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## The Sociological Implications of Evolving Fertility Trends in Nepal

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### Abstract

*This research delves into the sociological aspects of fertility change in Nepal, drawing on data spanning two decades from 2001 to 2022. Fertility rate commonly referred to as the total fertility of a population, represents the average number of children expected to be born to a woman throughout her lifetime. The shifts in fertility rate trends serve as indicators of broader changes in social factors such as education, socio-economic status, alterations in gender dynamics, and the overarching social structure (Hirschman, 1994; Mills & Blossfeld, 2003; Anderson & Kohler, 2015). The paper meticulously analyzes the trajectory of fertility change in Nepal establishing connections with concurrent social changes. Notably, this research relies on the Nepal Demographic and Health Survey (NDHS), initiated in 2001 and most recently conducted in 2022, marking a substantial advancement from the 1986 Nepal Family and Health Survey in terms of fertility calculations. Utilizing quantitative data obtained from secondary sources, the paper conducts a qualitative analysis. The findings reveal a gradual decline in the total fertility rate. This sociological trend suggests that factors such as increased socio-economic status, elevated educational attainment, evolving gender roles beyond traditional family spheres, and a higher rate of migration contribute to the observed decrease in total fertility in Nepal.*

### Keywords

Fertility rate, Demography, Contraceptive, Ecological, Wealth quintile.

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## **The Sociological Implications of Evolving Fertility Trends in Nepal**

### **1. Introduction**

The sociological analysis of the fertility rate change holds significant implications within the realm of social study. It is intricately connected to various social factors, such as education, socio-economic status, shifts in gender dynamics, and the overarching social structure (Hirschman, 1994; Mills & Blossfeld, 2003; Anderson & Kohler, 2015). Alterations in family composition and structure, notably the emergence of non-traditional family forms, are intricately linked to fluctuations in fertility rates. As women gain increased access to education and employment opportunities, there is a tendency to postpone childbirth and opt for smaller family sizes. Economic factors, including employment opportunities, income levels, and economic uncertainties, exert a substantial influence on decisions regarding fertility. Cultural beliefs and societal norms also play a pivotal role in shaping fertility behaviors. Sociologists delve into the impact of global economic trends, migration patterns, and cultural exchanges on perceptions of family, thereby influencing reproductive behaviors. In essence, the transformation in fertility rates bears clear sociological implications for analyzing broader social changes.

Fertility, one of the three fundamental components of population dynamics alongside mortality and migration, plays a pivotal role in shaping the size, structure, and composition of a country's population. Unlike other demographic processes, the study of fertility is notably intricate due to its susceptibility to various factors, encompassing both biological and behavioral aspects (Nepal Population Report 2021 : 19). Demographers employ distinct measures to analyze fertility, with the main four indicators being Crude Birth Rate (CBR), Age-Specific Fertility Rate (ASFR), Children Ever Born (CEB), and Total Fertility Rate (TFR). The Crude Birth Rate is defined as the number of live births per thousand persons in a specific area for a given year. Age-Specific Fertility Rates represent the ratio of children born to a particular age group of women relative to the number of women at risk of bearing children.

The Total Fertility Rate, a commonly used metric, is defined as the anticipated number of children a woman would bear during her childbearing years based on prevailing age-specific fertility rates. It provides an estimate of the average number of births a woman would have by the end of her reproductive period if she adheres to the prevailing age-specific fertility rates throughout her childbearing years (typically ages 15-49). The TFR is calculated as the average sum of ASFRs. This paper focuses primarily on the age-specific fertility rate and total fertility rate in Nepal, analyzing their trends using data sourced from the Nepal Demographic and Health Survey (NDHS) spanning from 2001 to 2022. The research utilizes secondary sources for quantitative data collection and conducts qualitative analysis, linking this data with various social factors.

## **2. Sociology of Fertility Change**

The sociology of fertility change is a multifaceted field that examines the social factors influencing patterns of fertility within societies. This area of study has evolved over time, reflecting changes in demographic trends, societal values, and economic structures. The literature on the sociology of fertility change encompasses a range of topics, including family dynamics, gender roles, socioeconomic factors, and cultural influences. Early sociological approaches to fertility often adopted structural-functional perspectives, emphasizing the role of family and reproduction in maintaining social stability. Scholars like Talcott Parsons argued that societies have mechanisms to regulate population size and ensure the reproduction of social structures. Scholars have explored the relationship between family structure and fertility (Hirschman, 1994 : 217). Changes in the composition and organization of families, such as the rise of non-traditional family forms, have been linked to variations in fertility rates. The transition from extended to nuclear family structures has been associated with lower fertility rates in some contexts, as individuals may have fewer social and economic reasons to have larger families. The empowerment of women and changes in gender roles have been identified as critical factors in fertility change (Anderson & Kohler, 2015 : 381). As women gain access to education and employment opportunities, they may delay childbirth and opt for smaller family sizes. Studies have investigated the impact of women's autonomy, decision-making power, and control over reproductive choices on fertility outcomes.

Economic conditions including employment opportunities, income levels, and economic uncertainty, play a significant role in fertility decisions (McLanahan & Percheski, 2008 : 260). Economic stability is often associated with delayed childbearing and lower fertility rates. Policies related to parental leave, childcare support, and work-family balance also influence fertility choices, reflecting the intersection of economic and social factors. Research in this area examines how socio-economic factors such as education, income, and occupation influence fertility decisions. High levels of education and economic stability are often associated with delayed childbearing and lower fertility rates. This line of research considers the impact of changing economic conditions on family planning.

Cultural beliefs and societal norms play a crucial role in shaping fertility behavior. Sociologists study how cultural values regarding gender roles, family, and fertility impact individual choices (Lesthaeghe & Surkyn, 1988 : 9). Changes in cultural norms, such as shifts in attitudes toward gender equality, can have profound effects on fertility patterns. Societies with strong pronatalist cultural norms may exhibit higher fertility rates, while those with a more individualistic ethos might experience lower fertility. Religious doctrines often have implications for family planning and reproductive health practices, affecting fertility behaviors among adherents. The sociology of fertility also explores the gendered nature of reproductive decisions. Research in this area delves into how power dynamics between men and women, as well as societal expectations regarding gender roles, influence decisions related to family planning, contraceptive use, and childbearing.

Social networks and peer influence contribute to the diffusion of fertility norms and behaviors within communities (Bongaarts, & Watkins, 1996). Individuals may adjust their fertility decisions based on the actions and choices of their peers. The spread of new ideas and practices, such as the acceptance of smaller family sizes, can be traced through social networks. Globalization and urbanization have been linked to changes in fertility patterns. Globalization has led to increased mobility and interconnectedness, impacting fertility patterns. Sociologists examine how global economic trends, migration, and cultural exchanges influence ideas about family and impact reproductive behaviors (Mills, & Blossfeld, 2003 : 188). Urban environments often provide different opportunities and challenges for individuals and families, influencing their decisions about family

size (Martine, Alves & Cavenaghi, 2013). Massive urbanization in the developing world is one of the major structural shifts of the 21<sup>st</sup> century impacting on fertility behavior. The interconnectedness of societies in a globalized world can lead to the transfer of ideas, values, and practices related to fertility.

Fertility decisions are influenced by institutional contexts, including policies related to family planning, maternity/paternity leave, and childcare (Casterline, 2001 : 3). Sociologists analyze how these institutional factors shape fertility choices and contribute to cross-national variations in fertility rates. Government policies, including family planning programs, reproductive health services, and population control measures, can have a significant impact on fertility rates. The effectiveness and implementation of these policies vary across different societies. Advances in reproductive technologies, such as in vitro fertilization (IVF), have expanded individuals' options for family building. The intersection of technology and fertility raises ethical and social questions about access, affordability, and cultural acceptance.

As the sociology of fertility change continues to evolve, researchers grapple with the complex interplay of these factors and seek to understand how they shape fertility decisions across diverse social contexts. The interdisciplinary nature of this field involves drawing on insights from sociology, demography, anthropology, economics, and other disciplines to provide a comprehensive understanding of fertility dynamics in contemporary societies.

### **3. Analysis of Fertility Change in Nepal**

Over the recent years, Nepal has witnessed a consistent decline in its total fertility rate. This rate exhibits variations across distinct time intervals, age groups, geographic regions, income levels, employment statuses, and educational backgrounds. The first table indicates a number of peculiarities and inconsistencies in the fertility trend in Nepal including both total fertility rate (TFR) and age-specific fertility rate (AGFR). In each survey, it seems declining in total fertility rate in every five years. After that period, the TFR has started to decline rapidly due to various reasons. Data shows that the total fertility rate decreases by at least two children over the years 2001 to 2022. Estimation of the first survey of 1981 has decreased by 3.7 in 2011 and continuously it becomes 2.6, decreased by 59.73 percentage points within three decades. This reduction in TFR indicates the

entire decline in fertility rates in rural, urban, ecological zone as well as development regions. Particularly, the education of women, female labour participation, urban residence, household wealth, cultural norms, and overall development has affected the fertility. The growth of contraceptive uses is also another important factor to decrease the fertility in which the contraceptive prevalence rate is 49.7 percent including both modern and traditional method (NDHS, 2022). To reduce the fertility rate and maternal mortality, government of Nepal has legalized the safe abortion in 2001. The change in the total fertility rate affects the population growth rate that is only 1.6 in 2011. The estimated Total Fertility rate of Nepal was more or less constant until mid-eighties and thereafter it started to decline. As the total fertility rate decreases gradually, the population growth rate also decreases to 0.92 respectively from 2001 to 2021 calculating in each population census (CBS, 2021).

**Table-1 : Trends of Total Fertility Rate in Nepal**

Age group	Year				
	2001	2006	2011	2016	2022
15-19 years	110	98	81	88	71
20-24 years	248	234	187	172	160
25-29 years	205	144	126	124	110
30-34 years	136	84	71	59	57
35-39 years	81	48	36	18	17
40-44 years	34	16	14	6	5
45-49 years	7	2	5	2	1
TFR (15-49 years)	4.1	3.1	2.6	2.3	2.1

**Note :** Age-specific fertility rates are per 1,000 women

**Sources :** Nepal Demographic and Health Survey of 2001, 2006, 2011, 2016 and 2022.

In the age specific fertility rate, the fertility rate of age group also decreases constantly. However, the fertility rate still is higher in the age group 20-24 and 25-29. It delineates that most girls are marrying at the age of above 20 to 29. This delineates the consistency in the early marriage of girl and improved fecundity due to better nutrition. In 2011, the fertility of the age group 15-19 has decreased which shows the decrease in early marriage and early motherhood. However, there are still some evidences that some girls are still marrying at the early

age of 15 to 19. This also shows that these girls are marrying before completion of their studies. The adolescent fertility in Nepal is in declining trends. The decline is also observed among women in the prime reproductive ages (20-24, 25-29 and 30-34). It shows that they are more educated, economically busy and using contraceptives profoundly. The age group 30-34 and older, the trends in AGFRs are all downward. The age group 45-49 has more decreased rate than the other groups that shows elder women do not want children in the later years of survey. In the NDHS report of 2022, the TFR of age group 45-49 is only 1 which is minimum among the groups.

The Central Bureau of Statistics released its fourth Population Monograph in 2014, analyzing data from the 2001 Population Census. Due to the scarcity of reliable demographic data in the context of Nepal, estimates must be derived using indirect estimation methods (Karki, 2003). According to the data, the total fertility rate has decreased by at least two children between 2001 and 2022. The increased knowledge about contraceptive prevalence (Modern Methods) among men and women aged 15-49, as noted in the Nepal Demographic and Health Survey (NDHS, 2022 : 141), has played a crucial role in this decline. The median age of women at marriage has progressively increased from 17.9 in 2016 to 18.3 years in 2022. Similarly, the median age of men at marriage has seen an upward trend, rising from 20.1 years in 2001 to 22.3 years in 2022. This shift towards later marriage for both women and men contributes to the reduction in fertility rates.

#### **4. Fertility Differentials**

The examination of differential fertility takes into account various factors such as residence, ecological zone, provinces, education, caste/ethnicity, and religion. This analysis, as suggested by Karki and Krishna (2008), enhances our understanding of the contextual elements contributing to fertility decline in Nepal. A new Table-2 has been created to facilitate a comparative assessment of each survey based on these background characteristics, highlighting the changes in each variable. A significant disparity in fertility is observed between urban and rural residences. In 2001, the Total Fertility Rate (TFR) among urban women was 2.1, representing a noteworthy 2.3 children fewer than the TFR among rural women, which stood at 4.4—a difference exceeding fifty percent. Over the years, this gap has been consistently decreasing and narrowed to just sixteen percent in

2022. By 2011, the TFR for urban women (2.0) was merely 0.4 less than that of rural women (2.4), indicating a 42 percentage point difference (NDHS, 2022). This trend underscores a rapid decline in the total fertility rate in rural areas, attributed to the widespread impact of urbanization, increased education, and heightened awareness regarding contraceptive usage.

**Table-2 : Fertility by Background Characteristics**

Background Characteristics	Total Fertility Rate				
	2001	2006	2011	2016	2022
<b>Residential Background</b>					
Rural	4.4	3.3	2.8	2.9	2.4
Urban	2.1	2.1	1.6	2.0	2.0
<b>Ecological Zone</b>					
Mountain	4.8	4.1	3.4	3.0	2.7
Hill	4	3	2.6	2.1	1.8
Terai	4.1	3.1	2.5	2.5	2.2
<b>Province</b>					
Province no. 1	—	—	—	2.3	2.2
Madesh Province	—	—	—	3.0	2.7
Bagmati Province	—	—	—	1.8	1.6
Gandaki Province	—	—	—	2.0	1.4
Lumbini Province	—	—	—	2.4	1.9
Karnali Province	—	—	—	2.8	2.6
Sudur Paschim Province	—	—	—	2.2	2.3
<b>Education</b>					
No Education	4.8	3.9	3.7	3.3	3.3
Basic Education	3.2	2.8	2.7	2.7	2.3
Secondary	2.3	2.3	2.1	2.1	1.8
Above Secondary	2.1	1.8	1.7	1.8	1.6
<b>Total</b>	4.1	3.1	2.6	2.3	2.1

**Sources :** NDHS 2001, NDHS 2006, NDHS 2011, NDHS, 2016, NDHS, 2022.

The disparity in fertility across ecological zones has diminished when compared to the fertility levels observed in 2001. Initially, there was little discernible difference among the three ecological zones,



with fertility hovering around 4 across all of them in 2001. However, by 2022, fertility rates had decreased across the board. Specifically, the hill region witnessed a reduction to less than two, falling below the national average. This trend underscores the rapid progress in socio-economic development, shifts in gender roles, and advancements in education within the hill region. The remaining two zones still exhibit fertility rates exceeding two and surpassing the national average. Nevertheless, across each zone, the fertility trends consistently depict a decline in Total Fertility Rate (TFR) in every survey, supporting the overall reduction in the country's total fertility.

Among the seven provinces, Madesh and Karnali provinces stand out with higher Total Fertility Rates (TFRs) than the other regions. Nevertheless, there is a consistent downward trend in TFRs in these provinces, and the disparity with other regions is diminishing in each survey. In both Madesh and Karnali provinces, the TFR exceeds 2 and surpasses the national average, indicating the need for comprehensive development initiatives. Implementing programs to elevate socio-economic status, redefine gender roles, and enhance educational opportunities is crucial in these regions. Conversely, the Bagmati, Gandaki, and Lumbini provinces demonstrate fertility rates lower than the national average. This suggests positive trends, indicating an increase in the socio-economic status of households in these provinces, accompanied by rising education levels. Notably, gender roles are evolving, with women increasingly participating in work beyond traditional household roles. These findings underscore the nuanced regional variations in fertility and emphasize the importance of tailored development strategies for each province.

The results underscore an inverse relationship between education and the Total Fertility Rate (TFR), establishing education as a key factor in the decline of fertility rates in Nepal. The 2014 Population Monograph highlighted a negative relationship between education and fertility, emphasizing that women with no education tend to have higher Total Fertility Rates (TFR) than their educated counterparts (CBS, 2014). In 2001, Nepal's literacy rate was less than fifty percent, but by 2022, it had surpassed seventy percent (NSO, 2021). Concurrently, the women's literacy rate exhibited a similar upward trend. Educated women consistently display lower TFRs compared to their counterparts. Notably, illiterate women, who had the highest fertility rates, have experienced a declining trend. The

fertility rate for uneducated women in 2001 (4.8) decreased by thirty-two percentage points in 2022 (3.3), attributed to concerted efforts by government and non-government organizations in raising awareness and promoting contraceptive measures (NDHS, 2022). Furthermore, individuals with education levels above secondary education exhibit a notably lower TFR (1.6) in 2022 compared to other groups. This rate is twenty percentage points below the national average (2.1), highlighting the substantial impact of education on shaping fertility patterns and the success of initiatives promoting awareness and family planning measures, especially among the educated population.

**Table-3 : Wealth Quintile and Total Fertility Rate**

Wealth Quintile	Total Fertility Rate			
	2006	2011	2016	2022
Lowest	4.7	4.1	3.2	2.8
Second	3.6	3.1	2.5	2.4
Middle	3.1	2.7	2.5	2.1
Fourth	2.7	2.1	2.1	1.7
Highest	1.9	1.5	1.6	1.6
<b>Total</b>	<b>3.1</b>	<b>2.6</b>	<b>2.3</b>	<b>2.1</b>

**Source :** NDHS, 2006, 2011, 2016 & 2022.

Economic factor is important factor for the determination of fertility. The surveys show that the wealth has negative impact in the fertility rate. In Nepal, wealth quintile is making related to total fertility rate only after 2006 and started to include in survey. In wealth quintile, the lowest class has the highest TFR that is less by 2.8 in comparison with the highest wealth quintile (1.5) in 2006. The fertility of lowest quintile has sixty percentage more than highest quintile. The difference is decreased to just 2.1 in 2022. The TFR of the highest group of wealth quintile is 0.5 less than the national level that is twenty three percentage point less. The trend of fertility of each group of wealth quintile is declining from 2006 to 2011. The result shows that the wealth/economic activities of Nepalese women are increasing comparing the survey of 2006 and 2022 and makes decline in fertility rate.

With over 10% of the population residing abroad for employment and remittances constituting more than 30% of Nepal's GDP,

economic factors significantly impact fertility rates. The majority of the total population, over 65%, is economically active according to the 2021 population census. Occupational differentials reveal that those engaged in agriculture tend to have higher fertility rates than those in other professions, even though agricultural engagement is decreasing in Nepal. These factors collectively contribute to the lower fertility rates observed in the country. The data suggests that the onset of fertility decline in Nepal likely began in the early 1980s. This fertility transition is typically accompanied by socio-economic changes, including the spread of education, improved health, income provision to the deprived, and exposure to modern ideas promoting fertility decline (Ahikari, 2010).

## **5. Conclusion**

The analysis clearly indicates a decline in fertility levels in Nepal over the past two decades, spanning from 2001 to 2022. The Total Fertility Rate (TFR) has seen a notable reduction, decreasing from 4.1 births per woman in 2001 to 2.1 births per woman in 2022—a decline of two children over the past 20 years, equating to a fifty percentage point decrease. This places Nepal's TFR below the world average of 2.4. As discussed by sociologists, various social factors such as education, socio-economic status, shifts in gender dynamics, migration, and the overarching social structure impact the total fertility rate (Hirschman, 1994; Mills & Blossfeld, 2003; Anderson & Kohler, 2015). The declining trends in fertility rates indicate positive advancements in these social factors within Nepal. The diminished fertility levels in Nepal can be attributed to several factors that favor lower fertility, including the increasing age of marriage, evolving gender roles with women participating in work outside households, rising literacy rates for both men and women, and an overall improvement in socio-economic status. Improved health services and increased exposure to modern contraceptives have played a crucial role in promoting the decline in fertility in Nepal. These findings strongly support the need for continued investment in planning programs and other social development factors. However, challenges persist, particularly with higher fertility rates in rural areas, the Mountain and Hill regions, and among women with no formal education. Addressing these challenges requires additional efforts focused on family planning programs, increasing contraceptive prevalence, and enhancing educational opportunities along with economic activities.

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