Gap between desired and actual family size in the context of fertility decline in India: A cohort analysis of longitudinal data

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Abstract: This study gives an imperative insight about how and why in reality women are irrational about their family size, although they have a desired number in their mind. Using three rounds of NFHS dataset in India and through a cohort analysis, the paper examines gap between desired and actual family size; observes change in gap over the last 15 years; and identifies determining factors responsible for having more than average CEB. Women's actual performance is much more than their desire which point towards unintended pregnancies, non-use or unmet need for family planning etc. Average of actual family size has declined 8.4 percent during 1992-2006, while average of desired family size has declined 16.6 percent. Couple's educational level, residence, mass-media exposure, discussion of contraception with husbands show significant effect of having more than average CEB among women aged below 40, while sex of dead children becomes significant for women aged 40-49.

Importance of the study

In India, every policy focusing on reducing fertility levels accentuate on promoting contraception, reducing unmet need, aiming at population stabilization; but there is dearth of studies that emphasize or understand the problem to what extent and why women exceed their desired fertility level. Extant literature exists on the assessment of levels and trends of fertility and its determinants in India and other developing countries, especially where high rate of fertility is a problem. However, few studies related to fertility are available that place its focus or analyze their proposition on the basis of number of children ever born (CEB) and its associated factors. Among the various measures of fertility, the number of children a woman has ever borne, a cohort measure of fertility reflects a different picture of fertility in

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the past than the period measures of fertility such as crude birth rate (CBR) and total fertility rate (TFR). Information on total number of children ever born provides data on the lifetime fertility experience of each woman, and is used for the estimation of age-specific fertility rates and other fertility indicators.

The TFR has declined from 3.4 in 1992-93 to 2.7 in 2005-06 in India. Changes in such period fertility rates may arise from the changes in the fertility of age cohorts. Comparison of mean number of children to women in the age-group 40-49 with the total fertility rates helps to see the movement of fertility rates over ages. CEB for the women in the age cohort of 40 years and above can be considered as the lifetime cumulative fertility outcome as almost all of them are close to complete their desired family size. On the other hand, the women belonging to the cohort of below 40 years are yet to complete their family size and their fertility performance may be considered as the current fertility experience. The mean CEB for these two groups of women can never be the same. Therefore, to capture the current change in fertility, this cohort approach is very helpful. It will be worth examining the associated factors for which women go beyond the mean number of children ever born and which factors are acting as the driving factors. As there exist a possibility of divergence between these two age cohorts, for better understanding of the fertility behaviour of the past and present, identifying the determinants for both the group separately may be a worth attempt. It is also well documented in the literature that current age of women has high correlation with their fertility, and fertility variations may be observed due to characteristics of women of various age groups. Fertility increases with higher order cohorts of women. Islam and Khan (1995), in their study, noticed that split data for women aged below 30 years and women 30 years or older show different types of distribution. Previous studies have shown that number of children that a couple will have is determined by many factors, including health, religion, culture, economic status, the ability to have the number they wish to have (Sarti *et. al* 1990), spousal communication, exposure to mass media and level of education of couples (Rasul 1993).

The theoretical and empirical literature contains many assumptions about the nature of fertility decision-making and actual performance in the family building process. In some cases, the notion of individual decision-making is ignored and the focus is on societal decisions on the basis of norms and values formulated to achieve the behavior. That may be the reason why there is a difference between wanted desired family size and actual family

size. Thus, actual changing circumstance will lead to a continuing revision of fertility preferences as time passes. Accordingly, several controversies and difficulties arise with regard to the concept and use of stated family size preferences, especially in developing countries.

Objectives

With the light of the above discussion, through a cohort measure of fertility, in this paper, we have tried to discuss in brief the extent, up to what the desired differ from actual performance according to women's age cohort and birth cohort and number of living children. The paper focuses its attention on two age cohort - below 40, and 40 and above. The specific objectives may be outlined as to (a) examine the gap between desired number of children and actual experience of childbearing among the ever married women aged 40 and above (b) observe the change in the gap between desired and actual family size over the last 15 years and (c) identify the determining factors responsible for having more than average number of children ever born to two age cohort of women.

Data and methods

The dataset of third Indian National Family Health Surveys (NFHS-3), coordinated by our Institute under the aegis of Government of India, conducted in 2005-06 from all the 29 states of India has been used for the present study. NFHS-3 collected information from a nationally representative sample of 109,041 households and 124,385 women aged 15-49. However, we did our analysis based on 98,923 ever married women. The dataset of the previous two rounds of NFHS-1 (1992-93) and NFHS-2 (1998-99) have also been used to observe the change in the gap between desired and actual family size. Bi-variate and multivariate techniques have been applied for data analysis. Z-test has been applied to check whether the average CEB for the two age cohort differ significantly. We have calculated the percentage contribution of several birth cohorts of women to the overall mean CEB. To identify the determining factors responsible for having more than average CEB to two age cohort of women, help of logit regression has been taken.

Results and discussion

Before entering into the main discussion of the extent and determinants of gap between desired and actual number of children, a brief analysis about the average number of desired as well as actual CEB has been provided separately. The average CEB according to various age

groups of ever-married women in India has been calculated by sex of the children. It is seen that though the average CEB for both the sexes follows the similar increasing trend to the overall averages, at higher ages the averages for male exceeds the same of female. The plausible explanation may be put towards sex preference of children that exists in many states in the country.

During 2005-06, the average CEB to all ever-married women in the reproductive age group is 2.84. While mean CEB for women below 40 years of age is 2.48, the same is 3.99 for the women for belonging to the age group 40-49. The result of Z-test clearly indicates the difference in mean of these two cohorts is statistically significant. In order to see the percentage contribution of several birth cohorts of women to the average CEB, the birth cohorts have been categorized into four groups.

From Figure 1 it is seen that higher percentage of women among the earlier born cohorts, had actual number of children more than their desired number, compared to the recent birth cohort of women. Figure 2 indicates that the gap between desired and actual family size is lowest in the age range of 25-29 years when women are in the peak of their childbearing age. The younger women wants more than two children on an average which is quite similar to the older women's average number of desire for children and in all the age-groups, women's actual performance is much more than their desire which indeed indicate about many things like unintended pregnancies, non-use of contraceptives or may be unmet need for family planning.
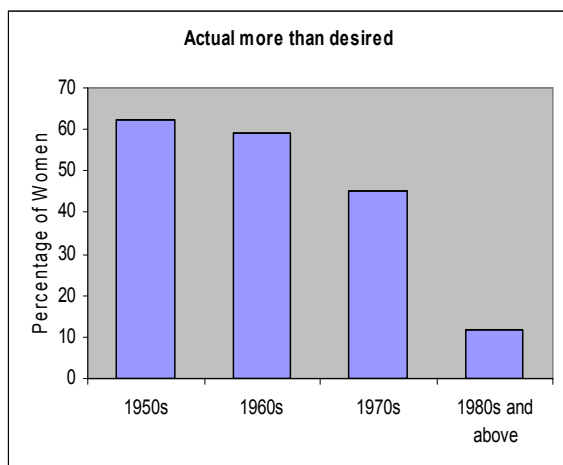
Figure 1. Percentage of women whose actual number of children is more than desired by birth cohort of women, 2005-06, India.
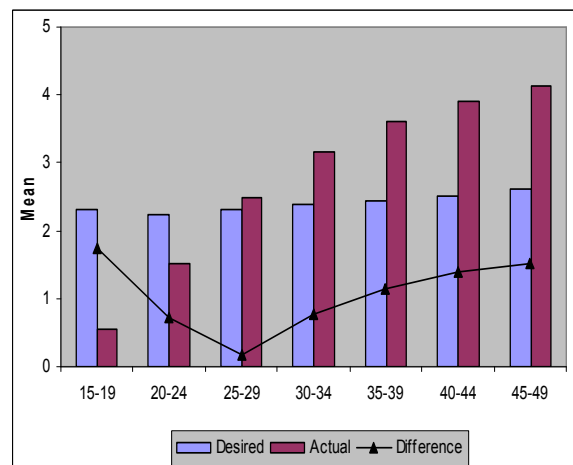
Figure 2. Difference between desired & actual number of children, 2005-06, India

The findings from the three consecutive survey dataset reveal that there is no substantial change in the gap between desired and actual family size in both the age groups of women. In the last 15 years the percentage changes in the averages of actual fertility and desired fertility for women aged 40 years and above are 18 percent and 19 percent respectively. Considering all women, the percent change in average actual family size and desired family size shows that the average of actual family size has declined 8.4 percent during 1992-2006, while the average of desired family size has declined 16.6 percent during the same period. We examined whether there is any change in the proportion of women whose actual fertility is more than their desired. Striking finding is that during 1992-93, 63 percent of women (aged 40 and above) had more children than their desire, and the proportion remains almost same (61 percent) during 2005-06.

Fertility behavior differs according to place of residence and as women residing in urban areas are more aware and can access more family planning services and also the cost of child bearing is high compared to rural areas. Results show that Muslim women have the tendency to have more than mean number of CEB compared to Hindu women, may be due to the fact that they have cultural/religious opposition to use family planning methods. The results about factors influential on the mean CEB show that as marital duration increases, mean CEB tend to increase significantly for both the cohorts of women, as well as for all women aged 15-49. Number of CEB is also strongly influenced by survival status of children and specifically number of child loss a woman had ever been experienced. With the increase in number of dead children, women prefer to go for next children and that leads to higher average CEB. For death of a male or female child, women are four times more likely to have higher children and thus the value of CEB will more than that of average value. Interestingly, different picture is revealed among the women of age cohort of 40-49. For male child loss, the likelihood of having more than average CEB is greater compared to female child loss. Caste of the women appears to have significant impact on the fertility experience of women of below 40 age cohort. Among these women, women belonging to scheduled caste, scheduled tribe and other backward castes tend to have more than average CEB compared to women of general category. Educational level influence women irrespective of women's age whether the women belongs to age below 40 or 40 and above or for all women aged 15-49 and with the higher level of educational attainment the women tend to go for less number of children. For women of age cohort of below 40, level of educational attainment is showing statistically significant effect on the average CEB, but not significant for the women of age

cohort 40 and above. It may be argued that older women were less conscious or did not received proper education due to individual or societal constraints. So, they did not realize the importance of small family size than those of younger women. It is anticipated that increases in the standard of living leads to the quantity-quality trade off. The results for the age cohort below 40 clearly points towards that fact.

For the age cohort less than 40, working women have lesser chance to exceed the average CEB. Discussion of family planning has a positive impact on lowering the fertility performance of women. The number of children tends to be more than average CEB among women of below 40 age cohort who have discussed about family planning with their husbands compared to those who have not discussed. The plausible explanation may be given that women, who are having more children, discuss more about family planning to reduce their family size or driven by strong son preference. Women of 15-39 age cohort go for less than average CEB if they have the aspiration for giving more education to their daughter up to high school and professional.

Findings also show that mean desired family size varies between three to four according to the number of living children, whereas, overall mean desired number of children is three. It is observed that average desired family size decreases over the years according to different birth cohort of women. In case of women's age, as age increases mean desired family size also increases. That means older women possess the opinion that the desired number of children a couple should have is more than three on an average. It is evident that desired family size tends to vary with the actual fertility performance. It is possible that, the respondents have tended to report the desired rather than personal preferences (Pullum 1980). From the above discussion, it is clear that the stated desired family size is not completely implemented, that is, considerations of varied issues are not perfect or accurate in replies, something that is practically impossible.

The mean desired family size increases with subsequent addition of living children, which may be interpreted as reflecting the increasing effect of rationalization of actual family size as women pass through child bearing stages. Again, rationalization is essentially a phenomenon, which occurs at higher family sizes. It is seen that 57 percent of the women with living children of three and 95 percent with living children of 6+ seem to have greater desired as compared to actual family size. In practice, however, only 23 percent women are

showing that an accurate estimate of rationalization is possible for all the ever-married women in India. The same rationalization can be seen among 44 percent and 33 percent ever-married women, who are having greater desired number than actual family size and less than actual family size respectively. The above estimate thus, may be simply treated as an indicator of a comparatively lower extent of rationalization.

Conclusion

Study of change in human reproductive behaviour is of central importance to any attempt in understanding the recent changes in cohort fertility and change in fertility level over the time period and in designing and implementing successful family planning as well as other related public policies. This study has been an effort to highlight some of the basic conceptual issues of fertility performances in India. The analysis according to two age cohort show how the determinants for having more than average CEB influence women of these two age cohorts and what are the changes in the recent years.

The present study gives an important insight that how in reality women are irrational about their family size. Although they have an desired family size in their mind, still they cannot make it in reality. For women belonging to below age 40 group, still there is chance of having more children in future. This means that if they have less than their desired number of children, they have time to fulfill their desired family size. In case of women of younger cohort (below 40 age cohort), who are having more than desired number of children, to identify those women and underlying causes for the same would be a necessary step to regulate the fertility outcome especially in the demographically backward states like Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh where still high fertility remains an important issue of concern.