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## **Planning Propensity and Contraceptive Use among Married Women : An Analysis of Survey Data of Three Indian States**

**W**E define planning propensity as an acquired behavioural disposition to fashion one's own future according to forethought, prevision or a plan of action. It characterises individuals in varying degrees, logically extending from a state where a person acts always spontaneously without any forethought, leaving his/her entire life in the hands of 'fate' to a state where every move in one's life is calculated or planned beforehand in order to achieve a self-pre-determined goal. Admitting this, it is logical to hold that the family building activity in general, and the use of contraception in particular, will be influenced by his/her level or degree of planning propensity. In any case, this personality variable has attracted considerable attention in the West in the analysis of fertility and contraceptive behaviour patterns under a variety of nomenclatures such as planning disposition, planning orientation, tendency to plan, planning aspects of personality, orientation toward and belief in planning and organising as a way of moulding life, etc.<sup>1</sup> Miller, for example, suggests, "Planning aspects of personality become especially important in that part of the sexual career which exists within marriage, especially in connection with deciding what contraceptive method to use for the duration of the marriage, a decision which often has to be made following each pregnancy, and in deciding when to discontinue a

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1. See Whelpton and Kiser, 1952; Rainwater, 1960; Fawcett and Bornstein, 1973; Miller, 1972; Inkles, 1966; Kahl, 1968.

method before each pregnancy".<sup>2</sup> The evidence of numerous western studies, though not quite conclusive, suggests that there exists a significant difference in the use of birth control according to planning propensity as defined above.

In the case of India, this aspect of fertility or family planning analysis has been virtually neglected. There has been some discussion in India on differential acceptance of family planning according to several of the conventional stratification variables, including some indices of modernity. But specific consideration of planning propensity as a psychological variable even within the cluster of variables defining modernity, has been absent. It is in the light of this neglect that an exploratory attempt was made in our surveys on the Status of Women and Family Planning in Haryana, Tamil Nadu and Meghalaya to canvass four multiple choice questions for differentiating respondents according to their level of planning propensity. The present exercise attempts to relate planning propensity to the extent and efficacy of contraceptive use by the respondents.

### **The Data**

The data relate to a probability sample of 1872 married women of reproductive age drawn by using a multi-stage sampling frame. After the clusters, i.e., villages, or urban blocks, were selected by using the cumulative method with probability proportionate to the estimated number of eligible wives, the final selection of sample women was made from the universe for each selected village or urban block constructed by actual enumeration by using the procedure of linear systematic sampling. The data were collected by using structured interview schedules. The scope of data collection covered (i) identification and background, including communication media used; (ii) such aspects of status of woman as decision-making role, self-perceived status within home or community, social freedom; (iii) modernity, personal efficiency, planning propensity, husband-wife communication, attitudes towards family size and women's rights; (iv) knowledge of, attitude towards and practice of, family planning; and (v) pregnancy history, including contraception.

### **Some Characteristics of the Sample Women**

The total sample is divided in six strata : the three states and rural-urban strata in each state. The mean age of respondents is 31.5 years in urban Har-

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2. *Op. cit.*, p. 69-

yana and close to 30 in all other strata. The average number of children ever born is 5 for respondents in the age group 30-49 years and 3 for the respondents in the age-group 15-29. More than 70 per cent of rural respondents were working outside their home in Haryana and Meghalaya and 41.6 per cent of the rural respondents were in gainful employment in Tamil Nadu. The corresponding urban proportions were 17.8, 43.6 and 32.9 respectively. Illiteracy was widespread among, especially, rural women; the proportion of illiterates among rural respondents was 89.7, 76.8 and 62.1 per cent in Haryana, Tamil Nadu and Meghalaya respectively. The corresponding urban proportions were 42.8, 51.3 and 5.0 respectively. In terms of the number of modern utility items owned by the respondents, the position of Haryana was much better than of either Tamil Nadu or Meghalaya. Nearly 90 per cent of the respondents were Hindus in Haryana and Tamil Nadu and Christians in Meghalaya. Surprisingly, the data indicate that socio-economic status of women is comparatively lower in Meghalaya than in Haryana or Tamil Nadu. The respondents in Meghalaya, all belong to tribal communities, with matrilineal culture; bulk of them are Christians, and comparatively larger proportions of them are literate. Even so, they, especially those among them belonging to rural areas, reported a comparatively lower felt-status within both the home and the community.

## Methodology

Measurement of fertility and KAP indices, including decision-making power, attitude towards birth control, subjective efficiency and modernity follow the usual procedures adopted in KAP surveys but we have subjected them to more rigorous statistical testing.<sup>3</sup> For the present purpose, we may direct particular attention to our exploration of planning propensity. As mentioned earlier, we had canvassed four multiple choice questions in this regard. Three of these questions are projective in nature<sup>4</sup> and the last one is directly meant to obtain a self-rating about the extent to which the respondent generally planned ahead of time. The first question elicited a dichotomous response and each of the other three allowed for a three fold classification. The index of planning propensity (PPI) is formed by summing the scores of these four questions; accordingly the numerical value of the total score varied from 4 to 11, the progression along this range indicating an increase in planning propensity.

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3. For detailed discussion see Mukherjee, 1975a, 1976.

4. We have in this regard drawn upon Williamson, 1970.

This procedure of measuring planning propensity is in conformity with Guttman Scale in all the six strata, the coefficient of reproducibility (RHP) being around 0.90 in all strata. Another measure of scalability, Jackson Plus Percentage Ratio (PPR) reaches a value beyond 0.60 in most strata. The level of uncorrected internal consistency of the PPI shown by the procedure of dichotomising the four items for Guttman scaling ranged from 0.62 to 0.72 among the six strata, while the split-half reliability based on the differently weighted odd-even summed scores on the PP scale ranged from 0.65 to 0.85.

*Inter alia*, we may note the correlation of PPI with selected other variables covered by the survey. PPI is correlated negatively to fatalistic orientation toward fertility performance in all strata and positively to modernity and to subjective efficiency in all strata excepting urban Tamil Nadu. It is positively correlated to educational level in three strata., and also with the number of modern utility items possessed by the respondent in urban strata of Haryana and Meghalaya. It is notable that the mean value of the index is significantly higher for the urban than for the rural strata of these two states. It is also clear that the PPI is not significantly related to the age of respondent in any of the strata.

Apart from PPI, we may briefly refer to our estimates of unplanned pregnancies. These are based on responses to a direct question, namely, "You conceived—times. Out of this, how many times did you not plan the pregnancy?" In this regard, a pregnancy was also considered as planned if the respondent had reported that she had stopped using contraception in order to become pregnant or that while she had not used contraception, she wanted to become pregnant at the time she did.

### Statistical Treatment

After testing the normality of the -variables used here, product moment inter-correlations among the variables were obtained by using a computer program which had the option of pairwise deletion of missing observations. For assessing the importance of planning propensity as a possible determinant of contraceptive use, a few partial correlations and multiple correlations were computed. The partial correlation coefficient was also used as a measure of the closeness of relationship between contraceptive use and other KAP variables when planning propensity was held constant.

To summarise the relationship between unplanned pregnancy, and planning

propensity and modernity related variables considered jointly, the data were subjected to a Multiple Classification Analysis (MCA), which is a special form of dummy-variable multiple regression<sup>5</sup> and is applicable to situations when the independent variables, called predictors, are categorical-nominal, ordinal or interval, in nature. The MCA technique involves the usual assumption underlying regression analysis that the effects on the dependent variables of the various predictors are additive. However, it does not invoke any assumption about linearity of regression or the ordering of sub-categories of predictors. It is thus able to handle data even when a non-linear relationship obtains between the predictors and the dependent variable.<sup>6</sup> The particular advantage that the MCA technique has over the more conventional multiple regression analysis is its ability to identify and describe non-linear relationships in a way which is unambiguous.

## Results

The results of our exercise are given in six tables in the appendix. The analysis seeks to answer the following questions :

1. What kinds of frequency distributions are obtained for the individual items of the Planning Propensity Index (PPI) in relation to the family planning status of respondents? Do the responses on various items of PPI show statistically significant association with contraception use?

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5. The MCA Model treats categories of the independent variables as dummy variables in regression analysis using the least square approach that minimizes the squared deviation between  $Y_0$  (predicted unplanned pregnancy) and  $Y$  (actual unplanned pregnancy as reported), where  $Y$  is the linear equation;

$$Y_p = Y + a_i + b_j + c_k + d_l + e_m,$$

where  $Y$  is the grand mean,  $a_i$  is the net effect from category  $i$  of variable  $a$ ,  $b_j$  is the net effect from category  $j$  of variable  $b$ ,  $c_k$  is the net effect from category  $k$  of variable  $c$ ,  $d_l$  is the net effect from category  $l$  of variable  $d$ , and  $e_m$  is the net effect from category  $m$  of variable  $e$ . The weighted sum of the net effect for any variable is always constrained to be zero, i.e.,

$$\sum_{j=1} n_j b_j = 0 \text{ for the constrained } b \text{ variable.}$$

6- The measure used was the square root of correlation ratio or the eta statistic which gives an estimate of association of a single independent variable with the dependent variable under the analysis before any covariance adjustment. When adjustment is made for the covariates, the corresponding statistic becomes the MCA beta coefficient which gives an estimate of the association between the dependent and independent variable with all the other remaining predictors (covariates) held constant. If all the predictors are mutually uncorrelated, then eta will be equal to beta.

2. For each of the different strata, what is the zero order correlation between **PPI** and indices of contraceptive behaviour and fertility?
3. To what extent are the relationships between use of contraceptives and family planning knowledge and attitudes independent of planning propensity?
4. Do married women with differing levels of PPI vary significantly in respect of their unplanned pregnancies? What is the status of this relationship after adjusting for other modernity related variables by Multiple Classification Analysis?
5. What relationship is obtained in different strata between the planning propensity and unplanned pregnancies?
6. How is propensity correlated with the frequency of husband-wife communication regarding family planning? How effective are the two variables in predicting contraceptive adoption? What is the amount of increment in the variance of adoption so accounted for, when education is included in the predictor set?

### **Frequency Distribution of PP Items in Relation to F.P. Adoption**

Table 1 gives, for each stratum, the frequency distribution for the four individual questions for constructing the PPI. The first row in each panel shows the number of respondents (*N*) within each family planning adopter group who responded to the item in the keyed direction indicating their planning propensity. Thus, of the 505 Hiryana rural respondents who had never used any family planning method, 348 attached importance to planning, whereas among the 122 ever users the corresponding number with favourable disposition to planning was 97. A 2 X 2 chi-square test was run for each stratum and all the four items in order to see if there exists any association between felt importance of planning and contraceptive use; the values of chi-square statistic and their probability under the null hypothesis are given in each panel.

It is seen from the table that the hypothesized association between contraceptive use and planning propensity is clearly supported with respect to each of the four items for the urban stratum of Haryana. Here, about 50 per cent of the ever-users said that they actually make plans in advance, whereas the same response was made by only about one-third of the non-users. It is notable that the last self-rating item of PPI showed statistically significant association with

contraceptive use also in the urban stratum of Tamil Nadu and the rural **stratum** of Meghalaya. In the urban stratum of Meghalaya, responses to none of the four items reflect any significant association with contraceptive use.

In the rural stratum of both Haryana and Tamil Nadu, responses only on three items of PPI reflected the hypothesized association beyond chance. The pattern of differences in the responses to the items between the non-users and users is a highly consistent one in the first three strata. Thus, it may be inferred that the items of PPI can predict effectively the family planning status of married women, at least in Haryana and rural Tamil Nadu.

### **Family Planning Correlates of Planning Propensity**

Table 2 shows that planning propensity is significantly related to awareness and knowledge of family planning methods, attitude towards family planning, attitude towards small family norm in almost all the strata, although the percentage of total variance in planning propensity accounted for is nowhere high. The relationship between planning propensity and adoption of family planning is significant at the .01 level in three strata, confirming the hypothesis : Knowledge, attitude and practice (KAP) of family planning are likely to increase in Haryana and rural Tamil Nadu with increasing levels of planning propensity among married women.

Planning propensity showed statistically significant product-moment correlation with unplanned pregnancies in the hypothesized negative direction in four out of the six strata. Only in Tamil Nadu, the relationship is not significant at the .01 level.

In the rural and urban strata of Haryana, a significant relationship obtains between planning propensity of married woman and her power to make some family planning decisions. Here, a positive relationship exists between the respondent's planning propensity and her perception of present family size as large; a comparatively large proportion of those who had greater faith in planning admitted that they had a large family, irrespective of their actual family size. In the urban area of Haryana, planning propensity also showed a positive relationship with the ideal age of marriage; those who care for planning tend to favour a higher age of female marriage.

In the rural Tamil Nadu, planning propensity showed negative relationship

with intention to increase the family just for the sake of a son, as shown by responses to the question : "Suppose a couple has four or more daughters, but no sons. In your opinion should they keep on having more children till they get a son ?" The point-biserial correlation between responses to this question and the PPI was .17, which is statistically significant at .01 level. In the same stratum, planning propensity shows a negative correlation with the ideal number of sons as well as ideal number of daughters and a positive relationship with the frequency of husband-wife communication on family planning. In urban Tamil Nadu and Haryana, planning propensity is positively related to exposure to family planning news.

### Some Correlates of Contraceptive Use Independent of Planning Propensity

The preceding analysis supports each of the following bivariate hypotheses tested one at a time : (a) that married women with high planning propensity are interested to know about family planning methods; (b) that they have a favourable disposition towards small family norm; and (c) that they are more likely to use fertility control measures. But the question is whether there are factors affecting the adoption of contraception in the absence of high planning propensity. This has some policy relevance; for example, if favourable attitudes towards small family norm are strongly related to adoption of family planning independently of planning propensity, then a campaign to modify attitudes towards small family norm may claim a preference over the one of fostering planning propensity.

For this purpose, a number of first order partial correlations were computed to determine the intrinsic relationship between a number of family planning variables and the contraceptive use independent of planning propensity as shown in Table 3, which includes also the corresponding zero-order correlations for each stratum.

The table shows that in Haryana and urban Tamil Nadu, knowledge of family planning methods and attitude towards family planning are significantly related to contraceptive use even after controlling the effect of planning propensity. But in rural Tamil Nadu, these relationships are *not* independent of planning propensity. The same holds true for the family planning decision-making power. Thus, when the effect of variation in planning propensity is removed from both adoption status and family planning decision-making power, the gross correla-

tion between the two variables is reduced to a value, which is not statistically significant at the .01 level.

In both Haryana and Tamil Nadu, the correlation between family planning decision-making power of the wife and contraceptive use reduces substantially when the effect of planning propensity is controlled. This suggests that planning propensity presumably acts as a joint determinant of family planning decision-making power and the adoption status. The results for Meghalaya, however, suggest the hypothesis that "couples are likely to adopt contraception if the wives have high level of influence over decision-making with respect to family planning"<sup>7</sup> irrespective of whether or not they attach any importance to planning.

The partial correlation analysis also suggests that in Haryana, having a large enough sample, favourable attitude towards small family norm is not related to contraceptive adoption, independent of planning propensity; here it appears that attitude towards small family norm and contraceptive use are uncorrelated in different planning propensity categories of respondents,

### **Multiple Classification Analysis of Unplanned Pregnancies**

For an idea of the intrinsic relationship between the dependent variable of unplanned pregnancies and independent variable of planning propensity, keeping statistically constant other variables like the length of consummation, education, and other modernity related concomitant independent variables or covariates, four statistical measures for each item of the Independent variable were obtained in the Multiple Classification Analysis (MCA), as shown in Table 4.

The analysis of unplanned pregnancies reveals that in Haryana about 80 per cent of births which occurred to currently married women between 1947-1972 were reported as unplanned at that time or ever. The figure includes also a high percentage of timing failures — that is, births wanted eventually but not at the time they occurred. Since the determination of whether the conception was planned or not was based on responses to a direct question, there is no definite way of checking validity of the data. However, in Haryana, the number of unplanned pregnancies was found to correlate nearly 0.57 with age of the respondents, which compares satisfactorily with the findings of other studies on un-

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7. See Mukherjee, 1975b, p. 92.

planned pregnancies,<sup>8</sup> The corresponding correlations are, however, only 0.16 in Tamil Nadu and 0.10 in Meghalaya; it is possible that there is, for these states a considerable measure of under-reporting, especially in the case of older cohorts.

The adjusted mean number of unplanned pregnancies given in the table represents the grand mean based on the total sample size in a given stratum plus the net effect of the level of PPI arrived at after controlling its covariates. These adjusted means indicate whether women with high planning propensity experience a relatively smaller number of unplanned pregnancies than the grand mean and whether the differences in the mean number of unplanned pregnancies between different PPI groups are retained even after controlling other variables.

The 'net effect' of planning propensity on unplanned pregnancies, as shown in the table, is the category specific deviation after the effects of covariates are controlled. In other words, it is based on the relative difference between adjusted mean and the grand mean for a particular stratum and gives us an estimate of the effect of the different levels of planning propensity, after the confounding effects of other variables correlated with unplanned pregnancies and/or planning propensity are taken into account. For example, the length of consummation was found to correlate highly (about .60) with unplanned pregnancies in Haryana. In other states the corresponding correlations were not that high. Still, the effects of the length of consummation and other such covariates were statistically held constant in the MCA.

A perusal of the values of net effect in the table indicates that in almost all strata, married women with high planning propensity have a substantially lower number of unplanned pregnancies. According to the model used in the MCA, high level of planning propensity decreases unplanned pregnancies to the tune of 1.08 per respondent in rural Haryana, independently of the relation of unplanned pregnancy to duration of consummation, education and other modernity related attitudes. The results also suggest that 0.04 of the difference between the mean unplanned pregnancy of respondents with high planning propensity and the grand mean may be attributed to the differences in the covariates included in the analysis; that is, an estimate of the residual effect of the covariates.

Table 5 shows the eta and the MCA beta coefficients as measures of associa-

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8. See Miller, 1973; Steinhoff *et al.*, 1975.

tion between planning propensity and unplanned pregnancies in the different strata. These two statistics correspond to the curvilinear correlation coefficient and the partial beta of ordinary regression analysis. The eta coefficient summarizes the total effect of the predictor (here, planning propensity) and is analogous to the square root of the proportion of total variation in the dependent variable (unplanned pregnancies) explained by the predictor in one-way analysis of variance. The eta represents the gross effect of the predictor on the dependent variable, while the MCA beta coefficient represents the net effect of that predictor on the dependent variable when the other covariates in the analysis are statistically held constant.

Looking at the relationship between PPI and unplanned pregnancies in rural Haryana, we find that both the eta and corresponding beta are statistically significant. The variance ratio test yielding the *F* statistics, given in the table, was used as a test of significance of the difference of a correlation ratio from zero. The same test was also used as an approximate test of significance of MCA beta coefficient from zero, the only difference being in the reduced degrees of freedom for covariance adjustment. The *F* statistics show whether planning propensity as a predictor would explain a significant portion of variance in the dependent variable if the correlates under analysis were held statistically constant.

The results show that except in Tamil Nadu, the relationship between unplanned pregnancy and planning propensity is significant even after adjusting for the effects of the covariates. They clearly support the hypothesis that in Haryana and Meghalaya, planning propensity is strongly related to the number of pregnancies reported as unplanned.

The data also reveal that except in Meghalaya, the decision-making power of the wife regarding family planning matters bears a significant inverse correlation with the number of unplanned pregnancies. For example, in urban Haryana, the product-moment correlation was  $-0.41$ , and in rural Haryana, it was only  $-0.15$ , but still significant at the  $.01$  level. In rural Tamil Nadu, the corresponding value was  $-.10$  only ( $p < .05$ ). Computation of the partial correlations reveals that when the effect of planning propensity is controlled, the relationship between unplanned pregnancy and family planning decision-making power fades away in the rural strata of both Haryana and Tamil Nadu.

In order to investigate the prediction of contraceptive use from scores of the

PPI and the frequency of husband-wife communication regarding family planning, multiple correlation and beta weights were calculated separately for each stratum, as shown in Table 6. These multiple correlations indicate that the adoption status (criterion) can be predicted from the use of the above two variables alone to the extent of about 3 to 12 per cent of the variance in the criterion Variabki However, a comparison of the multiple correlations with the zero order correlations indicates that husband-wife communication variable alone predicts the adoption status quite well. When planning propensity is added in the regression equation, the percentage of predicted variance rises in most strata, but the increment is statistically significant<sup>9</sup> only in Haryana.

For the purpose of predicting family planning status, the contribution of the educational level attained by the respondents along with their planning propensity and the frequency of husband-wife discussion concerning family planning matters turned out to be quite small in most strata. Thus, for practical purposes, the educational status variable could be said as contributing a negligible amount to the efficacy of prediction of adoption status. The beta coefficient corresponding to educational level was also found to be almost zero in most cases. In two cases, the algebraic sign attached to the beta coefficient for education turned out to be negative, statistically not significant. Therefore, it can be inferred that the role of education as a determinant of family planning adoption is more often indirect. In the present case, the indirect effect of education is not sizable in five of the six strata. Only in urban Haryana, education can be said to function as an intervening variable, since nearly 1.27 per cent of the explained variation in adoption status is accounted for by the effects of husband-wife communication and planning propensity *through* education.

### Planning Propensity and KAP Variables

The finding of the present study demonstrates that the higher the planning

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9. Significance was judged by examining the increment to the explained variance resulting from the addition of Planning propensity predictor in the earlier two variable regression equation representing husband-wife communication and education as predictors. Statistical significance was ascertained using the following *F* test:

$$F = \frac{(R_3^2 - R_2^2)/3}{(1 - R_3^2)/(N-3-2-1)}$$

with df = 3 and N-3-2-1.

propensity of a married woman, the higher is her level of awareness and knowledge about various contraceptive methods. Planning propensity appears to be related also to attitude towards family planning and towards family norm. However, contraceptive use is related to planning propensity only in Haryana and in rural Tamil Nadu. In Meghalaya, the level of family planning adoption is very poor and it is no wonder that contraceptive use showed almost negligible correlation with planning propensity as with other variables. In urban Tamil Nadu also, restriction of range in the adoption variable appears to be the main reason for its failure to correlate with planning propensity. In any case, in the latter three strata, the adoption status of the respondent cannot be predicted from the level of her PPL -

To fully appreciate the above finding, we may first note that planning propensity represents a temporal orientation geared to the future. Those who are presently using contraception could therefore be expected to show an essentially future oriented approach to life, characterised by a higher planning propensity and a longer time perspective as compared to the non-users. The converse of this may not be necessarily true because if the contraceptive facilities are not readily available and/or if the use of contraceptives is a kind of taboo in a particular social setting, then future time orientation in itself does not necessarily encourage the individual to practice effective contraception. If the individual, for example, believes that his/her goal attainment (effective birth control) is dependent on resources, or is contingent upon the active cooperation of the spouse or on acts of nature or God, then planning propensity alone will not be of much use in predicting the adoption status.

The partial correlation analysis of data for Meghalaya suggests that in this state, it is the decision-making power of the wife which is more important than planning propensity so far as the prediction of adoption status is concerned. The likelihood of adoption of contraception appears to increase a good deal in Meghalaya as a result of wife's active partnership in deciding about the size of the family, spacing and the like. However, almost 75 per cent of the respondents in rural Meghalaya and about 81 per cent in urban Meghalaya do not take any decision on matters such as (a) when to have the first child after marriage, and (&) how many children to have.<sup>10</sup> Acceptance of contraception was much more frequent in the case of those eligible couples who decided jointly

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10. See Mukherjee, 1975a.

about the family size, independent of whether or not the wife attached importance to planning.

On the other hand, in Haryana and rural Tamil Nadu, once the effect of planning propensity was controlled, the relationship between family planning decision-making power of the wife and the use of contraception becomes statistically *non-significant*. Thus, while in the case of married women of Meghalaya, their decision-making power or their ability to control the resources is at the core of family planning adoption, for married women from Haryana, it is their planning propensity that encourages them to discuss the topic of family size with the husband and to reach some agreement on the future line of action. Planning propensity might also motivate them to know about the various contraceptives, which motivation is finally translated into actual adoption of contraception.

In rural Tamil Nadu, planning propensity also seems to be influencing "the norms about family size".<sup>11</sup> This is shown by the fact that here married women with high planning propensity stated a comparatively lower number of children as their ideal. Their frequency of family planning communication with their husbands is comparatively higher and they also expressed their intention of not increasing the size of the family just for the sake of a son. In rural Meghalaya also, planning propensity correlated negatively with son-preference. Further, married women of urban Haryana showed a positive correlation between planning propensity and the ideal age of marriage of their daughters.

### Planning Propensity and Unplanned Pregnancies

A major focus of this paper is on the relationship between planning propensity and the incidence of unplanned pregnancies. Our results indicate that married women with higher planning propensity report comparatively smaller number of unplanned pregnancies. In Haryana and Meghalaya, the above relationship holds good even after the effects of length of consummation, education and modernity related attitudes are controlled. As a matter of fact, the removal of influence of the above correlates slightly accentuated the relationship between planning propensity and unplanned pregnancies in Meghalaya.

In almost all strata, the reported number of unplanned pregnancies correlated significantly with the total number of pregnancies. However, in rural Tamil Nadu the product-moment correlation between unplanned pregnancy and the

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11. See Davis and Blake, 1956.

number of living daughters turned out to be 0.62 and it appears that in this stratum, a distinct son-preference is the main factor underlying the reported incidence of unplanned pregnancy. The higher is the number of failures to bear a son, the larger is the number of unplanned pregnancies. The value of the correlation between the number of living sons and number of unplanned pregnancies in rural Tamil Nadu is found to be 0.44 only. No variable, other than the number of living daughters, predicted so well the number of unplanned pregnancies in rural Tamil Nadu.

In urban Tamil Nadu, the number of living sons and the number of legal rights which the respondent knew turned out to be major correlates of unplanned pregnancies, in addition to the total number of pregnancies. The correlation between the number of living sons and the number of unplanned pregnancies was 0.52 as against the correlation of 0.38 between the latter and the number of living daughters. The product-moment correlation was around  $-0.30$  between unplanned pregnancies and the number of laws known. Thus, married women in urban Tamil Nadu who were aware of such fundamental rights as the right for legal abortion, right to divorce, right to remarry, equal right in inheritance, etc. reported a smaller number of unplanned pregnancies as compared to others, irrespective of whether they attached any importance to planning.<sup>12</sup>

The fact that the relationship between family planning decision-making power and the adoption of family planning tends to fade away in Haryana and Tamil Nadu, when planning propensity is statistically held constant, provides grounds for the necessary inclusion of planning propensity and other personality related variables in theoretical models of risk-taking in general and risk-taking in contraceptive behaviour in particular. Theories of risk-taking that ignore such variables are grossly inadequate as models of prediction.

Taken as a group, the married women of Haryana reported a larger number of unplanned pregnancies as compared to those belonging to Tamil Nadu. And yet their mean PPI was not significantly lower than those of married women from Tamil Nadu. Thus, the low reporting of unplanned pregnancies by married women of Tamil Nadu may be due more to their cultural norms of having a traditionally large family than to their individual planning propensities. For this reason, the correlations between planning propensity and unplanned preg-

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12. See Mukerjee, 1975a.

nancies, although in the expected direction, are weak and statistically non-significant in both the strata of Tamil Nadu.

The relationship between planning propensity and unplanned pregnancy is likely to be much more complex than what has been demonstrated for Haryana. The data for the rural Tamil Nadu clearly indicate that among wives who live in communities guided by values emphasising sex-preference, unplanned pregnancies will continue to remain unchecked in spite of the high planning propensities.

### **Planning Propensity and Fertility**

Since planning propensity did not show any significant correlation with fertility, it appears that an unplanned family tends to be large, even if the wife shows a very high planning propensity. It appears that the tradition of giving births to five children is still deep-rooted in the rural areas of Haryana, Tamil Nadu and Meghalaya and is independent of modernity, female employment status and planning propensity. Only when wives in these strata exerted influence and became equal partners-with husbands in deciding about family size and spacing, as in Meghalaya, they would tend, more often than not, to adopt contraception. Although a positive relationship was found in almost all strata between adoption status and fertility in the present survey, this can not mean that contraceptive practice leads to increased fertility. It only suggests that those having large families adopt more often than others, some methods of family limitation. This does not also mean that effective adoption has no effect on fertility. Family planning adoption could be expected to predict *only future*, and not explain the **past**, fertility. Thus, although planning propensity is not found here to be related to fertility, it could be held to have some indirect effects through adoption of contraceptives, as shown by the data for Haryana. In other words, family planning is one of the major intervening variables between planning propensity and fertility. One must appreciate the fact that planning propensity does not emerge out of the blue. It is a product of socialization including the position in the social stratification system, the cultural norms associated with planning and other personal characteristics. Planning propensity is only one of the intervening variables through which other factors operate to affect fertility.

### **Some Implications of the Findings**

Some interesting implications of the present study emerge when the adoption

of family planning and the decrease of unplanned pregnancies are considered in conjunction with the importance which married women attach to planning things in advance. Some of these implications are listed below :

1. The PPI can be used as a screening device to determine the high risk groups for family planning activities, which would be helpful in the formulation of a better strategy for family planning services.
2. The high incidence of unplanned pregnancies revealed by the survey is an indication of the great demand for improved family planning services. Real improvement in the control of unplanned pregnancies is likely to lead to substantial decline in fertility.
3. The present research has not only considered the usual static variables like education and employment status of the wife but also a few dynamic, independent and intervening variables like the decision-making power of the wife, planning propensity, husband-wife communication. These variables appear to have 'potential utility for application in communication strategies for family planning diffusion'.<sup>13</sup>
4. The present study represents a beginning towards an explicit test of the explanatory power of the above-noted dynamic variables in predicting adoption of family planning and incidence of unplanned pregnancies. Our study demonstrates the utility of using psychological variables and family dynamics variables as predictors of unplanned pregnancies. We would, therefore, advocate that future analyses should concentrate on the study of interactions between individual and situation variables in predicting unplanned pregnancies.
5. It is expected that with improvement in the socio-economic situation and women's decision-making power, they would improve their level of planning propensity leading to a decrease in unplanned pregnancies.
6. The present study shows that family planning campaigns directed towards enhancing married women's knowledge of contraceptives and their attitudes towards the family planning programme are likely to accelerate the incidence of contraceptive adoption in Haryana independently of planning propensity. But this is not true of the rural Tamil Nadu. In the latter case, messages emphasizing the importance of planning things ahead of time could be usefully added to the usual programme inputs. Even in Haryana, a narrow programme based on medico-technical infor-

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13. See Rogers, 1973 p. 371.

mation and contraceptive distribution is not likely to accelerate the process of family planning adoption just through diffusion of small family norm in the absence of married women's high planning propensity. It appears that the future fertility of population in States like Haryana, Tamil Nadu and Meghalaya may be in part a consequence of planning propensity among married women, whose lack in conjunction with other inhibiting attitudes and social factors appear to be at the root of unplanned pregnancies.

7. To generalize the findings of the present study limited to only three states, to whole of India is unwarranted. Even so, it appears reasonable to take into consideration planning propensity as an intervening variable in future fertility research,

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## Appendix

TABLE 1-FREQUENCY (N) AND PROPORTION (PROP.) OF RESPONDENTS AMONG EVER-USERS AND NON-USERS OF FAMILY PLANNING WHO RESPONDED IN THE KEYED DIRECTION TO VARIOUS ITEMS OF PLANNING PROPENSITY SCALE INDICATING THEIR APPROVAL FOR PLANFULNESS AND RESULTS OF CHI-SQUARE TEST OF ASSOCIATION : BY STATE AND MAJOR STRATA

Item in the Planning Propensity Scale (PPS)	Statistic	Haryana		Tamil Nadu				Meghalaya					
		Rural		Urban		Rural		Urban		Rural		Urban	
		Non (505)	Ever (122)	Non (106)	Ever (119)	Non (345)	Ever (54)	Non (68)	Ever (8)	Non (428)	Ever (7)	Non (93)	Ever (8)
I know a man who does not worry (think) about what he will need to <i>do</i> in the days ahead; he just counts on being able to do each task as it comes up. What would you feel about this man ? Or : what kind of man would you say he is ? Do you approve of what he does ?	N	348	97	75	98	279	46	59	7	277	5	70	8
	Prop.	.69	.74	.71	.82	.81	.85	.87	.88	.65	.71	.75	1.00
	$\chi^2_1$	5.37*		4.24*		0.58		0.24		0.01		1.35	
Probability	.03		.04		.50		.70		.90		.25		
In comparison with a man who just takes things as they are, do you think that a man who plans and arranges things in advance will have the same number of difficulties and problems or less?	N	167	59	35	62	65	15	15	2	157	2	44	4
	Prop.	.33	.48	.33	.52	.19	.28	.22	.25	.37	.29	.47	.50
	$\chi^2_1$	9.93*		8.32*		5.39*		0.05		0.01		0.05	
Probability	.005		.005		.03		.85		.90		.85		
People are different in how much they like to plan and arrange their affairs ( <i>lives</i> ) in advance. Would you say that you yourself prefer planning ?	N	188	60	48	70	62	17	16	2	183	3	50	6
	Prop.	.37	.49	.45	.59	.17	.32	.24	.25	.43	.43	.54	.75
	$\chi^2_1$	5.89*		4.12*		4.15*		0.12		.02		.62	
Probability	.02		.05		.05		.05		.90		.40		

<b>In general, do you make plans in advance or do you act on the spur of the moment?</b>				N	169	48	36	60	66	13	10	8	179	6	48	6
	$\chi^2_1$	1.50	6.20*	Prop.	.34	.39	.33	.50	.19	.24	.15	3.00	.42	.86	.52	.75
				0.67	13.93*	6.30*		0.82								
				Probability		.25		.015		.40		.001		.015		.40

The number in the parenthesis in this row refers to the number of non-users and over-users of family planning in various study areas.

\*Statistically significant beyond the .05 level under the hypothesis of no association.

TABLE 2—PRODUCT-MOMENT CORRELATIONS BETWEEN RESPONDENTS\*  
**PLANNING PROPENSITY INDEX AND VARIOUS KAP AND FERTILITY**  
**RELATED VARIABLES : BY STATE AND MAJOR STRATA**

<i>KAP and Fertility Variables</i>	<i>Haryana</i>		<i>Tamil Nadu</i>		<i>Meghalaya</i>	
	<i>Rural</i> ( <i>N=627</i> )	<i>Urban</i> ( <i>N=225</i> )	<i>Rural</i> ( <i>N=402</i> )	<i>Urban</i> ( <i>N=76</i> )	<i>Rural</i> ( <i>N=435</i> )	<i>Urban</i> ( <i>N=100</i> )
Adoption of F. P.	0.22*	0.23*	0.16*	0.15	0.04	0.06
P.P. Awareness Index	0.09**	0.21*	0.25*	0.08	0.38*	0.15
P.P. Knowledge Index	0.15*	0.21*	0.17*	0.05	0.57*	0.49*
Attitude towards Family Planning	0.21*	0.29*	0.38*	0.37*	0.50*	0.32*
Attitudes towards Small Family	0.13*	0.26*	0.40*	0.32*	0.46*	0.29*
Pearl Index of Fertility	-0.06	-0.09	-0.05	-0.08	-0.09	-0.04
Number of Pregnancies	-0.05	-0.08	0.03	-0.01	-0.04	0.05
Number of Living Sons	0.00	-0.01	0.04	-0.16	0.03	0.07
No. of Unplanned Pregnancies	-0.20*	-0.32*	-0.13**	-0.06	-0.20*	-0.29*
P.P. Decision Making Power	0.27*	0.25*	0.01	-0.02	0.05	0.04
Perception of Present Family size as large	0.10*	0.13**	0.01	-0.04	0.13**	0.03
Ideal Age of Daughter's Marriage	0.07	0.21	0.12	0.09	-0.10	-0.10
Not willing to increase Family size for son	0.05	0.04	0.20*	0.00	0.35*	-0.03
Ideal Number of Sons	-0.05	-0.03	-0.17*	0.00	-0.06	-0.15
Ideal Number of Daughters	-0.01	-0.01	-0.17*	-0.06	0.03	0.13
Rated Freq. of F.P. Discussion with Husband	0.07	0.10	0.16*	0.06	-0.01	0.01
F.P. News Ever Read	0.14*	0.32*	0.11	0.29*	0.04	0.19

\*Significant from a zero correlation at the 0.01 level.

\*\*Significant from a zero correlation at the 0.05 level.

TABLE 3-CORRELATION BETWEEN ADOPTION OF CONTRACEPTION AND SELECTED FAMILY PLANNING VARIABLES BEFORE AND AFTER CONTROLLING THE EFFECT OF PLANNING PROPENSITY: BY STATE AND MAJOR STRATA

Family Planning Variables	Haryana				Tamil Nadu				Meghalaya			
	Rural		Urban		Rural		Urban		Rural		Urban	
	Zero + Part.***	Zero	Part.	Part.	Zero- + Part.+	Zero+	Part.	Part.	Zero	Part+	Zero+Part+	Part+
Knowledge of F.P. Methods	.23*	.20*	.38*	.35*	.13*	.16	.29*	.20*	.05	.03	.01	-.02
P.P. Attitude	.23*	.19*	.39*	.35*	.18*	.13	.27*	.23*	.10	.09	.11	.10
Attitude to Small Family Norm	.11*	.08	.21*	.16	.09	.03	.16	.12	.08	.07	.18	.17
F-P. Decision-Making Power	.18*	.11	.20*	.11	.24*	.20	.16	.11	.40*	.40*	.27*	.26*

The Coefficients shown in this column are Hero order Correlations between adoption of contraception and various family planning variables.

\*The Coefficients shown in this column are the first order partial correlations between adoption of contraception and various family planning variables after eliminating in each case the effect of planning propensity.

•Statistically significant at the .01 level.

**TABLE 4-RESULTS OF MULTIPLE CLASSIFICATION ANALYSIS SHOWING GRAND MEAN, GROUP MEAN, GROSS DEVIATION AND ADJUSTED MEAN NUMBER OF UNPLANNED PREGNANCIES AMONG MARRIED WOMEN CLASSIFIED BY THEIR PPI: BY STATES AND MAJOR STRATA**

Statistic	Haryana						Tamil Nadu						Meghalaya					
	Rural (N=620)			Urban (N=225)			Rural (N=399)			Urban (N=76)			Rural (N=434)			Urban (N=100)		
	Low	Med.	High	Low	Med.	High	Low	Med.	High	Low	Med.	High	Low	Med.	High	Low	Med.	High
Sample Size	142	200	278	40	53	120	144	121	134	20	30	26	166	80	188	20	24	56
% Group Mean	5.18	3.92	3.58	4.19	3.50	2.37	2.40	1.64	1.51	2.73	2.01	1.62	1.33	.85	.44	1.20	.40	.23
Gross Dev*	1.12	-0.14	-0.48	1.22	0.53	-0.60	0.53	-0.23	-0.36	0.66	-0.06	-0.45	0.49	.01	-0.40	0.73	-0.07	-.24
Adjust. Mean**	5.14	3.96	3.58	4.17	3.47	2.35	2.37	1.61	1.57	2.77	2.07	1.53	1.34	.74	.44	1.27	.28	.27
Net Effect	+ 1.08	-0.10	-0.48	1.20	0.50	-0.62	0.50	-0.26	-0.30	0.70	.00	-0.54	0.50	-0.10	-0.40	0.80	-0.19	-.20
Residual Effect	0.04	-0.04	0.00	0.02	0.03	0.02	0.03	0.03	-0.06	-0.04	-0.06	0.09	-0.01	.11	.00	-0.07	-.12	-.04
Grand Mean		4.06			2.97			1.87			2.07			0.84			0.47	
Stand. Devn.***		4.22			3.00			3.30			2.74			2.42			1.43	

\*The Gross Deviation (difference between Group Mean and the Grand Mean) is decomposed **into** : Net effect -f **Residual** Effect. The net effect is the contribution from being **in** the particular category (group) of Planning disposition after adjustment for the distribution of the respondents in the category on all other classificatory (independent) variables in the analysis. The residual effect is the difference between the gross deviation and the Net effect, representing the contribution from the distribution of the category respondents on all the other variables included in the analysis.

\*\*The Adjusted means (A.M.) shown in this column were obtained through the use of Multiple Classification Analysis. Adjusted means represent the grand mean plus the net effects from the characteristic under classification after adjustment for the net effects of all other remaining characteristics under analysis. The total sample size appear in parentheses.

+ If the net effect (adjusted deviation) remains as high as the corresponding gross deviation, then it may be inferred that the remaining independent variables in the analysis have very little moderating effect on the relationship between dependent variable and the classificatory variable.

\*\*\*Square-root of the biased variance,

TABLE 5—RESULTS OF MULTIPLE CLASSIFICATION ANALYSIS SHOWING UNADJUSTED SQUARE-ROOT OF EXPLAINED VARIANCE (ETA) AND ADJUSTED (PARTIAL BETA) MEASURES OF RELATIONSHIP BETWEEN UNPLANNED PREGNANCY AND PLANNING PROPENSITY ALONG WITH THEIR CORRESPONDING F STATISTIC BY STATE AND MAJOR STRATA

State	Strata	Sample Size (N)	No. of Groups (k)	Unadjusted		Adjusted	
				Eta+	F MCA Beta <sup>+</sup>	F	F
Haryana	Rural	620	3	0.149	6.85*	0.145	6.61*
Haryana	Urban	223	3	0.243	6.90*	0.240	6.74*
Tamil Nadu	Rural	399	3	0.121	2.93	0.119	2.90
Tamil Nadu	Urban	76	3	0.067	0.19	0.175	1.13
Meghalaya	Rural	434	3	0.165	6.30*	0.170	6.60*
Meghalaya	Urban	100	3	0.270	3.86	0.278	4.08**

+ In order to test the significance of a correlation ratio,  $(\text{Eta})^2$ , the Fatalistic was obtained by the formula

$$F_{k, N-k} = \frac{\text{Eta}^2}{n}$$

where  $n^2$  is the eta square,  $N$  is the total sample size and  $k$  is the number of classificatory groups, i.e., number of arrays or categories used for classifying the dependent variable (here, unplanned pregnancies). This Fratio has  $(k - 1)$  d.f. associated with the numerator and  $(N - k)$  d.f. associated with the denominator.

\*The MCA beta coefficients shown here reflect the association between unplanned pregnancy and planfulness after adjusting for the influence of education, length of consummation, modernity value, subjective efficacy, and family planning decision making.

•Statistically significant at the .01 level.

\*\*Statistically significant at the .05 level.

TABLE 6-BETA WEIGHTS (PARTIAL REGRESSION COEFFICIENTS IN STANDARD FORM) AND SQUARED MULTIPLE CORRELATIONS ( $R^2$ ) BETWEEN THREE PREDICTORS + AND FAMILY PLANNING ADOPTION STATUS : BY STATE AND MAJOR STRATA

Study Area	N	Beta Weights $R^2$		$r_{12}$	Beta Weights		R1	Beta Weights			$R^2_3$
		HWC	PP		HWC	ED		HWC	PP	ED	
Haryana Rural	627	.236	.203	.1037*	.246	.033	.0636*	.236	.201	.008	.1038*
Haryana Urban	225	.270	.203	.1249*	.278	.042	.0860*	.272	.207	-.001	-.1266*
Tamil Nadu Rural	402	.179	.131	.0570*	.204	-.023	.0410*	.180	.134	-.020	.0570*
Tamil Nadu Urban	76	.091	.145	.0308	.010	.010	.0200	.095	.123	.055	.0336
Meghalaya Rural	435	.220	.042	.0492*	.222	-.013	.0485*	.217	.050	-.014	.0500*
Meghalaya Urban	100	.280	.061	.0821**	.078	.004	.0813**	.278	.060	.041	.0843

tThe three independent variables forming three sets of predictors were : Husband-Wife Communication (HWC), Planning Propensity (PP) and Educational level of Respondent (ED).

\*Multiple correlation significant from zero at the .01 level.

\*\*Multiple correlation significant from zero at the .05 level.