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# Determinants of Desired Family Size in Kerala

## Introduction

concept of 'desired family size' has assumed considerable importance in recent fertility analysis. This is because 'the small family norm' has become an important factor in the motivational programme of family planning being implemented in the country. The states like Kerala, where the educated and literate population are on the increase, the attitudes of couples towards desired family norms have influenced their decision making which have led to a fast decline in birth rate in the state in recent years.

Studies related to desired family size have assumed importance ever since the Indianapolis studies in 1 95 1 (Kiser and Whelpton, 1 956), in which the question about the desired number of children of either sex in couples decision making was asked. In the recent World Fertility Survey the question on desired family size has also been given importance, which has been adopted by many developing countries for inclusion in the surveys (WFS, 1984). Most of these studies have sought to explain the desired number of children in relation to their birth control practice and related socio-economic and demographic characteristics. Among the demographic characteristics, sex preference, age at marriage and family size have been brought out as related factors of desired family size (Freedman, 1969; Kale, 1969; Holder, and Sivaraman, 1969; Mahadevan, 1979). It has been observed in the context of similar studies that the socio-economic status also has influenced the decision making process among couples which shape their attitudes with regard to the desired number of children (Bhatia, 1970;Tiwarie/tf/., 1972;Pillai andNamboothiri, 1972; Basheer, 1990). It has been seen that the higher income groups have expressed a low desired family size that they could achieve also. Similarly higher prestigious occupational groups have expressed a low desired family size. Likewise, son preference has been observed as an important reason for additional number of children, which is mainly a socio-cultural phenomenon in most of the Asian countries (Mahadevan, 1979).

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Perhaps, recent developmental changes in terms of education, income, occupation, health and decline in mortality might have motivated people to adopt a small family norm. The fast decline in fertility in Kerala therefore can be said as a realisation of the desired family size among the couples. To what extent the couples are able to conform to the desired family size in terms of their actual parity? What determinant in terms of socio-economic and demographic factors have been substantiated for these changes? What percentage of couples wanted to have additional number of children and why so? Answers to these questions are important in planning and implementation of family planning programme. A study to this effect is contemplated here.

## The Objectives of the Study are as Follows

1. To study the change in desired and actual family size during the last 15 years at two points of time.
2. To study the determinants of desired family size in terms of socio-economic (education, occupation, religion, contraceptive practice etc.) and demographic (age at marriage, sex, no. children born, etc.) factors.

## Data and Methodology

The above objectives are examined using data available from two surveys conducted in 1972 and 1988, in the neighbouring Panchayats of Kazhakkuttom and Attipra in Thiruvananthapuram district ofHerataThe survey MflAmX^^^ a sample of 2500 households to study the fertility history of couples. A specific question was asked about the desired number of children in the questionnaires used for the surveys. The question asked in the Sample I survey is: (a) Number of children desired by the couples. Similarly the question asked in the Sample II survey is: (b) In your opinion, how many children do you desire to have? Both of these questions directly enquire into the number of children desired by the couples, irrespective of the sex preference. The responses to these questions are considerd as the number of desired children couples wish to have at the time of survey. The number of children ever born to the couples, at the time of survey has been taken as the actual fertility of the couples. The survey was conducted in Pangappara (Attipra Panchayat) by the PRC in 1988. The survey at Pangappara covered a sample of 410 women in the reproductive age groups of 15 to 35 years. The socio-economic and other demographic characteristics of couples are also available in these schedules. An equal sample of 410 married women in their reproductive span is drawn from the 1972 survey, (Sample-I) which was carried out at Kazhakkuttom, in order to match the sample in the survey conducted at Pangappara in 1988, (Sample-II). The socio-economic characteristics of population of these two areas are comparable, as it belonged to neighbouring villages.

In population experiencing decline in fertility, the Desired Family Size (DPS) is considered as a good measure of fertility because the DPS normally tend to narrow down to actual number of children they have, or likely to have. With high levels of literacy in population, the difference between DPS and actual number of living children of the couples tend to be

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narrow. Westoff(1963) has found that DPS is an accurate predictor of actual number of children at the aggregate level, and the difference between these has been less than 5 per cent only. Kerala has a high literacy rate since 1970's. Therefore, it is expected that the difference between DPS and actual fertility would be less, and is expected to have further narrowed down during the period of the second survey (1988). It is assumed that DPS, for Kerala, is a good predictor of actual fertility particularly in recent times. The DPS rates based on National Family Health Survey (NFHS) conducted during 1992-93 in Kerala is also compared to examine whether this contention is confirmed further. The influence of socio-economic and demographic determinants on DPS is examined using Multiple Regression techniques separately for two sample populations. Discussion of these results are presented in the following sections.

## Socio-economic and Demographic Determinants of Desired Family Size

### *Religion*

Table 1 presents the percentage distribution of the women in Sample I (Kazhakkuttom) and Sample II (Pangappara) according to their religion and desired number of children. Of the total population in Sample I, 87.3 per cent of the women are Hindus, 6.8 per cent are Christians and 5.9 per cent are Muslims. Only 21.3 per cent of the Hindus, 10.7 per cent of the Christians and 29.2 per cent of the Muslims reported to have two children as their desired family size. But 79.4 per cent of the Hindus, 89.2 per cent of the Christians and 66.7 per cent of the Muslims desired to have 3 and more children as their family size.

In Sample II, 93 per cent of the women are Hindus, 2.7 per cent are Christians and 4.3 per cent are Muslims. Nearly 77 per cent of the Hindus, 73 per cent of the Christians and more than 88 per cent of the Muslims expressed their desire for only 2 children as their family size.

In Sample I, only 21 per cent of the women desired 2 children, where as in Sample II, more than 77 per cent desired to have 2 children only. It can also be seen that in Sample I, majority (75.5%) of the women have expressed their desire for 3 and more children as their family size, whereas in Sample II this proportion has reduced to only 22 per cent. This indicates an increase of around 56 per cent of women who desired for small family size of 2 or less number of children in a period of 15 years.

The average number of desired family size in Kazhakkuttom sample is 2.92 (S.D. 60) and that of Pangappara sample is 2.23 (S.D. 50).

### *Education of Women*

Table 2 presents the differentials in educational attainment of the women in Sample I and Sample II. In Sample I, 14.9% of the women are illiterates where as in Sample II, only 2.7% are illiterates. Percentages of degree holders in Sample I is, 9.03% and the corresponding figure in Sample II, is 39.7%. In Sample, I, more than 46.8% belong to the groups of women who have only primary level of education, and among them, more than 80% desired to have

3 or more children. More than 38% of the women possess secondary level of education and above. Among them more than 82% desire to have 3 or more children. This is contrary to the usual belief that education has a positive influence on small family norm.

In Sample II, more than 77% attained education of secondary level and above. Among them 78% are in favour of one or two as their desired family size. But in the other category (women who have primary education including literate, more than 75% desired to have one or two children). Education seems to have some influence on fertility.

TABLE 1: DESIRED FAMILY SIZE AND BACKGROUND CHARACTERISTICS

| *DFS/Characteristics* | *1* | | *2* | | *3* | | *4* | | *Total* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S-I* | *S-II* | *S-I* | *S-II* | *S-I* | *S-II* | *S-I* | *S-II* | *S-I* | *S-II* |
| Religion | | | | | | | | | | |
| Hindu | 1 | 1 | 76 | 287 | 231 | 78 | 50 | 1 | 358 | 373 |
| | (0.3) | (0.3) | (21.3) | (76.9) | (65.4) | (20.9) | (13.9) | (1.9) | (100.0) | (100.0) |
| Christian | 0 | 0 | 3 | 8 | 16 | 3 | 9 | 0 | 28 | 11 |
| | (0) | (8) | (10.7) | (72.7) | (57.1) | (27.3) | (32.1) | 0 | (100.0) | (100.0) |
| Muslim | 1 | 1 | 7 | 15 | 16 | 1 | 0 | 0 | 24 | 17 |
| | (42) | (5.9) | (29.2) | (88.2) | (66.7) | (5.9) | (0) | (0) | (100.0) | (100.0) |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | (0.5) | (0.5) | (21.0) | (77.3) | (64.1) | (20.4) | (14.4) | (1.7) | (100.0) | (100,0) |
| Education | | | | | | | | | | |
| Illiterate | 1 | 0 | 21 | 11 | 27 | 0 | 12 | 0 | 61 | 11 |
| | (1.6) | (0) | (34.4) | (100) | (44.3) | (0) | (19.7) | (0) | (100.0) | (100.0) |
| Primary | 0 | 0 | 38 | 58 | 132 | 22 | 22 | 0 | 192 | 80 |
| | (0) | (0) | (19.8) | (72.5) | (68.8) | (27.5) | (11.5) | (0) | (100.0) | (100.0) |
| Secondary | 1 | 1 | 21 | 107 | 73 | 40 | 25 | 3 | 120 | 151 |
| | (0.8) | (0.7) | (17.5) | (17.9) | (60.8) | (26.5) | (20.8) | (2) | (100.0) | (100.0) |
| Graduate | 0 | 0 | 5 | 107 | 22 | 20 | 0 | 4 | 27 | 131 |
| | (0) | (0) | (18.5) | (81.7) | (81.5) | (15.3) | (0) | (3.1) | (100.0) | (100.0) |
| Post | 0 | 1 | 1 | 27 | 9 | 0 | 0 | 0 | 10 | 28 |
| Graduate | (0) | (3.6) | (10) | (96.4) | (90.0) | (0) | (0) | (0) | (100.0) | (100.0) |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | (0.5) | (0.5) | (21.0) | (77.3) | (64.1) | (20.4) | (14.4) | (1.7) | (100.0) | (100.0) |
| Occupation | | | | | | | | | | |
| HW | 1 | 0 | 80 | 270 | 201 | 75 | 49 | 7 | 331 | 352 |
| | 0.3 | 0 | 24.2 | 76.7 | 60.7 | 21.3 | 14.8 | 2.0 | 100 | 100 |
| GOVT | 0 | 1 | 2 | 23 | 4 | 3 | 0 | 0 | 6 | 27 |
| | 0 | 3.7 | 33.3 | 85.2 | 66.7 | 11.1 | 0 | 0 | 100 | 100 |
| AGRI | 1 | 0 | 4 | 10 | 20 | 1 | 1 | 0 | 26 | 11 |
| | 3.8 | 0 | 15.4 | 90.9 | 76.9 | 9.1 | 3.8 | 0 | 100 | 100 |
| OTHER | 0 | 1 | 0 | 7 | 38 | 3 | 9 | 0 | 47 | 11 |
| | 0 | 9.1 | 0 | 63.6 | 80.9 | 27.3 | 19.1 | 0 | 100 | 100 |
| TOTAL | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21 | 77.3 | 64.1 | 20.4 | 14.4 | 1.7 | 100 | 100 |

S-I: Sample I S-II: Sample II H.W.: House Wife
Govt: Government Service AGRI: Agricultural Labour
(Figures in bracket indicate percentage)

TABLE 2: DESIRED FAMILY SIZE AND DEMOGRAPHIC CHARACTERISTICS

| *DFS* | *I* | 2 | | | *3* | | *4* | | *Total* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S-I* | *S-II* | 5-7 | *S-II* | *S-I* | *S-II* | *S-I* | *S-II* | *S-I* | *S-II* |
| 1. Age of women | | | | | | | | | | |
| <24 | 1 | 0 | 42 | 51 | 112 | *1* | 13 | *2* | 168 | 60 |
| | 0.6 | 0 | 25 | 85.0 | 66.7 | 11.7 | 7.7 | 3.3 | 100 | 100 |
| 25-29 | 1 | 1 | 43 | 108 | 123 | 23 | 33 | 0 | 200 | 132 |
| | 0.5 | 0.8 | 21.5 | 81.8 | 61.5 | 17.4 | 16.5 | 0 | 100 | 100 |
| 30+ | 0 | 1 | 1 | 151 | 28 | 52 | 13 | 5 | 42 | 209 |
| | 0 | 0.5 | 2.4 | 72.2 | 66.7 | 24.9 | 31 | 2.4 | 100 | 100 |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21 | 77.3 | 64.1 | 20.4 | 14.4 | 1.7 | 100 | 100 |
| 2. Age at Marriage | | | | | | | | | | |
| < 19 | 1 | 1 | 42 | 145 | 158 | 53 | 37 | 1 | 238 | 200 |
| | 0.4 | 0.5 | 17.8 | 72.5 | 66.4 | 26.5 | 15.5 | 0.5 | 100 | 100 |
| 20-24 | 1 | 1 | 44 | 133 | 104 | 26 | 22 | 6 | 171 | 166 |
| | 0.6 | 0.6 | 25.7 | 80.1 | 60.8 | 15.7 | 12.9 | 3.6 | 100 | 100 |
| 25+ | 0 | 0 | 0 | 32 | 1 | 3 | 0 | 0 | 1 | 35 |
| | 0.0 | 0.0 | 0.0 | 91.4 | 100.0 | 8.6 | 0.0 | 0.0 | 100.0 | 100 |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21.0 | 77.3 | 64.1 | 20.4 | 144 | 1.7 | 100 | 100 |
| 3. Duration | of Marriage | (Year) | | | | | | | | |
| <2 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 |
| | 25.0 | 0 | 50.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 |
| 3 | 0 | 0 | 6 | 6 | 9 | 0 | 5 | 0 | 20 | 6 |
| | 0.0 | 0.0 | 30.0 | 100.0 | 45.5 | 0.0 | 25.0 | 0.0 | 100.0 | 100.0 |
| 4 | 0 | 0 | 19 | 27 | 49 | 2 | 0 | 1 | 68 | 30 |
| | 0.0 | 0.0 | 27.9 | 90.0 | 72.1 | 6.7 | 0.0 | 3.3 | 100.0 | 100.0 |
| 5 | 0 | 0 | 9 | 23 | 31 | 3 | 5 | 1 | 45 | 27 |
| | 0.0 | 0.0 | 20.0 | 85.2 | 68.9 | 11.1 | 11.1 | 3.7 | 100.0 | 100.0 |
| 6 | 0 | 0 | 15 | 39 | 59 | 6 | 0 | 1 | 74 | 46 |
| | 0.0 | 0.0 | 20.3 | 84.8 | 79.7 | 13.0 | 0.0 | 2.2 | 100.0 | 100.0 |
| 7 | 1 | 0 | 25 | 32 | 39 | 6 | 6 | 0 | 71 | 38 |
| | 1.4 | 0.0 | 35.2 | 84.2 | 54.9 | 15.8 | 8.5 | 0.0 | 100.0 | 100.0 |
| 8 | 0 | 1 | 9 | 35 | 29 | 6 | 20 | 0 | 58 | 42 |
| | 0.0 | 2.4 | 15.5 | 83.5 | 50.0 | 14.3 | 34.5 | 0.0 | 100.0 | 100.0 |
| 9 | 0 | 0 | 1 | 29 | 12 | 2 | 10 | 1 | 23 | 32 |
| | 0.0 | 0.0 | 43 | 90.6 | 52.2 | 6.3 | 43.5 | 3.1 | 100.0 | 100.0 |
| 10+ | 0 | 1 | 0 | 119 | 34 | 57 | 13 | 3 | 47 | 180 |
| | 0.0 | 0.6 | 0.0 | 66.1 | 72.3 | 31.7 | 27.7 | 1.7 | 100.0 | 100.0 |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21.0 | 77.3 | 64.1 | 20.4 | 14.4 | 1.7 | 100.0 | 100.0 |

**4. Living Children**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| < 1 | 1 | 0 | 16 | 0 | 4 | 0 | 0 | 0 | 21 | 6 |
| | 4.8 | 0.0 | 76.2 | 100.0 | 19.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100 |
| 2 | 1 | 1 | 69 | 276 | 115 | 22 | 6 | 6 | 191 | 306 |
| | 0.5 | 0.3 | 36.1 | 90.5 | 60.2 | 7.2 | 3.1 | 2.0 | 100.0 | 100.0 |
| 3 | 0 | 1 | 1 | 77 | 139 | 58 | 26 | 1 | 166 | 87 |
| | 0.0 | 0.0 | 0.0 | 31.0 | 83.7 | 66.7 | 15.7 | 1.1 | 100.0 | 100.0 |
| 4+ | 0 | 0 | 0 | 1 | 5 | 2 | 27 | 0 | 32 | 3 |
| | 0.0 | 0.0 | 0.0 | 31.0 | 15.6 | 66.7 | 84.4 | 0.0 | 100.0 | 100.0 |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21.0 | 77.3 | 64.1 | 20.4 | 14.4 | 1.7 | 100.0 | 100.0 |
| 5. Children Born | | | | | | | | | | |
| 1 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 6 | 2 |
| | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| 2 | 0 | 1 | 74 | 279 | 110 | 21 | 6 | 6 | 190 | 307 |
| | 0.0 | 0.3 | 38.9 | 90.9 | 57.9 | 6.8 | 3.2 | 2.0 | 100.0 | 100.0 |
| 3 | 0 | 0 | 4 | 27 | 146 | 59 | 26 | 1 | 176 | 87 |
| | 0.0 | 0.0 | 2.3 | 31.0 | 83.0 | 67.8 | 14.8 | 1.1 | 100.0 | 100.0 |
| 4 | 0 | 0 | 0 | 2 | 5 | 2 | 27 | 0 | 32 | 4 |
| | 0.0 | 0.0 | 0.0 | 50.0 | 15.6 | 50.0 | 84.4 | 0.0 | 100.0 | 100.0 |
| 4+ | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 6 | 1 |
| | 33.3 | 100.0 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Total | 2 | 2 | 86 | 310 | 263 | 82 | 59 | 7 | 410 | 401 |
| | 0.5 | 0.5 | 21.0 | 77.3 | 64.1 | 20.4 | 14.4 | 1.7 | 100.0 | 100.0 |
| 6. Contraceptive | Use | | | | | | | | | |
| None | 51 | 1 | 129 | 6 | 102 | 11 | 34 | 23 | 316 | 41 |
| | 16.1 | 2.4 | 40.8 | 14.6 | 32.3 | 26.8 | 10.8 | 56.1 | 100.0 | 100 |
| Nirodh | 3 | 0 | 0 | 3 | 3 | 12 | 2 | 19 | 8 | 34 |
| | 37.5 | 0.0 | 0.0 | 8.8 | 37.5 | 35.3 | 25.0 | 55.9 | 100.0 | 100.0 |
| Pill | 0 | 1 | 0 | 2 | 0 | 8 | 0 | 14 | 0 | 25 |
| | 0.0 | 4.0 | 0.0 | 8.0 | 0.0 | 32.0 | 0.0 | 56.0 | 0.0 | 100 |
| Rythm | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 5 |
| | 0.0 | 0.0 | 0.0 | 60.0 | 0.0 | 20.0 | 0.0 | 20.0 | 0.0 | 100.0 |
| IUD | 2 | 0 | 28 | 1 | 4 | 1 | 0 | 2 | 34 | 4 |
| | 5.9 | 0.0 | 82.4 | 25.0 | 11.8 | 25.0 | 0.0 | 50.0 | 100.0 | 100.0 |
| Sterilisation | 5 | 9 | 35 | 64 | 11 | 119 | 1 | 100 | 52 | 292 |
| | 9.6 | 3.1 | 67.3 | 22.0 | 21.2 | 40.5 | 1.9 | 34.4 | 100.0 | 100.0 |
| Total | 61 | 11 | 192 | 79 | 120 | 152 | 37 | 159 | 410 | 401 |
| | 14.9 | 2.8 | 46.8 | 19.8 | 29.3 | 37.8 | 9.0 | 39.8 | 100.0 | 100.0 |

S-I : SAMPLE 1. S-I1 : SAMPLE II

*Occupation of Women*

In sample I, only 19.3% of the women are working outside the home and the rest, 80.7% are housewives (Table -3). Among the women working outside home. 1.5% are

govemnment servants and 6.3% are agricultural labourers. Majority of the housewives (75.5%) expressed their desired family size as 3 or more children. So also, majority of the working women (i.e. 91%) in all categories are of the opinion that they desired 3 and more children which is contrary to our expectation that working women desire to have lesser number of children than the non-working women.This shows that occupational status does not influence the desired family size positively in sample I.

In sample II also, majority of the women (87.8%) are housewives and only 12.2% of women are working. Among them government servants constitute more than 59%, and agricultural labourers constitute only 22%. 76.7% of the housewives desire to have only two children as their family size. Nearly 89% of the government servants desire one or two children as their family size. Among the agricultural labourers 91% are for 2 children family. Even though majority of the housewives desire to have one or 2 children as their family size (sample II), there is an increase in the percentage of working women who desire to have only two children.

The average desired family size of working women other than housewives in sample I, is 3.03 and that of the sample II is 2.10.

The average desired family size for non-working women in sample I is 2.90 and that of sample II is 2.24.

### *Age of Women*

Majority of the women (nearly 90%) in sample I, belonged to the age group, 20-29, of which 40,97 are in the age group 20-24 and 48.78% in the age group, 25-29. The rest, 10.25% belonged to the age group of 30-34.

The average age of women in this sample is 25.6, whereas that in sample II is 29.3. That is, the average age is lower in sample I. 25% of the women in the age group of 20-24, 22% of the women in the age group of 25-29 and 2.4% of women in the age group of 30-34 prefer to have a small family size (i.e.2 children).

In sample II, 85% of the women in 20-24 age group, 81.8% in 25-29 age group and 72.2 per cent in 30-34 age groups prefer to have 2 children family. It is interesting to note that even in sample II, the percentage of the women desired to have 2 or less number of children decreases as their age increases. This shows that in both the samples, the younger generation is more attracted by the small family norm than the older generation.

### *Age at Marriage*

The mean age at marriage of the women in sample 1, is 19.03 and that of the women in sample II is 19.92, which is higher than that in sample I. In sample I, all women except one were married before attaining the age of 25, where as in sample II around 91% of the women married before they attaining the age of 25 years ( Table 5).

It can be noted that in both samples, desire for less number of children increases with the increase in age at marriage.

*Duration of Marriage*

The average duration of marriage in sample I is 9.88 years and that of the sample II is 6.54 years. More than 66% of the women in sample I had a marriage duration of more than 5 years. In sample II, the percentage is about 85% (Table 8).

These rates show that the desired family size has increased with the duration of marriage, in sample I. Whereas, the proportion of women expressing the desired family size has decreased considerably as the duration of marriage decreased as per sample II population. This indicate that there is a decline in desired family size viz-a-viz fertility, during the 15 year period between these two surveys.

*Number of Living Children*

In sample I. more than 48% of the women have 3 or more living children whereas in saample II only 22.45% have 3 or more living children. Out of the 48% of women having 3 or more living children in sample I, only one woman (0.5%) reported that she had desired for only two children. In sample II, nearly 32% of the women who had 3 or more living children expressed their desire for a family size of two or less. In Sample I, among the women who had 2 or less number of living children, 58.9% reported that they desire 3 or more children as their family size. But in sample II, this proportion is around 9% only. That is a high proportion of women whose family is two or less children expressed a desired family size of 3 in sample I whereas in the sample II, this proportion of women is very small.

*Number of Children Ever Born*

The average number of children ever born in sample I is 2.61 and that in sample II is 2.24, which is less than the average number of live births in sample I.

More than 52% of the women in sample I, have 3 or more live births whereas in sample II the proportion is only 22.9%. Out of 52% of the women in sample I, only 3.7% expressed their desire for two or less children as their family size. Whereas in sample II, 32.6% of the women reported that they desire only two or less children. This variation in the proportion of the women in the two'samples is significant. That is the women in sample I, desire for more children than those in sample II.

*Contraceptive Practice*

In sample I, majority of the couples (77%) are 'non-user' of contraceptives and the remaining 23% are users of one or the other method of contraception. Among the users, 12.67% are acceptors of permanent methods while the remaining 10.23% are using temporary methods, namely nirodh (1.95%) and IUD (8.28%).

In sample II, majority of the couples (91.7%) are users of contraceptives and the remaining 8.3% are 'non users'. Among the users of contraception, 80.7% are acceptors of permanent methods and the remaining 19.3% are practising temporary methods, viz. Nirodh 9.2%, Pills,

7.6%, Rhythm, 1.35% and IUD 1.08%. The percentage of women using IUD had declined considerably, during the period of surveys. This show that in comparison to sample I, couples using contraception in the sample II population are very high. The permanent method users are also more among the sample II population, having 2 or less number of children and also those having 3 or more children.

## Determinants of Desired Family Size

In order to understand the basic socio-economic and demographic factors determining the desired family size and fertility, two sets of multiple regression models have been considered for each sample population. Two sets of regression equations have been fitted separately for each sample, with desired family size as dependent variable. The independent variables are number of children born, contraceptive practice, age at marriage, age of wife, duration of marriage, education, occupation and religion. The variables occupation, education and religion have been treated as dummy in these equations. Four occupational categories have been considerd viz., housewife, agricultural labour, govvernment employed, and others that include all other categories of occupation, not included in the other three. A sample wise analysis of the above variables is presented below.

### *1. Sample I (1972)*

The factors found to be most influential to Desired Family Size (DPS) in respect of sample I population are: religion, occupation, age of women, children ever born, contraceptive practice, age at marriage of women and duration of marriage. Of the religious groups the influence of Christians on DPS is found to be most significant with a co-efficient value of 0.3507 and that of Hindu is 0.2146. This states that the fertility of the Christian group has been influenced more than that of the Hindu group. The values of both these variables are also positive which show that there is a positive influence of religion on DPS. Of the occupational categories, the agriculture labour is most influential variable with a coefficient value of 0.4313 that is positive. That is, DPS increases with the proportion of agriculture labour. It implies that higher the proportion of agriculture labour, higher will be the level of fertility.

Among demographic variables, the number of children ever born (fertility) is influential, with a coefficient value of 0.2273, which is positive also. That is, the desire for higher family size increases with the level of fertility (number of children ever born) by 22.7 percent. Similarly, the age of women is significantly influential with a coefficient value of 0.1417, which is negative. The age at marriage of women has positive influence on the DPS. The variable, contraceptive practice by couples, is used as a dummy in these equations i.e., as those who are using any methods and those who are not using any methods. The value of the coefficient of this variable is 0.0832, which is negative. That is the DPS decreases with contraceptive practice. Also, the value of the coefficient of the variable, duration of marriage of women, is 0.1957, which is positive. The $R^2$ value in this equation is 0.314 (see Table 13 for the values of coefficients of equations fitted).

Of all the significant variables in this equation, agriculture labour contribute to the highest variability. Age of women and contraceptive use have negative influence on DPS. The age at marriage of women and duration of marriage have positive influence on DPS. This is because of the traditional fertility of the woman that is usually high.

*2. Sample II (1988)*

In the sample II population at Pangappara, the variables, which are found significant in sample I, however, show little influence with DPS, except that of the number of children ever born. The coefficient value of the variable is 0.2443. Educational variable (secondary and above) is influential with DPS at 10 percent level, with a coefficient value of 0.0957. The $R^2$ value of the fitted equation is 0.129 that is very low. This explains that the socio-economic and demographic variables have not influenced much the DPS in this sample. However, the fertility variable has significantly influenced the DPS. That is, during the gap of 15 years between the first and second surveys, the desired family size, although declined, has not been influenced much by the socio-economic factors.

## The Changes in Determinants Over Time

If we compare the changes occurred in the variables discussed during the period of these surveys, it is interesting to see that some variables have significantly influenced the DPS, without any change. The number of children ever born (fertility variable) has significant influence in the coefficient value during this period. The secondary level education of couples has turned out to be an influential factor during the period of change. The value of DPS has changed from 3.2 to 2.2 in this period whereas the actual number of children among the couples have declined from 2.5 in 1972 to 2.1 in 1988. That is, the DPS has been manifested in the actual fertility also. The factor of education, however, has influenced the couple's decision making during the period of change.

## Conclusion

The study has brought out certain factors, which are relevant for consideration in the context of implementation of family welfare programme in the country. Education and age at marriage are observed as significant factors influencing desired family size and fertility in the study. The relevance of the educational change is important because it influences the decision making process of couples with regard to their family size. Similarly, the rise in age at marriage has influenced fertility decline over a period of 15 years. The influence of education was to narrow down the difference between DPS and the actual fertility, which is an important point to be noted. In sample I population, the DPS and education has shown direct, but negative influence on fertility which is significant; whereas in the analysis of smple II population, this is not very clear, but only those who have been educated up to

secondary school level have shown influence (negative) with DPS (at 10% level). Whereas the difference between DPS and number of living children, in sample II has almost become equal, when compared to that of the sample I population. The difference between DPS (3.2) and actual number of children (2.5) is 0.7 in sample I (1972) population. Whereas in sample II population (1988) these rates are 2.2 and 2.1 respectively, the absolute difference being 0.1. This implies that a high rate of literacy and education has influenced the DPS to conform to the actual fertility. Further, theNFHS data, 1992-93 show that there is virtually no difference between the DPS (2.0) and the actual fertility (TFR), which is estimated as 2. That is the difference between DPS and actual number of children have merged gradually as per the three survey results shown. The major factor that could contribute to this has been the indirect influence of education.

The cultural factors like religion and the economic factors like occupation have also shown significant influence on desired family size and fertility in the state. This indicates that the changes in the socio-economic factors have indirectly influenced the overall decline in fertility. But the most important factor that has directly influenced fertility is the use of contraception. There has been an increase in the use of birth control methods, especially the permanent methods of sterilisation, by the couples, during the two surveys, which indicate a growing awareness among the couples to reduce their family size, which has changed from an average rate of 3 to 2 children couple, during this period. It implies that more couples in the state, have been slowly changing over to accept permanent birth control method, after attaining their desired level of fertility of two or less children. The background socio-economic factors and its changes are relevant in this context that it had helped the decision making process of couples with regard to the desired number of children. That is, majority of the couples have been able to limit their family size during the period of 15 years under study. To achieve the sustained decline in fertility, these background factors seem to be relevant. It can also be pointed out that the set back in the programme in some of the states in the country is due to absence of such changes in the background factors and lack of concerted efforts in that direction. However, the present study also indicates the relevance of conducting retrospective studies in those states where the performance in family planning programme is lagging behind the national average, which should incorporate changes in these background factors and achievements in fertility decline.

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