Intergenerational Dynamics and Fertility Transition in a Rural North Indian Area

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Introduction and the perspective of the study

Fertility in India is still high, specially, in rural areas where rationale for a larger family remains fairly strong. Various theories and explanations, for example that of Baker et al. (1990), Bhat (1996), Bongaarts and Watkins (1996), Easterline (1975), Leibenstein (1957), and Caldwell (1976) all indicate that high fertility in India is a norm. Total fertility rate still remains 2.5 children per woman (Wikipedia 2012).

There are several pockets where fertility has fallen below replacement levels. However, there is lack of understanding for that decline in fertility due to paucity of detailed and systematic data and partly due to data being less reliable. Also much of the available literature explains fertility in India as a product of definitive independent variables, which is often misleading as fertility in the Indian social system could be a result of larger network of people rather than the woman alone or a couple.

In 1988, Himachal Pradesh had a TFR of 3.6 women. A similar TFR was estimated for the Himachali villages (Singh, 1996). At that time there was an indication that the State was on the path of demographic revolution but little was clear as to what was leading that demographic transformation. What was clear though was that this mountainous state had large tracks of uninhabitable land and very little prospects for agricultural and industrial development.

Himachal Pradesh Development report signalled of State reaching replacement level fertility by the year 2010. Interestingly, the State surpassed that estimation. The TFR in HP has now reached at 1.8 per woman. This is a miracle and puts Himachal Pradesh with Southern States Kerala and Goa (Wikipedia 2012).

Data and methodology

In this paper we are using an intergenerational approach to seek explanations for fertility decline and also uncover some facts that first underlay the high fertility and that drive fertility to lower levels. The explanations and interpretations may only apply to India as Indian society has strong family systems and kinship relationships.
The fertility behaviour in a family setting could be better understood than the fertility of an individual woman or a group of women who are not related.

The paper is based on the data collected through a demographic survey of 10 villages of Himachal Pradesh in 1988 and a micro-demographic survey in 2011. The 2010 survey was conducted using structured questionnaires as well as in-depth interviews of ever married women. Questions were asked on marriage and fertility history of women. The data were then analysed using traditional statistical approaches as well as micro-demographic approach purported by Caldwell et al (1975). The 2011 survey was less formal than the 1988 survey as we did not use any structured questionnaire. Instead we choose in-depth interviews and asked a range of questions on actual fertility and desired fertility of ever married women.

In 1988 survey, we first conducted the village census, identified ever married women aged 15 years and older and asked them questions about their marriage history, age at first marriage and subsequent marriages and children born to them as well as desired number of children then wanted to have (at the time of the survey).

In 2011 survey, we revisited the villages, some households and identified the women that we had interviewed in 1988. Out of 338 women that we interviewed in 1988, only 26 could be contacted. Age distribution of the women interviewed in 1988 and 2011 is given in Table 1. This number although quite small to have any statistical analysis undertaken, was adequate to address our research questions and seek explanations for inter generational fertility dynamics.

In addition to their own fertility intentions and fertility outcome, the women were also asked questions about the fertility of their daughters and grand daughters in 2011.

Average number of children born to the daughters of these women was 2.6 and the average number of children born their grand daughters was less than 1 child per woman. Of course, the grand daughters are in the beginning of their fertility life and have long way to go to complete their fertility life.
Table 1: Number of ever married women interviewed in 1988 and 2011

<table>
<thead>
<tr>
<th>Age Group in 1988</th>
<th>Number of Women</th>
<th>Age Group in 2011</th>
<th>Number of Women</th>
<th>Percentage of women Revisited in 1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>12</td>
<td>38-42</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>20-24</td>
<td>53</td>
<td>43-47</td>
<td>5</td>
<td>9.4</td>
</tr>
<tr>
<td>25-29</td>
<td>56</td>
<td>48-52</td>
<td>5</td>
<td>8.9</td>
</tr>
<tr>
<td>30-34</td>
<td>43</td>
<td>53-57</td>
<td>6</td>
<td>14.0</td>
</tr>
<tr>
<td>35-39</td>
<td>35</td>
<td>58-62</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>40-44</td>
<td>28</td>
<td>63-67</td>
<td>2</td>
<td>7.1</td>
</tr>
<tr>
<td>45-49</td>
<td>23</td>
<td>68-72</td>
<td>1</td>
<td>4.3</td>
</tr>
</tbody>
</table>


Fertility Theories

To understand fertility behaviour in Himachali villages and to identify the drivers of fertility decline this first looks into fertility theories and identifies the factors that regulate fertility in various populations.

Among the first to theorise fertility behaviour, TR Malthus presented a view that population growth follows a geometric progression and the resources sustaining the population grow in arithmetic progression. The balance between resources and population was maintained through alterations in fertility and mortality rates.

Following Malthus, demographers used the theory of demographic transition and experience of European countries in the 19th century to postulate the fertility course in developing countries. In the first phase of transition, countries experience high level of fertility and mortality rates. In the second phase, developments in technology and medicine lead to a steep decline in the mortality rates resulting in high rate of growth of population. The third and final phase of the transition is marked by low rates of both fertility and mortality rate.

Afterwards, Leibenstein related the income and fertility decisions and thereby purported economic theory of fertility decline. Under this framework parents make
decisions on whether to have children by weighing the utility and disutility of having additional children. Becker extended this model by arguing that parents view children as consumer durables and parents might want to have better quality children when their income increase. Quality of children is defined in terms of investment on children. With an increase in income, demand for children decline. This is replaced by greater investment in children in terms of education.

Easterlin (1975) added the supply component (number of children parents would have if they did not use methods to limit fertility) and costs of fertility regulation to the economic theory of fertility theory. According to this theory there would be motivation to control fertility only if the supply exceeds the demand give costless fertility regulation. Becker, Murphy and Tamura (1990) in their theoretical contribution have addressed the issue of why some regions have grown more rapidly than others. In their growth model, fertility choice is endogenous and so is investment in education. One conclusion of their paper is the following, “Societies with limited human capital choose large families and invest little in each member; those with abundant human capital do the opposite. This leads to two steady states. One has large families and little human capital and the other has small families and perhaps growing human and physical capital.”

The impact of economic development and modernization on fertility behaviour came to be referred as classical demographic transition theory. Bongaarts and Watkins (1996) in their research find a weak relation between development and reproductive behaviour. After analysing the trends in fertility and indicators of social and development for 69 developing countries between 1969 and 1990, they suggest that diffusion of information about birth control methods is an important mechanism of fertility change. According to Bongaarts and Watkins, diffusion refers to the mechanism by which innovation spreads among regions, social groups and individuals. This spread of information is independent of social and economic changes and is through social interaction. Social interaction includes exchange of information, joint evaluation of the meaning of the idea and finally social influence that would lead to action or no action on part of the individuals. Channels of interactions could be on a local or day to day individual basis, a national level in
terms of migration or better transportation system or on a global basis via world level organizations or multinational organizations.

Caldwell (1976) purported the idea of intergenerational wealth flow as a driver of fertility decisions. His classical work The Restatement of Demographic Transition Theory” presented a new direction for demographers to explore the relationship between the direction of intergenerational flow of wealth and fertility. Caldwell argued a shift in the flow of wealth from children to parents, to, from parents to children is the force that triggers fertility decline. Wealth for Caldwell was lot more than financial wealth and included services and other resources.

Over the years theories in fertility have shifted emphasis from attributing the fall in TFR solely to economic development to including social and cultural factors. Our analysis will help identify the key economic, social and cultural factors that have contributed to the decline in TFR and thereby help identify potential policy interventions.

We conceptualise that fertility decline in developing countries such as India needs to be viewed in association with family and kinship dynamics. This dynamics is initiated by the shift in the desired fertility size. For example, when the desired fertility of daughters and grand daughters fall, that has an impact on the desired fertility of the grand mothers and thereby the desired fertility of grand mothers falls below their actual fertility. Data from the study confirms this argument as the desired fertility of women aged 40 years and older in 1988 is greater that their actual fertility in 1988.

**Results and discussion**

In 2011, the Total Fertility Rate in the study area was estimated at 1.75 per woman. This compares with the Total Fertility Rate in Himachal Pradesh (1.8 per woman). These rates compare with the fertility in Kerala (1. per woman8) and the lowest rate in Tamil Nadu (1.7 per woman) (these figures are quoted from Wikipedia - [http://en.wikipedia.org/wiki/Himachal_Pradesh](http://en.wikipedia.org/wiki/Himachal_Pradesh)).
Further analysis of fertility data for the Himachali villages was undertaken by comparing the average number of children ever born and average number of children wanted by ever married women aged 15 to 49 years. This was done as this was the only way to compare the fertility of women between the two time periods 1988 and 2011. It also allowed comparison of fertility across the generations from grandmothers, to daughters and granddaughters.

At first we looked into the average number of children wanted and children ever born to women in 1988 (see Table 2). The table shows that the desired number of children was higher for the older women and lower for the younger women. In other words, there was a clear positive association between the number of children wanted and age of the women. This shows that older women wanted more children than the younger ones. What is interesting though is that even the youngest women wanted about 3 children. This was clearly aligned with the prevailing Total Fertility Rate of 3.6 children per woman in 1988.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Average Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Born</td>
</tr>
<tr>
<td>15-19</td>
<td>0.3</td>
</tr>
<tr>
<td>20-24</td>
<td>1.8</td>
</tr>
<tr>
<td>25-29</td>
<td>3.0</td>
</tr>
<tr>
<td>30-34</td>
<td>4.3</td>
</tr>
<tr>
<td>35-39</td>
<td>6.1</td>
</tr>
<tr>
<td>40-44</td>
<td>5.1</td>
</tr>
<tr>
<td>45-49</td>
<td>5.6</td>
</tr>
</tbody>
</table>


When the same women were asked a question on the desired number of children they wanted in 2011 then a different picture emerged. Women who were aged less than 25 years in 1988 and 38-47 years in 2011 reported in 2011 that they wanted 1-2 children; in contrast of almost 3 children they wanted in 1988. Furthermore, women who were aged 25 years and older in 1988 and at that time reported that they wanted more than
3 children on average, in fact the oldest women those aged 45-49 reporting desired number of children being 6, now reported that they wanted only 2-3 children (see Table 3). These are striking observations and clear demonstration of desired fertility revolution.

Table 3: Cohort dynamics, Himachali villages, 1988 and 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>1968-1972</td>
<td>2.8</td>
<td>38-42</td>
<td>1-2</td>
</tr>
<tr>
<td>30-34</td>
<td>1953-1957</td>
<td>3.9</td>
<td>53-57</td>
<td>2-3</td>
</tr>
<tr>
<td>40-44</td>
<td>1943-1947</td>
<td>4.5</td>
<td>63-67</td>
<td>2-3</td>
</tr>
<tr>
<td>45-49</td>
<td>1938-1942</td>
<td>6.0</td>
<td>68-72</td>
<td>2-3</td>
</tr>
</tbody>
</table>


What is clear is that the fertility intentions have fallen significantly across the age groups; but even more striking observation is that the women actually had more children than they wanted now. What has underpinned this fertility revolution and why are the women still having more children than they desired? A further discussion on the life, society and economy revealed that the couple that had fewer children commanded the best standard of living in the study area. Those who had more children were rather less well off and the value of more children was no more apparent for couples. Some 20-30 years ago, 3-4 children meant greater ability to manage family’s fruit gardens and cash crops. Over the last 5-10 years that have all changed and now the management of gardens and cash crops is done by contractors who directly approach the villagers and purchase the fruit and vegetables and take care of management, harvesting and transportation to the contractor’s warehouse. Thus, the demand for children was reduced.

Furthermore, families with 1-2 children were sending their children to private schools where a higher fee was charged but which ensured a better job for the children in the non-agricultural sector. That facilitated supplementing family wealth pool and their
economic strength. Although, the couple’s were also mindful of educated children leaving the family’s horticulture and agricultural affairs altogether and adopting an urban life, the couples believed that there were ample examples of educated children working in non-agricultural sector and also shouldering the responsibilities for maintaining the family’s horticulture and agricultural pursuits. They were also convinced that the educated children will not only continue to remain attached to the land, but also that by virtue of their education and contacts with outside world as well as outside connections will arrange the best possible contracts to market the fruit and vegetables.

Furthermore, mortality in Himachal Pradesh has fallen considerably and the State now has one of the highest life expectancy in Indian States (67 years for both sexes in 2011) which is 4 years higher than the average life expectancy at birth for India as a whole (Wikipedia, 2011). This means a live birth in Himachal Pradesh has a greater chance of survival than in other parts of India. Thus, there is less pressure on Himachali parents to have larger family to ensure the survival of at least 2 to three children. Instead they are happy to have one to two children and provide them quality education and thereby improve their chances of an urban job.

In the past several Indian parents as well as Himachali parents had large families or 4 children and more because they strongly wanted at least one son. When the parents had daughters only then they continued to have children with a hope that the next child was going to be a male offspring. The desire and expectation for a male offspring lead to several parents to have more children than they actually wanted to have. That situation was rife in 1988 and all women reported that they would definitely want a male child because the male child is the one who helps continuation of family lineage. In 2011, the situation has changed now. Women reported that they would ideally like to have a son, but if the offspring is a daughter then it does not really matter and they would be happy with the daughter as well. For them educated daughters and their husband are helping families manage their family farms and horticulture.

One more reason for desired fertility falling to 1-2 children per woman became apparent during the informal discussion sessions with the villagers. It was mentioned
that several couples were going for the gender testing of the foetus and the woman was terminating the pregnancy in case of a female foetus. Gender testing was reported as high as 50% among the women whose first child was a daughter. Clearly, there appears some role of gender testing and abortion of female foetuses but it is difficult to quantify that.

**Conclusions**

In this paper we have demonstrated the fertility decline in Himachali villages and shown how fertility decision is a matter of inter generational dynamics instead of merely being the product of an individual or a couple. While grand mothers had highest fertility, followed by the daughters and the grand daughters had the lowest fertility. This is consistent with the fertility decline in the study villages where fertility has fallen by half in the last 24 years. Interestingly, the desired fertility has fallen to the level of actual fertility whereas in the past the desired fertility was always higher than the actual fertility.

Another significant finding is that the desired fertility of mothers and grand mothers has also fallen; but that has little bearing on their own fertility but that does make a low fertility being a norm in the wider rural community and all the women older or younger viewing the low fertility as beneficial.

No single theory to explain fertility decline in Himachali villages. The fertility decline in the study area is rather a product of combination of several theories which include economic, theory, opportunity cost, and intergenerational wealth flow. What is important though is that the low fertility has become economically rationale for the Himachali parents and they are finding fewer children being economically more useful and affordable.

**References**


