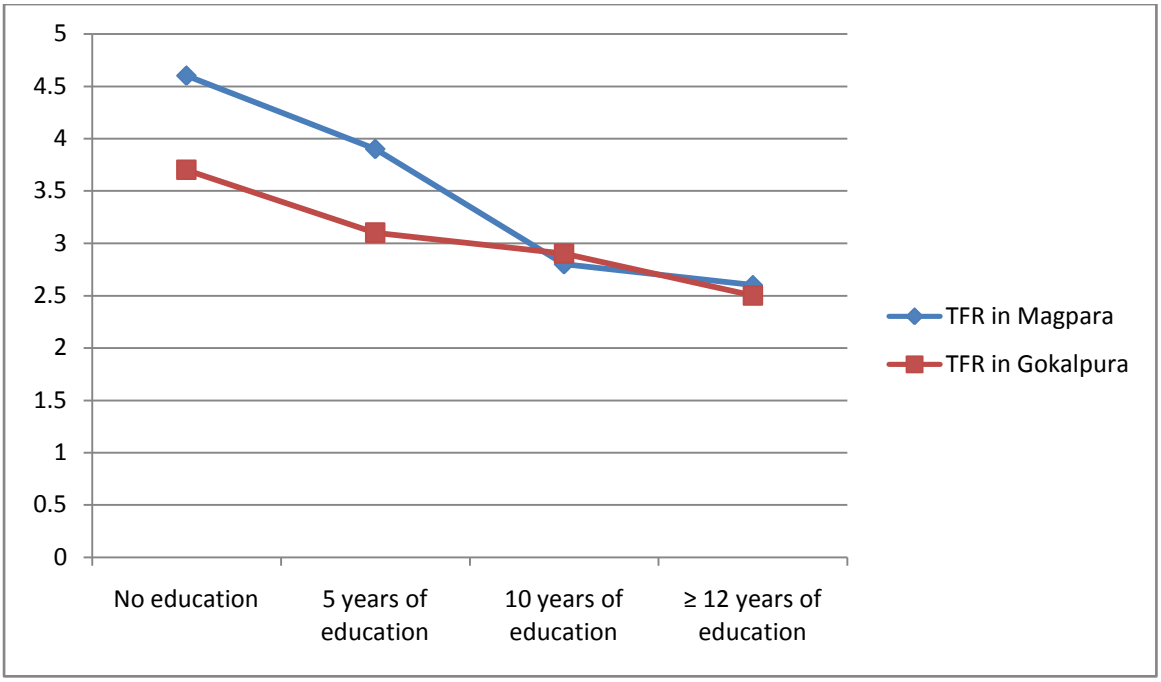


Table 15: Table below shows the comparison of Total Fertility Rate in sample women population of Magpara and Gokalpura by Knowledge about the contraceptives

Knowledge about contraceptives	Total Fertility Rate	
	Magpara	Gokalpura
Women having knowledge of contraceptives	3.1	2.6
Women having no knowledge of contraceptives	4.2	1.9

Thus, from the above table it can be inferred that the total fertility among the women having no knowledge of contraceptives is higher than among the women having knowledge of contraceptives both in the Magpara urban slum and Gokalpura village of Mahesana.

Conclusion

Fertility is an important measure for population stabilization. According to the National Population Policy 2000, India should have reached the replacement-level fertility rate of 2.1 by 2010, and ought to attain population stabilization at 145 crore by 2045. Population stabilization is when the size of the population remains unchanged. It is also called the stage of zero population growth. However, India now expects to reach the population stabilization TFR of 2.1 at 165 crore by 2060. Union health minister Ghulam Nabi Azad recently said "We have seen a steady decline in TFR that has come down by 42% from the mid-1960s. We may see a drop of 0.1 point in the TFR, which is currently at 2.6". However, we are failing to take into account the population living in urban slum areas. Urban slums are the fastest growing corners of the fast paced urbanization of Indian towns and cities and the living conditions of these slum areas are unhygienic and unsafe. Moreover, people suffer from illiteracy and necessary knowledge which is required for development. From the current study on fertility patterns in urban slums re-emphasize the same situation and on comparing the figures with that of a village, infer that the situation is worse in slums than in villages. Thus, it can be safely concluded from the study that fertility control measures need urgent attention in the urban slum areas. Due to absence of well recognized structure of the health care delivery, fertility indicators of these areas are higher than the national and state level statistics. Awareness programs and family welfare service delivery should focus on urban slum areas to control the fertility.

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ANNEXURE 1

Informed Consent Form and Scheduled Questionnaire

IIHMR JAIPUR

Instructions: Please mention the serial no in the box given. Mention first two initials of your district then U/R for urban/rural area, serial number of the respondent and lastly initial of your first name. Example: You are visiting a urban area in Mehsana district then mention serial number as MEU01M

A Comparative study on Fertility patterns and factors affecting the fertility rates in the Urban Slums and the Villages of the Gujarat

Scheduled Questionnaire for the Interviewees

(Strictly confidential for Research purpose only)

I, Dr. Megha Ranjan, a final year student of Health Management from Institute of Health Management Research, Jaipur; is conducting a survey on fertility patterns and factors affecting the fertility rates in the urban slums and the villages of Gujarat. The objective of the survey is to compare the fertility rates of women living in urban slum areas with that of the village in Gujarat and to examine the socio-economic factors i.e. the mean age at marriage, female literacy; and health related factors i.e. Children ever born and children living; affecting the fertility of the women living in an urban slum and a village of allocated district.

Informed Consent

I would like to thank you for giving your valuable time for this survey. This interview might take about 15 minutes. My name is _____. I would like to talk to you about the fertility patterns and the factors affecting the fertility of women**.** The interview will be regarding number of children in the ever born to you, your age at marriage, your education. You will not be forced to answer any question you do not wish to. If you agree to take part in this interview, the responses will be kept strictly confidential. I ensure that any information that I include in my report does not identify you as the respondent. There are no risks related to the study. You can end the interview at any time.

Do you have any questions about what I just explained?
(Yes/No)

_____
__

Are you willing to participate in the interview?
(Yes/No)

I agree to take part in this study. I have understood the verbal explanation and I understand what will be required of me and what will happen to me if I take part in it. I understand that at any time I may withdraw from this study without giving a reason and without affecting my normal services. My questions concerning this study have been answered by the interviewer

Date: _____

Interviewee Signature: _____

Person filling the form:		Fill Date:	
Person checking the form:		Check Date:	

Questionnaire

Respondent: Women of Reproductive age (15-49 years)

Name of the Village/Slum Area	
Name of the Block	
Name of the District	

Q1	What is your age (in years)?	☐☐
Q2	Level of your Education	☐☐
	Illiterate Can Read and Write but no formal education Primary education i.e. 5 years of formal education Secondary i.e. 10 years of formal education Senior Secondary i.e. 12 years of formal education Graduate i.e. completed 15 years of education Post Graduate	01 02 03 04 05 06 07
Q3	Are you married? Yes No	☐☐ 01 02 If answer is NO, end the questionnaire.
Q4	What was your age at the time of your marriage?	☐☐
	< 15 years 15-19 years 20-24 years 25-29 years	01 02 03 04
Q5	How many children do you have? If No children then skip to question no. 9	
Q6.	Did you give birth in past one year? Yes No	☐☐ 01 02
Q7.	How many children ever born to you and that have been aborted?	☐☐

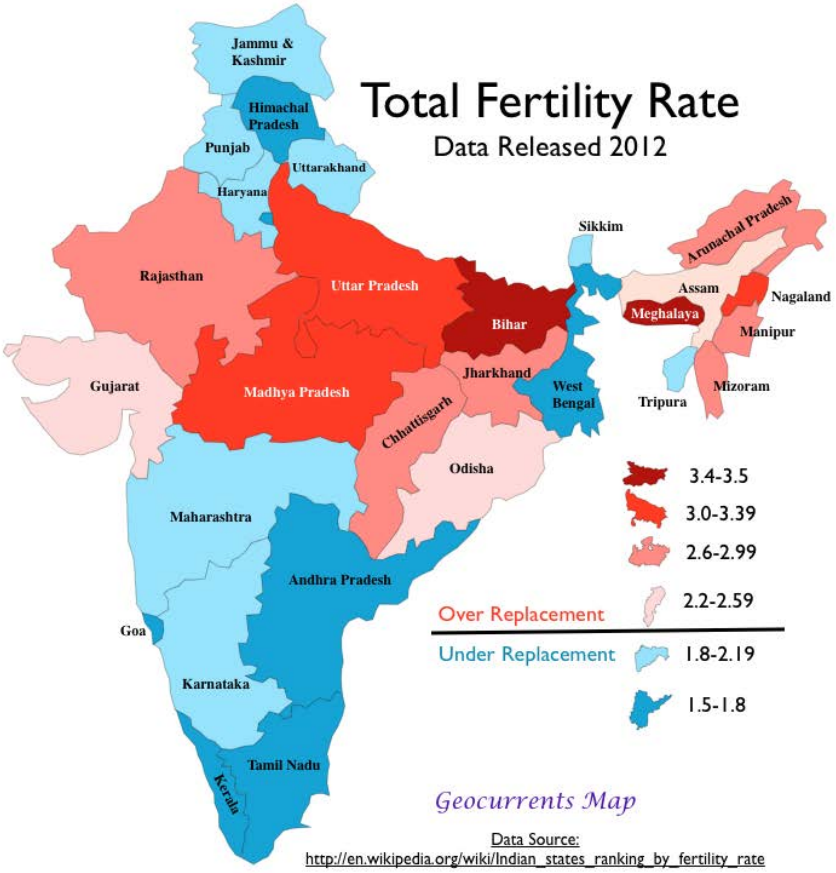
	No children Only one child Two children Three children More than 3 children	01 02 03 04 05
Q8.	What is the sex of your first child?	☐☐
	Male Female If answer is Female, then ask the respondent if the woman and the family desired for another child since their first child was a female? Yes No	01 02 01 02
Q9.	Do you know about the contraceptives? Yes No If No then skip the question no. 11	☐☐ 01 02
Q10.	What is the source of knowledge about contraceptives? Television Newspaper Peers and Relatives ASHA/ANM/AWW Medical Officer Others, please specify……	☐☐ 01 02 03 04 05 06
Q11.	Do you participate in making decision about family planning or having children? Yes No	☐☐ 01 02
Q12.	Who has final decision in the family about having children? Father in law Mother in law Husband Yourself Collective Decision Influenced by Societal Norma/Relatives	☐☐ 01 02 03 04 05 06

…….Thank You……..

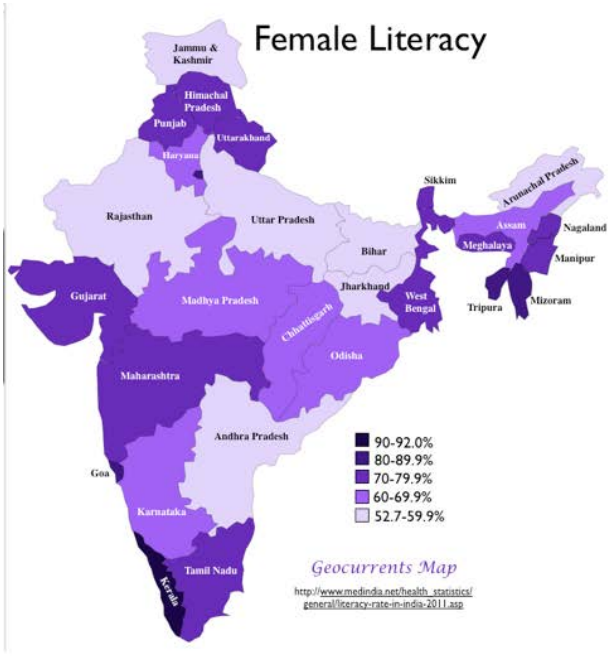
Annexure 2

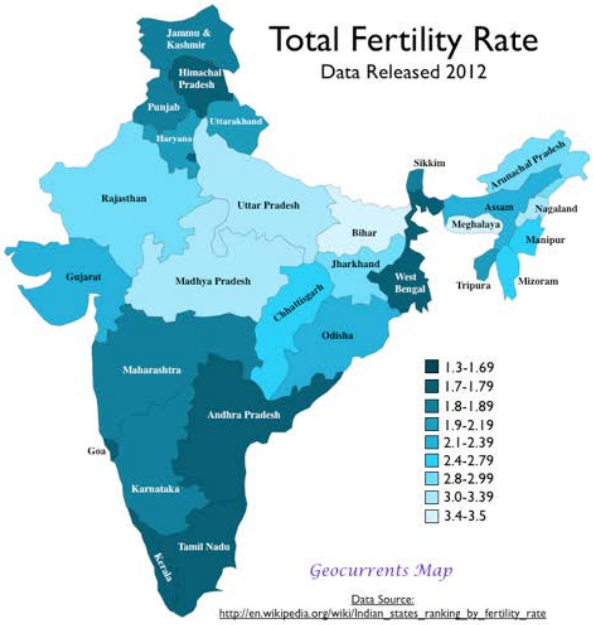
List of Villages in Mehsana

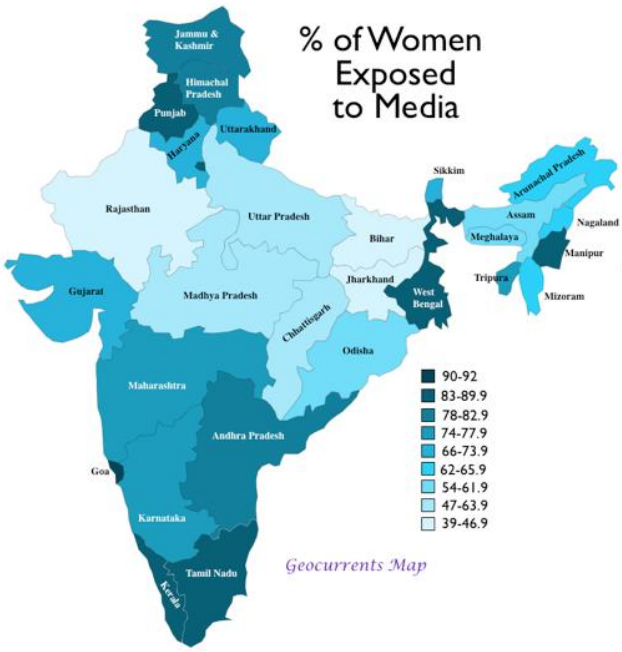
..\Documents\Mehsana.pdf

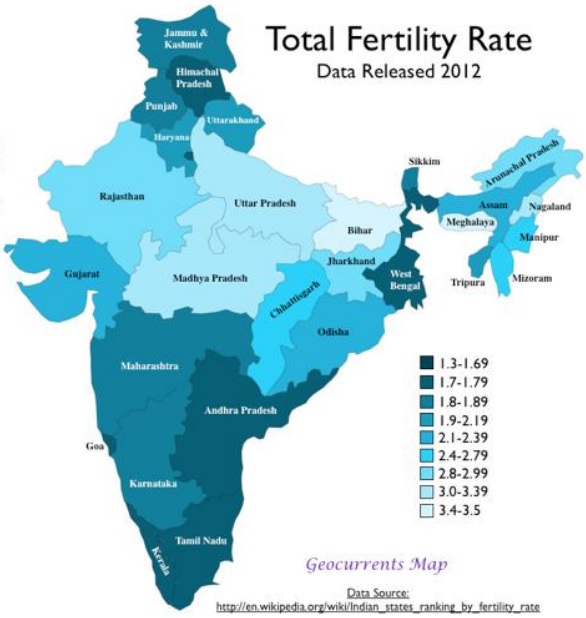


1	Chandigarh	1.3
2	Goa	1.5
3	Tamil Nadu	1.7
3	Kerala	1.7
3	Andhra Pradesh	1.7
3	West Bengal	1.7
3	Himachal Pradesh	1.7
3	Delhi	1.7
3	Punjab	1.8
4	Maharashtra	1.8
4	Sikkim	1.8
4	Karnataka	1.8
4	Jammu and Kashmir	1.8
5	Tripura	2.0
6	Haryana	2.1
6	Uttarakhand	2.1
7	Orisa	2.2
8	Assam	2.3
8	Gujarat	2.3
-	**INDIA**	**2.4**
9	Manipur	2.6
9	Chattisgarh	2.6
10	Mizoram	2.7
11	Arunachal Pradesh	2.8
11	Jharkhand	2.8
12	Rajasthan	2.9
13	Madhya Pradesh	3.0
14	Uttar Pradesh	3.3
14	Nagaland	3.3
15	Bihar	3.5
15	Meghalaya	3.5


Female Literacy
Jammu & Kashmir
Himachal Pradesh
Punjab
Uttarakhand
Haryana
Rajasthan
Uttar Pradesh
Bihar
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Maharashtra
Andhra Pradesh
Goa
Karnataka
Tamil Nadu
Kerala
90-92.0%
80-89.9%
70-79.9%
60-69.9%
52.7-59.9%
Geocurrents Map
http://www.medindia.net/health_statistics/general/literacy-rate-in-india-2011.asp


Total Fertility Rate
Data Released 2012
Jammu & Kashmir
Himachal Pradesh
Punjab
Uttarakhand
Haryana
Rajasthan
Uttar Pradesh
Bihar
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Maharashtra
Andhra Pradesh
Goa
Karnataka
Tamil Nadu
Kerala
1.3-1.69
1.7-1.79
1.8-1.89
1.9-2.19
2.1-2.39
2.4-2.79
2.8-2.99
3.0-3.39
3.4-3.5
Geocurrents Map
Data Source:
http://en.wikipedia.org/wiki/Indian_states_ranking_by_fertility_rate


% of Women Exposed to Media
Jammu & Kashmir
Himachal Pradesh
Punjab
Uttarakhand
Haryana
Rajasthan
Uttar Pradesh
Bihar
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Maharashtra
Andhra Pradesh
Goa
Karnataka
Tamil Nadu
Kerala
90-92
83-89.9
78-82.9
74-77.9
66-73.9
62-65.9
54-61.9
47-63.9
39-46.9
Geocurrents Map


Total Fertility Rate
Data Released 2012
Jammu & Kashmir
Himachal Pradesh
Punjab
Uttarakhand
Haryana
Rajasthan
Uttar Pradesh
Bihar
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Maharashtra
Andhra Pradesh
Goa
Karnataka
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