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REPRODUCTIVE MOTIVAT'IONS AND FAMILY SIZE PREFERENCES AMONG PAKISTANI WOMEN : DISCRIMINANT ANALYSIS

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This paper deals with identifying differentials influencing women's reproductive motivations in Pakistan. Different methods of analysis, qualitative as well as quantitative, haVe been applied to explore the role of socio - economic, biological and demographic determinants of reproductive behaviour on different sets of data. The work consists of three models. Discriminant analysis was applied to identify the factors which differentiate 'users' of contraceptives from 'non - users', who 'want to cease production of more children' from those 'desiring more' after having completed their family and the women having 'low' fertility from those having 'not low'. The data analysis revealed that duration of marriage and interspousal discussion about family size are major forces in determining the family, size. It is suggested that family planning programme should give more weight to men to change their attitude about family size preferences than in the past.

Key words: Box's M test, discriminant function analysis, family size, reproductive rnotlvancns, Wilk's lambda

INTRODUCTION

At present the population of Pakistan is about 130 million and is increasing at the rate of 2.9%. If this rate of growth continues, the population will be doubled in about 25 years. World population is growing @ 1.5 % per year on the average. In countries like Pakistan, where population is growing rapidly, hunger and malnutrition are often critical problems .. Proper education and health care are essential to improve people's well being and thus promote productivity and sustainable resource use. The sooner the world reaches replacement-level fertility of about two children per couple, the sooner world attention could shift away from the need to increase food production continually and be diverted towards improving the quality of life for all. Pakistan is one of the 82 countries that are at particular risk. Due to persistently high population growth rate in Pakistan, the use of family planning methods remains a very important demographic issue. Contraceptives is the key variable directly affecting fertility. Family planning activities started here in 1950 and Pakistan was a pioneer in 'their support and implementation. Family planning prograrnrne was given special support in the successiVe five year development plans (1955-60 to 1988-93). Different strategies were adopted to encourage the use of new methods of family planning. Contraceptive use among married women tripled in 15 years, from 5% in ~974-75 to 9,% in 1984 - 85 and 14 % in 1990 - 91 (PDHS, 1990- 91) but it is still very low as compared to developed countries. An effective programme requires the diagnosis of factors that become hurdle in the adoption of contraceptives. Then it would be possible to test new approaches that may be labour / cost effective as well as successful.,

The family size preferences play an important role in accounting for actual reproductive behaviour. The responses to the questions on fertility preferences could be of practical value provided the questions are correctly framed. Although in our social set up, husbands and in-laws have influence on reproductive decisions, yet these responses are useful in predicting future fertility also. In underdeveloped countries where the contraceptive prevalence rate is low, the family size preferences would reflect the actual demand for children. We are interested in finding out that how do the surviving children and family-size preferences influence the demand for children among women? Uche (1994) observed a negative association of interspousal communication and fertility. Iqbal (1997) advocated that educational level and age at marriage of women should be increased to achieve the desired population goals. An attempt has thus been made to identify the motives of women's demand for children.

MATERIAL AND METHODS

The data for this study were obtained from Pakistan Demographic Health Survey (PDHS, 1990-91 I.

Federal Bureau of Statistics (FBS) P~o,vi<;te~.. sampling frame which. was irn.plell:\e,rl~ed .~f.' National Institute of Population Studies. th.e',~~le design adopted for the PDHS is s,tratlfied,;~~ered and systematic sample of households. ItiQ,Qtudesthe universe of all urban and rural :CIf>e.~/,ol,the Jour provinces of Pakistan as defi,ned ijl the 1981 population census, Asample of,80t9'Qouseholdswas selected and ,6611 eligible)/VomJl,rw,ere covered, The respondents of this study ,w,erewomen aged 15 - 49 years, Discriminant function ~r:ti'llysiswas applied to' identify the variables ,ttlat are important fo'r distinguishing amongg,r:oups regarding fertility behaviour of Pakistar:tj women, The discriminant function analysis war; performed on three variables, considered to be the representative of fertility behaviour viz. 'ever used contraceptives', 'whether desire a child in future', and 'the number of living children' to have the clear understanding of the reproductlve behaviour,

First group variable 'ever used contraceptives' was' divided into two groups i.e, those who had ever used contraceptives were called 'users' and those who never used were termed 'non-users'. The second variable was 'whether desire a child in future'. The respondents were divided into two groups i.e. those who desire were coded as 1 and those who do not, *were* coded as 2 and the third grouping variable 'the number of living children' was also coded into two categories i.e. the respondents having one to two children were given the value zero, representing the small family and those with more than two children were given value 1 as the second category i.e. those having not small family. Different demographic and attitudinal variables were tested as predictor or discriminating variables.vln discriminant analysis, a linear combination of the predictor variable is formed that serves as basis for assigning cases to groups. Those weights or coefficients were estimated which resulted in the best separation between the groups for the equation:

$$D = b_o + b_1x_1 + b_2x_2 + ... + b_px_p$$

For best separation, the two groups must differ in their D value. Sample sizes were ,us~d'to estimate prior probabilities of group membe'rShip.' Stepwise selection procedure was used to obt~ln the D value. Wilks lambda is used as selection criterion ' tor variables to be included in the eqUation.Althougn, a theoretically required normality and hornoqeneitvot variance - covariance matrices could not he obtained yet evaluation of assumption of linea~ity, normality, multicollinearity and homogeneity of variancs _ covariance matrtces revealed no threat to multivariate analysis. SPSScomputer programme for discriminant analysis has protection against multicollinearity. yC/riables not meeting tolerance are not allowed to participate in the prediction. Discriminant function analysis is robust to failure of normality if violation is caused byskewn.ess rather than by outlier and the assumption of linear relationship among *all* predictor varieiblesWithin each group is less serious than some other (8arb'ara'& Fidell', 1983).

A *small* probability for Box's M - test leads to reject the null hypothesis that the covariance matrices are equal, however, when sample sizes in the groups are large, the significance probability may be *small* even if the group covariance matrices are not too dissimilar (SPSSV3.0, 1~88). In case of dichotomous variables, strong evidence suggests that the linear discriminant function often performs reasonably well. The analysis focused only on continuous married fecund women having at least one birth during the lst five years of their marriage. However, for the variables 'ever used contraceptives' and 'desired a child in future', the women who had at least two children were included. This restriction intends to avoid that higher motivations lead to more use of contraception. A woman who have had not completed her family that is she has no child or at the most one child, lacks motivation to do, so. Also her desire for first or second baby is considered to be within the limits suggested by demographers and popular slogans proposed by Govt. of Pakistan on media (Bachey doo hee achhey-nothing like two children per family), (Hum'doo; harnarsy doo-since a husband and wife make two, for them two children should Suffice), etc. A desire after having two children would be considered as lack of sense-of small family norms. A drawback associated with the applications of these screens to data is the reduction in the number of cases included in the study.

RESULTS

The findings of discriminant function analysis for each of the three group variables 'ever used contraceptives', 'desire a child in future' and fertility levels are 'given below:

Ever Used Contraceptives: A discriminant function analys's'vvas performed with two attitudinal and eight other'demographic and socio - economic variables as predictorsof rnembership in two groups. The

Table 1. Variables selected for stepwise discriminant function analysis of 'ever used contraceptives'

Variables	F to remove	Wilk's lambda	Coefficients *
Type of residence	41.950	0.72774	-0.5679
Educational level of respondent	57.709	0.73262	0.3264
Number of living children	12.988	0.71877	0.09144
Media exposure	2.3065	0.71546	0.1316
Duration of marriage	8.5568	0.71740	-0.02010
Whether desire a child in future	26.2360	0.72287	0.5114
Personal liking	96.3130	0.744,57	0.9724
Husband's approval	30.8780	0.72431	0.6282
Educational level of husband	10.2590		0.7179
Constant	—	—	-2.24620

* Canonical discriminant function coefficients.

Table 2. Variables selected for step wise discriminant function analysis of 'desiring' more children'

Variables	F to remove	Wilk's lambda	Coefficients *
Type of residence	23.2910	0.7117	-0.33620
Respondent's schooling	55.6760	0.7185	0.6203
Number of dead children	1.8211	0.7073	-0.0419
Number of living children	350,4200	0.7796	0.3617
Media exposure	2.7197	0.7075	0.1232
Duration of marriage	146.3300	0.7373	0.0687
Spousal discussion	25.8680	0.7123	0.3407
Work status of respondent	11.1580	0.7092	-0.2980
Constant	—	—	-2.84970

* Canonical discriminant function coefficients.

Table 3. Variables selected for stepwise discriminant function analysis of 'fertility level'

Variables	F to remove	Wilk's lambda	Coefficients *
Number of dead children	11,457	0.8620	-0,4174
Duration of marriage	221.98	0.9908	0.2253
Spousal discussion	9.2146	0.8606	0,4423
Constant	—	—	-1.06100

* Canonical discriminant function coefficients.

attitudinal variables were personal liking and husband's approval to adopt the family planning methods and socio- economic and demographic variables were type of residence, educational level of the respondent, number of living children, media exposure, duration of marriage, whether desire a child in future, husband's educational level and work status of the respondent.. Overall, 74.53 % of the cases were correctly classified. All the variables except work status of women significantly separated 'users' from the 'non-users'. Work status of women was removed from model as its role was not significant in distinguishing 'users' from the 'non users'. It can be observed from Table 1 that the strongest combination

comes from the two attitudinal variab/es~.~,.as personal likings and husband's approy.f~'\ivith background variables i.e. type of r~i~EJ~~ and educational level of the respondent:

Desire a Child in Future: Discrimjn.~analysis was performed to assess prediction of membership in the two groups from the nine socio ~ economic and demographic variables. The groups were, women desiring a child in future, **and** not desirous of any more child with predictor variables the same as given under 'ever used CPntraceptives'. Husband's schooling revealed a weak role in separating two groups and was thus not inclUded in the final equation. **Table 2** suggested that primary variables in distinguishin~between 'desirous' and 'non - desirous' were number of liVing children, duration of marriage, type of residence and spousal discussions. The F _ values associated with these factors are very large shOWing a significant role in respect of group variables. The correct classification rate is near 77%.

Fertility Levels: Here also the step wise discriminant analysis was run to test the hypothesis that the variables such as type of residence, respondent's. schooling, number of dead children, media exposure, duration of marriage, spousal discussion, husband's schooling and Work status of respondent would not predict whether the family is 'small' or 'not small'. Seventy-one percent of the cases specified correctly. Only three variables were selected in step wise analysis as statistically significant. F-to-enter values associated with other five variables were very small and could not be inclUded in final equation. It is clear from Table 3 that three predictor variables i.e. number of dead children, duration of marriage and spousal discussion were found sufficient to distinguish between 'small' and 'not small' families.

DISCUSSION AND RECOMMENDATIONS

Discriminant function analysis SuccessfUlly examined the differentials of fertility and proved equally useful as that of logistic regression analysis to analyse the differentials of reproductive behaviour by different authors. Discriminant analysis yields similar results as that of logistic regression. Spousal discussions in terms of men's role, duration of marriage and number of dead children emerged as the major factors in fiXing the reproductive motivations and family size preferences among Pakistani women. Infant mortality rate increases the fertility rate. Parents want more children to Cover the loss due to deaths (Siddiqui, 1996). Better child-maternal care needs to be extended, especially to rural areas. This will lead to reduced fertility in the long run. The COUntries like Pakistan, where the family planning methods are stili considered as a taboo, duration of marriage becomes the major determinant of the level of fertility. Higher age at marriage reduces the duration of marriage and exposure to have children. The female's legal age at marriage for Pakistan is 16 years but due to the religious beliefs and cultural values many girls are married before 16 years. Parents feel relief after the marriage of a daughter. Moreover, in Pakistani society the sexual demands are fulfilled through marriage, and remarriage of a widow or divorced woman becomes somewhat difficult. The minimum age at marriage may be fixed at 19 years (Agarwa/a, 1967). It is favourable to the health of women and exerts negative effect on fertility as a woman loses an appreciable fertile period.

Men's role proved the primary reprOductive motivation factor. Its effect on husband's approval for adopting the family planning methods and as 'Spousal discussions' for group variables 'ever used contraception', desired and actual family size, was highly significant. It emerged from the present study that Pakistani men dominate in decision making and their reprOductive motivation and preferences influence their wives' reproductive Outcome'. It was realized that family planning programmes should inclUde the ways to change the men's attitude towards family size preferences. The diVision of labour between the sexes need to be changed and husbands should be motivated through the mass media that they should participate in domestic activities in order to achieve the increased level of spousal communication Which is essential to Control fertility. It is strongly recommended that the women's participation in the decision making process regarding family and non - family matters should be increased. All these factors are of Course related to education of Couples. Thus, the importance of education becomes manifold. Education affects the fertility in the sense that explanatory variables SUch as attitude towards ideal family size and age at marriage are no dOubt influenced (Hoslinger and Kasarda; 1976). Therefore, presently at least the 'compulsory primary education' programme for females should be vigorously implemented in all the four provinces of Pakistan.

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