CHAPTER 5

A Comparative Analysis of Women's Education and Fertility

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1. INTRODUCTION.

It is widely recognized that the enhancement of women's education is critical for fertility reduction. Most empirical studies indicate a negative relationship between the level of women's education and their fertility or stated fertility desires (Goldstein, 1972; Rodrigez and Cleland, 1980; Jain, 1981; ESCAP,1992). However, intertemporal and intercountry variations in the magnitude and patterns of the relationships are noted which are attributed to the disparity in economic and social development. Several factors interact with education at the predictive and intermediate levels to effect the fertility reduction. Economic status interacts closely with education such that income and employment both curb the trend towards a large family norm (Hermalin and Mason,1981; Jain,1981; Shireen Jejeehoy, 1992). Improvement in education erodes the deeply ingrained cultural values and traditions that predispose to a large family size.

Caldwell argued that the educational exposure to modern ideas and social values strongly undermine the traditional norms and familial relationships that favour a high fertility (Caldwell, 1980, 1982). Education may directly change attitudes, values and beliefs towards a small family norm and towards a style of child - rearing that is relatively costly to the parents in time and money (higher "child quality"; UN, 1987). However, Cochranne's research (1979) shows that a small amount of education in least literate societies might initially increase fertility (Jain, 1981).

Various pathways are perceived in extricating the linkage between education and fertility. These are intricately webbed and interlocking. While education can have both a positive and negative effect on fertility, the access to and effective use of intervention measures offset whatever positive links could emanate. For example, a high level of female education is associated with increased fecundability, lower prevalence and duration of breast - feeding, early onset of ovulation, higher childhood survival and lower foetal loss and a longer reproductive span through better nutrition and health. On the other hand, the same high level of education is responsible for the higher age at marriage or late entry into the marriage union by which leads to delay the child - bearing, wider birth intervals, access to modern contraceptive methods and deliberate shortening of the reproductive span. Thus, the net effect of education on number of births or surviving children may not always be negative.

Cochranne's research (1979) shows that women's education is more strongly negatively related to fertility than that of men's. Women's education is associated with better opportunities for employment outside the home, time needed for child care has a higher opportunity cost for them, this tends not to be true for men. For men, a positive relation between education and fertility might be expected from the "income effect" (UN, 1987).

In the course of demographic transition, the wide disparity in fertility by education narrows down over time as a result of greater access to contraception and the diffusion of information through both the visual and print media. Whereas at the initial stages, individual initiatives play a large part in the fertility differentials discerned, programmatic and policy interventions could construct the gap at a lower fertility level. Fertility will first widen, at the initial stages of transition to lower fertility, as a decline begins at the earliest among the highly educated; at a later stage, differentials are expected to narrow (UN, 1987).

From the foregoing discussions outlined above, it is obvious that the paths through which education acts on fertility are complex and intertwined. The present chapter is an attempt to analyze this relationship, by examining fertility differentials by education through a number of variables such as children ever born, living children, age at first marriage, contraceptive knowledge

and practice and reproductive span drawing from data in 28 developing countries which took part in the Demographic Health Surveys (DHS) program in the late 1980's. Analysis was undertaken on standard record data files which were available at the time, paper was prepared for 15 African countries, 3 Asian countries, and 10 countries in Latin America and the Caribbean.

2. EDUCATIONAL ATTAINMENT IN TWENTY-EIGHT DHS COUNTRIES

1) Education by Sex

Educational attainment of both sexes is strongly related to the national level of development; indeed, education is an integral part of socio - economic development (UN, 1987).

In the DHS, quetions dealing with education include literacy and number of years of schooling completed by both the woman and her spouse. The educational levels were classified into four categories according to the number of years of schooling completed. It is to be noted, though, that variations in the categorization of educational level exist on an intercountry basis, and the educational system has evolved over time even in the country. The classification in most countries is as follows; no education is designated as 0 year schooling, primary education covers a range of 4 to 6 years, secondary education ends from between 9 to 12 years and higher education has a ceiling of 13 to 16 years.

Appendix Tables (A.Tab) 4, 5 and 22 shows the literacy and educational distribution of women and their husbands. The proportion of women who can read easily ranged from 11 per cent in Mali to 90 per cent in Mexico (A.Tab 5). Wide variations noted in the DHS countries. The percentage of women with no formal education ranged from 0.8 per cent in Trinidad and Tobago to 82.7 per cent in Morocco (A.Tab 4). Husbands were more likely to receive some schooling—the proportion with no education ranged from 0.7 per cent (Trinidad Tobago) to 72.6 per cent (Mali) (Table 22).

A.Tab 57 presents the mean number of years of schooling completed (unweighted) for women and their husbands by urban—rural residence. A common feature of the table is the higher level of education in urban areas irrespective of sex. Mean years of schooling in urban residence for both sexes are about two years and over longer than in rural residence in most countries (A.Tab 57).

The average number of years of schooling for women in the countries ranged from 1.08 in Morocco to 7.79 in Trinidad and Tobago, while for the men the range was from 1.02 in Senegal to 7.97 in Trinidad and Tobago. In Asia, husbands have better education than the wives, the difference ranging from 1 to 2 years (Fig.1). In Latin America, the differences are hardly perceptible, while in Africa, marked differences were noted in Liberia (2.7 years), Uganda (2.2 years) and Ghana (2.0 years).

In all countries, relatively well educated persons tend to marry each other. There is a positive relationship between the educational attainment of wife and husband in all countries. The correlation coefficient, r, between husband's and wife's education, measured in single years, ranged from 0.51 in Trinidad and Tobago to 0.75 in Peru (Table 1).

2) Education by Working Status

Mean Years of schooling completed of women differ according to their working status (A.Tab 58). Women currently working received higher education than non - working women for most countries. In Asia, the difference in average education was slight between the working woman and their non-working counterarts, less than 1 year in the case of Indonesia and Thailand and close to two years for Sri Lanka. Ranking the regions, one could discern that among those non-working, Asian women have the highest mean number of years of schooling, 6 years followed by Latin America (5 years) with Africa having an average of 3 years. Among those working, Latin American women ranked first with an average of 7 years of schooling followed by Africa and Asia with about 5 years. On this basis, it cannot be said that education is a good prediction of employment.

When we look at level of women's education by husband's occupation instead of women's occupation which are not included in DHS, husbands in the professional and clerical categories known as white collar reported higher educational levels compared to their other working and non-working counterparts, as expected (A. Tab 59). This situation prevails in all three regions. Inter country variations do exist by region within Asia, it is to be noted that in Thailand, the average number of years of schooling for professionals was 12, within Latin America, Peru, Bolivia and Ecuador reported 11 years of education for the professionals. In Africa, a similar pattern was observed in Egypt. Clerical workers have a slightly lower length of schooling. It seems that agricultural workers have the lowest education—even lower than those not working in most cases. Manual and other workers have also lower levels of education.

3) Education by Age

A.Tab 56 indicates cohort performance in educational levels. On a regional basis, Latin America takes the lead where there was a perceived lengthening of the educational level with age regression. Younger women tended to be better educated than the older women.

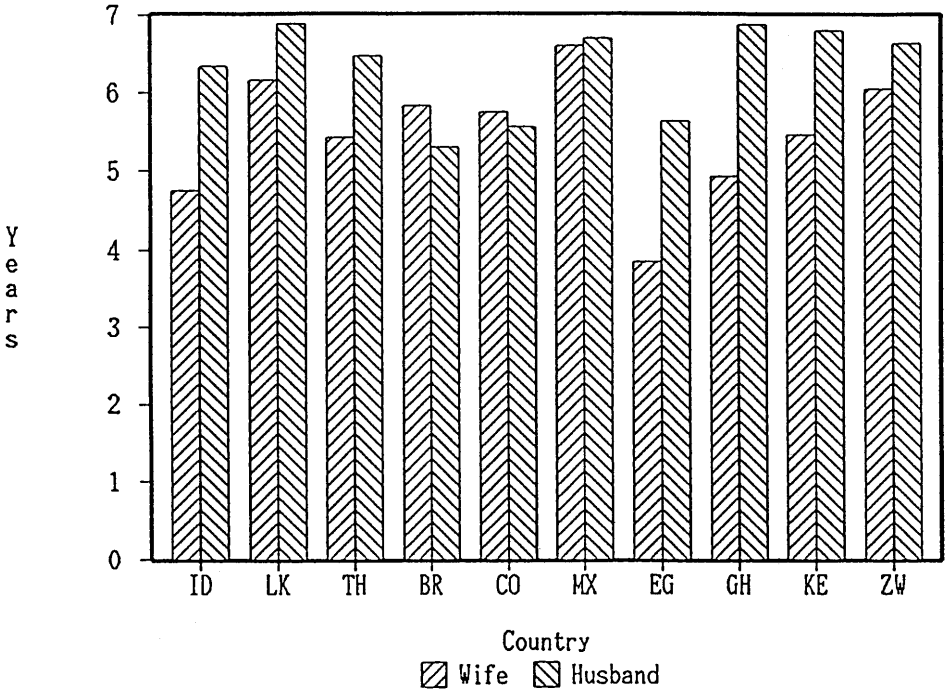
Table 1 Relationship between Women's Educational Level and Number of Children, Age at First Marriage in Selected DHS Countries

Country	VAR	Number	Mean	STD DEV	Pearson Correlation Coefficients					
					ED	CEB	LC	FM	EDH	UR
Asia										
Indonesia	ED	11,880	4.75	3.89	1.000					
	CEB	11,884	3.34	2.51	-0.198 **	1.000				
	LC	11,884	2.89	2.11	-0.138 **	0.934 **	1.000			
	FM	11,884	17.55	3.92	0.382 **	-0.238 **	-0.197 **			
	EDH	11,617	6.33	4.22	0.706 **	-0.129 **	-0.070 **	0.345 **		
	UR	11,884	0.38	0.48	0.341 **	-0.005	0.025 **	0.209 **	0.390 **	
	WK	11,868	0.48	0.50	-0.113 **	-0.003	-0.013	0.022 *	-0.129 **	-0.183 **
Sri Lanka	ED	5,862	6.16	3.62	1.000					
	CEB	5,865	3.02	2.14	-0.320 **	1.000				
	LC	5,865	2.84	1.98	-0.295 **	0.972 **	1.000			
	FM	5,865	20.71	4.63	0.359 **	-0.387 **	-0.375 **			
	EDH	5,692	6.89	3.21	0.594 **	-0.255 **	-0.230 **	0.283 **		
	UR	5,865	0.17	0.38	0.162 **	-0.056 **	-0.052 **	0.095 **	0.194 **	
	WK	5,865	0.19	0.39	0.176 **	-0.056 **	-0.066 **	0.058 **	-0.129 **	-0.100 **
Thailand	ED	6,769	5.42	4.09	1.000					
	CEB	6,775	2.63	2.05	-0.314 **	1.000				
	LC	6,775	2.43	1.82	-0.300 **	0.965 **	1.000			
	FM	6,775	19.75	4.00	0.331 **	-0.250 **	-0.236 **			
	EDH	6,595	6.48	4.47	0.685 **	-0.298 **	-0.285 **	0.300 **		
	UR	6,775	0.36	0.48	0.363 **	-0.179 **	-0.162 **	0.172 **	0.411 **	
	WK	6,751	0.63	0.48	0.052 **	0.049 **	0.052 **	0.081 **	0.010	-0.040 **
Latin America										
Brazil	ED	3,864	5.07	4.02	1.000					
	CEB	3,873	3.15	2.63	-0.393 **	1.000				
	LC	3,873	2.79	2.20	-0.360 **	0.944 **	1.000			
	FM	3,873	19.89	4.20	0.273 **	-0.242 **	-0.228 **			
	EDH	3,608	5.29	4.34	0.731 **	-0.373 **	-0.337 **	0.221 **		
	UR	3,873	0.74	0.43	0.327 **	-0.186 **	-0.179 **	0.063 **	0.358 **	
	WK	3,873	0.39	0.48	0.169 **	-0.037 **	-0.033 *	0.119 **	0.086 **	0.030 *
Colombia	ED	3,340	4.93	3.50	1.000					
	CEB	3,340	3.38	2.67	-0.426 **	1.000				
	LC	3,340	3.12	2.38	-0.402 **	0.970 **	1.000			
	FM	3,340	19.44	4.30	0.224 **	-0.239 **	-0.227 **			
	EDH	3,241	5.56	4.12	0.654 **	-0.382 **	-0.369 **	0.160 **		
	UR	3,340	0.69	0.46	0.324 **	-0.216 **	-0.209 **	0.082 **	0.384 **	
	WK	3,338	0.21	0.41	0.193 **	-0.082 **	-0.078 **	0.079 **	0.183 **	0.207 **
Mexico	ED	6,024	5.56	3.98	1.000					
	CEB	6,062	3.71	2.80	-0.444 **	1.000				
	LC	6,062	3.37	2.44	-0.410 **	0.965 **	1.000			
	FM	6,062	19.15	4.39	0.299 **	-0.297 **	-0.282 **			
	EDH	5,961	6.69	5.05	0.704 **	-0.401 **	-0.371 **	0.293 **		
	UR	6,062	0.74	0.43	0.373 **	-0.214 **	-0.183 **	0.201 **	0.400 **	
	WK	6,026	0.30	0.46	0.128 **	-0.055 **	-0.063 **	0.093 **	0.094 **	0.106 **
Africa										
Egypt	ED	8,886	3.84	5.07	1.000					
	CEB	8,911	3.98	2.84	-0.338 **	1.000				
	LC	8,911	3.27	2.18	-0.290 **	0.913 **	1.000			
	FM	8,911	18.17	4.21	0.512 **	-0.368 **	-0.321 **			
	EDH	8,780	5.62	5.62	0.732 **	-0.322 **	-0.279 **	0.428 **		
	UR	8,911	0.49	0.50	0.399 **	-0.138 **	-0.084 **	0.317 **	0.357 **	
	WK	8,907	0.12	0.33	0.491 **	-0.141 **	-0.124 *	0.360 **	0.365 **	0.188 **
Ghana	ED	3,593	4.31	4.53	1.000					
	CEB	3,599	3.91	2.77	-0.290 **	1.000				
	LC	3,599	3.24	2.29	-0.236 **	0.931 **	1.000			
	FM	3,599	17.73	3.40	0.143 **	-0.195 **	-0.180 **			
	EDH	3,306	6.86	5.27	0.547 **	-0.250 **	-0.190 **	0.082 **		
	UR	3,599	0.31	0.46	0.227 **	-0.075 **	-0.052 **	0.052 **	0.231 **	
	WK	3,598	0.57	0.49	0.132 **	0.082 **	0.095 **	0.022	0.108 **	0.158 **
Kenya	ED	5,285	4.69	3.85	1.000					
	CEB	5,296	4.57	3.02	-0.394 **	1.000				
	LC	5,296	4.07	2.69	-0.340 **	0.949 **	1.000			
	FM	5,296	17.64	3.78	0.307 **	-0.218 **	-0.188 **			
	EDH	4,988	6.80	3.98	0.613 **	-0.317 **	-0.272 **	0.185 **		
	UR	5,296	0.25	0.43	0.304 **	-0.282 **	-0.269 **	0.098 **	0.320 **	
	WK	5,244	0.11	0.32	0.306 **	-0.071 **	-0.048 **	0.160 **	0.235 **	0.251 **
Zimbabwe	ED	3,065	5.19	3.51	1.000					
	CEB	3,068	3.97	2.82	-0.337 **	1.000				
	LC	3,068	3.58	2.50	-0.303 **	0.964 **	1.000			
	FM	3,068	18.11	3.61	0.205 **	-0.172 **	-0.150 **			
	EDH	2,766	6.63	3.62	0.620 **	-0.327 **	-0.294 **	0.169 **		
	UR	3,068	0.30	0.46	0.339 **	-0.164 **	-0.136 **	0.090 **	0.342 **	
	WK	3,065	0.37	0.48	0.127 **	0.015	0.022	0.064 **	0.126 **	0.106 **

(Note) CEB:Total Number of Children Ever Born
LC:Total Number of Living Children
ED:Total Years of Schooling Completed of Women
FM:Age at First Marriage
EDH:Total Years of Schooling Completed of Husband
UR:Place of Residence,Urban=1,Rural=0
WK:Women's Current Working Status,Working=1,Not Working=0

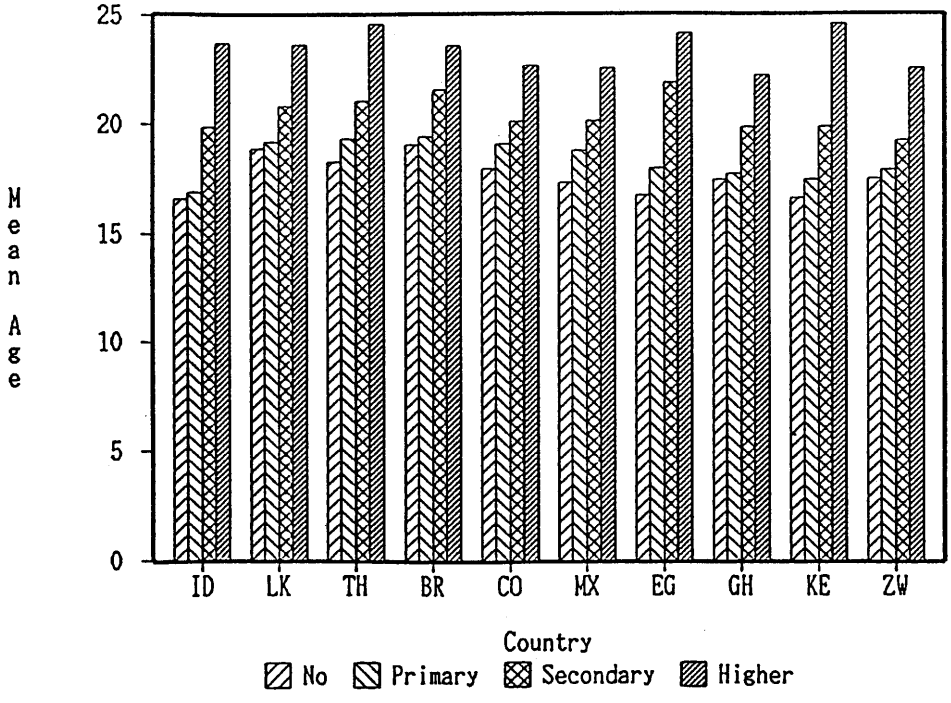
**:PROB>F=0.01 or PROB>|T|=0.01
* :PROB>F=0.05 or PROB>|T|=0.05
# :PROB>F=0.10 or PROB>|T|=0.10

Figure 1 Mean Years of schooling Completed between Wife and Husband



(Note) ID:Indonesia, LK:Sri Lanka, TH:Thailand, BR:Brazil
CO:Colombia, MX:Mexico, EG:Egypt, GH:Ghana
KE:Kenya, ZW:Zimbabwe

Figure 2 Mean Age at First Marriage for Women by Educational Level



(Note) Same as figure 1.

The trend persists in the other regions and in most countries although levels differed. Most of the African countries manifested lower levels than in Latin America and Asia. The countries that demonstrated marked changes were Indonesia in Asia; Bolivia, Ecuador, Mexico, Peru in Latin America; and Botswana, Kenya, and Zimbabwe in Africa. Definitely, modernization and exposure to western values over time were instrumental to these changes.

3. AGE AT FIRST MARRIAGE AND EDUCATION

The World Fertility Survey (WFS) results indicated that women with seven or more years of schooling marry, on the average, nearly four years later than those with no formal education (UN, 1987). Based on DHS results, mean age at first marriage for all women by region are 17.8 years in Africa and 18.9 years both in Asia and Latin America. The positive trend with increase in education was evident in all countries of the region with slight variations (Figure 2 and A.Tab 32).

In Asia, women with high education married at around 24 to 25 years, while those with no education married at a range of 17 (Indonesia) to 19 years (Sri Lanka). In Latin America, the country that manifested the highest age at marriage with the high educational level was Peru (24 years) followed by Guatemala (23 years). While among those with no schooling, Bolivia exhibited the highest age at marriage (20 years) followed by Brazil (19 years). In Africa, the countries reflecting high marriage age with the high educational level was Togo (25.0 years), Kenya (24.6 years) and Tunisia (24.2 years). Despite the variations, the trend of increasing age at marriage with education persisted. Pronounced differences are discerned at the higher education levels, that is, between women with secondary and higher education.

Tables 1 and 2 show the Pearsonian correlation coefficients and the results of regression analyses between ever-married women's education and age at their first marriage in some DHS countries. As previous studies indicate, there was a strong positive correlation between the number of years in schooling and the age at first marriage in all countries in the DHS. A stronger positive correlation is revealed among urban residents. When age at first marriage was regressed against education, the adjusted r-square and the standardized coefficient of regression equation (Form 10) in Table 2, were comparatively higher in Egypt, Dominican Republic and Sri Lanka compared to other DHS countries. The educational differentials in age at first marriage are comparatively wider in these countries. The differentials are greatest between women with secondary education and women with higher education in most countries (A.Tab 32).

4. EDUCATION AND CONTRACEPTIVE KNOWLEDGE AND PRACTICE

The DHS questionnaire includes a list of nine contraceptive methods (pill, IUD, injection, vaginal methods, condom, female sterlization, male sterlization, periodic abstinence, and withdrawal) and any "other country specific method" (Rutenberg,1991). For the purpose of analysis, the contraceptive methods were classified into two main categories: modern and traditional. Modern methods include the pill, IUD, injection, vaginal methods (diaphragm, foam, jelly), condom, female and male sterilization. Traditional methods include periodic abstinence, withdrawal, herbs, folk methods, and all country specific methods.

A strong relationship was observed between contraceptive knowledge and level of education in-as-much as educated women have closer access to information and family planning services. The knowledge of at least one contraceptive method is nearly universal among women with some secondary education (Rutenberg, 1991) (Table 3). Educational disparities in contraceptive knowledge are witnessed in countries with an overall level of knowledge of less than 90 per cent — Burundi, Ghana, Liberia, Mali, Uganda, Bolivia and Guatemala. In countries where the overall knowledge of contraception is 90 per cent or greater, small variations are observed among women with no education and those with primary education. However, there were no differences between women with primary education and those with a secondary education or higher.

Knowledge of modern methods is universal in all of the countries in Asia. In three Latin American countries, Brazil showed no differences, while in Columbia, a slight negative trend was observed with 8.4 % of the women with no education having no knowledge of contraception at all. In Mexico, among those with no education nearly a fourth did not know of any method. In Africa, contraceptive knowledge is fairly high in Egypt and Zimbabwe while in Ghana, there is a definite relationship between knowledge and education.

Contraceptive prevalence differentials by education are quite large. Surveys preceding the WFS revealed a strong positive relationship between education and contraceptive use (UN, 1979) and in the WFS, women with seven or more years of schooling have about 25 percentage points higher contraceptive use level than those with no education (UN, 1987).

The percentage of married women currently using a contraceptive method in the DHS, ranged from less than 8 in Mali and Uganda to 40 or more in Indonesia, Sri Lanka, Thailand, Brazil and Tunisia (A.Tab 17).

Table 2-1 Regression Analysis of Fertility in the DHS Countries

Country	Form	Dep	Independent Variables 1	2	3	4	5	F	ADJ-RSQ	Standardized Parameter Estimates 1	T	2	T	3	T	4	T	5	T
Asia																			
Indonesia	(1)	CEB	ED					**	0.040	-0.199	**								
	(2)	LC	ED					**	0.020	-0.140	**								
	(3)	CEB	EDH					**	0.016	-0.128	**								
	(4)	CEB	FM	ED				**	0.070	-0.189	**	-0.127	**						
	(5)	CEB	FM	ED	WK			**	0.070	-0.189	**	-0.128	**	-0.012					
	(6)	CEB	ED	UR	WK			**	0.044	-0.224	**	0.069	**	-0.015					
	(7)	CEB	FM	ED	UR	WK		**	0.077	-0.198	**	-0.153	**	0.090	**	0.002			
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.077	-0.200	**	-0.171	**	0.028	*	0.085	**	0.003	
	(9)	LC	FM	ED	EDH	UR	WK	**	0.054	-0.183	**	-0.142	**	0.060	**	0.088	**	0.001	
	(10)	FM	ED					**	0.147	0.383	**								
	(11)	FM	EDH					**	0.118	0.344	**								
	(12)	FM	ED	UR	WK			**	0.160	0.356	**	0.103	**	0.084	**				
Sri Lanka	(1)	CEB	ED					**	0.104	-0.322	**								
	(2)	LC	ED					**	0.088	-0.297	**								
	(3)	CEB	EDH					**	0.065	-0.255	**								
	(4)	CEB	FM	ED				**	0.184	-0.305	**	-0.210	**						
	(5)	CEB	FM	ED	WK			**	0.191	-0.294	**	-0.230	**	-0.079	**				
	(6)	CEB	ED	UR	WK			**	0.117	-0.342	**	-0.010		-0.119	**				
	(7)	CEB	FM	ED	UR	WK		**	0.191	-0.294	**	-0.230	**	0.004		-0.079	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.194	-0.289	**	-0.191	**	-0.072	**	0.010		-0.081	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.177	-0.286	**	-0.177	**	-0.057	**	0.008		-0.087	**
	(10)	FM	ED					**	0.134	0.366	**								
	(11)	FM	EDH					**	0.080	0.283	**								
	(12)	FM	ED	UR	WK			**	0.152	0.382	**	0.046	**	0.135	**				
Thailand	(1)	CEB	ED					**	0.100	-0.317	**								
	(2)	LC	ED					**	0.092	-0.304	**								
	(3)	CEB	EDH					**	0.088	-0.298	**								
	(4)	CEB	FM	ED				**	0.124	-0.162	**	-0.262	**						
	(5)	CEB	FM	ED	WK			**	0.129	-0.168	**	-0.264	**	0.074	**				
	(6)	CEB	ED	UR	WK			**	0.108	-0.296	**	-0.066	**	0.059	**				
	(7)	CEB	FM	ED	UR	WK		**	0.131	-0.165	**	-0.244	**	-0.057	**	0.071	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.138	-0.156	**	-0.174	**	-0.117	**	-0.036	**	0.068	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.126	-0.147	**	-0.170	**	-0.115	**	-0.024	#	0.071	**
	(10)	FM	ED					**	0.114	0.338	**								
	(11)	FM	EDH					**	0.090	0.301	**								
	(12)	FM	ED	UR	WK			**	0.121	0.314	**	0.056	**	0.069	**				
Latin America																			
Brazil	(1)	CEB	ED					**	0.159	-0.399	**								
	(2)	LC	ED					**	0.134	-0.366	**								
	(3)	CEB	EDH					**	0.139	-0.373	**								
	(4)	CEB	FM	ED				**	0.176	-0.137	**	-0.361	**						
	(5)	CEB	FM	ED	WK			**	0.178	-0.141	**	-0.367	**	0.043	**				
	(6)	CEB	ED	UR	WK			**	0.163	-0.383	**	-0.063	**	0.030	#				
	(7)	CEB	FM	ED	UR	WK		**	0.181	-0.143	**	-0.343	**	-0.068	**	0.041	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.192	-0.139	**	-0.236	**	-0.156	**	-0.048	**	0.035	*
	(9)	LC	FM	ED	EDH	UR	WK	**	0.163	-0.135	**	-0.229	**	-0.131	**	-0.050	**	0.031	*
	(10)	FM	ED					**	0.077	0.278	**								
	(11)	FM	EDH					**	0.049	0.222	**								
	(12)	FM	ED	UR	WK			**	0.083	0.276	**	-0.030	#	0.076	**				
Colombia	(1)	CEB	ED					**	0.183	-0.428	**								
	(2)	LC	ED					**	0.164	-0.405	**								
	(3)	CEB	EDH					**	0.146	-0.382	**								
	(4)	CEB	FM	ED				**	0.204	-0.150	**	-0.393	**						
	(5)	CEB	FM	ED	WK			**	0.204	-0.151	**	-0.394	**	0.007					
	(6)	CEB	ED	UR	WK			**	0.190	-0.401	**	-0.093	**	0.016					
	(7)	CEB	FM	ED	UR	WK		**	0.211	-0.150	**	-0.368	**	-0.093	**	0.021			
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.225	-0.149	**	-0.274	**	-0.160	**	-0.063	**	0.025	
	(9)	LC	FM	ED	EDH	UR	WK	**	0.205	-0.143	**	-0.250	**	-0.163	**	-0.061	**	0.024	
	(10)	FM	ED					**	0.053	0.231	**								
	(11)	FM	EDH					**	0.025	0.160	**								
	(12)	FM	ED	UR	WK			**	0.054	0.223	**	0.005		0.033	#				
Mexico	(1)	CEB	ED					**	0.198	-0.445	**								
	(2)	LC	ED					**	0.168	-0.410	**								
	(3)	CEB	EDH					**	0.161	-0.401	**								
	(4)	CEB	FM	ED				**	0.227	-0.181	**	-0.391	**						
	(5)	CEB	FM	ED	WK			**	0.227	-0.182	**	-0.392	**	0.014					
	(6)	CEB	ED	UR	WK			**	0.199	-0.425	**	-0.053	**	0.008					
	(7)	CEB	FM	ED	UR	WK		**	0.228	-0.179	**	-0.381	**	-0.035	**	0.016			
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.238	-0.167	**	-0.291	**	-0.144	**	-0.129		0.014	
	(9)	LC	FM	ED	EDH	UR	WK	**	0.205	-0.165	**	-0.267	**	-0.138	**	0.008		0.000	
	(10)	FM	ED					**	0.087	0.296	**								
	(11)	FM	EDH					**	0.086	0.293	**								
	(12)	FM	ED	UR	WK			**	0.099	0.251	**	0.101	**	0.047					

Table 2-2 Regression Analysis of Fertility in the DHS Countries

Country	Form	Dep	Independent Variables 1	2	3	4	5	F	ADJ-RSQ	Standardized Parameter Estimates 1	T	2	T	3	T	4	T	5	T
Africa																			
Egypt	(1)	CEB	ED					**	0.117	-0.342	**								
	(2)	LC	ED					**	0.086	-0.294	**								
	(3)	CEB	EDH					**	0.110	-0.332	**								
	(4)	CEB	FM	ED				**	0.168	-0.263	**	-0.207	**						
	(5)	CEB	FM	ED	WK			**	0.171	-0.273	**	-0.236	**	0.071	**				
	(6)	CEB	ED	UR	WK			**	0.118	-0.356	**	-0.003		0.032	**				
	(7)	CEB	FM	ED	UR	WK		**	0.172	-0.278	**	-0.248	**	0.033	**	0.072	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.183	-0.269	**	-0.144	**	-0.153	**	0.044	**	0.071	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.140	-0.246	**	-0.137	**	-0.124	**	0.079	**	0.060	**
	(10)	FM	ED					**	0.264	0.514	**								
	(11)	FM	EDH					**	0.183	0.428	**								
	(12)	FM	ED	UR	WK			**	0.294	0.389	**	0.134	**	0.143	**				
Ghana	(1)	CEB	ED					**	0.084	-0.290	**								
	(2)	LC	ED					**	0.055	-0.236	**								
	(3)	CEB	EDH					**	0.062	-0.250	**								
	(4)	CEB	FM	ED				**	0.108	-0.160	**	-0.266	**						
	(5)	CEB	FM	ED	WK			**	0.123	-0.161	**	-0.282	**	0.121	**				
	(6)	CEB	ED	UR	WK			**	0.097	-0.301	**	-0.018		0.121	**				
	(7)	CEB	FM	ED	UR	WK		**	0.123	-0.161	**	-0.279	**	-0.016		0.123	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.135	-0.160	**	-0.208	**	-0.135	**	-0.001		0.125	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.098	-0.153	**	-0.180	**	-0.093	**	0.006		0.128	**
	(10)	FM	ED					**	0.021	0.146	**			-0.130	**				
	(11)	FM	EDH					**	0.007	0.082	**			-0.087	**				
	(12)	FM	ED	UR	WK			**	0.021	0.140	**	0.016		0.008	**				
Kenya	(1)	CEB	ED					**	0.159	-0.398	**								
	(2)	LC	ED					**	0.118	-0.343	**								
	(3)	CEB	EDH					**	0.100	-0.316	**								
	(4)	CEB	FM	ED				**	0.169	-0.106	**	-0.365	**						
	(5)	CEB	FM	ED	WK			**	0.171	-0.110	**	-0.383	**	0.065	**				
	(6)	CEB	ED	UR	WK			**	0.193	-0.366	**	-0.192	**	0.091	**				
	(7)	CEB	FM	ED	UR	WK		**	0.204	-0.112	**	-0.333	**	-0.192	**	0.099	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.208	-0.113	**	-0.284	**	-0.087	**	-0.180	**	0.102	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.166	-0.100	**	-0.244	**	-0.068	**	-0.189	**	0.109	**
	(10)	FM	ED					**	0.096	0.310	**								
	(11)	FM	EDH					**	0.034	0.184	**								
	(12)	FM	ED	UR	WK			**	0.101	0.288	**	-0.008		0.078	**				
Zimbabwe	(1)	CEB	ED					**	0.126	-0.356	**								
	(2)	LC	ED					**	0.105	-0.325	**								
	(3)	CEB	EDH					**	0.107	-0.328	**								
	(4)	CEB	FM	ED				**	0.137	-0.106	**	-0.333	**						
	(5)	CEB	FM	ED	WK			**	0.143	-0.109	**	-0.343	**	0.081	**				
	(6)	CEB	ED	UR	WK			**	0.136	-0.343	**	-0.065	**	0.081	**				
	(7)	CEB	FM	ED	UR	WK		**	0.146	-0.107	**	-0.322	**	-0.061	**	0.085	**		
	(8)	CEB	FM	ED	EDH	UR	WK	**	0.162	-0.102	**	-0.228	**	-0.167	**	-0.039	*	0.091	**
	(9)	LC	FM	ED	EDH	UR	WK	**	0.134	-0.086	**	-0.219	**	-0.148	**	-0.021		0.094	**
	(10)	FM	ED					**	0.048	0.220	**								
	(11)	FM	EDH					**	0.028	0.169	**								
	(12)	FM	ED	UR	WK			**	0.050	0.202	**	0.035	#	0.039	*				

(Note) CEB:Total Number of Children Ever Born
LC:Total Number of Living Children
ED:Total Years of Schooling Completed of Women
FM:Age at First Marriage
EDH:Total Years of Schooling Completed of Husband
UR:Place of Residence,Urban=1,Rural=0
WK:Women's Current Working Status,Working=1,Not Working=0

**:PROB>F=0.01 or PROB>|T|=0.01
* :PROB>F=0.05 or PROB>|T|=0.05
# :PROB>F=0.10 or PROB>|T|=0.10

Table 3 Percentage Distribution of Women by Knowledge of Contraceptive Method and Educational Level

	No Education	Primary	Secondary	Higher	Missing
			Indonesia		
No Method	14.91	3.00	0.22	0.00	
Only Trad. method	1.07	0.40	0.04	0.00	
Modern Method	84.02	96.60	99.73	100.00	
Total (Number)	2629	6772	2232	251	
			Sri Lanka		
No Method	3.27	1.24	0.82	0.16	0.00
Only Trad. method	0.27	0.17	0.05	0.08	0.00
Modern Method	96.46	98.59	99.13	99.77	100.00
Total (Number)	734	1777	2062	1289	3
			Thailand		
No Method	3.67	0.24	0.26	0.00	
Only Trad. method	0.17	0.00	0.13	0.00	
Modern Method	96.16	99.76	99.61	100.00	
Total (Number)	599	4984	777	415	
			Brazil		
No Method	1.29	1.11	0.00	0.00	0.00
Only Trad. method	0.00	0.05	0.00	0.00	0.00
Modern Method	98.71	98.84	100.00	100.00	100.00
Total (Number)	466	3871	1175	371	9
			Colombia		
No Method	8.36	3.35	0.65	0.00	0.00
Only Trad. method	0.96	0.12	0.05	0.00	0.00
Modern Method	90.68	96.53	99.30	100.00	100.00
Total (Number)	311	2597	2154	263	4
			Mexico		
No Method	23.37	6.11	1.23	0.00	0.00
Only Trad. method	0.37	0.16	0.06	0.00	0.00
Modern Method	76.26	93.73	98.72	100.00	100.00
Total (Number)	813	4352	3504	639	2
			Egypt		
No Method	3.16	0.83	0.34	0.00	
Only Trad. method	0.27	0.07	0.09	0.00	
Modern Method	96.57	99.10	99.57	100.00	
Total (Number)	4429	2885	1160	437	
			Ghana		
No Method	36.34	16.93	6.08	2.50	
Only Trad. method	4.60	1.06	0.68	2.50	
Modern Method	59.06	82.02	93.24	95.00	
Total (Number)	1783	2369	296	40	
			Kenya		
No Method	13.75	8.94	3.97	0.00	20.00
Only Trad. method	1.47	1.31	0.57	0.00	0.00
Modern Method	84.78	89.75	95.46	100.00	80.00
Total (Number)	1702	3826	1587	25	10
			Zimbabwe		
No Method	5.12	3.66	3.20	2.70	
Only Trad. method	1.59	1.06	0.32	0.00	
Modern Method	93.29	95.27	96.48	97.30	
Total (Number)	566	2349	1249	37	

(Source) Demographic Health Survey, Country Data.

In most developing countries the contraceptive methods widely used are the so called "female methods" including principally pills, female sterilization and intra-uterine devices (IUD) (UN, 1987). In the DHS, usage of female contraceptive methods were also dominant in all countries. "Male methods", including principally condom, male sterilization and withdrawal were used by 5 to 12 percent of the husbands in Indonesia, Thailand, Zimbabwe, Brazil, Columbia and Trinidad and Tobago, and less than 3 percent in other countries.

Although the use of contraception undoubtedly depends in large part upon the husband's motivation, and the support of other members of the family as well, still it is the woman who must know how to obtain and use these methods, and be willing to practice. Her educational level may indirectly affect this (UN,1987).

The higher the education of a woman, the more likely she will be using contraception. As can be observed in Table 4, the differentials are greatest between women with no education and those with primary education, although there were also substantial differences between women with primary education and those with secondary and higher education.

Despite the assertion that contraceptive usage improves with education, it can be noted in Table 4 that a substantive proportion of woman with higher than secondary education still have not used a method (39 percent in Indonesia, 40 percent in Sri Lanka, 38 percent in Thailand). The three countries of Latin America have levels of non-usage beyond 50 percent among those with higher education. For those with no education, the range was from 60 to 75 percent in Asia and Latin America. In Africa, non-usage among the better educated ranged from 36 percent in Kenya to 73 percent in Ghana. The percentage for those with no education was much higher (from 70 percent in Zimbabwe to 92 percent in Ghana). The comparatively high proportion of non contraceptive usage even among the higher educated women is affected with non-usage data which includes the pregnant women. The differentials of education in the use of more modern methods is not cleary delineated except for Brazil, Egypt, Kenya and Zimbabwe.

The higher educated woman is more likely to use a modern method than her less educated counterpart. The differentials are greatest between women with no education and women with primary education. The education differentials in contraceptive use could also be related with the levels of development, family planning and health program efforts, and the culture of the country. Women with secondary or higher education are less likely to use the pill than women with primary education in Indonesia, Mexico and Egypt (Table 5). Female sterilization decreased with an increase in the level of education in most DHS countries. The IUD is the commonly used method which did demonstrate a clear cut pattern of increasing use with increasing level of education except in Trinidad and Tobago (Rutenberg, 1991). Male sterilization is used at a very minimal level irrespective of education in Indonesia, Mexico and Egypt. However, the condom use increased with increasing level of education in Indonesia, Thailand, Mexico and Egypt.

5. DIFFERENTIAL FERTILITY ACCORDING TO EDUCATION

It has been observed that the effect of a low level of education (lower or upper lower primary) is negligible, but beyond a threshold level of education (middle, secondary) the effect of maternal education on fertility becomes uniformly inverse (Rodriguez, 1991, Jejeebhoy, 1992). In other words, a primary school education has little effect on fertility; the break comes later, most often at the level of some secondary school or about seven years of education (UN, 1987).

According to the evidence from WFS data, when current fertility rates are averaged over all countries, women with seven or more years of education will bear 3.9 children while women with no schooling will bear nearly 80 per cent more, 6.9 children on average (UN, 1987).

According to the Rodriguez study, the fertility difference between the extreme categories of no education and secondary or higher was 2.7 children for the WFS and 2.3 for the DHS, with the margin in Latin America and North Africa exceeding three children. After adjustment for place of residence and husband's education, however, these differentials narrowed down to 1.6 from the WFS and 1.1 from the DHS (Rodriguez, 1991).

The children ever born (CEB) among ever-married women by educational attainment is shown in Table 6, Figure 3 and A.Tab 41. Without controlling for education, there has been a divergence in fertility levels on an interregional basis. The three countries in Asia showed lower levels than Latin American and African countries. These differences of fertility were more keenly felt when fertility was disaggregated by the educational attainment of the mother. A definitive inverse relationship between education and the number of CEB was consistently noted in all countries, although the magnitude varied widely. Women with no education had on the average 4 children in Asia, 5 to 6 in Latin America, and 4 to 6 in Africa (A.Tab 41). The attainment of the highest category of education yielded average CEB ranging from 1 to 2 in Asia and Latin

Table 4 Percentage Distribution of Women by Type of Current Contraceptive Method and Educational Level

	No Education	Primary	Secondary	Higher	Missing
			Indonesia		
No Method	66.95	51.95	39.87	39.44	
Traditional Method	1.90	3.91	8.24	10.76	
Modern Method	31.15	44.12	51.88	49.80	
Total (Number)	2629	6772	2232	251	
			Sri Lanka		
No Method	51.77	41.70	40.01	40.42	0.00
Traditional Method	8.86	13.62	20.76	29.95	33.37
Modern Method	39.37	44.68	39.23	29.64	66.67
Total (Number)	734	1777	2062	1289	3
			Thailand		
No Method	50.25	37.50	36.55	37.83	
Traditional Method	0.50	1.67	4.76	8.43	
Modern Method	49.25	60.83	58.69	53.73	
Total (Number)	599	4984	777	415	
			Brazil		
No Method	60.73	54.82	65.45	51.48	55.56
Traditional Method	6.22	6.04	5.19	10.51	0.00
Modern Method	33.05	39.14	29.36	38.01	44.44
Total (Number)	466	3871	1175	371	9
			Colombia		
No Method	59.81	56.26	66.85	64.64	100.00
Traditional Method	5.47	8.09	5.48	6.08	0.00
Modern Method	34.73	35.66	27.67	29.28	0.00
Total (Number)	311	2597	2154	263	4
			Mexico		
No Method	75.28	58.25	69.78	67.29	100.00
Traditional Method	4.06	5.63	4.85	4.85	0.00
Modern Method	20.66	36.12	25.37	27.86	0.00
Total (Number)	813	4352	3504	639	2
			Egypt		
No Method	75.05	57.71	50.78	46.45	
Traditional Method	1.49	2.36	3.45	4.81	
Modern Method	23.46	39.93	45.78	48.74	
Total (Number)	4429	2885	1160	437	
			Ghana		
No Method	92.32	86.11	75.00	72.50	
Traditional Method	4.66	8.40	17.23	20.00	
Modern Method	3.03	5.49	7.77	7.50	
Total (Number)	1783	2369	296	40	
			Kenya		
No Method	84.49	79.30	67.74	36.00	70.00
Traditional Method	5.58	6.48	8.76	20.00	10.00
Modern Method	9.93	14.22	23.50	44.00	20.00
Total (Number)	1702	3826	1587	25	10
			Zimbabwe		
No Method	69.96	66.33	70.22	48.65	
Traditional Method	6.54	5.87	2.72	0.00	
Modern Method	23.50	27.80	27.06	51.35	
Total (Number)	566	2349	1249	37	

Table 5 Percentage Distribution of Women by Current Contraceptive Method and Educational Level

	No Education	Primary	Secondary	Higher
			Indonesia	
Not using	66.95	51.95	39.87	39.44
Pill	10.27	14.66	9.72	4.78
IUD	14.30	15.39	18.86	24.30
Injections	4.18	9.29	10.93	6.77
Diaphragm/Foam/Jelly	0.00	0.01	0.04	0.00
Condom	0.38	1.20	5.47	9.16
Female Sterilization	1.64	3.12	5.87	4.78
Male Sterilization	0.11	0.16	0.54	0.00
Periodic Abstinence	0.11	1.15	4.61	7.17
Withdrawal	0.38	1.02	2.15	1.59
Other	0.04	0.22	0.04	0.40
Norplant	0.27	0.30	0.45	0.00
Abstinence	0.80	0.31	0.09	0.00
Specific method 1	0.38	0.92	0.90	1.20
Specific method 2	0.19	0.30	0.45	0.40
Missing value	0.00	0.01	0.00	0.00
Total (Number)	2629	6772	2232	251
			Thailand	
Not using	50.25	37.50	36.55	37.83
Pill	11.52	18.12	18.40	13.25
IUD	3.34	5.16	4.76	6.27
Injections	6.68	8.43	5.66	2.89
Diaphragm/Foam/Jelly	0	0.04	0	0
Condom	0.67	0.72	3.6	3.86
Female Sterilization	20.87	23.13	20.21	20
Male Sterilization	6.18	5.24	5.66	7.23
Periodic Abstinence	0.5	0.42	3.6	6.02
Withdrawal	0	1.12	1.16	2.17
Other	0	0.12	0	0.24
Norplant	0	0	0.39	0.24
Total (Number)	599	4984	777	415
			Mexico	
Not using	75.28	58.25	69.78	67.29
Pill	3.69	7.86	5.45	6.42
IUD	3.69	6.64	6.88	7.82
Injections	0.98	1.95	1.8	1.25
Diaphragm/Foam/Jelly	0	0.44	0.37	1.25
Condom	0.12	1.52	1.31	1.56
Female Sterilization	12.05	17.3	8.99	8.92
Male Sterilization	0.12	0.41	0.57	0.63
Periodic Abstinence	1.72	2.64	3.77	4.85
Withdrawal	2.21	2.8	0.97	0
Other	0.12	0.18	0.11	0.00
Total (Number)	813	4352	3504	639
			Egypt	
Not using	75.05	57.71	50.78	46.45
Pill	12.33	18.27	15.78	9.15
IUD	8.94	16.81	22.67	29.75
Injections	0.07	0.07	0.09	0
Diaphragm/Foam/Jelly	0.27	0.55	0.52	0.23
Condom	0.75	2.53	4.91	9.38
Female Sterilization	1.08	1.66	1.81	0.23
Male Sterilization	0.02	0.03	0	0
Periodic Abstinence	0.07	0.52	1.81	2.97
Withdrawal	0.27	0.49	0.78	1.14
Other	0.2	0.14	0.17	0.23
Specific Method	0.95	1.21	0.69	0.46
Total (Number)	4429	2885	1160	437

(Note) "Not using" includes Pregnant Women.
In Mexico, 2 persons are missing for the current contraception data.

America and 1 to 3 in Africa. The wider disparity between the two extreme educational groups was noted in Columbia (5.7, 1.6), Peru (6.4, 2.3), Ecuador (5.4, 1.8), Brazil (5.3, 1.8), Mexico (5.8, 1.8), Kenya (6.0, 2.6) and Sudan (5.2, 1.9). On the average, the fertility difference between women with no education and those with higher education was 3.2 in Latin America, 2.0 in Asia and 2.5 in Africa (A.Tab 41).

It is no doubt that the highly educated women have the lowest fertility, but at lower educational levels, the pattern could not be clearly delineated. This pattern is common in the least developed countries (Cochranne, 1979, Jain, 1981, UN,1987). The fertility differential was greatest between women with primary education and those with secondary education in most DHS countries, as confirmed by various studies. However, the differential was greatest between women with no education and those with primary education in Indonesia, Thailand, Brazil, Columbia, El Salvador, Mali and Togo.

Although the link with the number of CEB is higher with wife's education, compared to the differentials reflected in husband's, the educational attainment of the husband showed the same trends. Larger fertility variations with husband's education progression were noted in Latin America compared to Asia and Africa (A.Tab 44). The differences in the number of CEB between those with no education and with higher education ranged from 0.93 in Liberia to 4.46 in Peru. Such comparison yields differences of 3 children in Latin America, 2 in Asia and Africa.

Table 6, Figure 4 and A.Tab 46 show the mean number of living children (LC) by mother's educational attainment. The number of LC divided by the number of CEB reflects the survival status of children. It is noted that in Africa and Latin America LC was about one child lower than CEB. In Asia, there is a close approximation between the number of CEB and the number of LC. Such survivorship factor can affect eventual reproductive performance. Survival rate is higher for children of mothers with high education in all countries. The positive trend between survival rate and level of education is consistent for the regions.

The average number of CEB and LC for ever-married women by age and place of residence (urban/rural) also decreased with an increase in the level of women's education (Table 6). The difference of the average number of CEB for women aged 40-49 by the educational level was highest between primary and secondary education in Latin America and urban Africa, however it is highest between secondary and higher education in Asia and rural Africa. The mean number of CEB for women with secondary education was about 20% less in Asia, 40% less in Latin America and 30% less in Africa, compared to the CEB of women with primary education at their ages 40-49 (Table 6). This shows that secondary school education for women can induce changes in reproductive attitudes and behaviour. The average number of CEB and LC for the urban women was less than those of women in rural in the three regions and the survival rate was higher in urban area.

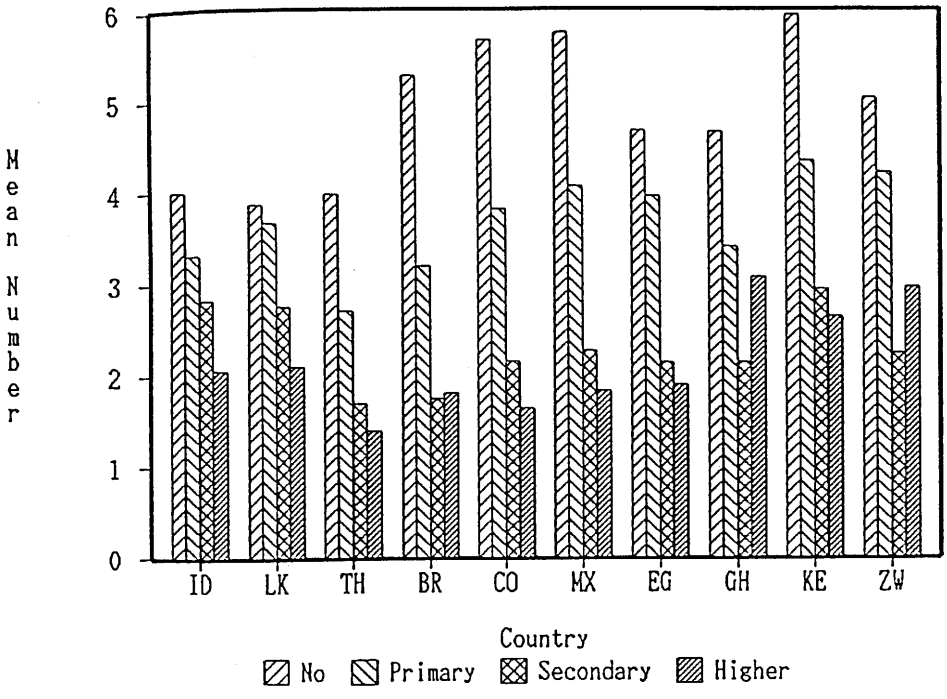
Table 6 and A.Tab 76 shows the fertility differential by education and women's working status before marriage. In Asia and Latin America, working women have CEB less than non-working women, however, working women with comparatively higher education in Indonesia, Thailand, Ecuador, Guatemala and Peru have CEB more than non-working women. In Africa, working women in most countries have more CEB than non-working women. Working women with higher education in urban area have the least CEB in most countries.

The size of the education differentials in fertility varies dramatically across countries. In the countries of sub-Saharan Africa, differences in fertility tend to be small (less than 2.0), and women with no education usually have the highest fertility. By contrast, fertility differentials in most countries of Northern Africa, Latin America and the Carribbean, are larger (more than 2.5) than those in Asia (2.0) and fertility decreases consistently with increasing level of education.

To evaluate wife's education in influencing fertility reduction, an examination of the Pearsonian correlation coefficients and the multi-variate regression analysis between education for ever-married women and fertility in selected DHS countries was done. In the correlation equation, we take number of children ever born (CEB) or number of living children (LC) as dependent variables, years of schooling completed for women (ED) or those for husbands (EDH), age at first marriage (FM), place of residence (UR) and women's currently working status (WK) as independent variables. Here, we take variables UR and WK as dummy variables; means that UR=1, if place of residence is urban, otherwise UR=0, WK=1, if women are currently working, otherwise WK=0.

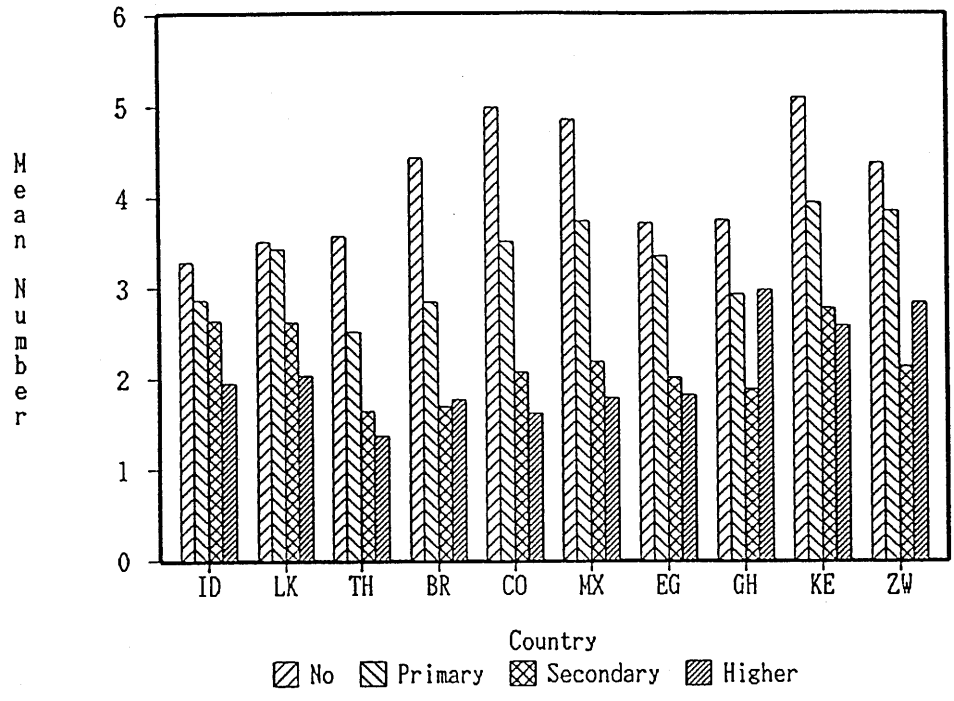
As previous studies indicate, there are strong negative correlation between years of schooling completed for women and CEB or LC and a positive relationships with FM (Table 1). All correlations were statistically significant at 1 percent level. In evaluating these correlation coefficients, one can assess the relative strength of the relationships. In Indonesia, Sri Lanka and Thailand, FM yielded the highest level of correlation with education followed by CEB and LC. However in Latin America, the strongest relationships were discerned with CEB, followed by LC, and FM. Fluctuations occured in African countries, for Egypt, a very strong relationship was obtained with FM followed by CEB and LC. In Ghana, Kenya and Zimbabwe, CEB exert a

Figure 3 Mean Number of Ever Born Children by Educational Level



(Note) Same as figure 1.

Figure 4 Mean Number of Living Children by Educational Level



(Note) Same as figure 1.

Table 6 Number of Children Ever Born, Number of Living Children, Survival Ratio for Ever Married Women by Age Group, Place of Residence, Working Status before and after Marriage and Educational Level

Area	Children Ever Born					Living Children					Survival Ratio				
	Educational Level					Educational Level					Educational Level				
	Total	No	Pri.	Sec.	High.	Total	No	Pri.	Sec.	High.	Total	No	Pri.	Sec.	High.
Age Group															
Asia															
15-19	0.58	0.77	0.55	0.62	0.50	0.54	0.67	0.51	0.59	0.50	0.93	0.87	0.93	0.95	1.00
20-29	1.80	2.08	1.93	1.60	1.10	1.68	1.86	1.77	1.54	1.07	0.93	0.89	0.92	0.96	0.97
30-39	3.30	3.76	3.50	3.04	2.14	3.00	3.23	3.15	2.90	2.08	0.91	0.86	0.90	0.95	0.97
40-49	4.93	5.28	5.20	4.29	2.86	4.28	4.37	4.52	3.98	2.75	0.87	0.83	0.87	0.93	0.96
15-49	3.07	3.97	3.14	2.61	1.93	2.75	3.36	2.81	2.47	1.87	0.90	0.85	0.89	0.95	0.97
Latin America															
15-19	0.88	1.08	0.90	0.72	0.82	0.81	0.97	0.83	0.69	0.82	0.92	0.90	0.92	0.96	1.00
20-29	2.30	3.11	2.56	1.71	1.24	2.10	2.68	2.32	1.63	1.21	0.91	0.86	0.91	0.95	0.98
30-39	4.18	5.63	4.46	2.91	2.28	3.69	4.64	3.95	2.73	2.21	0.88	0.82	0.89	0.94	0.97
40-49	5.89	7.23	5.99	3.75	3.02	5.02	5.73	5.19	3.50	2.90	0.85	0.79	0.87	0.93	0.96
15-49	3.62	5.26	3.86	2.26	1.99	3.19	4.29	3.42	2.13	1.93	0.88	0.82	0.89	0.94	0.97
Africa															
15-19	0.74	0.72	0.79	0.66	0.50	0.64	0.59	0.71	0.61	0.50	0.86	0.82	0.90	0.92	1.00
20-29	2.48	2.67	2.55	1.85	1.31	2.14	2.22	2.25	1.70	1.27	0.86	0.83	0.88	0.92	0.97
30-39	5.03	5.39	4.96	3.63	2.52	4.22	4.37	4.34	3.36	2.39	0.84	0.81	0.88	0.93	0.95
40-49	6.79	7.01	6.70	4.50	3.71	5.40	5.43	5.64	4.05	3.46	0.80	0.77	0.84	0.90	0.93
15-49	4.14	4.67	3.84	2.54	2.22	3.44	3.74	3.34	2.33	2.11	0.83	0.80	0.87	0.92	0.95
Place of Residence															
Asia						**Women Aged 40-49**									
Urban	4.58	4.97	5.04	4.27	2.69	4.05	4.01	4.44	3.97	2.57	0.88	0.81	0.88	0.93	0.96
Rural	5.08	5.36	5.26	4.32	3.00	4.38	4.46	4.55	3.98	2.90	0.86	0.83	0.87	0.92	0.97
Latin America															
Urban	5.18	6.79	5.44	3.71	3.00	4.54	5.50	4.79	3.46	2.90	0.88	0.81	0.88	0.93	0.97
Rural	7.02	7.50	6.89	4.11	3.50	5.78	5.87	5.86	3.78	3.07	0.82	0.78	0.85	0.92	0.88
Africa															
Urban	5.97	6.45	5.81	4.18	3.63	4.98	5.23	5.02	3.82	3.39	0.83	0.81	0.86	0.91	0.93
Rural	7.27	7.25	7.43	6.38	4.57	5.64	5.52	6.16	5.38	4.21	0.78	0.76	0.83	0.84	0.92
Asia				**Women Aged 40-49**		**Working Status Before Marriage**									
Working	4.61	5.01	4.99	3.94	2.47	3.95	4.14	4.25	3.67	2.35	0.86	0.83	0.85	0.93	0.95
No Working	5.13	5.57	5.30	4.51	3.28	4.49	4.61	4.65	4.17	3.18	0.88	0.83	0.88	0.92	0.97
Latin America															
Working	5.50	7.05	5.71	3.67	3.02	4.76	5.71	4.98	3.41	2.83	0.87	0.81	0.87	0.93	0.94
No Working	6.61	7.57	6.67	4.30	3.55	5.65	6.05	5.79	4.00	3.55	0.85	0.80	0.87	0.93	1.00
Africa															
Working	6.38	6.92	6.43	4.23	3.64	5.04	5.26	5.34	3.83	3.44	0.79	0.76	0.83	0.91	0.95
No Working	6.94	7.08	6.72	4.49	3.46	5.54	5.56	5.66	4.06	3.17	0.80	0.79	0.84	0.90	0.92
Asia				**Women Aged 40-49**		**Working Status After Marriage**									
Working	4.63	4.97	4.86	3.96	2.48	3.95	4.07	4.17	3.67	2.38	0.85	0.82	0.86	0.93	0.96
No Working	5.20	5.76	5.46	4.49	3.22	4.57	4.84	4.79	4.16	3.11	0.88	0.84	0.88	0.93	0.97
Latin America															
Working	5.65	7.17	5.89	3.77	3.02	4.84	5.71	5.12	3.45	2.88	0.86	0.80	0.87	0.92	0.95
No Working	6.41	7.48	6.50	4.08	3.84	5.52	6.06	5.66	3.85	3.60	0.86	0.81	0.87	0.94	0.94
Africa															
Working	6.47	6.92	6.70	4.54	3.60	5.02	5.13	5.54	4.06	3.36	0.78	0.74	0.83	0.89	0.93
No Working	6.87	7.03	6.63	4.08	3.13	5.49	5.51	5.58	3.82	3.13	0.80	0.78	0.84	0.94	1.00

greater link compared to FM. Some of the factors accounting for the latter include lactational amenorrhea, postpartum abstinence, and sterility due to mulnutrition. Overall, the highest correlation with FM was obtained in Egypt (.512), followed by Indonesia (.382) and Sri Lanka (.359). However, in Latin America, correlation with CEB was higher. Mexico exhibits the highest correlation (−0.444), followed by Columbia (−0.424) and Brazil (−0.393).

There is a definitive high correlation between wife's education and that of her husband. Women's education is more strongly and negatively related to both CEB and LC than husband's as shown in Table 1. Women residents in urban areas were better educated than their rural counterparts. The same observation held for the husbands. The urban women correlates negatively to CEB. The difference in educational level between working and non-working women was very slight, a range of 1 or 2 years. The pearsonian correlates revealed a positive relationship between education and rural residence and with work status except in Indonesia where a negative value was obtained although mini-scale. Women currently working correlates negatively to marital fertility in Sri Lanka, Brazil, Columbia, Mexico, Egypt and Kenya, but correlates positively in Thailand and Ghana (Table 1).

In case where the effect of education on marital fertility differs between rural and urban areas, the education differentials is usually more strongly and more consistently negative in urban than in rural areas (UN,1987). This also appears in some DHS countries. For these applications, separate urban or rural estimates are computed, the correlation coefficient between women's education and CEB is −0.313 in urban, on the other hand −0.277 in rural, where the mean CEB by urban and rural are 2.13 and 2.90, respectively in Thailand.

6. BIRTH INTERVAL AND EDUCATION

A.Tab 63 shows the length of reproductive span which could be certained by examining the median age at first birth (FB), the median age at last birth (LB), and the average number of CEB for ever-married women who have reached or were closed to the end of the reproductive span (40−49 years of age) by their educational attainment. A wide variation was noted in the childbearing span among the countries. The FB hovered at 20 years and the LB in the early 30's in Asia and Latin America, increasing to the late 30's in Africa. In effect, more than a decade was considered the residual period where women remained at risk of childbearing but are able to curtail such reproductive behavior. Considering that the average number of children was about 5 and an 11 - 14 years of reproductive span in Asia, this implies birth intervals of almost 2 - 3 years. In Latin America with almost similar length of childbearing and a larger number of children, the average birth intervals were estimated to be shorter about 2 years. In Africa, a larger number of children (about 7) and a reproductive span (about 15 - 20 years), thus birth intervals averaged 2 and a half years and the cessation of reproduction occurs later (close to 40 years). Contraceptive prevalence was lower in the African countries and it seems that the 2.5 years of birth interval can be attributed to prolonged lactation, postpartum amenorrhea and the cultural postpartum abstinence. In all of the countries, the limit of the actual reproductive span is much less than the fecundable limit of 45 - 49 years of age. Contraceptive use might be a factor responsible for such curtailment. This period ranges from 11 - 12 years in Sri Lanka, Thailand, Trinidad and Tobago and to 19 - 20 years in Ghana, Mali, Senegal, Togo and Uganda.

The length of child-bearing period decreases with an increase in the level of women's education. Women with lower education had their births earlier (less than 20 years) compared to those with higher education. The length of child-bearing period for ever-married women with higher education was about half or two thirds of those for women with no education. However, the length of childbearing period for women with primary education was longer than those for women with no education in some countries like Indonesia, Burundi, Liberia, Sudan, Togo and Uganda.

Table 7 and A.Tab 68 shows the differentials of birth intervals by parity for ever married women aged 40 - 49 by educational level. The average interval between the marriage and first birth of mothers with no education was 1.25 years to 2 years in Asia, 1 year or less in Latin America, 0.58 to 3 years in Africa. The data for El Salvador and Ondo State in Nigeria may include some problems. The interval for mothers with secondary education was 1.2 years in Asia, 1.0 year in Latin America, 0.8 to 1.5 years in Africa. It shows −1.08 years in Botswana, this means that the average age of mothers at first birth is younger than the age at their marriage. The result shows that contraceptive prevalence was low untill the first birth after marriage regardless of educational level.

The interval between first and second birth for mothers with no education was 2.1 to 2.4 years in Asia, 1.7 to 2.3 years in Latin America and 1.9 to 2.7 years in Africa. The interval for mothers with higher education was 2.0 to 2.2 years in Asia, 1.2 to 3.8 years in Latin America and 1.6 to 3 years in Africa. The birth interval between first child and second child was longer than the interval between first marriage and first child.

Table 7 Birth Intervals by Parity for Ever Married Women Aged 40–49 by Educational Level

Country	Age at First Marriage				Period for Parity 0-1				Period for Parity 1-2				Period for Parity 2-3			
	Educational Level				Educational Level				Educational Level				Educational Level			
	No	Pri.	Sec.	High.	No	Pri.	Sec.	High.	No	Pri.	Sec.	High.	No	Pri.	Sec.	High.
Asia																
Indonesia	16.33	16.46	20.25	23.75	2.00	1.83	1.17	1.00	2.42	2.29	2.00	2.00	2.42	2.42	2.17	1.75
Sri Lanka	17.58	18.58	21.33	25.58	1.25	1.17	1.17	1.00	2.17	2.08	2.08	2.17	2.42	2.33	2.17	2.42
Thailand	18.42	19.83	21.92	26.25	1.25	1.33	1.25	1.42	2.08	2.00	1.92	2.17	2.25	2.42	2.08	2.42
Latin America																
Bolivia	19.58	19.83	20.58	23.83	0.83	1.00	1.00	1.29	2.25	2.08	2.04	2.33	2.25	2.08	2.42	3.00
Brazil	18.96	20.25	23.92	24.29	0.92	1.00	1.25	1.54	1.75	1.83	2.00	2.21	1.67	1.92	2.17	3.54
Colombia	18.38	19.75	21.17	25.38	0.83	1.00	1.04	1.38	1.83	1.67	1.67	3.79	2.00	1.92	1.92	3.17
Domonican Rep	16.25	17.58	19.71	22.58	1.25	1.08	1.21	1.04	1.83	1.92	1.92	1.50	2.08	2.00	2.50	2.33
Ecuador	18.58	19.21	21.67	22.92	0.92	1.08	1.00	1.00	2.17	2.00	1.75	2.38	2.25	2.08	2.25	3.42
El Salvador	18.00	19.21	24.00	22.75	7.67	3.08	1.63	8.42	8.42	8.25	9.42	-	4.00	6.46	3.58	-
Guatemala	18.17	19.42	22.63	24.33	1.08	1.00	0.92	0.75	2.33	2.21	2.08	1.17	2.33	2.33	2.25	3.25
Mexico	17.50	19.50	22.33	23.58	1.08	1.00	0.92	1.17	2.00	1.83	1.79	1.63	2.17	1.92	2.25	2.58
Peru	18.50	19.21	21.50	26.33	0.92	0.92	1.00	0.83	2.08	2.08	2.17	2.08	2.08	2.08	1.96	2.08
Trinidad & T	18.08	18.33	21.50	23.79	1.08	1.17	1.42	2.25	1.67	1.75	2.25	2.29	1.54	1.92	2.17	4.25
Africa																
Botswana	21.00	21.75	23.25	22.50	0.58	-1.08	0.75	0.96	2.83	2.67	2.25	2.50	2.58	2.50	2.42	2.92
Burundi	19.33	18.33	20.67	22.50	1.08	1.13	1.25	0.17	2.33	2.25	1.75	1.58	2.33	2.17	1.58	2.67
Egypt	16.50	17.92	23.63	24.92	1.58	1.33	1.00	1.08	1.83	1.75	2.08	2.50	2.00	2.00	2.83	3.75
Ghana	17.58	18.00	20.21	22.83	1.17	0.96	1.46	0.75	2.50	2.75	5.33	3.00	2.58	2.50	3.67	2.58
Kenya	17.29	18.08	21.83	24.17	1.25	0.92	0.83	0.75	2.25	2.08	1.79	2.25	2.33	2.08	2.67	2.58
Liberia	15.92	17.83	19.96	21.50	1.50	0.75	0.75	1.00	2.25	1.92	2.08	1.67	2.25	2.17	2.00	2.67
Mali	15.58	15.33	21.38	-	2.83	3.17	1.58	-	2.25	1.92	1.88	-	2.25	2.00	1.75	-
Morocco	16.25	16.92	21.88	22.58	2.08	1.25	1.29	1.00	2.00	1.92	1.83	3.17	2.08	2.00	2.46	2.79
Ondo State	19.58	20.00	20.25	20.83	4.04	8.83	-3.08	0.42	12.42	4.42	16.00	4.17	2.96	3.08	1.83	-
Senegal	15.83	19.38	21.33	-	1.83	1.42	0.75	-	2.50	2.50	2.00	-	2.50	2.00	2.67	-
Sudan	15.67	16.83	16.71	21.67	1.92	1.58	1.50	0.92	2.00	1.96	2.25	2.58	2.00	1.83	2.00	3.29
Togo	18.25	18.25	22.79	-	0.92	0.13	0.63	-	2.67	2.79	3.17	-	2.75	2.67	2.08	-
Tunisia	18.75	20.83	21.88	28.04	1.58	1.25	1.33	1.21	1.92	1.75	2.42	2.92	2.08	2.08	2.83	3.96
Uganda	16.38	16.92	18.17	25.33	1.17	1.00	0.83	0.92	2.17	2.17	1.67	1.75	2.25	2.08	1.75	1.33
Zimbabwe	16.88	18.08	21.42	24.75	1.00	0.92	0.75	0.25	2.25	2.33	2.17	2.96	2.29	2.25	2.83	2.17

It can be attributed in the postpartum amenorrhea and the period for lactation. The birth interval between second child and third child period was almost same as long as the interval between first child and second child.

7. FERTILITY PREFERENCES AND EDUCATION

The desired or ideal number of children (IDC) reflects the attitude towards childbearing and the norms by a society in the social setting. A pronatalist stance would be more acceptable in certain communities, particularly in the agricultural society where the utility of children is very high as labor and old age security, but the cost of children is comparatively low. Measurement of the desired number of children provides a range within which socially acceptable fertility is defined (Westoff, 1991). In DHS surveys the following question was asked to all women:

"If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?"

The distribution of women by IDC is shown in A.Tab 21. Some women in Indonesia and most African countries were likely to give non-numerical answers such as "God's will" or "as many as possible" to this question, since a certain degree of pronatalism is indicated. In the comparison of IDC by educational attainment in A.Tab 51, non-numeric data were deleted.

The result revealed marked difference in the fertility norms of sub-Saharan Africa and the two other regions. In sub-Saharan Africa the ideal number averaged just under six children, compared to over three children in the countries of North Africa, Asia, Latin America and the Carribbean (Westoff, 1991). In Africa, the desired family size was higher than the actual family size reflected in the high child mortality where survivorship has to be assured (Figure 6).

The relationship between education and desired family size is usually monotonically negative, provided the education effect is statistically significant (UN, 1987). The data presented in Figure 5 showed the negative relationship between women's education and mean IDC. Relatively larger differences were noted by education in sub-Saharan Africa, particularly in Uganda (3.49). The difference between women with no education and women with higher education was 2.30 in Africa, 1.67 in Latin America and 0.66 in Asia. However, mean number of IDC for women with higher education was more or less the same or even higher than for women with secondary education in most Latin American countries and Thailand.

The relationship between husband's education and mean IDC was also negative (A.Tab 54). However the difference between husbands with no education and those with higher education was not large as women's differentials. The mean IDC for husbands by educational differentials revealed larger differences in sub-Saharan Africa, particularly in Uganda (2.65). The differential was greatest between husbands with primary education and those with secondary education in most countries.

8. DISCUSSIONS AND CONCLUSIONS

The DHS permitted a unique opportunity to further explore the education—fertility relationship and validate empirical obserbations by using comparable data from a wide variety of settings encompassing countries at different economic levels with divergent length of education and varying levels of fertility.

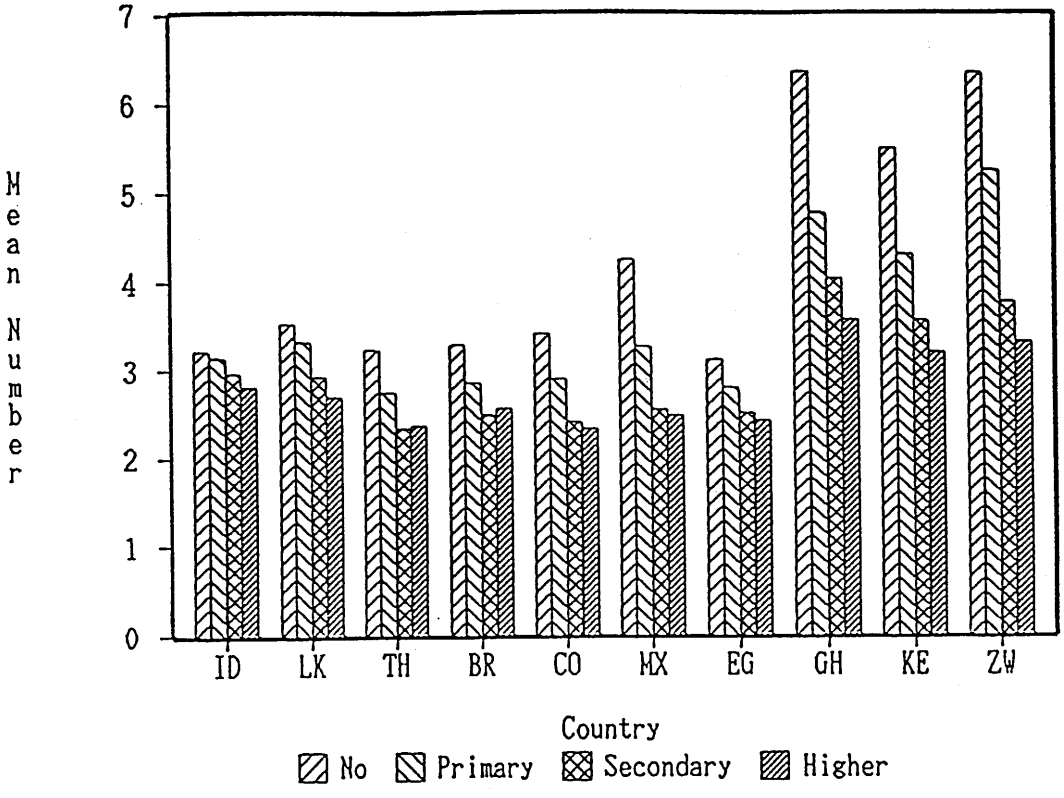
The negative impact of women's education on fertility has been sufficiently documented on a global basis. However, inter-country variations in fertility levels by maternal educational level and the magnitude of declines with the improvement of education have not been adequately explored. Furthermore, the proximate determinants of fertility that could explain the divergence noted have not been extricated. Attempts have been made in this chapter to make analysis on the intermediate factors in effecting the reduction of fertility on an inter-country basis.

Table 8 gives a regional comparative analysis of fertility levels by educational attainment of the women. The fertility indicators encompass both direct and indirect measures such as age at first marriage (FM), CEB and LC. It can be seen that in the three regions of Asia, Latin America and Africa, a clear positive linear relationships between FM and educational attainment exists. The levels have been consistent among the three regions—about 17 years with no education, 18 years with primary education, 20 to 21 years with secondary education, and 23 to 24 years with higher education. The magnitude of change between those with no and higher education was 5 years in Latin America, 6 years in Africa and 7 years in Asia.

Comparing to the number of CEB among region, it was 3 in Asia, 4 in Latin America and Africa without considering educational level. Women with no education had the number of CEB one child lower in Asia compared to Latin America and Africa. The number of CEB was similar (2 children) on averages for the three regions among women with higher education. Noting that FM was similar for three regions among women with no education, there seems to be a clear indication that another factor is operative in inducing such difference which is deliberate fertility control.

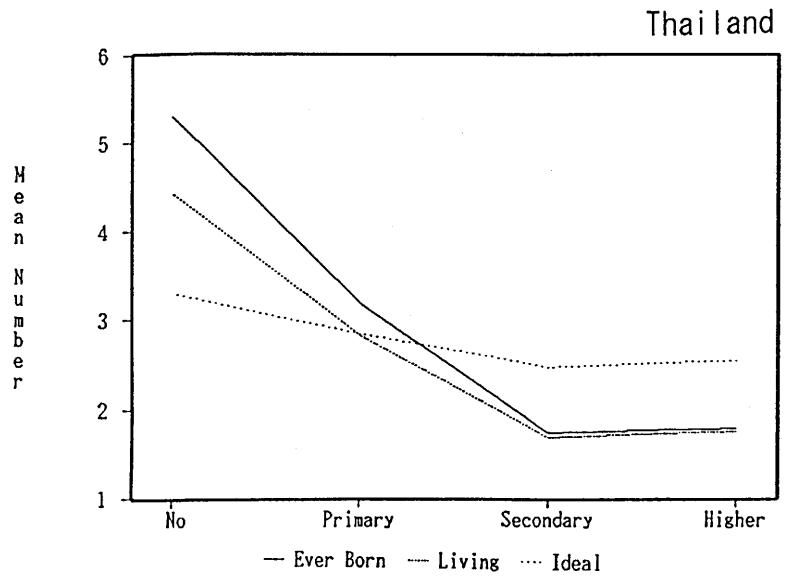
The number of LC is lower by an average of one for

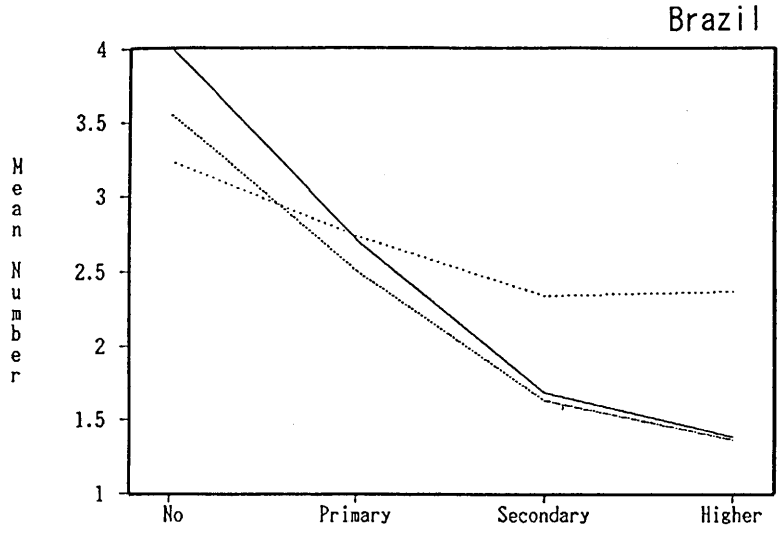
Figure 5 Mean Ideal Number of Children
by Educational Level



(Note) Same as figure 1.

Figure 6 Mean Number of Children by Educational Level





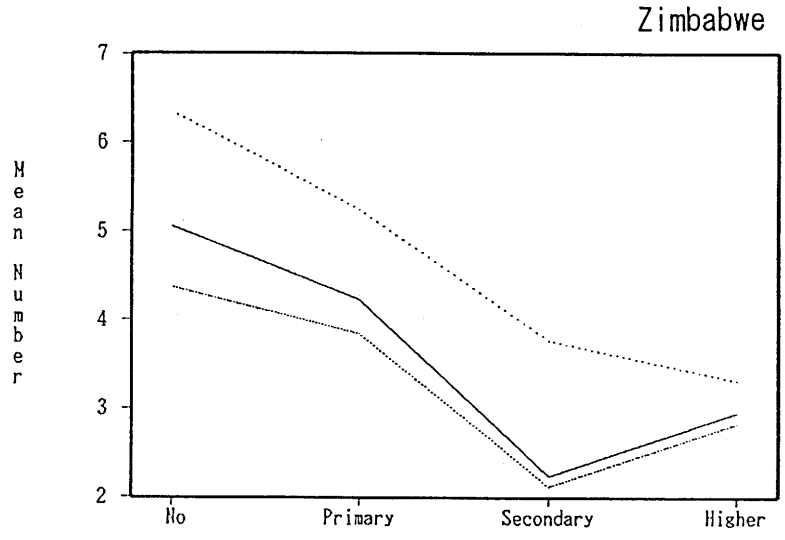


Table 8 Regional Comparative Analysis of Selected Fertility Indicators by Educational Level

	Asia	Latin America	Africa
Age at First Marriage (Years)			
Total	18.9	18.9	17.8
No Education	17.3	17.3	17.2
Primary	18.1	18.4	18.0
Secondary	20.5	19.9	20.2
Higher	23.9	22.6	23.5
Difference (Hi-No)	6.6	5.3	6.3
Number of Children Ever Born			
Total	3.1	3.6	4.2
No Education	4.0	5.2	4.7
Primary	3.1	3.9	3.8
Secondary	2.6	2.3	2.5
Higher	1.9	2.0	2.2
Difference (Hi-No)	-2.0	-3.2	-2.5
Number of Living Children			
Total	2.8	3.2	3.5
No Education	3.4	4.3	3.7
Primary	2.8	3.4	3.3
Secondary	2.5	2.1	2.3
Higher	1.9	1.9	2.1
Difference (Hi-No)	-1.5	-2.4	-1.6
Ideal Number of Children			
Total	3.0	3.0	5.0
No Education	3.3	4.4	5.6
Primary	3.0	3.3	4.7
Secondary	2.9	2.7	3.9
Higher	2.6	2.7	3.3
Difference (Hi-No)	-0.7	-1.7	-2.3

Table 9 Proportion of Variation (R^2) in Fertility explained through a Multivariate Analysis Dependent Variables

Country	Age at First Marriage				No. of Children Ever Born				No. of Living Children			
	Total	ED	Other	HD	Total	ED	Other	HD	Total	ED	Other	HD
Asia												
Indonesia	0.160	0.147	0.013	0.118	0.044	0.040	0.004	0.016	0.025	0.020	0.005	0.005
Sri Lanka	0.152	0.134	0.018	0.080	0.117	0.104	0.013	0.065	0.104	0.088	0.016	0.053
Thailand	0.121	0.114	0.007	0.090	0.108	0.100	0.008	0.088	0.098	0.092	0.006	0.081
Latin America												
Brazil	0.083	0.077	0.006	0.049	0.163	0.159	0.004	0.139	0.138	0.134	0.004	0.113
Colombia	0.054	0.053	0.001	0.025	0.190	0.183	0.007	0.146	0.171	0.164	0.007	0.136
Mexico	0.099	0.087	0.012	0.086	0.199	0.198	0.001	0.161	0.169	0.168	0.001	0.137
Africa												
Egypt	0.294	0.264	0.030	0.183	0.118	0.117	0.001	0.110	0.088	0.086	0.002	0.078
Ghana	0.021	0.021	0.000	0.007	0.097	0.084	0.013	0.062	0.070	0.055	0.015	0.036
Kenya	0.101	0.096	0.005	0.034	0.193	0.159	0.034	0.100	0.155	0.118	0.037	0.074
Zimbabwe	0.050	0.048	0.002	0.028	0.136	0.126	0.010	0.107	0.114	0.105	0.009	0.087

women with no education in all regions. This differential disappears at higher levels of education. In the survivorship percentage, a definitive linear trend was observed wherein survivorship improved with increased education. In Asia, the proportion surviving among three regions was highest among women with any levels of education. The child mortality is an important factor in assesing fertility differentials by education. This differential child mortality is reflected in the IDC. In Asia, the ideal family size is approximately same as the actual, while in Latin America, it was about one child lower than the actual, and in Africa, the reverse holds wherein the ideal family size was one child more than the actual number. The desire for a higher fertility in the African region may be due to the need to ensure the replacement of the offsprings that will be needed for agricultural work and support in the old age of the parents. In Asia and Latin America, women with lower education desire on average of one child less than their actual number, but at secondary education and above, the ideal exceeds the actual number. In Africa, there is a consistent excess of ideal to the actual which could be attributed to the mortality differentials. Figure 6 shows the relationship and the characteristics of CEB, LC and ideal family size by educational level and region.

Education exerts its influence on fertility through two major operating forces: FM and contraceptive usage. It can be observed that those with secondary education and above have higher contraceptive rates than those with primary schooling or below. The dichotomying line in the contraceptive prevalence level was between the primary and secondary education. There is much room for greater contraceptive coverage in Latin America and Africa. Despite higher contraceptive prevalence and higher FM in Asia, the fertility achieved at the higher educational level did not differ much from Latin America. The relatively higher fertility in Africa at the higher educational level could be attributed to lower contraceptive prevalence. It could be inferred that the two intermediate focus that operate in inducing the fertility reduction with education improvement are: FM and contraceptive prevalence.

The impact of women's education on their fertility is realized through the pathway to delayed FM, delayed FB, reduction of prefered family size, increase adoption of family planning practices, shortened child - bearing period. In the study of the length of reproductive span between the median FB and the median LB, while FB differed considerably by education, there is a notable convergence in the LB with a narrow range of 31 to 33 years in the three countries in Asia. Again the dichotomy is drawn between women with primary education and those with secondary education. Those with primary education or lower tend to have a longer length of reproductive span which is almost twice or more that of women with higher education in all the region. There is a tendency for highly educated women to have a higher FM and terminate childbearing within a short span of time. However, the birth intervals remained virtually similar by educational category. It is only the age at entry into union and the termination of childbearing that differed.

From Tables 2 and 9, it is shown that education exerts its influence on fertility through FM in Asia and in Egypt. In Indonesia, almost 15 percent of the variation in age at marriage was explored by education. The percentage in Latin America, the influence is marked in CEB and LC in the range of 16 to 20 percent. In Kenya and Zimbabwe, the educational effect is more felt in CEB and LC.

With the addition of other variables such as education of husband, urban residence, and work status of women, the proportion of variation slightly increased with the increment ranging from 0 percent in Ghana to 3.0 percent in Egypt for FM; 0.1 percent in Mexico and Egypt to 3.4 percent in Kenya for CEB and 0.1 percent in Mexico to 3.7 percent in Kenya for LC.

It is axiomatic to state that education comprises an important predictor of fertility change. However, the impact of education on fertility cannot be discussed in isolation from the various factors that interact with it, i.e. FM, contraceptive information and accessibility, and natural fertility determinants such as lactations, postpartum amenorrhea, abstinence and sterility. Likewise, cultural, social and religious elements operate within the reproductive milieu of this women. From the R^2 obtained, it is clear that trere is much more room for the explanation of the fertility—education links. What emerged from the analysis was the existence of a certain educational threshold level (secondary or above) which could signal the initial downturn trend. It is clear that the differential fertility by education occurs because of differential opportunities presented to the women, alternative life styles other than childbearing, higher childhood survivorship, and better access to family planning methods. Inter and Intra regional differences were noted and explanations were sought for the variance. In Africa, the high infant and childhood mortality acts as a curb to effective fertility reduction; an observation evinced by the discrepancy between CEB and LC on one hand and the ideal family size and CEB on the other. This is further aggravated by relatively lower level of contraceptive prevalence. With improvements in public health and more efficient contraceptive distribution, there is a possibility that Africa can replicate both the Asian and Latin American experience. At present, the proportion of variance explained by education is less than 20 percent. As governments

intensify their mortality reduction strategies and incorporate one vigorous family planning program within the scope of the total health plan, it is anticipated that the impact of education on reproductive performance will be further eroded.

One of the important policy implications of these findings is the need for policy initiatives that would enable the females to avail of educational opportunities that such country can offer. As "the World Population Plan of Action and Recommendations for its Further Implementation" by the United Nations in 1992 stated: " Governments should pursue more aggressively action programmes aimed at improving and protecting the legal rights and status of women through efforts to identify and to remove institutional and cultural barriers to women's education, training, employment and access to health care". The present analysis shown above has derived a conclusion which concerns with the United Nations recommendation.

ACKNOWLEDGEMENTS

I am deeply indebted to Dr. Trinidad S. Osteria, Director, Social Development Research Center, De La Salle University, Philippines, who provided me with a useful comment. Mr. Yutaka Nakayama, a student of Meiji University were extremely helpful in the computer work.

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