



Working Paper



FAMILY PLANNING, PLACE AND
PERSONALITY PROFILES

By

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Family Planning, Place and Personality Profiles

Mirza S. Saiyadain

This study examines the relationship between awareness, attitude and practice of family planning of people who belong to top and bottom performing districts of a state on one hand and on the other with seven biographic characteristics. Data for this study came from 1200 married respondents (600 from each district). The results showed that the top district is top because the respondents of this district have relatively better awareness more supportive attitude and higher practice of family planning. While the relationship between age, age at the time of marriage of self and spouse, number of children, education of self and spouse and income showed generally significant association with awareness, attitude and practice. Districtwise correlations showed different pattern.

Introduction*

This is a comparative study of the awareness, attitude and practice of family planning of married respondents from two districts - top and the bottom on family planning performance. It also explores the profiles of those respondents who show variance in awareness, attitude and practice of family planning programme.

For purposes of identifying top and bottom, all the districts of the State were rank ordered on the basis of couple protection rate (CPR) and acceptance of various methods of family planning. For both these indices data for last five years was collected as it was felt that for attitude/behaviour to stabilize extended period of exposure may be necessary.

The data for (CPR) for the last five years were added and divided by five to get a single index of performance. Similarly data for practice of various methods for last five years was also added and divided by five to get a single index of practice. However in adding practice data conversion was made to a single index by equating number of IUDs, condoms and oral pills to sterilization by using following conversion table.

1 Sterilisation	=	1 Sterilization
3 IUD	=	1 Sterilization
9 OP	=	1 Sterilization
18 CC	=	1 Sterilization

* This report is based on some of the data collected for a project sponsored by Gujarat Government.

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The single indicator thus generated helped to rank order the districts. A simple rank order coefficient estimate suggested a high consistency between the two indices ($r=.87$, $P<.01$). This analysis yielded districts AAA as the top and ZZZ as bottom performers in the State.

Data Collection

The sample consisted of 1200 married respondents randomly selected from the two districts (600 from each district). Data was collected by a team of investigators (both male and female) who were intensively trained in interviewing. The investigators individually interviewed each respondent in as much privacy as was possible in the social surroundings. During the period of data collection, the investigators stayed in the target areas to help them develop rapport with potential respondents.

For purposes of collecting data a semi structured interview schedule was developed. It was translated into local language. Subsequently this version was given to a group of experts who had competence in both English and local language and were requested to translate the local language version in English to check the parity in two versions. The final version in local language was pretested on a representative sample for debugging and was administered to 1200 married respondents.

Sample Characteristics

The characteristics of the samples from two districts are presented in Table-1. The results in Table-1 suggest that the

Table-1

Sample Characteristics

Factors	Districts		t-test
	AAA	ZZZ	
1. AGEOR			
M	31.1	30.8	
SD	7.27	6.94	n.s.
2. AGMSE			
M	18.5	18.4	
SD	4.18	3.26	n.s.
3. AGMSP			
M	18.9	18.9	
SD	4.82	3.27	n.s.
4. CHILD			
M	3.1	3.5	
SD	1.74	1.82	n.s.
5. EDUSE			
M	8.2	7.9	
SD	3.57	3.51	n.s.
6. EDUSP			
M	8.9	8.2	
SD	3.91	3.99	n.s.
7. INCOM			
M	431.8	375.2	
SD	330.6	397.12	n.s.

AGEOR = Age of respondent; AGMSE = age at the time of marriage (respondent); AGMSP = age at the time of marriage (spouse); CHILD = child born; EDUSE = years of formal education (respondent); EDUSP = years of formal education (spouse); INCOM = monthly income.

two samples are comparable on all characteristics. None of the averages on seven biographic characteristics are statistically significant. Seven biographic factors for the total sample were intercorrelated (See Table-2). All of them intercorrelate significantly with each other except age of respondents with age at the time of marriage (self) and number of children with income.

Results

Results are presented separately for awareness, attitude and practice of family planning. The results, not only examine the differences between districts but also the profile of those who vary in their degree of awareness, attitude and practice of family planning on seven biographic factors presented in Table-1. In identifying the profiles only statistically significant differences are highlighted.

Awareness

Awareness of family planning programme is a precursor to subsequent practice. For purpose of this study, awareness was examined in relation to programme awareness, awareness of programme message and methods and discussion on family planning with spouse. In the following paragraphs an attempt is made to present results on awareness according to these themes.

Programme Awareness: As far as programme awareness is concerned, the campaign for the awareness of family planning programme in two districts started more or the same time. However only 38.8% respondents from ZZZ district and 65.5% respondents of AAA

Table-2
Intercorrelations among factors
(Total Sample)

Factors	r	df	p
AGEOR-AGMSE	.057	1196	NS
AGEOR-AGMSP	-.063	1194	*
AGEOR-CHILD	.553	1112	**
AGEOR-EDUSE	-.146	748	*
AGEOR-EDUSP	-.099	649	*
AGEOR-INCOM	.170	711	**
AGMSE-AGMSP	.298	1194	**
AGMSE-CHILD	-.217	1111	**
AGMSE-EDUSE	.315	747	**
AGMSE-EDUSP	.110	649	*
AGMSE-INCOM	.239	710	**
AGMSP-CHILD	-.132	1109	**
AGMSP-EDISE	.174	746	**
AGMSP-EDISP	.403	648	**
AGMSP-INCOM	.135	709	**
CHILD-EDUSE	-.256	684	**
CHILD-EDUSP	-.152	594	**
CHILD-INCOM	-.083	659	NS
EDUSE-EDUSP	.396	507	**
EDUSE-INCOM	.417	432	**
EDUSP-INCOM	.350	258	**

r=Value of coefficient; df=degrees of freedom;
P=Level of significance, NS=Not Significant,
*=P<.05, **=P<.01

district indicated awareness of the family planning programme. The respondents from ZZZ district seemed to have become aware of it more recently (M=175 days) as compared to those belonging to AAA district (M=500 days). The difference between the two averages is statistically significant ($t=4.05$; $df=622$; $P<.01$). Analysis by other biographic variables showed that only monthly income made the difference ($t=2.07$; $df=377$; $P<.05$) suggesting thereby that respondents from AAA district had more income (M=497) compared to their counterparts from ZZZ district (M=374). Subsequent analysis using correlation technique showed that for the total sample, the higher was the age of spouse at the time of marriage the greater was programme awareness ($r=.246$; $df=625$; $P<.01$). Analysis by district showed significant values of coefficient between programme awareness and the education of spouse ($r=.284$; $df=94$; $P<.01$) in ZZZ district. This is the only value which is significant in ZZZ district suggesting thereby that the more the years of formal education among the spouses of respondents the greater is the programme awareness. As far as AAA district is concerned, programme awareness correlated significantly with age ($r=.152$, $df=391$; $P<.01$) and the age of spouse at the time of marriage ($r=.273$; $df=390$; $P<.01$). What is perhaps more interesting to note is that the higher the monthly income, the lower was the programme awareness among the respondents of AAA district ($r=-.201$ $df= 204$; $P<.01$).

Message Awareness: Awareness of family planning message is not as global as has been accepted generally. While 90.16% of the respondents from AAA district had seen/heard of family planning message, the percentage for ZZZ district is 78.22. The results of Chi-square test revealed a significant value ($\chi^2 = 32.09$; $df=1$; $P < .01$). The sources of the awareness of family planning messages were many. The percentage of respondents and the sources of information are presented in Table-3. The data in Table-3 suggests that on the whole a larger number of respondents from AAA district had been exposed to family planning messages by multiple media than by those from ZZZ district. It also suggested that mass media seems to have been more effective than person to person communication in AAA district while the reverse is more true for those from ZZZ district.

District-wise and awareness-wise analysis indicated both district as well as awareness effect as far as age at the time of marriage of respondents is concerned. Respondents who belonged to AAA district and were aware of message married relatively late ($M=18.5$) as compared to those from ZZZ district ($M=18.4$). The difference in means marginally crossed the conventional level of significance required for the degrees of freedom available ($F=4.33$; $df 1/1192$; $P < .05$). What is perhaps more useful to learn is that those who were aware of message, irrespective of district, married much later ($M=18.8$) as compared to those who showed ignorance of the message ($M=16.8$). The difference is

Table-3

Sources of information for message awareness
(Percentages)

Sources	AAA	ZZZ
<u>Mass Media</u>		
Bhavai	32.3	8.3
Cinema	42.5	26.0
Exhibition	8.8	2.6
Folders	31.0	16.8
Mela	7.3	3.2
Natak	27.8	5.2
Newspapers	49.0	27.8
OTC	3.7	1.5
Pamphlets	47.0	15.0
Periodicals	38.3	22.3
Posters	55.5	41.5
Radio	60.0	35.8
Slide show	13.5	3.6
T.V.	37.8	18.3
<u>Person to Person</u>		
Dais	9.6	11.2
Doctor	55.5	41.2
Friend	24.8	19.2
Health Worker	56.8	43.2
Neighbour	18.2	17.0
Relative	20.2	17.7
Talati	2.3	0.3
Village Head	17.7	5.6
Village Health Guide	60.5	53.3
Village Postmaster	21.0	7.8
Village Teacher	18.7	7.6

Totals do not add to 100 because of multiple responses.

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statistically significant ($F=52.48$; $df=1/1192$; $P<.01$). The interaction effect is also significant ($F=5.89$; $df=1/1192$; $P<.05$) indicating that respondents from AAA district without awareness married much younger ($M=15.8$). While respondents from the ZZZ district with awareness married much older ($M=18.7$).

Further the results showed that those who were aware of message, irrespective of district married older mates ($M=19.1$) as compared to those who are not aware ($M=17.6$). The difference is significant ($F=32.09$; $df=1/1190$; $P<.01$). District-wise analysis reveals that respondents of AAA district who were unaware of message married relatively more younger mates ($M=16.1$) as compared to those from ZZZ district ($M=18.3$). The difference is significant ($F=10.50$; $df=1/1190$; $P<.01$). The interaction effect suggests a wider gap in the ages of mates at the time of marriage for AAA district respondents (unaware $M=16.1$, aware $M=19.2$) as compared to those from ZZZ district (unaware $M=18.3$; aware $M=19.1$). This variation is also significant ($F=11.48$; $df=1/1190$; $P<.01$).

Irrespective of district, those who were aware of message seems to have lesser average number of children ($M=3.2$) as compared to those who were unaware of message ($M=3.6$). The difference is significant ($F=6.76$; $df=1/1108$; $P<.01$). Similarly, irrespective of district those who were aware, seemed to have more years of formal education ($M=8.3$) than those without awareness ($M=5.0$). The F-value is also significant ($F=23.38$; $df=1/746$; $P<.01$). Their spouses also had more years of formal education ($M=8.9$) as

compared to those who were unaware (M=5.4). This difference is also statistically significant (F=33.79; df=1/647; P<.01). Income by awareness analysis reveals a significant F-value (F=46.65; df=1/709; P<.01) signifying that those irrespective of district, who were aware of family planning message have significantly higher monthly income (M=446) as compared to those who were not aware (M=200).

Methods Awareness: A larger percentage of respondents were aware of various methods of family planning in district AAA (88.3%) as compared to those in district ZZZ (76.9%). The value of Chi-Square is significant ($\chi^2 = 28.77$; df=1, P< .01). The percentage of respondents and methods identified by them are presented below:

<u>Methods</u>	<u>AAA</u>	<u>ZZZ</u>
Condom	63.8	52.7
Copper T	10.8	3.3
Laproscopy	5.3	1.7
Loop	37.7	35.5
Pills	19.3	7.8
Rhythm	5.0	1.3
Tubectomy	42.8	51.2
Vasectomy	10.3	17.7

While the value of coefficient for the ranks assigned to different methods of respondents from two districts is very high (r=.93; df=6; P< .01), the sheer percentage of respondents identifying methods supports the earlier contention that a larger

percentage of respondents from AAA have greater methods awareness than those from ZZZ district.

Analysis of responses by district and methods awareness reveals that respondents from AAA district, who have greater methods awareness married later ($M=18.7$) than those from ZZZ district ($M=17.0$). This difference is statistically significant ($F=32.04$; $df=1/1193$; $P < .01$). Not only this, such respondents also tended to marry younger mates ($M=18.8$) as compared to those from ZZZ district ($M=18.9$). Once again the value of F is statistically significant ($F=10.58$; $df=1/1191$; $P < .01$). However, irrespective of district differences those who were aware of different methods of family planning married older mates ($M=19.2$) as compared to those who were not aware ($M=17.7$). The differences in means is significant ($F=32.72$; $df=1/1191$; $P < .01$). What is more interesting to note is that within district those who were aware of family planning methods married older mates than those not aware ($F=12.65$; $df=1/1191$; $P < .01$).

Further analysis shows that respondents of two districts also varied in terms of the average number of children ($F=6.21$; $df=1/1109$; $P < .01$). Those who were from AAA district and were aware of family planning methods had lesser number of children ($M=3.0$) as compared to those from ZZZ district ($M=3.5$).

Examination of the years of formal education showed that those who were aware of various methods irrespective of district have more years of formal education, have more educated spouses and had greater monthly income ($M=8.37$, $M=8.9$ and $M=448$ respectively)

as compared to those who were not aware of various methods of family planning (M=5.6, M=6.2 and M=211 respectively). The values of F are given below:

EDUSE = (F=22.34; DF=1/747; P< .01)

EDUSP = (F=19.55; df=1/648; P< .01)

INCOM = (F=46.63; df=1/709; P< .01)

Discussion with Spouse: As many as 46.1% in district AAA discussed family planning with their spouses as compared to 19.5% in district ZZZ. The distribution is statistically significant ($X^2 = 96.49$; df=1; P< .01).

Analysis based on biographic factors shows that irrespective of districts those who discussed family planning with their spouses were older (M=34.0) than those who did not (M=29.0). The F-value is 108.5 which is significant at .01 level of significance for 1/975 degrees of freedom. Once again irrespective of district they married at older age (M=18.7) than those who did not (M=17.9) and married relatively older mates (M=19.7) as compared to those who did not (M=18.5). They had significantly lesser years of formal education (M=7.0) as compared to the other group (M=8.4) but interestingly their spouses had more years of formal education (M=9.2) than their spouses of those who did not discuss family planning with their spouses (M=8.2). The F-values of these biographic variables are given below:

AGMSE = (F = 7.58; df = 1/975; P< .01)

AGMSP = (F =15.16; df = 1/973; P< .01)

EDUSE = (F =18.43; df = 1/618; P< .01)

EDUSP = (F =19.46; df = 1/739; P< .01)

While there are no significant variations in the income levels of those who discussed family planning with spouse and those who did not either in AAA district or ZZZ district, there are some interesting differences in the number of children born in these groups. Our results suggest a significant AAA district effect (F=13.59; df=1/897; P< .01) signifying that respondents of AAA district had lesser number of children (M=3.0) than those belonging to ZZZ district (M=3.3). However, irrespective of district, those who discussed family planning with spouse surprisingly had more children (M=4.1) than those who did not discussed it with their spouses (M=2.8). This difference is very significant (F=103.39; df=1/897; P< .01).

Attitude

For purpose of measuring attitude towards family planning, respondents were asked to indicate ideal age of marriage both for boys and girls and ideal number of children per couple. The assumption was that if the respondents feel favourably towards family planning they would be more predisposed towards later marriage and fewer children which is the essence of family planning. Data on the district/profile differences on these three themes are separately presented below:

Ideal age of marriage for boys: The difference between the averages of two districts is not statistically significant ($t=.24$; $df=1186$) suggesting thereby that the respondents from the two districts considered the ideal age of marriage for boys as more or less the same ($M=20.7$ for AAA and $M=20.4$ for ZZZ districts). Differences by individual biographic factors across districts were found to be insignificant. What is perhaps most interesting is that except for the age of the respondents, all other 6 biographic variable correlate significantly with the age of marriage for boys for the total sample. Thus respondents who married late ($r=.215$) with older mates ($r=.340$) had less number of children ($r=.167$) more years of formal education themselves ($r=.294$) as well as their spouses ($r=.402$) and more income ($r=.357$) had greater awareness of family planning message. However this pattern changed slightly when districts were isolated and examined individually. Thus respondents from AAA district who indicated higher age of marriage for boys are those who themselves married at higher age ($r=.233$; $df=588$) and with older mates ($r=.278$; $df=587$). The greater the marriage age suggested by them the lesser were the children born to them ($r=_.157$; $df=548$). The greater was the age of marriage as suggested by them, the more they were educated ($r=.258$; $df=439$) the more their spouses were educated ($r=.408$; $df=354$) and the higher was their monthly income ($r=.400$; $df=334$). The values of coefficients for the respondents from ZZZ district signifying relationship between biographic variables and ideal age of marriage for boys are given below:

	<u>r</u>	<u>df</u>
AGEOR	-.066	595
AGMSE	.200**	595
AGMSP	.454**	594
CHILD	-.174**	554
EDUSE	.357**	300
EDUSP	.397**	289
INCOM	.336**	373

** P < .01

Ideal age of marriage for girls: The respondents from district AAA on an average indicated 17.5 years as the ideal age of marriage for girls. This average is not very distant from the one indicated by respondents from ZZZ district. The difference between these averages is not statistically insignificant ($t=.23$; $df=1186$). Individual differences for each one of the biographic factors across districts also turned out to be insignificant.

As far as the total sample is concerned what was true in case of ideal age of marriage for boys, was also found to be true in relation to ideal age of marriage for girls. However, when results were examined for each district respondents from both district independently seemed to show significant relationship between all biographic variables (except age) and the ideal age of marriage for girls. One other exception is the lack of relationship between years of formal education of respondents in AAA district and ideal age of marriage for girls. The values of

coefficients along with degrees of freedom for both districts are presented below:

	<u>AAA</u>		<u>ZZZ</u>	
	<u>r</u>	<u>df</u>	<u>r</u>	<u>df</u>
AGEOR	.011	589	-.019	595
AGMSE	.176**	588	.346**	595
AGMSP	.574**	587	.368**	594
CHILD	-.121**	548	-.170**	554
EDUSE	.085	441	.390**	300
EDUSP	.350**	354	.358**	289
INCOM	.375**	334	.333**	373

** P < .01

The results suggest that as far as AAA district is concerned, the respondents who indicated higher age of marriage for girls also married late, with relatively older mates, had lesser number of children, were married to more educated spouses and had higher monthly income. The same is true for respondents from ZZZ district. In addition the respondents who indicated higher age of marriage for girls had themselves more years of formal education.

Ideal number of children per couple: As far as ideal number of children per couple is concerned, respondents from district AAA on an average indicate 2.6 children per couple. However, the average for those belonging to district ZZZ is higher (M=3.1). The difference in averages is statistically significant (t=2.54; df=1140, P < .05). Individual differences by biographic factors across districts turned out to be insignificant.

The relationships between most of the biographic factors and the ideal number of children per couple are significant beyond the conventional levels of significance for the total sample. Specifically, the higher the age of self ($r=-.133$) and spouse ($r=-.308$) at the time of marriage, the lesser the children ($r=.289$), the higher the education of self ($r=-.329$) and spouse ($r=-.387$) and the higher the income ($r=-.328$) the lesser the ideal number of children indicated by all the respondents. The values of coefficients for both districts with degrees of freedom are presented below:

	<u>AAA</u>		<u>ZZZ</u>	
	<u>r</u>	<u>df</u>	<u>r</u>	<u>df</u>
AGEOR	.014	587	.127**	551
AGMSE	-.128**	586	-.170**	551
AGMSP	-.339**	585	-.326**	551
CHILD	.224**	546	.299**	512
EDUSE	-.296**	438	-.369**	297
EDUSP	-.359**	353	-.404**	283
INCOM	-.408**	328	-.261**	348

** P < .01

Respondents who married late with relatively older mates, had themselves undergone more years of formal education, had more educated spouses and had relatively higher income indicated lesser number of children per couple. This statement is valid for respondents from both districts. What is intriguing is the observation that the respondents who themselves had more children

indicated larger number of children per couple in both the districts. Similarly, older respondents of district ZZZ seemed to suggest more children per couple.

Practice

The practice of family planning, is far less amongst the respondents when compared to the actual awareness. The practice itself can take the form of a permanent or a spacing method. While those who have undergone sterilization would have nothing to do with spacing as they have already accepted the terminal technique, the obverse is not true. Those practicing temporary technique may opt for a permanent solution at a later day. Irrespective of the nature of method, they were asked for how long they have been using spacing methods both for self and spouse and if not have they or their spouses undergone sterilization. The results are separately presented below:

Spacing method for self: As many as 27.3% of respondents from AAA district and 21.88% from ZZZ district have been using spacing method for self for as long as 38.7 and 43.6 days* on an average for AAA and ZZZ districts respectively. The difference in the duration of use between the districts is not significant ($t=.013$; $df=293$). None of the biographic factors showed variation across the two districts.

* The standard deviation estimates for AAA and ZZZ districts are 42.87 and 48.79 respectively.

Correlational analysis indicates only few significant values for the total sample. The higher the age ($r=.539$), the more the children ($r=.349$), and the higher the income ($r=.170$) the greater was the practice of spacing method. More or less the same findings emerged when individual correlations for each district were calculated there was a significant relationship between age and the duration of spacing methods for respondents from both districts. The specific values of coefficient are .453 and .633 which are statistically significant at .01 level for $df=162$ and $df=129$ for respondents from AAA and ZZZ districts respectively. The same is true for the number of children. The greater the number of children, the longer is the duration of the practice of spacing methods for respondents from AAA district ($r=.354$; $df=155$; $P<.01$) and from ZZZ district ($r=.352$; $df=120$; $P<.01$). In addition, for respondents from ZZZ district one more value is significant. This is the positive relationship between monthly income and the duration of practice of spacing method for self ($r=.288$; $df=87$; $P<.01$). The value of coefficient suggested that the higher the income the longer is the duration of the practice of spacing method. All other values of coefficient are insignificant.

Spacing method for spouse: Twenty two point one per cent respondents from AAA district and 22.3% from ZZZ district indicated that their spouses used one or the other kind of spacing method. The spouses of those from AAA district had been practicing it on an average for last 58 days as against the

spouses of ZZZ district where the average duration has been 47 days*. However, the difference in duration is not statistically significant ($t=1.25$; $df=265$). Once again differences based on biographic factors by districts were not significant.

Coefficient values for the total sample showed that the longer was the duration of the practice of spacing methods by spouses the higher was the age of respondents ($r=.597$). They married early ($r=-.530$) with younger mates ($r=-.251$) and had more children ($r=.192$) and more income ($r=.180$). Districtwise correlation with each of the seven biographic variables are presented below:

	<u>AAA</u>		<u>ZZZ</u>	
	<u>r</u>	<u>df</u>	<u>r</u>	<u>df</u>
AGEOR	.613**	131	.587**	132
AGMSE	-.266**	130	-.043	132
AGMSP	-.305**	130	-.146	132
CHILD	.227*	129	.212*	129
EDUSE	-.119	102	.104	78
EDUSP	-.160	70	.005	66
INCOM	.039	107	.328**	83

* $P < .05$; ** $P < .01$

The results suggest that as far as district AAA is concerned the duration of the use of spacing method of the spouses of respondents varied according to variation in their biographic characteristics. The older they were and the more children they had, the longer they have been using the spacing methods. However, the younger the age of the self and spouse at the time

* The standards deviation estimates for AAA and ZZZ districts are 51.98 and 42.72 respectively.

of marriage the longer is the use of spacing method. For the spouses of the respondents from district ZZZ, the older they were, the larger the number of children they had and the higher was the monthly income, the longer was the period of the practice of spacing method for purposes of family planning.

Terminal method for self: As many as 169 respondents (28.2%) from AAA district and 92 or 15.3% from district ZZZ had accepted vasectomy or tubectomy for family planning. The difference in proportions of those who have undergone sterilization as against those who have not by district is significant ($\chi^2 = 32.93$; $df=1$; $P < .01$).

Further analysis reveals that those who have undergone sterilization, irrespective of district were more older at the time of marriage ($M=18.8$) as compared to those who did not ($M=17.2$). The difference between the averages is significant ($F=34.53$; $df=1/819$; $P < .01$). Further more the age variations at the time of marriage within district are also significant (16.9 as compared 19.2 years of those who underwent sterilization in ZZZ district and 17.7 versus 18.6 years for those in AAA district). The analysis of variance value is significant ($F=6.04$; $df=1/819$; $P < .05$). Similarly, those who underwent sterilization married younger mates ($M=18.7$) as compared to those who did not ($M=19.1$). This difference is also significant ($F=8.05$; $df=1/817$; $P < .01$).

Whether they underwent sterilization or not did not make much difference in the average number of children born to them.

However, those who opted for sterilization in AAA district were found to have more children ($M=3.3$) as compared to those who did not ($M=2.7$). This difference was found to be significant ($F=6.32$; $df=1/786$; $P < .05$). Similarly, the spouses of those who underwent sterilization in AAA district were more educated ($M=8.9$) as compared to those from ZZZ district ($M=8.3$). The difference in averages was found to be significant ($F=5.55$; $df=1/499$; $P < .05$). The rest of the biographic factors in both districts did not make any significant impact on the acceptance of sterilization in the two samples.

Terminal method for spouse: One hundred and forty three respondents of AAA district (23.8%) and 85 respondents (14.1%) of ZZZ district indicated that their spouses have undergone the sterilization. The ratios of these percentages as against those who did not are statistically significant ($X^2 = 30.62$; $df=1$; $P < .01$).

Analysis of data by district reveals two significant results. Spouses of district AAA respondents who adopted terminal methods were older ($M=31.2$) as compared to those from ZZZ district ($M=30.8$). The value of F is 4.71 which is significant at .05 level of significance for 1/1182 degrees of freedom. Secondly the spouses of district AAA respondents were relatively younger than those from district ZZZ ($F=8.46$; $df=1/1179$; $P < .01$) at the time of marriage.

Subsequent analysis of data irrespective of district revealed that the spouses who underwent sterilization were younger ($M=29.4$) than those who did not ($M=31.7$). This variation is

significant ($F=31.56$; $df=1/1182$; $P < .01$). However, they were older at the time of marriage ($M=20.5$) than their counterparts ($M=18.1$). F value turns out to be significant ($F=97.65$; $df=1/1179$; $P < .01$). Another significant observation has to do with the number of children at the time of sterilization. The results showed that spouses who underwent sterilization had significantly lesser number of children ($M=2.8$) as compared to those who not did ($M=3.5$). The difference in means is significant ($F=22.95$; $df=1/1097$; $P < .01$). Not only this such spouses from ZZZ district showed a larger variation in terms of average number of children ($F=5.39$; $df=1/1097$; $P < .05$) between those who adopted sterilization ($M=2.70$) as against those who did not ($M=3.6$) in ZZZ district. The same variation is not significant for spouses of respondents from AAA district ($M=2.9$ Vs $X=3.2$).

Results of the years of formal education revealed that those whose spouses accepted sterilization irrespective of district had more years of formal education ($M=8.7$) than those who did not ($M=7.5$). The difference in means is significant ($F=19.46$; $df=1/739$; $P < .01$). Not only this, there was a significant difference in the years of formal education of the spouses themselves ($F=93.42$; $df=1/642$; $P < .01$). Irrespective of district the spouses who underwent sterilization had more years of formal education ($M=10.0$) than those who did not ($M=7.2$). Further, the significant interaction effect suggested that there was larger difference in the years of education for spouses from ZZZ district ($M=10.6$ Vs $M=6.8$) than those from AAA district ($X=9.6$ Vs $X=7.7$). The interaction effect is also significant ($F= 9.10$;

df=1/642; P<.01). Finally, the results indicated that those whose spouses accepted sterilization had more monthly income (M=537) as compared to those whose spouses did not (X= 367) and this difference is statistically significant (F=21.47; df = 1/702; P<.01).

Discussions

The objective of this study was to examine the differences between the best and the poorest performing districts in a state in the area of family planning while controlling for some of the biographic variables. Additionally the study also explored the relationship between the biographic characteristics at the respondents and the awareness, attitude and practice of family planning. While detailed results are presented in the previous section, an attempt is made here to summarize and discuss the findings of the study.

District differences

To begin with the districts were identified as top and bottom on the basis of couple protection rate and use of family planning methods based on five years data. Data on knowledge, attitude and practice were collected on 600 respondents from each district. The results are summarized in Table-4 and discussed below.

Awareness: These are significant overall differences between the two districts on four items of awareness significant that the respondents of top district (AAA) as compared to those from ZZZ district are more aware of the programme, message and methods of family planning and a significant majority of them discuss family

Table-4
District Differences

Items	AGEOR	AGMSE	AGMSP	CHILD	EDUSE	EDUSP	INCOM	OVERAL
<u>Awareness</u>								
PROGRAMME AWARENESS	-	-	-	-	-	-	-	SIGNI
MESSAGE AWARENESS	-	SIGNI	SIGNI	-	-	-	-	SIGNI
METHODS AWARENESS	-	SIGNI	SIGNI	SIGNI	-	-	-	SIGNI
DISCUSSION WITH SPOUSE	-	-	-	SIGNI	-	-	-	SIGNI
<u>Attitude</u>								
IDEAL MARRIAGE AGE-B	-	-	-	-	-	-	-	-
IDEAL MARRIAGE AGE-G	-	-	-	-	-	-	-	-
IDEAL NO. OF CHILDREN	-	-	-	-	-	-	-	SIGNI
<u>Practice</u>								
PACING METHOD-SELF	-	-	-	-	-	-	-	-
PACING METHOD-SPOUSE	-	-	-	-	-	-	-	-
TERMINAL METHOD-SELF	-	-	-	SIGNI	-	SIGNI	-	SIGNI
TERMINAL METHOD-SPOUSE	SIGNI	-	SIGNI	-	-	-	-	SIGNI

SIGNI=Significant

planning with their spouses. However when we control for the biographic characteristics the overall significant differences seem to hold for only few characteristics. Neither variations in years of formal education for self nor years of formal education of spouse across districts contribute to the overall differences. Age at the time of marriage for self and spouse, number of children and income levels do contribute to the differences in awareness. Perhaps it could be said that district AAA tops in the awareness of family planning because those who

1. were more aware of programme had more income
2. were aware of message married late and with older mates.
3. were more aware of methods married late with older mates and had lesser number of children
4. had more intraspouse communication had lesser number of children.

These results showed a systematic progression towards the goal of family planning (low fertility) as one moves from the general awareness of the programme to a more constructive inter personal communication between husband and wife. This further supports the original finding of Stycos, Back and Hill (in 1956)* who concluded that the proportion of couples who had ever used family planning methods was higher among those who had discussed family size.

* Stycos, J.M., Back, K. and Hill, R. Problems of communication between husband and wife on matters relating to family limitation. Human Relations, 1956, 9, 207-215.

Attitude: What is perhaps most significant to note is that on all items of attitude towards family planning, there were no significant variations between districts on the whole or by specific biographic factors. The general trend of the results on attitude strongly suggests that the respondents from two districts have more or less the same attitude towards family planning and that these are neither moderated by the biographic factors nor by the overall district differences. The only significant difference between districts was on the ideal number of children per couple. The respondents from AAA district suggested significantly lesser number of children per couple when compared to their counterparts from ZZZ district. The people of ZZZ district by contrast are poor and lesser educated. The general conclusion from many of the studies on such groups shows that they not only have larger number of children but also seem to profess larger families.* For them children are a form of investment-providing short term benefit if they work during childhood, long term benefits if they support parents in old age. The World Bank report indicates that the "economic cost of children are low, the economic (any other) benefits are high, and having many children makes economic sense". Quoting examples

from several nations the report indicates that the cost of being pregnant (not going to work) in illiterate and poor groups can

* See World Bank Report: Population change and Economic Development, New York, Oxford University Press, 1985.

easily be made up by sending children of young age to work. This is not so in more educated and relatively better off families where the cost of bearing a child is many fold and return in very low as many of these children do not contribute to the household chores and income. Hence relatively poor and ill educated people see many children as economic security. Whether such an attitude develops as a result of one's own experiences or whether experiences are shaped by such an attitude is difficult to establish. However one thing is for sure. Both seem to reinforce each other.

Practice: Family planning can take the form of spacing or terminal methods of adoption. District differences reveal insignificant variations in the overall practice of spacing methods. This does not change even when biographic characteristics are allowed to contribute. However the results of the adoption of terminal methods are different. A larger number of respondents of AAA district have not only accepted terminal method for themselves but their spouses as well when compared to those from ZZZ district. Of those who accepted terminal methods of family planning in AAA district, they had larger average of children and more educated spouse compared to their counterpart from ZZZ district. Similarly, the spouses of respondents from AAA district who accepted terminal methods were more older and more educated compared to the spouses of those from ZZZ district.

The overall results indicate that district AAA is top performing district because the respondents have significantly higher

awareness and better practice of terminal methods of family planning. Based on the results of this study it can also be concluded that the existence of positive attitude towards family planning may not always be a necessary condition for converting awareness into practice.

Biographic Characteristics and Family Planning

As far as the relationship of 7 biographic factors and the knowledge, attitude and practice of family are concerned, the results for the total sample from both the districts taken together are summarized in Table 5 and discussed below:

Awareness: Programme awareness does not seem to relate with any of the biographic variables except age of the spouse at the time of marriage. The greater the programme awareness the higher was the age of spouse at the time of marriage. The lack of relationship between programme awareness and the biographic factors shows that the knowledge of family planning programme is universally disseminated and is not exclusively the characteristic prerogative of any specific segment of population. However, despite the global knowledge, it seems that the awareness of the specific message of the programme still seems to vary with varying biographic profiles. The greater the age of marriage (self and spouse), education of self and spouse, family income and lesser the number of children, the greater is the awareness of family planning message. More or less same could be said as far as methods awareness is concerned. The higher the age of spouse at the time of marriage, education of self and

Table -5
 Significant Relationships
 (Total Sample)

Items	AGEOR	AGMSE	AGMSP	CHILD	EDUSE	EDUSP	INCOM
<u>Awareness</u>							
PROGRAMME AWARENESS	-	-	SIGNI	-	-	-	-
MESSAGE AWARENESS	-	SIGNI	SIGNI	-SIGNI	SIGNI	SIGNI	SIGNI
METHODS AWARENESS	-	-	SIGNI	-	SIGNI	SIGNI	SIGNI
DISCUSSION WITH SPOUSE	SIGNI	SIGNI	SIGNI	SIGNI	SIGNI	SIGNI	-
<u>Attitude</u>							
IDEAL MARRIAGE AGE-B	-	SIGNI	SIGNI	-SIGNI	SIGNI	SIGNI	SIGNI
IDEAL MARRIAGE AGE-G	-	SIGNI	SIGNI	-SIGNI	SIGNI	SIGNI	SIGNI
IDEAL NO. OF CHILDREN	-	-SIGNI	-SIGNI	SIGNI	-SIGNI	-SIGNI	-SIGNI
<u>Practice</u>							
SPACING METHOD-SELF	SIGNI	-	-	SIGNI	-	-	SIGNI
SPACING METHOD-SPOUSE	SIGNI	-SIGNI	-SIGNI	SIGNI	-	-	SIGNI
TERMINAL METHOD-SELF	SIGNI	-	SIGNI	-	-	-	-
SPACING METHOD-SPOUSE	SIGNI	-	SIGNI	SIGNI	SIGNI	SIGNI	SIGNI
SIGNI=Significant							

spouse and income, the greater is the awareness of various methods of family planning. Finally, as far as awareness goes, there is greater inter-spouse discussion on family planning among older respondents who married late with relatively older mates had more year of formal education for self and spouse. However, those who had more children also indicated more frequent inter-spouse communication. This seems to be contrary to general understanding that increased intra-spouse communication leads to decreased fertility.* While on the face of it, this part of the result may sound more dissonant from existing belief, perhaps the fact that they had larger number of children had forced them to have greater inter-spouse communication to find alternatives for stopping further fertility.

The findings of awareness in this study by and large seem to corroborate the results of a most recent survey of 5624 married women of reproductive age in and around Delhi (Gulati, 1988).** This study showed positive and significant relationship between awareness (as measured by the number of the methods known) and education ($r=.31$) and monthly income ($r=.22$).

Attitude: Except for the age of the respondents all other biographic factors correlate in the expected direction with the attitude towards family planning. Attitude in this study was measured in terms of ideal ages for marriage (boys and girls) and

* Bhatia, J.C. & Neuman, A.R. Interpersonal communication and practice of family planning in India. Journal of Family Welfare, 2980, 26(4), 18-30.

** Gulati, S.C. Fertility in India. New Delhi: Sage Publications.

ideal number of children per couple. What it means is that those who married old with relatively older mates, had less number of children, had more years of formal education for self and spouse and had more monthly income indicated older age for marriage for both boys and girls and fewer children per couple.

Unlike the results of district comparisons many more biographic factors stand out as significantly correlated with the attitude towards family planning. Perhaps when district differences are dropped and the two samples are combined together, the presence of positive attitude shows up. While there are not many studies on the attitude towards family planning and biographic factors, in one of the studies (Gulatis, 1988)* asked her respondents to indicate desired family size. She found negative and significant relationship between the desired family size and awareness of various methods signifying that the greater the awareness of various methods of family planning, the smaller was the size of family desired by respondents.

Practice: Practice of family planning was studied in terms of spacing and terminal methods of adoption. Our results suggest that the more the age the more is the practice of both methods for both self and spouse. Such a relationship seems tenable particularly because of recent evidence which suggest a general tendency among newly married couples to have quicker fertility and adopt either spacing or terminal methods of fertility control

* Gulati, 1988. Opp. Cit.

in India.* If the age at the time of marriage is more the desired family size is achieved in next 4-6 years and hence a large number of adoptors accept family planning practices in the age group of 30-34 years. Another study by Nanda (1973)** also confirms that age range of 30-39 years of all those who accepted vasectomy as method of family planning in India. This study drew its sample from 7 States of the country.

Ages at the time of marriage for self and spouse show significant negative relationship with the adoption of spacing method suggesting thereby that the lower the age at the time of marriage the more the probability of accepting spacing method. This further supports the conclusion that the adoption of family planning takes after quicker fertility among newly married. However, as far as acceptance of terminal methods is concerned, those respondents and their spouses who marry late tend to accept the terminal method of family planning.

The larger the number of children, the greater is the acceptance of spacing method by both respondents and their spouses as well greater tendency to accept terminal method by spouses. The results seem to support the existing evidence in this regard.

* Das, N. Socio-Cultural determinants - The Case of India. In Socio-Cultural determinants of fertility. New Delhi, ICMR, 1985.

** Nanda, A.K. (Ed.) Vasectomy Camps - A Study. New Delhi: National Institute of Family Planning, 1973.

Bulk of the studies showed acceptance of family planning methods by those who already had a large number of children*.

The results on the relationship of education and adaption in India are inconclusive. A survey of four countries in Asia and Pacific by ESCAP (1975)** showed that in case of India there was no relationship between male literacy and practice ($r=.058$) and female literacy and practice ($r=.046$). Gulati,*** on the other hand found negative relationship and Das found that more educated had lower fertility. Nanda@ on the other hand found that majority of his respondents who accepted Vasectomy came from lower educated groups. The results of this study show a general lack of relationship between education and practice except that the spouses of the respondents who accepted sterilization were more educated themselves and had more educated mates. The results suggest no relationship between spacing methods and education. However, more educated respondents who have more educated spouses generally made the spouses to accept terminal methods of family planning.

In general trend on the relationship between income and adoption of family planning practice in this study reveals a positive

* See Nanda, 1973. Opp. Cit.

** A comparative study on the input-output relationships of family planning programmes in Selected countries of ESCAP region. Asia Population Studies series No.30, Bangkok, UN-ESCAP Population Division, 1975.

*** Gulati, 1988. Opp. Cit.

@ Nanda, 1973. Opp. Cit.

relationship between the two. Those with higher income also adopt spacing method. However, as far as terminal methods are concerned, those with higher income would rather have their spouses to undergo sterilization. The general results seem contrary to the trend of results in this area* which suggests negative relationship between fertility and income but seem consistent with the result of other studies.**

In conclusion while putting the results presented in Table 2 and Table 5 together, it could be said that awareness, attitude and practice of family planning varied with districts and biographic factors. Those who showed greater awareness, more positive attitude and improved practice of family planning were generally those who married late with older spouses, had lesser children were more educated themselves as well as their spouses and had better income.

* See for example Das, 1985 Opp. Cit. and Nanda, 1973 Opp. Cit. Also see Sinha, J.N. Differential fertility and family limitation. Lucknow: Lucknow University, 1975.

** See Gulati, 1988, Opp. Cit. Also see Mysore Population Study. New York: UN, 1961.

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