

Article

Fertility decline and women's status: A micro data analysis of the role of non-governmental organizations (NGOs) in Bangladesh

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Accepted 25 November, 2009

In the last two decades, Bangladesh has achieved a considerable fertility decline despite pervasive poverty and under development. Unfortunately, recent statistics suggest that despite continued increase in contraceptive use, the fertility decline has stalled. Thus, Bangladesh becomes an interesting case study for exploring the question of what factors are necessary to bring about further fertility decline. In this paper, an attempt will be made to highlight women's status, non-governmental organizations (NGOs) and some demographic factors, which are affecting the decline in fertility. It is found that the desire for an additional child is lower among working women, who have a number of living children above 2 and are involved in micro-credit related NGOs. The interesting finding of this paper is to micro-credit organization such as BRAC and GB that are more effective in reducing fertility. However, evidence shows that they fail to empower the women with respect to decision-making power, but successfully raise their status by increasing mobility. This study will help policy makers to take the initiative for further fertility decline in the country.

Key words: Fertility, women's status, micro-credit NGOs, micro-data, logistic regression, Bangladesh.

INTRODUCTION

Much attention has been paid to the status of women as an important determinant of fertility in developing countries, with emphasis on the importance of employment and education as measures to 'empower' them in society. In Bangladesh too, their status in society was traditionally very low and the need to help them improve their social status has been well recognized. Yet, progress made so far was very limited. Women's education and labour force participation have increased in the past decade or so, still, their literacy levels remained low. However, it is interesting to note that Bangladesh saw a substantial decline in total fertility rate from 6.3% in 1975 to 3.3% in 2000 despite pervasive poverty and underdevelopment, although recent statistics suggest that the fertility decline has stalled (BDHS, 2000). It is therefore likely, as was suggested, that non-governmental organizations such as

the Bangladesh Rural Advancement Committee (BRAC) and Grameen Bank (GB) played an important role in this respect (Goni, 2008). Their activities, although their aim was an economic one, resulted in raising rural women's awareness in socio-medical as well as economic matters. It is likely that this effect was strongest in the 1980s when much enthusiasm was felt among NGO activists. Those NGOs, especially BRAC and GB, provide women with micro-finance through village organizations and providing different levels of loans to different group members. Group formation is organized initially to increase savings and to raise women's awareness in economic, social and family issues. Later, collateral-free credit is provided to group members for various income-generating activities (BRAC report, 2005). Access to credit helps them to generate self-employment, which will enhance their earnings, lead to empowerment and increase mobility, decision-making power and greater control over their lives. Besides micro-credit activities, most NGOs are working to improve health and education, as well as trying to

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develop a new lifestyle among rural women (Goni, 2008).

Goni's hypothesis is that involvement in GOs/NGOs raised women's status, which eventually led to a reduction in fertility and he argued that this effect can be identified even if effects of employment and education are controlled. He also hypothesizes that micro-credit organizations such as BRAC and GB were more effective in reducing fertility than those aiming at public health and women's welfare. This is the major aim of this paper.

More specifically, the study would like to show, by making use of micro data from the 1999 - 2000 Bangladesh Demographic and Health Survey (BDHS), how various measures of women's status are explained by demographic, social and economic variables, including involvement in GO and NGO activities. Also, it would try to show what extent these status variables as well as the NGO variables exert an effect on fertility decision-making. In this respect, it is worth noting that Balk (1994) addressed these questions by using questionnaire surveys taken in one part of rural Bangladesh. She divided the concept into four categories: mobility, leniency, authority and attitude and she explored the relationships that exist between social and economic factors with that of fertility, that is, total number of children ever born. Her findings are; firstly, not all the four measures of status exhibit a significant impact on fertility. The performances of the authority and attitude measures are rather weak. Secondly, while the effect of the mobility and leniency measures of status is significant, the role of education and other explanatory variables tends to be moderately small. This is undoubtedly an important contribution to the understanding of the relationship between the status of women and fertility. However, there remain a few problems. One is that, her data come from just one set of sub-district level surveys. Another is the choice of the dependent variable. She used the total number of children ever born, but given the findings that the decline in fertility during the past decades is likely to have been a consequence of "stopping" behaviour, the most appropriate variable is whether one wants to have an additional child or not (Goni, 2008). Finally and most importantly, it is believed that an explicit examination should be done on how women's involvement in NGO activities transmit an impact on the status of women and hence, on fertility decline. The NGO variables are believed to have positive interactions with some of the aspects of women's status and negatively on fertility decision. This paper has a total of 5 sections. Data source and methods are discussed in sections 2 and 3. Regression results are presented in section 4, while concluding remarks are set out in section 5.

POPULATION AND FERTILITY DATA

This paper utilizes mainly the 1999 - 2000 Bangladesh

Demographic and Health Survey (BDHS) based on a national representative and a two-stage sample that was selected from the master sample maintained by the Bangladesh Bureau of Statistics (BBS) for the implementation of surveys before the 2001 census. The 1999 - 2000 BDHS collected information on a respondent's background characteristics (age, residence, education, religion, etc.), employment history and occupation, contraceptive use history, marriage, mobility, decision-making power, GO and NGO involvement and fertility preferences. The master sample consists of 500 primary sampling units (PSUs) with PSUs in each stratum except for the urban strata of the Barisal and Sylhet divisions. In the rural areas, the primary sampling unit was the *mauza*, while in urban areas it was the *mahalla*. Mitra and associates conducted a household listing operation in all the sample points from September to December 1999. A total of 10,268 households were selected for the sample of which 9,854 were successfully interviewed. Among the 10,855 eligible women, interviews were completed for 10,544 (97%) of them, with 9,720 being currently married. But the study's analysis covers only 9,450 married women who were able to bear children. Women who were described by the respondents themselves as infecund, divorced or widowed are not included in the analyses.

In BDHS, currently married women were asked, "would you like to have another child (ren) or would you prefer not to have any more children?" Interviewers were instructed to use the words in parenthesis depending on whether the respondent had children or not. Pregnant respondents were asked if they wanted another child and then, they were asked how long they would like to wait before the birth of the next child. Almost 52% of currently married women aged 10 - 49 in Bangladesh said that they wanted no more children and an additional 7% had been sterilized. 37% of women wanted to have a child at some time in the future. However, the vast majority of these women answered that they would like to wait for two or more years before having their next birth (Table 1). The desire for additional children declined noticeably in Bangladesh over the past decade. In 1991, 45% of married women with two children wanted to have another child in the future (Mitra et al., 1983; 1984), while in the 1999 - 2000 BDHS survey, the proportion was only 30%. Conversely, the percentage of women with two children who wanted no more children or who had been sterilized rose from 48% in 1991 to 66% in 1999 - 2000. There was a little change in the overall fertility preference from 1996 - 1997, with the proportion of women who either wanted no more children or who had been sterilized increasing from 58 to 59%. For the study's analysis, the stated data is divided into two categories; women who wanted another child and those who do not want another child.

Table 1. Percentage distribution of currently married women, aged 10 – 49, who want more children, Bangladesh 1999 - 2000.

Desire for children	No. of respondents	Percentage
Wants another child	3596	37.0
Wants no more child	5735	59.0
Undecided, infecund	389	4.0
Total	9720	100

MATERIALS AND METHODS

In this section, the determinants of fertility preference was first examined as revealed in the answer to the question, if one wants another child, and then, it was turned to the women's status. In this study, although most of the independent or explanatory variables are quantitative, for the purpose of comparison, they were converted into qualitative variables of '1' and '0'. The independent variables include the women's age group (10 - 14, 15 - 19, 20 - 24, 25 - 29, 30 - 39 and 40 - 49), number of living children (0, 1, 2, 3, 4 and 5+), administrative division, employment status (employed and not employed), occupational status (agriculture, non-agriculture, working for cash only and working for kind only), educational status (educated and non-educated), religion (Muslim, Hindu, Christian and others), involvement in GOs (BRDB) and NGOs (Grameen Bank, BRAC, Mothers club/Mothers' association and others), no involvement and her husband's occupational status (agriculture and non-agriculture) and educational status (educated and non-educated). Table 2 shows percentage distributions of categories used as explanatory variables in this study.

Table 2 illustrates, firstly, that as many as 17% of the respondents had a baby below the age of 20, while 15% had five or more children and such teenage pregnancy is particularly marked in Rajshahi division. Secondly, more than one quarter (27%) still had more than three children at the time of survey. Thirdly, 59% of the respondents are educated, which is a little lower than that for their husband (63%), while the women's involvement in non-agricultural occupation (9%) is much lower than that for their husband (45%). A close scrutiny of the data reveals that the proportion of educated women is low in Rajshahi and Sylhet divisions, while the proportion of those having a non-agricultural occupation is very low in the latter division. Fourthly, the general level of involvement in GOs and NGOs is not very high, but there are some noticeable differences among the organizations. The percentage is higher for micro-credit organizations, that is, 7% for BRAC and 6% for GB; but it is only 1% for the GO of BRDB and also for Mothers' Club. Fifthly, there is some regional concentration of those particular NGOs. Both BRAC and GB are much less active in Chittagong Division in which the minority tribal people are numerous, but are very likely to find membership of women in Rajshahi Division where marriage is early, female enrollment levels are low and their husbands' involvement in non-agricultural activity is low. Generally, since inter-correlation between the explanatory variables is not high, it is safe to assume that the problem of multicollinearity will not be serious when regression analysis is conducted.

Given these descriptive statistics of the explanatory variables, which are likely to affect fertility decisions, logistic regression analysis may be conducted. The logistic regression model has become the standard method of analyzing data in which the dependency of a binary response variable is tested on a number of explanatory variables. A response (dependent) variable is binary. In the study's analysis, it can take "1" or "0" depending on whether or not a respondent (married women in the age group 10 - 49) belongs to a specific category. Variables of this type are often called binary

or dichotomous variables. The SPSS for windows version 11.5 is utilized for the logistic regression analysis.

RESULTS AND DISCUSSION

NGOs and fertility decline

GOs and NGOs are widespread in Bangladesh. In this study, a total of 2,397 respondents are involved in different GOs and NGOs and out of them, 1,720 respondents (72%) do not demand for any more children. This proportion is the highest in BRAC (21%), followed by GB (18%). For measuring the association between fertility preference and involvement in different NGOs, the study would like to use the following hypothesis.

H_0 : There is no association between fertility preference and involvement in NGOs

H_1 : There is some association between the two attributes.

To test the hypothesis, the following 2×2 contingency table was constructed (Table 3). Through χ^2 as well as Mantel-Hansel tests for Table 3, it is observed that there is significant association between fertility preference and involvement in GOs and NGOs and the direction of the association is negative. Here, the study paid particular attention to BRAC, GB and other organizations. Their coefficients are negative, which suggests that those NGOs are instrumental in reducing fertility.

However, there is need to check if this association holds even when married women's background characteristics are controlled. Thus, logistic regression analysis is conducted with membership of individual NGOs included (Table 4). The results show that religion has a significant relevance to demography. Muslim communities consistently show higher fertility than many other non-Muslim communities: the desire for another child among Hindu women is 76% and for Christian women is 46% less than Muslim women. The effect of women's age is also important. Married women under age 30 are more likely to want additional children and those above age 30 are less likely to want additional children. The desire for an additional child also varies with the number of existing children. The odd ratios indicate that women having no children and having one child only are 47 and 10 times respectively, more likely to want an additional child

Table 2. Descriptive statistics concerning the independent variables.

Variables	Percentage (%)	Variables	Percentage (%)
Age			
10-14	1.7	Non-agricultural occupation	8.9
15-19	14.8	Agricultural occupation	91.1
20-24	19.0		
25-29	20.0	Works for cash	67.7
30-39	28.6	Works for kind	32.3
40-49	15.8		
No. of children			
0	11.9	Husband's education	62.5
1	20.4	No education	37.5
2	23.1		
3	17.9	Husband's non-agriculture	44.9
4	11.7	Agriculture	55.1
5+	15.0		
Respondent's education	58.8	Belongs to BRAC	7.0
No education	41.2	Belongs to Grameen bank	5.9
		Belongs to BRDB	1.3
		Belongs to Mother's club	0.5
		Belongs to other NGOs	10.7
		None of the GOs and NGOs	74.5
Respondent currently employed	18.9	Muslim religion	86.2
Not employed	81.1	Hindu religion	1.5
		Christian religion	11.8
		Other religion	0.4
Works for cash	67.7	Rajshahi	20.3
Works for kind	32.3	Khulna	17.6
		Barisal	9.4
		Chittagong	18.3
		Sylhet	10.2
		Dhaka	24.2

than women already having two children. On the other hand, women having three, four, five and more are 66, 89 and 95% less likely to want an additional child. In other words, it implies that women's desire for "stopping" is dependent on parity and becomes apparent after having two children. This is a significant result since it is obtained by controlling women's other characteristics and factors that are likely to affect their fertility decisions.

Among other variables, education, employment, non-agricultural occupation and cash earnings are proven to have been all important in reducing fertility. For example, the desire for another child among working women is 22% less than that of non-working women.

For individual administrative divisions, the regression coefficients corresponding to the Chittagong and Sylhet divisions are positive, but for the Rajshahi, Khulna and Barisal divisions, the coefficients are negative in sign and statistically significant except for Barisal division. The odd ratio indicates that the demand for additional children among women under Chittagong and Sylhet divisions is 2 times higher than that of Dhaka division. On the contrary, women in Khulna, Rajshahi and Barisal divisions are 33, 7 and 6% less than that of Dhaka division. There are regional variations in contraceptive use, with Rajshahi and Khulna divisions having the highest and Chittagong and Sylhet divisions having the lowest prevalence. This is

Table 3. 2 × 2 contingency tables.

Attributes		Fertility preference		Total	χ^2 (M-H)
		No	Yes		
Belongs to GB	No	5494	3390	8884	34.92*
	Yes	419	147	566	
Total		5913	3537	9450	
Belongs to BRAC	No	5425	3358	8783	35.78*
	Yes	491	176	667	
Total		5735	3767	9450	
Belongs to BRDB	No	5822	3505	9327	7.54**
	Yes	93	30	123	
Total		5915	3535	9450	
Belongs to MC	No	5889	3533	9422	0.82
	Yes	19	9	28	
Total		5908	3542	9450	
Belongs to other organizations	No	5220	3217	8437	18.38*
	Yes	698	315	1013	
Total		5918	3532	9450	

*** Significant at $p < 0.001$, ** Significant at $P < 0.01$
Sources: Goni, 2008.

from the data of BDHS 2000: the percentage of women currently using contraceptive methods for Dhaka, Chittagong, Rajshahi, Khulna, Barisal and Sylhet divisions are 54, 44, 59, 64, 59 and 34% respectively. It is also evident from the data that the percentage of working women is significantly lower in Chittagong and Sylhet divisions as compared with Rajshahi and Khulna divisions, while contraceptive use is generally higher among working women than non-working women (Mitra and Associates, 2000). This result is consistent with this study.

However, the most important of all results (Table 4) exhibits the effects of various GO and NGOs. Both GO (government-run BRDB) and some NGOs exert an impact. Of the latter, the most significant are BRAC and GB (two micro-credit organizations), while Mother's club and 'other' organizations do not show a significant effect. Although the level of significance is not high for BRDB, BRAC and GB, this should be considered important because the results are those obtained by controlling for education and employment (two of the most frequently mentioned determinants of fertility decline) and for many other explanatory variables (also because organization for women and health did not exhibit any statistically significant effect on fertility preference). Judging from the level of significance, coefficient size (Table 4) and share of membership (Table 2), it may be concluded that BRAC was somewhat more effective than the other two organizations. Among the two, GB's performance had a little larger impact than government-run BRDB. Therefore, the regression results seem to suggest that women who

are involved in NGOs had a stronger desire to reduce the family size by "stopping" and this desire is not less even if women are involved in NGOs that are engaged in income generating activities and not working in the health sector.

On the status of women

Now, the study addresses the next question of whether or not this was because NGOs raised the status of women. Women's status is determined in relation to men and also to other women and as such, it is deeply rooted in culture, religious beliefs, traditions and economic environments. In other words, the concept is multi-faceted so that it is not easy to capture it with a single measure (Balk, 1994; Hari, 1991). It is for this reason that, despite the increasing attention to the concept of women's status in the recent literature of fertility decline, the meaning of the concept has remained unclear. The terms used in the social demographic literature are not only "status of women" (Dixon, 1978), but also "women's autonomy" (Dyson and Moor, 1983). To measure women's status/autonomy more directly, the BDHS (2000) survey asked about women's roles in household decision making and their freedom of movement. Such information provides an insight into women's control over their environment and their attitudes towards gender roles, both of which are relevant in understanding women's demographic and health behaviors. Education, employment status and control over earnings are some of the means by which

Table 4. Logistic regression explaining whether women wanted another child, by background characteristics of married women, Bangladesh: BDHS 1999-2000.

Selected characteristics	Regression coefficient	Odd ratio (OR)
Age		
10-14 (25-29 ^r)	0.248**	1.28
15-19	0.157**	1.17
20-24	0.145****	1.16
30-39	-0.045***	0.96
40-49	-0.072***	0.93
Number of living children		
0 (Exactly 2 ^r)	3.854 [*]	47.16
1	2.387 [*]	10.88
3	-1.066 [*]	0.34
4	-2.218 [*]	0.11
5+	-3.036 [*]	0.05
Educational status		
Respondent's education (No education ^r)	-0.224 [*]	0.80
Employment status		
Employed (Not employed ^r)	-0.253**	0.78
Occupational status		
Non-Agriculture (Agriculture ^r)	-0.114****	0.89
Earns for cash only (Kind only ^r)	-0.016****	0.98
Husband's education (No education ^r)	-0.214**	0.81
Husband's non-agricultural occupation (Agricultural occupation ^r)	-0.175 [*]	0.84
Religion		
Hinduism (Islam ^r)	-1.411 [*]	0.24
Christianity	-0.624 [*]	0.54
Others	-0.129	0.88
Geographical region (Division)		
Rajshahi (Dhaka ^r)	-0.066****	0.93
Chittagong	0.801 [*]	2.23
Khulna	-0.257 [*]	0.77
Barisal	-0.057	0.94
Sylhet	0.719 [*]	2.05
Involvement in GO and NGO activities		
BRDB (no involvement ^r)	-0.019****	0.98
BRAC	-0.242***	0.76
Grameen bank	-0.021****	0.97
Mothers club	-0.210	0.81
Others	-0.033	0.97
Intercept	-0.576 [*]	
-2log likelihood	6834.539	
N	9450	
Df	29	

r = Reference category, ** Significant at P<0.001, *** Significant at P<0.01, **** Significant at P<0.05, ***** Significant at P< 0.10.

Notes: Not employed = housewife/housework. Agriculture = own land, rental land and other's land worker/cultivator. Non-agriculture = Professional, technical, clerical and managerial occupations.

Table 5. Percent of distribution of currently married women's response to mobility from the women's status survey of BDHS in 1999 - 2000.

	Respondent alone	With children/husband	Other relative	Never
Can you go outside the residence/ village/city?	14.2	46.0	31.3	8.4
Can you go to the health center/hospital?	26.0	45.8	9.4	19.6

Row totals add to 100%; n = 9,450. Respondent alone is only considered in the analysis.

Table 6. Percent of distribution of currently married women's response to decision-making from the women's status survey of BDHS in 1999 - 2000.

	Respondent alone	Husband only	With husband jointly	Someone else	With someone else jointly
Visit to parents, friends or relatives	12.1	31.6	41.2	7.5	8.2
What food should be cooked	65.5	4.6	11.6	9.3	9.0

Row totals add to 100%; n = 9,450. Respondent alone is only considered in the analysis.

women gain status/autonomy and constitute important aspects of their empowerment.

In this paper, an unconventional new variable and involvement in activities of GOs (BRDB) and NGOs (such as BRAC, GB, Mother's club, etc.) was introduced as a crucial factor, which may increase women's status. Also included are variables that measure women's status directly: residence, employment, education, religion, freedom of movement, decision-making power etc., since the BDHS data allow the measurement of women's mobility and decision-making power in their household. Two questions are selected for each, with which the relationships between women's status and NGO involvement can be explored.

The respondents are currently married women. Their responses to the two groups of questions are summarized in Tables 5 and 6. The questions in Table 5 are concerned with their mobility. Only 14% of the women say that they can go alone or can go outside the village or city, while 26% can go alone to the hospital or health center. In Table 5, aspects of women's decision-making are measured by two separate questions. As expected, women in Bangladesh are most likely to participate in the decision about what food should be cooked: 65% of women make this decision on their own and only 12% can decide on their own with respect to visiting their parents, friends or relatives. These indices represent four dimensions of women's status that are conceptually and statistically distinct with each other as there are no intra-indices correlations (Appendix B1).

Tables 7 and 8 show the relationship among four indices to fertility preferences (if one wants another child or not). As shown in Table 7, among women who can go

outside the village/city alone, 83.5% did not want an additional child, while only 16.5% wanted an additional child. Similar results are also found about women's decision-making status. 74% of women who can visit parents/friends alone did not want an additional child. In the case of what food should be cooked, it was 70%. Therefore, Tables 7 and 8 seem to suggest that the women who were more mobile and having a better decision-making status were less likely to want additional children.

Demographic variables

However, if this supposition holds, the study will have to control for the effects of other factors. Thus, the determinants of these four status dimensions are explored through multiple logistic regression. Many of the independent variables are those commonly used as background characteristics of women. These include age, education, religion, region, employment status and GO and NGO involvement. Tables 9 and 10 suggest that there is no clear pattern on the various facets of women's status. Older women are more mobile than younger women. It is positively related with women's movement outside the village/city. A similar, though weaker, age pattern is seen with respect to women's decision-making concerning visit to parents, friends or relatives. An opposite pattern is found for visit to health center or hospital: older women are less likely to go to health center than younger women. Similarly, the relationship between age and women's decision about food is weak. However, the women who have 0 and 1 children are less likely to be mobile and have

Table 7. Women's mobility status and fertility preference from BDHS 1999 - 2000.

Can go outside the residence/village/city	Fertility preference		
	No	Yes	Total
Women can go alone	1103 (83.50)	218 (16.50)	1321
Women can go with children/husband	3125 (71.44)	1249 (28.55)	4374
With other relatives	1288 (43.54)	1670 (56.45)	2958
Never	402 (50.44)	395 (49.56)	797
Total	5918	3532	9450
Can go to the health center/hospital	No	Yes	Total
Women can go alone	1755 (72.64)	661 (27.35)	2416
Women can go with children/husband	2806 (64.88)	1519 (35.12)	4325
With other relatives	412 (46.40)	476 (53.60)	888
Never	945 (51.89)	876 (48.11)	1821
Total	5918	3532	9450

Notes: Percentage of the women is bracketed within.

Table 8. Women's decision-making status and fertility preference from BDHS 1999 - 2000.

Visit to parents, friends or relatives	Fertility preference		
	No	Yes	Total
Can visit alone	796 (74.18)	277 (25.82)	1073
Husband only	1919 (64.20)	1070 (35.80)	2989
With husband jointly	2715 (69.79)	1175 (30.21)	3890
Someone else	190 (26.57)	525 (73.43)	715
With someone else jointly	298 (38.06)	485 (61.94)	783
Total	5918	3532	9450

Table 8. Cont'd.

What food should be cooked	No	Yes	Total
Can decide alone	4348 (70.28)	1839 (29.72)	6187
Husband only	286 (65.59)	150 (34.40)	436
With husband jointly	741 (67.49)	357 (32.51)	1098
Someone else	209 (23.80)	669 (76.20)	878
With someone else jointly	334 (39.25)	517 (60.75)	851
Total	5918	3532	9450

have decision making power, while those with 4 and 5+ children are likely to be more mobile and have more decision-making power than those who have two children.

Socio-demographic/economic variables

The socio-demographic/economic determinants show that women's education (the variable most commonly used as a proxy for women's status) is positively and significantly correlated with all indices of women's status except food cooking decision. Employed women are more likely to get higher mobility and decision-making power than non-employed women. Women who are engaged in non-agriculture and earn cash seem to have more mobility, but less household decision-making power. This is very important, but on the face of it, there is a little puzzling. A similarly puzzling pattern is also observed for the women's husbands who have a non-agriculture occupation. However, this may well be a fair reflection of present-day Bangladesh's socio-culture.

Often, differences in women's status have been attributed to broad socio-cultural variables such as religion and region of residence. Non-Muslim women are more likely to have higher mobility and decision-making power than Muslim women. On the other hand, the status of women is quite unclear according to the administrative divisions. Except for Khulna division, the results are not as the authors expected. It is notable that Khulna division has the highest literacy rate than Dhaka and other divisions. Sylhet division is religiously conservative than others (Biswas, 2004). Literacy rate is lower in Rajshahi, Chittagong and Sylhet divisions than in Dhaka division. The status of residence in the conservative Sylhet

division is lower than that of women in the highest literacy rate (liberal) region like Khulna and Dhaka divisions.

Involvement in GOs and NGOs

As shown in Tables 9 and 10, women's involvement in those activities exerted positive impact on women's mobility and to a much lesser extent, on decision-making power. As for mobility, it is clear that both BRDB and BRAC-GB have an expected sign (for both Models 1 and 2) and the relationship is particularly significant for hospital visits (Model 2) in the case of BRDB and GB, while Mothers' club's impact proves to be very weak. On the other hand, the results for decision-making power are mixed. For cooking (Model 3), all organizations exhibit a positive effect, but in the case of visits to parents etc. (Model 4), the coefficient has either a wrong sign or an insignificant value. It is probably safe, therefore, to conclude that women's involvement in GO and NGO activities did raise their status by increasing mobility, but not necessarily by increasing their decision-making power. Consequently, BRAC and GB, and to a lesser extent BRDB, were more effective in this respect, but the Mothers' club is a little bit weak in this respect.

Women who are involved in BRAC showed higher mobility and reduced economic dependence on their husband and other male kin. The members who had at least 48 months involvement with BRAC were significantly empowered (Islam, 1998; Husain, 1998). BRAC's other development activities include free informal education (set up in 1985, with about 49,000 schools in 2004, accounting for 11% of the total primary schools in Bangladesh) and health and medical facilities for low-

Table 9. Determinants of the mobility measures of women's status: a logistic regression coefficient estimates of the characteristics of married women in Bangladesh: BDHS 1999 - 2000.

Characteristics	Mobility indices			
	Model 1 (Outside village)		Model 2 (Hospital visits)	
	Coefficient	OR	Coefficient	OR
Demographic variables				
Age				
10-14 (25-29 ^r)	-0.185	0.83	-0.227	0.78
15-19	0.054	1.06	-0.098	0.91
20-24	- 0.002	0.99	-0.071	0.93
30-39	0.050****	1.05	-0.057	0.95
40-49	0.103 ****	1.11	-0.177***	0.84
Number of living children				
0	-0.030	0.93	-0.877*	0.42
1	0.148	1.16	-0.221**	0.80
3	0.076	1.08	0.109	1.12
4	0.395*	1.49	0.131****	1.14
5+	0.171***	1.19	-0.034	0.97
Socio demographic/economic variables				
Respondent's education (No education ^r)	0.160 **	1.17	0.181*	1.20
Respondent's employment status				
Employed (Not employed ^r)	0.638 *	1.89	0.428 *	1.54
Non-agriculture work (Agric work ^r)	0.339 *	1.40	0.407 *	1.50
Works for cash (Kind ^r)	0.030 **	1.03	0.070 **	1.07
Husband's status				
Education (No education ^r)	0.020	1.02	0.103****	1.11
Non-agriculture work (Agriculture work ^r)	0.066	1.07	0.375 *	1.46
Socio cultural variables				
Religion				
Hindu (Muslim ^r)	1.010*	2.74	1.105*	2.87
Christian	0.123	1.13	0.087	1.09
Others	1.084 **	2.99	0.656 ****	1.93
Geographic region				
Rajshahi (Dhaka ^r)	-0.085	0.92	-0.23 **	0.78
Chittagong	0.029	1.03	-0.099	0.91
Khulna	0.339*	1.40	0.001	1.01
Barisal	-0.202	0.82	-0.233 ***	0.79
Sylhet	-0.044	0.96	-0.193 ***	0.82
Involvement in GO and NGO activities				
BRDB (No involvement ^r)	0.282****	1.33	0.790*	2.20
BRAC	0.182 ***	1.21	0.113 ***	1.12
Grameen Bank	0.109***	1.12	0.245 **	1.28
Mother's club	0.188	1.21	-0.395	0.67
Other organizations	0.360 *	1.43	0.252 *	1.29
Intercept	-2.45 *		-1.34 *	
-2log likelihood	7360.152		10166.31	
N	9450		9450	
df	29		29	

r = Reference category, ** Significant at P<0.001, *** Significant at P<0.01, **** Significant at P<0.05 ***** Significant at P<0.10.
Notes: Model 1 is for a respondent who can go outside the village/city alone; Model 2 is for a respondent who can go to the health center/ hospital alone; Education means at least primary education; Not employed = housewife/house worker. Agriculture = Own land, rental land and other land worker/ cultivator. Non-agriculture = Professional, technical, clerical and managerial occupations.

Table 10. Determinants of the decision-making measures of women's status: a logistic regression estimates of the characteristics of married women in Bangladesh: BDHS 1999 - 2000.

Selected characteristics	Decision-making indices			
	Model 3 (Cooking)		Model 4 (Visit to relatives)	
	Coefficient	OR	Coefficient	OR
Demographic variables				
Age				
10-14 (25-29 ^r)	-0.043	0.96	0.149	1.14
15-19	-0.111	0.90	-0.011	0.99
20-24	-0.009	0.99	0.097	1.10
30-39	-0.029	0.97	0.082	1.09
40-49	-0.075	0.93	-0.013	0.99
Number of living children				
0	-1.28*	0.28	-1.119*	0.33
1	-.608*	0.544	-0.300**	0.74
3	0.320*	1.38	-0.115	1.12
4	0.334*	1.40	0.163	1.17
5+	0.450*	1.57	0.166****	1.18
Socio demographic/economic variables				
Respondent's education (No education ^r)	0.082****	1.09	0.208 **	1.23
Respondent's employment status				
Employed (Not employed ^r)	0.338*	1.40	0.444*	1.56
Non-agricultural work (Agric work ^r)	-0.084	0.92	-0.034	0.97
Works for cash (Kind ^r)	-0.041	0.96	0.174**	1.19
Husband's status				
Education (No education ^r)	-0.196*	0.82	0.218**	1.24
Non-agricultural work (Agricultural work ^r)	0.076	1.08	0.070	1.07
Socio cultural variables				
Religion				
Hindu (Muslim ^r)	0.531****	1.70	-0.066	0.94
Christian	0.031	1.03	-0.144	0.87
Others	-0.470	0.63	0.605	1.83
Geographic region				
Rajshahi (Dhaka ^r)	-0.103	0.90	-0.514*	0.60
Chittagong	-0.191**	0.83	0.374*	1.45
Chittagong	-0.331*	0.72	0.213***	1.24
Khulna	-0.791*	0.45	-0.032	0.96
Barisal	-0.257**	0.77	0.207****	1.23
Sylhet				
Involvement in GO and NGO activities				
BRDB (No involvement ^r)	0.169****	1.18	-0.139	0.87
BRAC	0.104***	1.11	-0.199	0.82
Grameen Bank	0.047***	1.24	-0.362***	0.69
Mother's club	0.95****	2.59	0.473	1.60
Other organizations	0.096***	1.10	-0.111	0.89
Intercept	1.037 *		-2.53*	
-2log likelihood	11290.078		6424.567	
N	9450		9450	
Df	29		29	

r = Reference category, ** Significant at P<0.001, *** Significant at P<0.01, **** Significant at P<0.05, ***** Significant at P<0.10

Notes: Model 3 represents what food should be cooked by a respondent; Model 4 is for a respondent who can visit parents, friends or relatives.

income people in rural areas. Under the essential health care program, with the help of Shashtho Shebikas (health volunteers) and Shashtho Kormis (health workers), immunization coverage of the population is 80% (BRAC, 2005). The program also provides services to pregnant women with respect to their health and nutritional statuses and to the community's needs, with a particular focus on BRAC members, all of which are addressed through education on family life, contraception and awareness of HIV/AIDS. Therefore, through the BRAC, women obtain education and financial independence and they come forward to learn about family planning. They, thus, become determined to have fewer children. GB has introduced higher education loans for all students from Grameen families who can enter into the higher educational institutions (medical schools, engineering, universities etc.). Students are held responsible to repay the loans when they start earning. Half of the numbers of scholarships are reserved for female students. They believe that education leads to much better jobs and then to a much better income. BRAC is directly involved in education and health sectors, while GB is indirectly involved in education sectors. BRAC is directly working in family planning sectors, while the GB concentration is on economic and financial sectors.

CONCLUSION AND IMPLICATIONS

The purpose of this paper has been to show how NGO activities changed fertility and women's status. The results presented above have confirmed that women's involvement in NGOs exerted a curbing effect on their desire for additional children. As a result, it was micro-credit organizations such as BRAC and GB, and not organizations for women and health like Mothers' club, that were most effective in reducing fertility. It is not unlikely that this was because NGOs helped women to raise their status in society, but on the other hand, there is no direct evidence that they could successfully raise the women's decision-making power in the household.

These points have some implications, as it is not easy for the government to take a direct measure in reducing the nation's fertility or to increase the employment of women except in the state sector. First, the finding that micro-credit NGOs are most successful is suggestive because it indicates that mere preaching or education on family planning cannot succeed. Secondly, it suggests that any social programme, which can motivate women to take action, will eventually raise their social awareness and enlarge their perspectives. In the case of BRAC and Grameen Bank, it was undoubtedly an economic motivation that has encouraged women to join their organizations, but it is very likely that it changed the women's awareness and eventually led to the reduction in the number of children they had. Thirdly, this may not imply that NGOs can change everything. Indeed, it is

likely that they failed to empower the women with respect to decision-making power in the household. Yet, fourthly, if further progress can be made on this aspect, then the study would be able to expect further progress in reducing Bangladesh's fertility.

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Appendix Table B1. Pearson's correlation coefficients for the indices of women's status

	(1)	(2)	(3)	(4)
(1) Can go outside the village/city	1.00			
(2) Can go to health center/hospital	0.32	1.00		
(3) What food should be cooked	0.03	0.05	1.00	
(4) Visits family, friends or relatives	0.10	0.12	0.18	1.00

Notes: All the correlations are significant at the 0.01 level (in a two tailed test).

Appendix B1

To test the possibility of the four indices representing largely different aspects of women's status (other than comparing their determinants in Tables 5 and 6), Table 1 is an intra-indices correlation coefficient matrix. While all the correlation coefficients are positive and significant, none of the correlations exceed 0.32. Although, there is some random variation in these indices, these low correlations coefficient are taken to confirm successful measurement of largely distinct dimensions of women's status.