

Do Household Wealth and Educational Advancement Affect the Spouse Age Difference? Evidence from Multiple Indicator Cluster Survey (MICS) 2006, Bangladesh

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Abstract

Using Multiple Indicator Cluster Survey (MICS) 2006 data on women, this paper shows that spouse age difference decreases by 1.73 months if wife's education increases by one additional year. On the other hand, same difference increases by 0.59 months if husband's education increases by one additional year. These figures imply the net decrease of spouse age difference by 1.14 months if both attain one additional year of education. This indicates that education delays age of marriage irrespective of sex. Reduction in spouse age difference in the case of wife's education may be due to women empowerment. On the other hand, increase in spouse age difference in the case of husband's education may be due to financial security an educated male provides. Along with educational advancement we tried to introduce wealth dummy, area dummy and their interaction in two regressions. The results of the regression shows that spouse age difference decreases for middle class and increases for rich compared to poor class. Spouse age gap decreased by approximately 6 to 8 months if a marriage occurred during democratic regime (after 1990). Besides, spouse age difference decreased by 9.97 to 10.72 months if a woman is selected from tribal region. Though coefficients of Muslim dummy are statistically significant but their sign remain inconsistent across regression.

Keywords: Marriage, Partnership, Age Gap, Demography, Multivariate Regression, Wealth Score

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Introduction

Spouse age difference helps us to understand the change in partnership formation subject to social, cultural and economic reality. This difference is affected by economic development of the society. In an advanced society age gap is supposed to be minimal or reverse (Cox and Wilson, 1973). But in a developing country like Bangladesh there exist a significant positive age gap between partners (Ahmed, 1989). Younger wives are the natural choice in the society where males have intention to control their wives; this is nothing but the result of male domination in a society (Kaliappan and Reddy, 1987). They claimed greater age gives husband a significant advantage in the case of status, experience and power.

Custom, religion, belief, values, social and economic advancement, educational attainment, etc. work as catalyst to influence the spouse age difference. When a society is underdeveloped with low educational advancement, it is presumed that the age gap between the spouses will be higher. Abedin (1975), from a survey in northern part of Bangladesh, showed that generally husbands were 5 to 9 years older than their wives, and in the case of late marriage this difference became even larger ranging from 10 to 20. His study did not articulate the socioeconomic factors affecting the age difference of spouses; rather he focused entirely on the relative distribution of ages of spouses by age group. Ahmed (1989) claimed that socioeconomic characteristics of spouses such as education, childhood, residence background, and occupation have considerable influence on their age differences. But we want to carry our research further by introducing several other factors like household wealth, marriage at early age (male aged before 21 years and female aged before 18 years), women married more than once, etc.

Sufficient numbers of literatures are devoted to explain various aspects of spouse age difference and their social implications. Socioeconomic characteristics of spouses such as education, childhood, residence background, and occupation have considerable influence on spouse age differences (Ahmed, 1989). The impact of education in the case of determining spouse age difference is prevalent in literature. Educated men and women have a greater chance to voice their opinion in mate selection as modernization changes the concept of marriage from an institution to a source of companionship (Burgess and Cottrell, 1939). Moreover, the role of geographical location has significant impact in the case of shaping spouse age difference. Women born and brought up in urban area are expected to be

younger than their spouses, even though urbanization has shown a positive relationship with age at first marriage (Ahmed, 1989), because the age at first marriage for men is much higher in urban areas than rural areas.

In some societies social customs work as 'pull' factor for women to marry early whereas economic factors work as 'push' factor to delay their marriage. Both factors simultaneously contribute to a larger spouse age difference. As long as men are economically responsible for the family, therefore, their age at marriage must be more strongly determined by external factors than that of women, which is determined more by societal factors (Goode, 1963). Quisumbing and Hallman (2003) showed that while the reduction of husband–wife age gap in schooling and age may improve the balance of power within the family, persistent differences in assets in favour of husbands may have important effects on family well-being. Most importantly they argued major social-structural changes such as increases in educational attainment, urbanization, and the emergence of new roles for single women are responsible for the increase in age at marriage.

Factors like wealth, education and economic status reinforce the delay of marriage for both men and women. A study in United States found that the spouse age difference is decreasing because of increase in median age of women at marriage and decrease in median age of men at marriage (Presser, 1975).

By using data of 51 studies based on a number of data sources Jejeebhoy (1995) claimed that education is the most influential factor related to the postponement of marriage, but the relationship may be subject to threshold effects. Husband's age and educational seniority have also been used to connote male control over women (Cain, 1984; Miller, 1981). Sen (1989) claimed that educational differences could be viewed as a proxy for differences in earning power, which influences bargaining power. Smith *et al.* (2003) postulated how women's decision-making power relative to their male partners (usually their husbands) depends on four underlying indicators – whether a woman works for cash, her age at first marriage, the age difference between her and her husband, and the educational difference between her and her husband. Aside from their use as proxies for sources of economic and power differential among spouses, the factors that affect spouse age differential have not been well studied.

Data and Methods

Data

Our analysis is based on secondary data. We have used Multiple Indicator Cluster Survey (MICS), 2006 carried out by Bangladesh Bureau of Statistics (BBS) at national level. For analysis we have selected 50,285 married women (aged between 15-49 years). Of them, 3.72 percent women were married more than once. The year of marriage of respondents ranges from 1961 to 2006. Among the respondents 66 percent were from rural areas. Majority of the respondents are Muslim (84.5 percent), whereas 11.73 percent are Hindu, and the rest 3.77 percent consists of Christian and Buddhist. In terms of ethnicity, 94.78 percent respondents are Bengali and rests are tribal (5.22 percent) such as Chakma, Marma, Tripura, Garo and Saontal. Average age of the respondents is 30.72 year. Average year of schooling of the respondents is 3.97. Additionally 39.33 percent of the respondents had never been to school. About 76.94 percent of the respondent is subject to child marriage implies that they got married before they attained their legal age of marriage (18 years for female and 21 for male). Background characteristics of the respondents are shown below (Table 1).

Table-1: Background characteristics of women 2006

	Background characteristics	Number = n	(%)
Religion	Muslim	42,492	84.50
	Non-Muslim	7,793	15.50
Area	Rural	33,192	66.00
	Urban	17,093	34.00
Age	15-19	5,451	10.84
	20-24	9,451	18.79
	25-29	9,522	18.94
	30-34	8,127	16.16
	35-39	7,674	15.26
	40-44	5,488	10.91
	45-49	4,572	9.09
Wealth group	Poor	20,284	40.34
	Middle class	20,500	40.77
	Rich	9,501	18.89
Ethnic group	Tribal	1,747	3.47
	Bengali	48,538	96.53
Child marriage	Married before 18	38,690	76.94
	Married at 18 or above	11,595	23.06

Model specification

Following Ahmed’s (1989) attempt to explain the spouse age difference for some socioeconomic variables, finding was limited as he showed only differences in mean of the concerned variables. The proportion of variance explained in his model was small. Here we would like to incorporate some additional socioeconomic variables as well as their interactions with other variables to capture the interaction effect of those variables. We also intended to extending the model for both types of women who were married once and more than once employing simple multivariate regression to identify the factors determine the spouse age difference. The models of spouse age difference are as follows,

Model 1: Spouse age difference for women married once -

$$y = a_0 + b_1 \text{ Muslim} + b_2 \text{ Place of Residence} + b_3 \text{ Ethnic status} + b_4 \text{ Political Regime} + c_1 \Sigma \text{ Child marriage} + d_1 \Sigma \text{ Economic condition} + e_1 \Sigma \text{ Place of Residence} * \text{ Economic condition} + f_1 \Sigma \text{ Ethnic status} * \text{ Economic condition} + g_1 \Sigma \text{ Spouses' education} + u_i$$

Model 2: Spouse age difference for all women

$$y = a_0 + b_1 \text{ Muslim} + b_2 \text{ Place of Residence} + b_3 \text{ Ethnic Status} + b_4 \text{ Political Regime} + b_5 \text{ Wife married more than once} + b_6 \text{ Wife child marriage} + c_1 \Sigma \text{ Economic condition} + d_1 \Sigma \text{ Place of Residence} * \text{ Economic condition} + e_1 \Sigma \text{ Ethnic Status} * \text{ Economic condition} + f_1 \Sigma \text{ Spouse education} + u_i$$

Here,

- y = Spouse age difference (in months)
- Muslim = religion status, 1=Islam and 0 = otherwise
- Place of Residence = region lives in, 1 = rural area and 0 = otherwise
- Ethnic status = ethnic status, 1 = tribal and 0 = otherwise
- Political Regime = married in democratic regime, 1 = married after 1990 and 0= otherwise
- Wife’s child marriage status = child marriage status of wife, 1= married before the age of 18 and 0 = otherwise
- Husband’s child marriage status = child marriage status of husband, 1 = married before the age of 21 and 0 = otherwise
- Poor = one of three economic status, 1 = poor and 0 = otherwise
- Middle class = one of three economic status, 1 = middleclass and 0 = otherwise
- Rich = one of three economic status, 1 = rich and 0 = otherwise
- Women education = highest class completed by the wife
- Husband education = highest class completed by the husband

We have determined the economic conditions of the household as poor, middle class and rich by calculating the asset index based on the asset data of the respondents' households. Spouses' education includes highest class completed by both wife and husband. All other variables mostly social characteristics are qualitative in nature and we are interested in their magnitudes for determining the spouse age difference. Several combinations of social characteristics are also controlled by introducing interaction dummy. In the case of model 1 (women married once) we have determined the variable 'husband's child marriage status' assuming that those husbands also married once. This restricts us using the variable in model 2 (all women) where women married more than once are also included.

Results

We have run regressions to identify the exact magnitude of effect of various variables on spouse age difference for both models. We found *Heteroscedasticity* (unequal variance) in the model. To remove the *Heteroscedasticity*, we report t-statistics with robust standard errors. Then we have tested for *Multicollinearity*. As none of the VIF exceed 10, implying no *Multicollinearity* in the model.

Regression model 1 (table-2) is for women who married once and we have incorporated Muslim dummy, wife's education, husband's education, husband's child marriage, wife's child marriage and democracy as independent variable. We have presented wealth variable along with other variables introduced in both regressions. Our wealth variable is inbuilt wealth index used in MICS 2006. We have constructed three dummy variables from wealth index i.e. poor, middle and rich class.

Our base category is poor, non-Muslim, urban Bengali women married in non-democratic regime. Besides, we have introduced location dummies e.g. urban, rural and ethnicity dummy, e.g. Bengali and Tribal. Moreover, we have included rich, poor and middle class dummies that represent wealth. Our regression result shows that spouse age difference is 1.84 months higher for Muslim women (married once) than Non-Muslims. This result is significant at 0.05 level of significance and opposite to Ahmed's (1989) finding of higher spouse age difference for Hindus. However, spouse age difference decreases by 1.38 months if a woman is Muslim as shown in regression model 2 (table 2) and our result is significant at 0.10 level of significance.

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Spouse age difference decreases by 1.73 months if women’s education increases by one additional year. This result holds even for a woman married twice but magnitude decreases slightly (1.53 months). This result is significant at 0.01 level of significance. On the other hand, spouse age difference increases by 0.59 months if husband’s education increases by one additional year. This result is also significant at 0.01 level of significance. Because in the case of marriage potential educated bridegrooms may have more bargaining power and can choose younger partner. It also may be due to financial security the educated bridegroom provides. This financial security makes an older educated bridegroom attractive candidate for marriage (Quisumbing and De la Briere, 2000; Quisumbing and Maluccio, 2002).

Table-2: Multivariate regression results 2006

<i>Dependent variable: spouse age difference</i>		
<i>Independent variables</i>	<i>Model 1</i>	<i>Model 2</i>
Muslim	1.84 (2.54)**	-1.38 (-1.65)*
Wife’s education	-1.73 (-18.24)***	-1.53 (-13.95)***
Husband’s education	0.59 (7.62)***	0.92 (10.14)***
Wife married more than once		55.15 (19.71)***
Democracy (Political Regime)	-8.37 (-16.01)***	-5.99 (-9.51)***
Wife’s child marriage	25.98 (39.05)***	11.51 (16)***
Husband’s child marriage	-75.21 (-187.77)***	
Middle class	-1.67 (-2.73)***	-1.96 (-2.62)***
Rich	2.18 (1.85)*	4.7 (3.4)***
Rural (Place of Residence)	-1.57 (-1.25)	1.11 (0.74)
Tribal (Ethnic status)	-10.72 (-4.71)***	-9.97 (-3.77)***
Rural middle class	-1.09 (-0.73)	0.33 (-0.18)
Rural rich	-3.89 (-2.27)**	-3.25 (-1.61)
Tribal middle class	-12.51 (-4.41)***	-13.65 (-4.26)***
Tribal rich	-22.43 (-3.22)***	-26.53 (-3.49)***
Constant	113.09 (75.03)***	104.6 (59.81)***
No of observations	48403	50275
Adjusted R-square	.2753	.053

Note: Absolute value of t statistics in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%.

Our democracy dummy is statistically significant in both regressions. The negative democracy coefficient indicates that spouse age difference is 8.37 to 5.99 months less for a woman married during democratic regime than a

woman married in non-democratic regime. Democracy dummy signifies whether spouse married after 1990 or before 1990. This is may be the fact that in a democratic environment every individual have more active role in any kind of decision-making, i.e., in the case of decisions regarding marriage. We also assumed that irrespective of society women also have their own voice in decision-making regarding their marriage.

Spouse age difference is 26 months higher if a woman marries before her legal age of marriage (the legal age of marriage for female is 18 years in Bangladesh) and our result is significant at 0.01 level of significance. In Bangladesh, family pressure often pushes women to admit child marriage. In such case, the groom is normally senior than bride by age. But spouse age difference decreases by 75.21 months if a man marries before attaining his legal age of marriage, i.e. 21 years. In our society male child marriage is associated with female child marriage and, this happens only if husband and wife are of similar age.

Spouse age difference decreases approximately by 1.5 months to 2 months if we pick a woman from middle class status. This may be due to the fact that the middle class is more educated and more aware of different problems arisen from high age difference of spouses. In educated middle class, boys and girls interact with each other randomly, that eventually choose partner of similar age. On the other hand, spouse age increases by 2.2 months if a woman is from rich class and married once. Nonetheless, spouse age difference decreases by 4.7 months if we estimate it for all women. In this case the former result is significant at 0.10 level of significance while the later one is significant at 0.01 level of significance.

The sign and statistical significance of coefficient for rural dummy remain dubious across regressions. Sign of the coefficient remains inconsistent in both regressions. So, we do not have any statistically consistent result for this dummy variable. Spouse age difference decreases by 10.72 months if we pick a tribal woman married once and decreases by 9.97 months if consider all tribal women. It may be due to their tradition of matriarchal family or other tribal attributes that we have not controlled. Coefficients of both regressions are significant at 0.01 level of significance. Rahman and Hussain (1997) shows that the mean age at marriage of tribal women is approximately 4 years higher

from the mean age at marriage of non-tribal women. So, it may be the reason of decreased spouse age difference for tribal people.

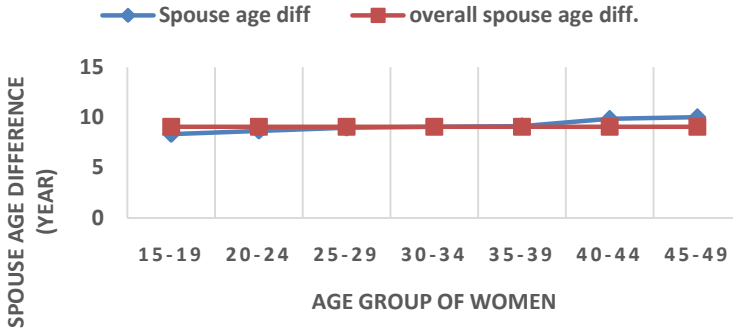
Additionally, we have addressed interaction dummy between area and wealth. For the rural middle class women the sign of coefficient remains inconsistent across regressions. Results show that spouse age difference decreases by 1.09 months in the case of rural middle class women who married once. Also, spouse age difference increases by 0.33 months for all rural middle class women. However, both estimates are statistically insignificant.

Spouse age difference decreases by 3.89 months for rural rich women who married once (0.05 level of significance). On the other hand, this difference is only 3.25 months if we consider all women. But for all women the coefficient is statistically insignificant. Spouse age difference decreases by 12.51 months for the tribal middle class women who married once. The same decrement is 13.65 months if we consider all middle class tribal women. The statistical significance of coefficients in both regressions remains intact at 0.01 level of significance.

Unlike the rich class in general, spouse age difference decreases by 22.43 months for tribal rich women who married once. On the other hand, spouse age difference decreases by 26.53 months for all tribal rich women. It may be because traditional tribal family practices dominate in the case of determining spouse age gap in that group.

For regression model 1, our adjusted R-Square is 0.27 which shows that our regression for women married once is able to explain 27 percent variation in spouse age difference due to change in independent variables. However, the adjusted R-square is 0.053 for our regression for all women, which is much lesser than regression model 1. We tried couple of other interaction dummy between democracy and education. Unfortunately, the coefficients show statistically insignificant results.

The following graph shows the trend in spouse age difference for all women considered in the model. It exhibits that younger women have smaller spouse age difference than older women.

Figure-1: Trend in spouse age difference for different age cohorts of women

The average spouse age difference for all women is about 9 years. This difference in the first three age cohorts is smaller than the average age difference for all women. For the age cohort 30-34 years average spouse age difference is same as the overall average. However, the same difference is higher for the last three age cohorts than the overall average.

Discussion and Conclusion

Our results are subject to some limitations which are basically structural and mainly due to using secondary data. Firstly, reliability on reporting of age by the respondent (female) is a concern as women usually understate their age and overstate their husband's age. It may be due to their tendency to picturesque their husband as commanding figure in the family. Moreover, it may be due to their unawareness about their own and husband's age. Secondly, 'husband's first age of marriage' is calculated for those women who are married only once assuming that their husband is also married once. From this calculation we have introduced the variable named 'Husband's child marriage'. This variable allows us to exclude the observations of women married more than once. Lastly, we could not control the effect of spouses' occupation at pre and post-marriage because of insufficiency of data. The asset holdings as well as the future economic prospects of husband and wife's parents' economic condition at the time of marriage can also be an interesting factor in marriage. We also could not capture these effects except current economic condition of household. However, current asset holdings could be a real time proxy for 'future economic prospects of husband' at the time of marriage. Spouse age difference has important relationship with marriage and the population available to marry or at risk of separation in the future. It also

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has an association with the population available to form any type of partnership, including cohabitation. So, age difference is a vital statistics that can be exploited to interpret partnership status. It has also important implication with fertility showing positive association with larger spouse age gap. Our argument is that this age gap is determined by husband's economic status and couple's educational advancement. However, husband and wife's education do not affect the age gap same way. Our result suggests that husband's education enlarge the spouse age difference at large, while wife's education reduces the difference. Additionally, the rich and poor class spouse age difference is greater compared to middle class spouse. In addition, several interaction dummies reveal that how age gap of spouse is influenced by different wealth class living in different area.

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