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The Impact of Socio-economic Factors on the Family Frequency Growth

[1]Z. Rahnavard, [2]A. Heidarnia, [3]M. Vahid Dastgerdi and [4]M. Amel Valizadeh
[1]Department of Health Education and International Affairs,
Tehran University of Medical Sciences, Tehran, Iran
[2]Faculty of Medicine, Tarbiat Modares University, Tabriz, Iran
[3]Department of International Affair, Tehran University of Medical Sciences, Tehran, Iran
[4]Faculty of Midwifery, Faculty of Nursing and Midwifery,
Tehran University of Medical Sciences, Tehran, Iran

Abstract: The impact of different factors, on family frequency growth can be interpreted by differences in probability of having extra child in each couples and explained by soci-economical and behavior factors. The aim of this study, was to determine influence of socio-economical factors on family frequency growth in Tehran. Data from a survey conducted in Tehran on ever-married women aged 15-49 by a 2 stage sampling were applied for the analysis of the influence factors. A total 2005 women were enrolled in our survey. The questionnaire used included some question about woman's education, wanted or unwanted this child, age of woman, age of husband and so. Using logic regression models it was found some affecting factors on family growth of first child to second, second child to third, fifth child to sixth. Results provided in this study, are a good guideline for the family planning programs.

Key words: Family frequency growth, socio-economical factors, influence factors, logic regression models

INTRODUCTION

Differences in fertility levels can logically be attributed to differences in exposure to the risk of pregnancy and differences in number of children already have had and the length of time between births when women are exposed. Exposure to risk varies primarily because the proportion of women cohabiting differs across populations. In the analysis of fertility change, a distention is drawn between 2 aspects, namely. Pace or Intensity or Quantum and timing or Tempo. The quantum of fertility is equal to the average number of birth per marriage. Timing is obtained from the distribution of births by duration of marriage. It may be expressed, in a number of ways, for example by the mean or median of the distribution or by birth intervals. The study of birth order is especially important in a time of changing patterns of fertility. The matter comes to general attention in the early 19940's, when so many marriages took place in the U.S.A and other countries (Whelpton, 1946).

A high proportion were quickly followed by births, such that the number of first births in some years was more than the number of women of anyone cohort entering child- bearing ages (Mohammad *et al*., 2000). Such a piling up of first births, concealed within the total births of certain year gives an overall rate that in its nature can not continue for very long. To understand what is happening, we need to see what fraction of marriages (considered as births of zero order) progress to first births, what fraction of couples having first births progress to second births, etc (that is parity progression ratio (an)).

This index may be calculated from distribution of births by birth order in the real cohorts, but one may also use the annual distribution of births by birth order, provided one is in possession of classification of births by date of birth of the child of preceding order. Without this information it is possible only to apply a hypothetical calendar of interval between successive births. We called the current parity progression ratio as the family frequency growth.

This study analyzes, the impact of different factors on the family frequency growth by using some legit regression models, logically, differences in probability of

Corresponding Author: Mehrnoosh Amel Valizadeh, Department of Midwifery, Faculty of Nursing and Midwifery, Tehran University of Medical Sciences, East of Nosrat Street, Toohid Squ, Postal Code: 1419733171, Tehran, Iran

having extra child in each parity can be explained by differences in socio, economical and behavior factors. Previous studies mainly worked on factors affecting on the birth interval rather than parity progression ratio. (Rodriguez and Hobcraft, 1990; Trusell *et al*., 1998). Our analysis is based on data from a survey conducted in Tehran according to a 2-stage probability sampling design. The first-stage units were selected with probability proportionate to the average size of population currently university the health center in Tehran, in the second stage the number of ever-married women aged 15-49 were selected randomly with equal site in each health center.

The sampling was self-weighing. All sample were ever-married women aged 15-49 with at least one child. A total ever-married women were interviewed by female expect in interviewers who were, specifically recruited for this purpose. All interviewers were resident of near the place where they assigned.

MATERIALS AND METHODS

Studied on socio-economic affecting on family frequency growth is the purpose of this study. In this study, we consider the relationship between (n = 1, 2, 3... and different socio-economic factors by using a logic regression analysis.

Three ideal result of logic regression analysis are usually distinguished.

Explanation: Explanation, meaning that the original relationship is causally spurious, caused by one or more variables preceding both a and y. In this case, x does not affect y causally.

Interpretation: Interpretation, meaning that a certain z-variable or a set of z-variables intervening x and y causally, transmit the effect of x on y.

Specification: Specification, which means that the strong of relationship between x and y is different for different levels of one or more of z-variables.

The analysis is based on logic regression analysis of the intensities of having extra child for the technical details (Aitkin and Clayton, 1980; Allison, 1998). Estimates of socio-economic effects were obtained by estimating the following logistic equation:

Where, Xijk is the J the covariate for the i the woman of parity k and βIK, … βPK are unknown regression coefficients and Pik is the family frequency growth of K to (K+1) (K = 1, 2, 3, 4, 5).

This model was estimated by maximum-likelihood using spss. The covariaties considered for inclusion in the model was such as women education, wanted or unwanted this child, age of woman, age of husband, woman occupation, husband occupation, age of first marriage, age at first pregnancy, age at last pregnancy, number of still births, length of breast feeding for the last child, sex preference on family planning.

RESULTS AND DISCUSSION

Information on the independent and dependent variables are reported in Table 1. Woman's education, husband occupation and type of children areas a set of dummy.

Variables as noted earlier, the logic regression model used for analyzing the impact of socioeconomic factors on family frequency growth, the result of the impact of different factors on family frequency growth of first child to the second children are shown in Table 2. The results shows that the age of woman, woman's education, woman's inoccupation, age of family planning and unwanted of child positively effect on family frequency growth of one child to two child. The result also shows that the age of husband, husband occupation, age at marriage, age at first pregnancy, length of breast feeding and wanted extra child negatively effect on family frequency growth of one child to two children, these results also can seen on Table 1.

Finally, the result are shown that the only age of woman and age of woman at marriage significantly effected on a_1 ($p<0.05$).

The results of the impact of different factors on the family frequency growth of second child to third children (a_2) are shown in Table 3. As we can see the results shows those factors positively effect on the a_2 are like, age of woman, age at last pregnancy, length of breast feeding more than 6 months and the an wanted this child. Factors age of husband, woman education, woman occupation, husband occupation, age of woman at marriage, age of first pregnancy, history of still birth, sex preference on family planning and the need extra child are negatively effected on the a_2. The same results can see in Table 1.

In this situation, only the age of woman, age of husband, age of woman at marriage, length of breast feeding and type of children are significantly effect on the family frequency growth of a_2 ($p<0.05$).

Table 4 shows the results of logic regression model on family frequency growth of third child to the fourth children.

Table 1: Background characteristics and the family frequency growth (an)

Characteristics	No (%)	1	2	3	4	5
Age of woman						
<30	199 (13.0)	0.990	0.731	0.313	0.133	0.333
30-34	372 (24.4)	0.989	0.783	0.649	0.214	0.150
35-39	407 (59.4)	0.947	0.701	0.849	0.757	0.284
40+	48 (3.1)	0.979	0.782	0.951	0.872	0.500
Age of husband						
<30	50 (3.3)	1.000	0.780	0.410	0.188	0.00
30-40	190 (12.4)	0.984	0.711	0.391	0.269	0.357
35-39	628 (41.1)	0.962	0.712	0.733	0.511	0.217
40-44 (29.3)	448 (29.3)	0.944	0.714	0.834	0.689	0.295
45+	211 (13.8)	0.781	0.821	0.865	0.769	0.351
Woman education						
Illiteracy	295 (19.3)	1.000	0.966	0.919	0.722	0.295
Elementary	435 (28.5)	0.998	0.967	0.874	0.643	0.269
Secondary	514 (33.7)	0.939	0.574	0.479	0.304	0.372
Higher	283 (18.5)	0.915	0.359	0.204	0.059	0.00
Woman occupation						
Housewife	1038 (68.0)	0.975	0.818	0.767	0.614	0.282
Employee	489 (32.0)	0.439	0.536	0.598	0.524	0.325
Husband occupation						
Worker	344 (25.8)	0.989	0.900	0.869	0.672	0.283
Private sector	484 (51.3)	0.958	0.754	0.735	0.567	0.297
Government employee	282 (18.5)	0.940	0.472	0.344	0.395	0.294
Others	67 (4.4)	0.970	0.492	0.563	0.500	0.222
Age of women At marriage						
<20	684 (44.8)	1.000	0.971	0.849	0.661	0.306
20-24	537 (35.2)	0.994	0.727	0.548	0.432	0.217
25-29	167 (10.9)	0.970	0.130	0.238	0.400	0.500
30+	139 (9.1)	0.647	0.00	0.00	0.00	0.00
Age off first pregnancy						
<20	403 (24.3)	1.000	0.975	0.860	0.672	0.286
20-24	713 (46.4)	0.999	0.848	0.689	0.550	0.279
25-29	199 (130.0)	0.975	0.340	0.288	0.316	0.500
30+	212 (13.9)	0.740	0.074	0.750	0.556	0.600
Age at last pregnancy						
<25	17 (1.1)	1.000	0.647	0.818	0.667	0.333
25-29	232 (15.2)	0.991	0.774	0.337	0.050	0.333
30-24	576 (37.7)	0.986	0.787	0.694	0.371	0.183
35+	702 (46.0)	0.934	0.668	0.920	0.851	0.324
Sex preference on f. p						
Yes	1127 (73.9)	0.982	0.923	0.884	0.605	0.264
No	398 (26.1)	0.957	0.660	0.648	0.592	0.304
History of Stillbirth						
Yes	392 (25.7)	0.997	0.954	0.446	0.700	0.296
No	1135 (74.3)	0.952	0.649	0.412	0.513	0.282
Length of breast feeding for the last child						
<6 months	775 (50.8)	0.986	0.842	0.806	0.641	0.289
6+	752 (49.2)	0.940	0.610	0.613	0.511	0.289
Type of children						
Convenient	257 (16.8)	1.00	0.347	0.039	0.00	0.00
Unwanted	943 (61.8)	1.00	0.497	0.828	0.600	0.284
Need extra child	327 (21.4)	0.829	0.0170	0.023	0.00	0.00
Total	1527 (100.0)	0.963	0.730	0.728	0.598	0.291

As can seen from this table the of woman, age at last pregnancy, history of still birth, sex preference on family planning and the unwanted child are statistically significant on a_3 and also in positive direction ($p<0.05$). The woman education, husband occupation, age at marriage and extra child are negatively effect on a_3 ($p<0.05$).

The result of the impact of different factors on the family frequency growth of fourth child to the fifth children (a_4) are shown in Table 4. As we can see the results shows those factors positively significantly effect on the a_4 are the age of woman, the age of last pregnancy, the history of still birth, $p<0.05$ and those are negatively significantly effect on a_4, woman education and the age of woman of marriage.

Table 5 shows those factors effecting on a_5 and the only age of woman at marriage negatively effected on a_5 $p<0.05$ (because the number of cases in this situation are small).

Table 2: The results of the impact of different factors on family frequency growth of the first child to the second children (a_1) (logic coefficients (β) for the effects)

Variable	B	SE	Exp (β)	Sig.
Age of woman	1.09	0.348	2.97	0.002
Age of husband	-0.018	0.0104	0.982	0.862
Woman education				
Less than diploma	0.00	-	1	-
Diploma and higher	0.56	0.685	1.75	0.414
Woman occupation				
House wife	0.00	-	1	-
Employee	0.21	6.26	1.23	0.738
Husband occupation				
Worker	0.00	-	1	-
Private	-1.33	1.17	0.264	0.253
Government	-1.58	1.23	0.205	0.201
Others	-0.815	1.77	0.442	0.645
Age of woman at marriage*	-1.07	0.431	0.343	0.013
Age of first pregnancy	-0.321	0.422	0.726	0.447
Age of last pregnancy	0.379	0.285	1.46	1.84
History of stillbirth				
No	0.00	-	1	-
Yes	2.51	2.67	12.37	0.347
Length of breast feeding for the last child				
<6 months	0.00	-	1	-
6+	-0.101	0.076	0.904	0.182
Sex preference on F.P.				
No	0.00	-	1	-
Yes	1.71	1.197	5.52	0.154
Type of children				
Convenient	0.00	-	1	-
Unwanted	35.83	265.01	3.900	0.89
Need extra child	-15.13	239.6	0.00	0.95
Constant	8.72	239.65	-	0.97

SE = Standard Error, * Significant at the 0.05 level

Table 3: The results of impact of different factors on family frequency growth of the second child to third children (a_2) (logic coefficients (β) for the effects)

Variable	β	SE	Exp (β)	Sig.
Age of woman*	0.287	0.074	1.33	0.0001
Age of husband*	-0.076	0.028	0.936	0.0185
Woman education				
Less than diploma	0.00	-	1	-
Diploma and higher	-0.501	0.293	0.606	0.887
Woman occupation				
Housewife	0.00	-	1	-
Employee	-0.474	0.274	0.623	0.085
Husband occupation				
Worker	0.00	-	1	-
Private	0.014	0.409	1.014	0.973
Government	-0.135	0.446	0.874	0.762
Others	-1.21	0.705	0.298	0.086
Age of woman at marriage*	-0.588	0.073	0.555	0.000
Age of first pregnancy	-0.02	0.031	0.98	0.51
Age at last pregnancy	0.003	0.073	1.003	0.472
History of stillbirth				
No	0.00	-	1	-
Yes	-0.308	0.563	0.735	0.585
Length of breast feeding for the last child				
<6 months	0.00	-	1	-
6+	0.067	0.028	0.436	0.016
Sex preference on F.P.				
No	0.00	-	1	-
Yes	-0.057	0.48	0.945	0.91
Type of children				
Convenient	0.00	-	1	-
Unwanted	5.23	0.665	185.9	0.000
Need extra child	-0.97	0.278	0.378	0.0005
Constant	6.857	1.38	-	0.00

SE = Standard Error, significant at the 0.05 level

Table 4: The results of impact of different factors on family frequency growth to the forth child to the fifth children (a_4) (logic coefficients (B) for the effects)

Variable	β	SE	Exp (β)	Sig.
Age of woman*	0.366	0.054	1.44	0.000
Age of husband	0.027	0.019	1.03	0.175
Woman education*				
Less than diploma	0.00	-	1	-
Diploma and higher	-2.473	1.092	0.064	0.012
Woman occupation				
House wife	0.00	-	1	-
Employee	-0.041	0.254	0.96	0.872
Husband occupation				
Worker	0.00	-	1	-
Private	-0.367	0.203	0.693	0.07
Government	-0.542	0.459	0.582	0.238
Others	-0.479	0.641	0.619	0.455
Age of woman at marriage*	-0.471	0.065	0.624	0.000
Age of first pregnancy	-0.01	0.0189	0.99	0.595
Age of last pregnancy*	0.192	0.046	1.212	0.000
History of stillbirth				
No	0.00	-	1	-
Yes	-0.084	0.212	0.92	0.7
Length of breast feeding for the last child				
<6 months	0.00	-	1	-
6+	0.043	0.036	1.04	0.232
Sex preference on F.P.				
No	0.00	-	1	-
Yes	-0.166	0.219	0.846	0.75
Constant	-7.98	2.4	-	0.0009
History of stillbirth*				
No	0.00	-	1.0	-
Yes	0.391	0.196	1.48	0.046
Length of breast feeding for the last child				
<6 months	0.00	-	1.0	-
6+	0.0118	0.0297	1.01	0.692
Sex preference on F.P.				
No	0.00	-	1.0	-
Yes	0.059	0.195	1.06	0.76
Type of children				
Convenient	0.00	-	1.0	-
Un wanted	6.54	11.57	697.11	0.572
Need extra child	4.05	25.07	57.58	0.87
Constant	-17.52	11.69	-	0.13

SE = Standard Error, *Significant at the 0.05 level

Table 5: The results of impact of different factors on family frequency growth of the third child to the fourth children (a_3) (logit coefficient (B) for the effects)

Variable	β	SE	Exp (β)	Sig.
Age of woman	0.262	0.057	1.299	0.000
Age of husband	0.022	0.025	1.02	0.378
Woman education*				
Less than diploma	0.00	-	1	-
Diploma and (higher)	-1.192	0.42	0.304	0.005
Woman occupation				
House wife	0.00	-	1	-
Employee	-0.042	0.277	0.96	0.881
Husband occupation*				
Worker	0.00	-	1	-
Private	-0.254	0.294	0.774	0.387
Government	-1.28	0.395	0.277	0.0012
Others	-1.21	0.575	0.298	0.035
Age of woman at marriage*	-0.615	0.678	0.541	0.000
Age of first pregnancy	0.008	0.025	1.01	0.734
Age of last pregnancy	0.178	0.052	1.19	0.001
History of stillbirth				
No	0.00	-	1	-
Yes	1.459	0.341	4.3	0.000
Length of breast feeding for the last child				
<6 months	0.00	-	1	-
6+	-0.057	0.03	0.945	0.056

Table 5: Continued

Variable	β	SE	Exp (β)	Sig.
Sex preference on F.P.*				
No	0.00	-	1	-
Yes	1.12	0.281	3.086	0.0001
Type of children*				
Convenient	0.00	-	1	-
Unwanted	4.997	0.716	148.02	0.000
Need extra child	-0.19	1.335	0.826	0.887
Constant	-6.788	1.608	-	0.000

SE = Standard Error, *Significant at the 0.05 level

CONCLUSION

Finally, we can conclude from these result that almost all of the family wanted at least 2 children and from the third un wanted the age of woman are positively effect and the woman education has a negatively effect, the woman occupation, has negatively effect, the age at marriage has a negatively effect, age of last pregnancy has positive effect therefore, these are a good guide line for the planning a good family planning program.

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