PRIVATE AND GROUP TUTORING IN EGYPT: WHERE IS THE GENDER INEQUALITY?

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Abstract

Private tutoring is being practiced at an alarming scale in Egypt and in many other developing countries. Nonetheless, the literature on tutoring is still scant. The purpose of this paper is to gain an understanding of the nature and determinants of tutoring in Egypt, using micro-level data, in order to investigate whether gender bias exists in tutoring decisions. It is expected that since gender disparities are present in educational investments in general, they would be more pronounced in optional educational investments like that of receiving tutoring. It is also expected that since labor market outcomes are more favorable to boys, parents would be less willing to spend on tutoring for girls. Surprisingly, however, no gender bias against girls was detected with respect to tutoring. The absence of bias is in itself a significant and puzzling finding. We conclude that the education premium in the marriage market may be the answer to the puzzle.

ملخص

تتفشى ظاهرة الدروس الخصوصية بصورة خطيرة في مصر و العديد من الدول النامية. و مع ذلك فان كل ما كتب عنها مازال ضئيلا للغاية. يهدف هذا البحث إلى فهم طبيعة و عوامل الدروس الخصوصية في مصر استنادا إلى بيانات دقيقة لمعرفة ما إذا كان يوجد انحياز للنوع في الدروس الخصوصية أم لا. و بما أن التمييز على أساس النوع موجود بالفعل في الاستثمارات التعليمية بصفة عامة فانه من المتوقع أن يكون اكثر وضوحا في الاستثمارات التعليمية الاختيارية مثل تلقى الدروس الخصوصية. وبما أن متطلبات سوق العمل في صالح الذكور فمن المتوقع ألا ينفق أولياء الأمور على الدروس الخصوصية للإناث. والمثير للدهشة انه لم يتم رصد أي انحياز على أساس النوع بخصوص الدروس الخصوصية. و عدم وجود هذا الانحياز يمثل في حد ذاته نتيجة مهمة ومحيرة. و نستنتج أن أهمية التعليم في سوق الزواج ربما يكون الإجابة لهذا اللغز.

1. Introduction

Although technically illegal, private tutoring has become increasingly widespread in Egypt and is no longer limited to diploma years or to students attending public schools. Despite recognition of how widespread tutoring has become, the phenomenon has not yet been formally studied. There is anecdotal evidence that private lessons currently constitute a considerable part of households' expenditure. This implies that the estimation of the rates of return on education should be revised to incorporate expenditure on private lessons. In addition, tutoring potentially exacerbates educational (and thereby income) gaps across different income as well as gender groups. Accordingly, examining tutoring determinants has important policy implications.

The purpose of this paper is to gain an understanding of the nature and determinants of both private and group tutoring in Egypt in order to investigate whether gender bias exists in tutoring decisions, in particular with respect to who takes and how much to spend on private lessons. Gender gaps in tutoring can possibly reflect general gender gaps in education. It is expected that if disparities are present in educational investments in general, it would even be more pronounced in more optional educational investments like that of receiving tutoring.

Women's education is crucial to the development of the MENA (Middle East and North Africa) region. Over and above its intrinsic value, schooling for girls has significant benefits to society. Education for mothers has positive effects on child survival and child health. In addition, the link of women's education to lower birth rate and better maternal health is well established. Educated mothers also tend to emphasize the education of their children, especially their daughters. Equally important, is that education enhances women's ability to influence decision-making at the household level since increased participation for women in the labor force means increased earning capacity. Education also contributes significantly to women's ability to exercise their political rights.

Despite these benefits, gender disparities in education[1] have strongly persisted in MENA countries and in developing countries in general.[2] According to the World Development Report (1996), the MENA region exhibits the highest gender gap in education, after South Asia. A considerable body of research has explored gender bias in schooling in South Asian countries, but there has been a shortage in empirical research on women's education in the case of MENA countries. This is not surprising given the scarcity and inaccessibility of micro-level data in these countries. Existing literature usually documents gender bias by only looking at aggregate level measures of education. For example, studies tend to compare literacy rates, enrollment rates, and mean years of schooling by gender (for example, Nagat El-Sanabary, 1993). Aggregate level data, however, does not help explain how individual, family, and community factors affect the extent of the bias and, hence, is not sufficient to the formulation of effective education policies.

In the case of Egypt, female literacy and enrollment rates still lag behind that of males. For instance, based on Egypt Labor Market Survey of 1998 (ELMS 98), the number of girls that have never been to school is 2.3 times more than boys. However, once girls are sent to school, there is no significant gender disparity observed in dropout rates.

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[1] Gender bias in other forms of human capital investments (e.g., bias in mortality rates, in health investment, and in nutrition) is also well documented in developing countries. For instance, Sen (1990) shows that females face a considerably higher mortality rate compared to males in Asia and North Africa.. Behrman (1988), on the other hand, found that there is a pro-male allocation of nutrients in rural India.

[2] In developing countries, gender disparities in education are present in literacy rates, enrolment rates, and attainment levels. For instance, in developing countries, excluding India and China, the percentage of boys enrolled was higher than that of girls by 22 and 43 percentage points for primary and secondary school-age kids respectively (World Bank 1996).

The remaining of this paper is organized as follows: section two provides theoretical explanations and evidence on gender bias; section three reviews literature on tutoring; section four discusses the empirical model followed; and section five presents the empirical results and preliminary findings.

2. Gender Bias: Theoretical Explanations and Evidence

Theoretically, a gender differential in educational investments can arise due to two reasons: [3]

> 1. Firstly, girls can face discrimination because of the different weights parents place on the education of their sons and daughters. For instance, parents may invest more in their sons' education because they value their human capital more than that of their daughters'-a pure preference bias. Dominant social norms about gender roles and parents' perceptions about the importance of women education can add to the bias. Parents may not emphasize their daughters' education as much as that of their sons because they believe that girls should marry and take care of their families rather than work. In addition, parents may value benefits associated with their daughters' education less because of their primarily non-pecuniary nature. Examples of such benefits include more efficiency in home production and childcare.
> 2. Secondly, girls can receive differential treatment based on pure efficiency grounds. Parents, even if disinclined to inequality, can (rationally) invest more in boys' schooling if they expect higher returns on education in the case of boys (Rosenzweig and Schultz 1982). In the context of developing countries, resource constraints along with imperfect credit markets would reinforce investment bias against girls. Realizing different returns from boys as opposed to girls, decisions with respect to educating boys or girls can be based on gender-related differentials in either benefits or costs of education.

Even if benefits and costs of education are identical for boys and girls, parents can invest more in boys' education if they expect boys to transfer back a relatively larger part of their future income. However, it is likely that both streams of benefits and costs of education would vary by gender in developing countries. Labor market outcomes tend to be more favorable to boys. It is not unusual for women in developing countries to have limited access to the paid labor market or to get a lower wage rate. In MENA countries, women face barriers to entry in the private sector (Moghadam 2002). In addition, there are considerable wage differentials in the private sector even after accounting for education and experience (Assaad and Arntz 2002).

Costs can also vary by gender. Costs associated with traveling to school are particularly important. These can be gender specific due to school availability and accessibility constraints. For example, if no school is available in a village, parents may be reluctant to send their daughters to a school in another village in fear of exposing them to danger.[4] Single-sex schools (if restricted to boys), especially in remote villages, may be a major obstacle to girls' enrollment.

The opportunity cost of children's time (an indirect cost) is the major cost of education that parents bear. Boys can help in farm work while girls typically help in house chores. If parents value girls' time more than boys', they would be more reluctant to send girls to school.

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[3] The discussion that follows assumes that girls and boys have the same cognitive abilities.

[4] Alderman et al. (1996), King and Lillard (1987), and Newman and Gertler (1994) find that distance has a more negative effect on enrollment of girls as opposed to boys in Pakistan, Malaysia, Philippines, and Peru.

3. Evidence on Tutoring

3.1. Tutoring in Egypt

Private tutoring in Egypt has become prevalent in recent years. Tutoring is generally done by teachers for a fee. It normally occurs as a shadow-phenomenon because it is technically not approved by the ministry of education. In addition, teachers usually evade taxes on their earnings from tutoring.

It is very common for school pupils, particularly those in diploma years, to take tutoring. This is the case across different regions and income levels. In addition, pupils in private schools are as likely to take tutoring as much as those in public schools, indicating that tutoring is not only to compensate for relatively lower school quality[5]. Fees for private tutoring are relatively high and represent a significant portion of parents' spending on their children's education. Pupils in the final year of the preparatory level normally take tutoring to do well enough in the governorate-level exams in order to move to the "prestigious" general secondary level which is the pathway to university. Those in the secondary level commonly receive tutoring so that they secure seats in the "prestigious" fields in one of the major universities.[6]

Group tutoring, on the other hand, has not witnessed such a big rise as in the case of private tutoring. Group tutoring is usually offered in school premises by the school teachers. It is not illegal. Its fees are much lower than that of private tutoring, and it is considered the less expensive substitute to private tutoring.

3.2. Literature on tutoring

No studies have looked at gender differences in the context of tutoring. In fact, very few papers analyze tutoring in general. Biswal (1999), in his theoretical paper, tries to explain why tutoring takes place in developing countries. He views tutoring as a form of corruption where teachers in public schools shirk - assuming they have monopoly power- to create demand for private tutoring in order to supplement their low incomes. This is also coupled with imperfect monitoring mechanisms in schools. Biswal follows a game theoretical framework where tutoring is represented as a club good. In the first stage of the game, the government sets the teacher's wage level, and the teacher chooses his/her level of effort accordingly. In the second stage, teachers offer a tutoring package: the club fee and the number of students per group. In the last stage, the student accepts or rejects the offer. Under this framework, governments use tutoring as a mechanism of providing education at a lower cost. Biswal ignores important demand side determinants of tutoring. In addition, the paper leaves tutoring taken by students in private schools unexplained and, therefore, does not fully portray the tutoring process in Egypt.

Bray & Kwok (2003), on the other hand, tried to examine the issue for the case of Hong Kong from a quantitative perspective focusing only on demand side factors. They collected data on pupils in six secondary schools. In Hong Kong, teachers are prohibited from providing tutoring to their own pupils, thereby ruling out monopoly power of teachers. In addition and unlike Egypt, tutoring is usually not considered an illegal phenomenon. The authors provided descriptive statistics on the proportion of pupils receiving tutoring, reasons reported by students as to why they resorted to tutoring, and the ratio of tutoring fees to

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[5] Over-crowded classrooms are one reason public schools are expected to be of lower quality compared to private schools.

[6] It is a norm in Egypt that engineering and medicine are "top" fields. These faculties require very high scores in the Egyptian general secondary certificate.

monthly household incomes. Our paper, however, will go beyond providing summary statistics (as described in the next section) and will consider supply-side factors. Moreover, we employ a richer and nationally representative dataset.

4. Data Sources and Methodology

The education system in Egypt currently consists of three stages: a six-year primary stage[7], a three-year preparatory stage, and a three-year secondary stage. Both primary and preparatory stages are compulsory. The secondary stage encompasses general and vocational streams. The general stream is regarded as the "prestigious" stream and is a required pathway for joining university. Our analysis will be restricted to pre-university education levels.

The paper utilizes data from the Egyptian Labor Market Survey (ELMS 98), supplemented by district level data drawn from the 1996 Egyptian Population Census and governorate level data from the Egyptian ministry of education. We restrict our sample to individuals currently in school who are 6 to 18 years old (6,114 observations out of an overall sample of 23,997 observations).

In ELMS 98, four questions cover tutoring (the dependent variable). The first two questions are related to private tutoring and indicate whether a student received private tutoring or not, and how much was spent per year on tutoring. The same two questions are posed again in the context of group tutoring.[8] A set of variables representing individual, household, as well as community characteristics serves as explanatory variables. Individual level variables include gender, age group dummies (corresponding to different education levels), and the child's relationship to the head of the household (e.g., if he/she is the eldest child). We would also employ variables showing whether the child is in a diploma year, whether he/she attends a multi-shift school, and if he/she is a delayed pupil (i.e., has experienced delayed school entry or repetition).

Household level variables comprise variables on parents' years of schooling, parental absence, and wealth (proxied by an asset score). Dummies showing which urban or rural area or region of Egypt the student resides in will be included to reflect community factors. In addition, a variable indicating the proportion of the working age population employed in the education industry was constructed, using census data, to reflect the supply of tutors. Furthermore, in an attempt to capture the quality of education, governorate-level[9] variables such as teacher-pupil ratios (for different education levels) will be used.

We will utilize a combination of single and bivariate probit models. The single probit model follows the standard form:

$$\Pr(T = 1|X) = \Pr(\varepsilon > - X\beta),$$

Where T denotes the tutoring status (1= receiving tutoring), and the error term ε is assumed to follow a normal distribution. X represents the vector of regressors: individual, household and community characteristics, as well as other supply side variables (as discussed above). Two probits are estimated separately for private and group tutoring. For controlling other explanatory variables, in each equation a female dummy variable is included to test for whether there are differences in the likelihood of receiving tutoring among girls and boys. To further test gender related biases, another specification (of single probits) adds a female dummy interaction with all regressors.

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[7] Our analysis, however, applies to an earlier period where the primary level consisted of only five grades.

[8] Group tutoring is usually offered on the premises of public schools. It is not illegal. Its fees are much lower than that of private tutoring.

[9] There are 27 governorates in Egypt. ELMS 98 has observations on 22 governorates.

Mindful of the potentially high covariance between disturbance terms of the two equations, we also follow a bivariate probit approach, where the two equations are estimated jointly. In the same fashion, two single tobit equations -where the dependent variables are spending on private tutoring and spending on group tutoring respectively- are estimated using the same set of regressors.

To control for within-province variation, we would also include in our analysis of private tutoring and group tutoring two additional specifications: governorate fixed effects and governorate random effects. To account for possible differences in tutoring decisions across different education levels (primary, preparatory, and secondary), we would estimate separate (single) probits for each level.

5. Preliminary Results and Conclusions

Initial inspection of the data reveals that private tutoring is undertaken at a large scale in Egypt. On average, 40% of students receive private tutoring; and this percentage goes up to 60% for students at the secondary stage. The average for group tutoring is around 15%. Private tutoring is more of an urban phenomenon: 44% of students in urban areas take private tutoring as opposed to 35 % in rural areas. In addition, private tutoring seems to be more practiced in Lower Egypt (53%) compared to other regions. Group tutoring, surprisingly, is more often observed in Greater Cairo (23%) compared to other regions.

The data did not show signs of gender differences either in the likelihood of taking tutoring (group or private) or in the average expenditure on tutoring. To check whether the absence of a gender disparity persists when controlling for other variables, we estimated single and bivariate probits and tobits (as explained in the previous section). The female dummy generally turned out to be insignificant, and remained insignificant after adding a series of interaction terms of gender with all regressors. The female dummy and the interaction terms with "female" were also jointly insignificant (see P-value for joint test at the end of Tables 8, 9, 11).

For private tutoring, the female dummy was insignificant across the four models (Table 8). For group tutoring, the female dummy was significant (at the 10% level) in the governorate fixed effects and random effects specifications. However, the dummy coefficient was positive, indicating favorable treatment to girls (Table 9).

Based on the female interacted specifications (models not shown) and apart from some exceptions, the similarity of tutoring patterns by gender holds across household and community characteristics. For example, in private tutoring models, the dummy for household being in the third urban quintile and the dummy for living in Lower Egypt were both significant (at the 10% level) when interacted with the female dummy. However, the coefficients were positive indicating favorable outcomes for girls.

For the group tutoring specifications (with interactions), significant interactions included the dummy for age 15 to 19, the dummy for being a son/daughter of the head, the dummy for the temporary absence of father, and the proxy for educators at the district level. All except the age 15 to 19 dummy had a negative effect.

No bias against girls was detected in spending on tutoring. The female dummy was insignificant for spending on private tutoring. The female dummy was significant (at the 10% level) and positive for spending on group tutoring (Table 11).

When regressions were performed separately for private, preparatory, and secondary levels, the female dummy was significant and positive in sign for the secondary level in both private and group tutoring (at 5% and 1% level of significance respectively). However, it was

significant (at the 10% level) and negative in sign for the primary level regression in the case of private tutoring. This was the only case in which the gender variable has the expected effect.

The absence of gender bias is a significant finding. This may result from parents - in an effort to get the most out of their daughter's education- ensuring that she does not drop out and that she performs well. What is puzzling, however, is what sort of benefits parents are trying to maximize. If an education premium in the labor market is the main motive for educating children, we would expect parents to invest more in boys' education since they have better prospects in the labor market. An education premium in the marriage market, due to the bride-price system, may be the answer to the puzzle. Parents may want their daughter to complete her education so that she finds a richer and/or more educated husband and, hence, can achieve a higher social status through marriage (Lloyd et al. 2001).

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Table 1: Percentage of Students Receiving Private Tutoring by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
5-11	32.7	31.3	32.0	1,336	1,206	2,542
12-14	52.3	50.9	51.6	826	787	1,613
15-18	56.2	63.7	59.6	783	672	1,455
Urban / Rural						
Urban	53.0	40.6	52.0	1,791	1,724	3,515
Rural	38.9	50.9	39.6	1,154	941	2,095
Regions						
Greater Cairo	52.0	43.1	47.5	465	484	949
Alex & Canal	49.9	48.4	49.1	335	345	680
Lower Egypt	55.4	57.4	56.3	1,053	960	2,013
Urban	62.9	69.4	66.2	423	421	844
Rural	53.3	53.5	53.4	630	539	1,169
Upper Egypt	26.9	27.9	27.3	1,092	876	1,968
Urban	46.1	45.9	46.0	568	474	1,042
Rural	21.4	21.8	21.6	524	402	926
Education Level						
Primary	34.3	32.9	33.7	1,524	1,339	2,863
Preparatory	53.8	52.8	53.3	869	806	1,675
Secondary	58.1	66.4	62.0	552	520	1,072
Diploma Year						
Primary	45.2	45.4	45.3	299	279	578
Preparatory	60.0	59.7	59.9	267	225	492
Secondary	61.3	69.6	65.2	322	295	617
Total	55.4	58.2	56.7	888	799	1,687
School Type						
Public	43.8	44.6	44.2	2636	2388	5024
Private	48.5	48.0	48.0	245	228	473
Wealth						
Lowest Urban Quintile	41.1	38.7	39.9	434	375	809
Highest Urban Quintile	60.7	50.8	56.1	325	291	616
Lowest Rural Quintile	25.1	27.8	26.0	181	96	277
Highest Rural Quintile	53.5	54.1	53.8	274	267	541
Total ELMS 98	44.4	45.2	44.7	2,945	2,665	5,610

Source: ELMS 98

Table 2: Percentage of Students Receiving Group Tutoring by Gender and Background Characteristic

	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
5-11	21.5	21.9	21.7	1,336	1,206	2,542
12-14	22.5	21.0	21.8	826	787	1,613
15-18	10.9	14.8	12.7	783	672	1,455
Urban / Rural						
Urban	17.1	21.1	19.1	1,791	1,724	3,515
Rural	20.1	18.9	19.6	1,154	941	2,095
Regions						
Greater Cairo	26.4	34.9	30.7	465	484	949
Alex & Canal	15.7	19.3	17.5	335	345	680
Lower Egypt	15.8	15.2	15.5	1,053	960	2,013
Urban	8.1	8.9	8.5	423	421	844
Rural	18.0	17.2	17.6	630	539	1,169
Upper Egypt	20.3	18.2	19.4	1,092	876	1,968
Urban	11.7	8.7	10.3	568	474	1,042
Rural	22.7	21.4	22.2	524	402	926
Education Level						
Primary	21.6	21.7	21.6	1,524	1,339	2,863
Preparatory	20.8	20.8	20.8	869	806	1,675
Secondary	8.5	13.3	10.7	552	520	1,072
Diploma Year						
Primary	24.6	20.7	22.7	299	279	578
Preparatory	15.1	19.6	17.2	267	225	492
Secondary	10.1	10.0	10.0	322	295	617
Total	16.6	16.5	16.6	888	799	1,687
School Type						
Public	18.0	16.0	18.0	2636	2388	5024
Private	7.0	13.0	10.0	245	228	473
Wealth						
Lowest Urban Quintile	18.1	20.4	19.2	434	375	809
Highest Urban Quintile	17.8	22.5	20.0	325	291	616
Lowest Rural Quintile	19.8	13.8	17.8	181	96	277
Highest Rural Quintile	16.4	23.1	19.6	274	267	541
Total ELMS 98	18.9	19.9	19.4	2,945	2,665	5,610

Source: ELMS 98

Table 3: Average Yearly Spending on Private Tutoring by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
5-11	67	23	46	1,336	1,206	2,542
12-14	118	201	159	826	787	1,613
15-18	339	377	357	783	672	1,455
Urban / Rural						
Urban	217	215	216	1,791	1,724	3,515
Rural	55	72	63	1,154	941	2,095
Regions						
Greater Cairo	379	294	336	465	484	949
Alex & Canal	230	236	233	335	345	680
Lower Egypt				1,053	960	2,013
Urban	104	193	188	423	421	844
Rural	76	98	86	630	539	1,169
Upper Egypt				1,092	876	1,968
Urban	101	140	119	568	474	1,042
Rural	30	38	33	524	402	926
Education Level						
Primary	62	32	48	1,524	1,339	2,863
Preparatory	145	217	180	869	806	1,675
Secondary	420	424	422	552	520	1,072
Diploma Year						
Primary	107	113	110	299	279	578
Preparatory	189	309	244	267	225	492
Secondary	512	536	523	322	295	617
Total	154	165	300	888	799	1,687
School Type						
Public	140	130	150	2636	2388	5024
Private	420	435	430	245	228	473
Wealth						
Lowest Urban Quintile	48	51	50	434	375	809
Highest Urban Quintile	532	540	536	325	291	616
Lowest Rural Quintile	18	28	21	181	96	277
Highest Rural Quintile	124	161	142	274	267	541
Total ELMS 98	154	165	159	2,945	2,665	5,610

Table 4: Average Yearly Spending on Group Tutoring by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
5-11	15	17	16	1,336	1,206	2,542
12-14	20	23	21	826	787	1,613
15-18	14	23	18	783	672	1,455
Urban / Rural						
Urban	18	24	31	1,791	1,724	3,515
Rural	14	14	14	1,154	941	2,095
Regions						
Greater Cairo	38	53	45	465	484	949
Alex & Canal	17	27	22	335	345	680
Lower Egypt				1,053	960	2,013
Urban	8	7	8	423	421	844
Rural	12	10	11	630	539	1,169
Upper Egypt				1,092	876	1,968
Urban	9	7	8	568	474	1,042
Rural	16	19	17	524	402	926
Education Level						
Primary	17	18	17	1,524	1,339	2,863
Preparatory	18	22	20	869	806	1,675
Secondary	13	26	19	552	520	1,072
Diploma Year						
Primary	25	18	22	299	279	578
Preparatory	17	24	21	267	225	492
Secondary	12	24	18	322	295	617
Total	17	20	19	888	799	1,687
School Type						
Public	18	33	25	2636	2388	5024
Private	12	20	15	245	228	473
Wealth						
Lowest Urban Quintile	15	16	15	434	375	809
Highest Urban Quintile	26	40	32	325	291	616
Lowest Rural Quintile	13	6	11	181	96	277
Highest Rural Quintile	9	18	13	274	267	541
Total ELMS 98	20	16	18	2,945	2,665	5,610

Source: ELMS 98

Table 5: Percentage of Children who have ever been to School by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
6-11	95.3	88.6	92.1	1,408	1,339	2,747
12-14	94.3	87.0	90.6	926	931	1,857
15-18	95.3	83.1	89.4	1,171	1,103	2,274
Urban / Rural						
Urban	98.0	95.5	96.7	2,065	2,036	4,101
Rural	93.4	80.4	87.1	1,440	1,337	2,777
Regions						
Greater Cairo	98.6	97.4	98.0	510	552	1,062
Alex & Canal	99.1	97.7	98.4	379	405	784
Lower Egypt	96.2	89.0	92.7	1,287	1,212	2,499
Urban	98.2	94.3	96.3	513	504	1,017
Rural	95.7	87.4	91.7	774	708	1,482
Upper Egypt	91.68	75.8	84.1	1,329	1,204	2,533 |
Urban	95.8	90.6	93.4	663	575	1,238
Rural	90.6	72.1	81.7	666	629	1,295
Wealth						
Lowest Urban Quintile	93.9	86.0	90.1	584	534	1,118
Highest Urban Quintile	100.0	98.2	99.2	333	300	633
Lowest Rural Quintile	84.2	56.9	71.7	255	226	481
Highest Rural Quintile	99.5	97.2	98.4	307	292	599
Total ELMS 98	95.1	86.3	90.8	3,505	3,373	6,878

Table 6: Percentage of Dropouts by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
6-11	1.5	1.2	1.4	1359.0	1222.0	2581.0
12-14	7.0	7.1	7.0	888.0	841.0	1729.0
15-18	31.7	33.0	32.3	1134.0	969.0	2103.0
Urban / Rural						
Urban	10.8	10.8	10.8	2020.0	1936.0	3956.0
Rural	14.7	15.0	14.8	1361.0	1096.0	2457.0
Regions						
Greater Cairo	7.7	9.9	8.8	504.0	537.0	1041.0
Alex & Canal	11.1	13.7	12.4	379.0	402.0	781.0
Lower Egypt	15.6	14.1	14.9	1252.0	1102.0	2354.0
Urban	15.3	11.0	13.2	503.0	474.0	977.0
Rural	15.7	15.0	15.4	749.0	628.0	1377.0
Upper Egypt	12.7	13.5	13.1	1246.0	991.0	2237.0
Urban	10.3	9.1	9.7	634.0	523.0	1157.0
Rural	13.4	14.9	14.0	612.0	468.0	1080.0
Wealth						
Lowest Urban Quintile	20.9	20.2	20.6	3381.0	456.0	1001.0
Highest Urban Quintile	2.0	1.2	1.6	334.0	295.0	629.0
Lowest Rural Quintile	15.5	22.6	18.1	214.0	124.0	338.0
Highest Rural Quintile	7.8	5.8	6.8	305.0	284.0	589.0
Total ELMS 98	13.2	13.2	13.2	3381.0	3032.0	6413.0

Source: ELMS 98

Table 7: Percentage of Children Attending School by Gender and Background Characteristic

Background Characteristic	Boys	Girls	Total	Number of Boys	Number of Girls	Sample Size
Age group						
6-11	93.9	87.5	90.8	1408.0	1339.0	2747.0
12-14	87.7	80.8	84.2	926.0	931.0	1857.0
15-18	65.0	55.7	60.4	1171.0	1103.0	2274.0
Urban / Rural						
Urban	87.5	85.2	86.3	2065.0	2036.0	4101.0
Rural	79.6	68.4	74.2	1440.0	1337.0	2777.0
Regions						
Greater Cairo	91.0	87.8	89.3	510.0	552.0	1062.0
Alex & Canal	88.0	84.2	86.0	379.0	405.0	784.0
Lower Egypt	81.2	76.5	78.9	1287.0	1212.0	2499.0
Urban	83.2	83.9	83.6	513.0	504.0	1017.0
Rural	80.6	74.3	77.6	774.0	708.0	1482.0
Upper Egypt	80.0	65.5	73.1	1329.0	1204.0	2,533	
Urban	86.0	82.4	84.3	663.0	575.0	1238.0
Rural	78.5	61.3	70.2	666.0	629.0	1295.0
Wealth						
Lowest Urban Quintile	74.3	68.6	71.5	584.0	534.0	1118.0
Highest Urban Quintile	98.0	97.1	97.6	333.0	300.0	633.0
Lowest Rural Quintile	71.2	44.1	58.8	255.0	226.0	481.0
Highest Rural Quintile	91.7	91.6	91.7	307.0	292.0	599.0
Total ELMS 98	82.5	74.9	78.8	3505.0	3373.0	6878.0

Source: ELMS 98

Table 8: Private Tutoring Probits

	Probit (1)	Bivariate Probit (2)	Governorate Fixed Effects (3)	Governorate Random Effects (4)
Individual characteristics				
Female	-0.03	-0.03	-0.028	-0.028
	-0.88	-0.87	-0.8	-0.82
Age group 12-14	0.616	0.614	0.632	0.628
	(14.50)***	(14.43)***	(14.72)***	(14.65)***
Age group 15-19	0.561	0.558	0.574	0.569
	(11.75)***	(11.70)***	(11.93)***	(11.80)***
Eldest child	0.093	0.097	0.083	0.085
	(2.25)**	(2.33)**	(1.99)**	(2.03)**
Son/daughter of head	0.088	0.085	0.113	0.108
	-1.32	-1.27	(1.66)*	-1.6
Late	-0.059	-0.06	-0.074	-0.073
	-1.01	-1.03	-1.26	-1.25
School operates in shifts	-0.004	-0.005	0.016	0.016
	-0.1	-0.12	-0.43	-0.44
Diploma year	0.28	0.279	0.292	0.289
	(6.83)***	(6.81)***	(7.06)***	(6.99)***
Household characteristics				
Father's years of schooling	0.046	0.046	0.043	0.041
	(4.03)***	(4.03)***	(3.78)***	(3.60)***
Square of father's years of schooling	-0.003	-0.003	-0.003	-0.003
	(4.11)***	(4.10)***	(4.05)***	(3.90)***
Mother's years of schooling	0.029	0.028	0.036	0.035
	(2.48)**	(2.43)**	(3.05)***	(2.98)***
Square of mother's years of schooling	-0.003	-0.002	-0.003	-0.003
	(3.14)***	(3.09)***	(3.32)***	(3.33)***
Father absent temporarily	0.18	0.171	0.194	0.186
	(2.15)**	(2.03)**	(2.28)**	(2.19)**
Father absent permanently	0.168	0.165	0.165	0.155
	(2.36)**	(2.32)**	(2.30)**	(2.17)**
Mother absent	0.074	0.071	0.09	0.08
	-0.67	-0.64	-0.79	-0.71
HH in 2nd lowest urban quintile	0.263	0.26	0.24	0.226
	(3.90)***	(3.87)***	(3.53)***	(3.36)***
HH in third urban quintile	0.325	0.324	0.293	0.269
	(4.49)***	(4.48)***	(4.01)***	(3.75)***
HH in fourth urban quintile	0.43	0.429	0.381	0.35
	(5.64)***	(5.64)***	(4.94)***	(4.67)***
HH in fifth urban quintile	0.486	0.484	0.444	0.401
	(5.53)***	(5.50)***	(5.05)***	(4.80)***
HH in 2nd lowest rural quintile	0.235	0.227	0.201	0.206
	(2.20)**	(2.14)**	(1.84)*	(1.88)*
HH in third rural quintile	0.004	-0.002	0.112	0.114
	-0.04	-0.01	-1.01	-1.05
HH in fourth rural quintile	0.293	0.286	0.372	0.369
	(2.80)***	(2.74)***	(3.42)***	(3.50)***
HH in fifth rural quintile	0.583	0.572	0.719	0.717

Table 8: Private Tutoring Probits Contd.

	Probit (1)	Bivariate Probit (2)	Governorate Fixed Effects (3)	Governorate Random Effects (4)
	(5.49)***	(5.40)***	(6.46)***	(6.73)***
Community characteristics				
Proportion of those working in education industry / working age population	0.029 (2.88)***	0.028 (2.82)***	0.029 (2.75)***	0.042 (5.05)***
Alexandria & Canal cities	-0.017 -0.21	-0.019 -0.23		
Upper Egypt	-0.064 -0.87	-0.06 -0.81		
Lower Egypt	0.495 (6.23)***	0.495 (6.21)***		
Urban	0.366 (3.69)***	0.358 (3.63)***	0.423 (4.18)***	0.381 (3.88)***
Teacher pupil ratio in general secondary level	-0.06 (2.42)**	-0.061 (2.45)**		
Teacher pupil ratio in preparatory level	0.004 -0.38	0.003 -0.36		
Teacher pupil ratio in primary level	0.02 (2.83)***	0.021 (2.88)***		
Constant	-1.331 (6.51)***	-1.303 (6.39)***	-1.642 (12.90)***	-1.383 (11.94)***
Observations	6114	6114	6114	6114
- Log likelihood	3965	6022	3627	3665
Test for joint significance of interactions with gender (P-value)	0.26	0.23	0.19	0.18

Absolute value of z statistics in parentheses
* Significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9: Group Tutoring Probits

	Probit (1)	Bivariate Probit (2)	Governorate Fixed Effects (3)	Governorate Random Effects (4)
Individual characteristics				
Female	0.059	0.059	0.07	0.073
	-1.44	-1.43	(1.66)*	(1.75)*
Age group 12-14	0.046	0.036	0.051	0.049
	-0.92	-0.72	-1	-0.96
Agegroup15-19	-0.392	-0.383	-0.388	-0.389
	(6.34)***	(6.23)***	(6.17)***	(6.20)***
Eldest child	0.157	0.161	0.161	0.163
	(3.13)***	(3.23)***	(3.17)***	(3.22)***
Son/daughter of head	-0.007	-0.023	-0.049	-0.053
	-0.09	-0.3	-0.62	-0.68
Late	0.188	0.185	0.188	0.188
	(2.70)***	(2.67)***	(2.65)***	(2.67)***
Shifts	0.076	0.075	0.095	0.09
	(1.74)*	(1.72)*	(2.07)**	(2.00)**
Diploma year	0.074	0.064	0.09	0.094
	-1.46	-1.26	(1.75)*	(1.84)*
Household characteristics				
Father's years of schooling	-0.008	-0.007	-0.012	-0.012
	-0.57	-0.53	-0.88	-0.87
Square of father's years of schooling	0	0	0.001	0.001
	-0.57	-0.5	-0.82	-0.86
Mother's years of schooling	0.052	0.051	0.051	0.05
	(3.69)***	(3.65)***	(3.58)***	(3.53)***
Square of mother's years of schooling	-0.005	-0.005	-0.005	-0.005
	(4.95)***	(4.93)***	(4.88)***	(4.94)***
Father absent temporarily	0.194	0.186	0.178	0.189
	(2.06)**	(1.97)**	(1.86)*	(1.97)**
Father absent permanently	-0.071	-0.072	-0.112	-0.099
	-0.82	-0.83	-1.27	-1.13
Mother absent	0.012	0.008	-0.06	-0.047
	-0.09	-0.06	-0.44	-0.35
HH in 2nd lowest urban quintile	-0.107	-0.108	-0.098	-0.068
	-1.3	-1.31	-1.18	-0.83
HH in third urban wealth quintile	-0.049	-0.045	-0.024	0.01
	-0.56	-0.52	-0.27	-0.11
HH in fourth urban wealth quintile	-0.258	-0.245	-0.212	-0.152
	(2.64)***	(2.52)**	(2.16)**	-1.6
HH in fifth urban wealth quintile	-0.052	-0.042	0.037	0.129
	-0.48	-0.39	-0.34	-1.24
HH in 2nd lowest rural quintile	0.137	0.128	0.064	0.058
	-1.19	-1.11	-0.54	-0.49
HH in third rural quintile	0.173	0.175	0.163	0.152
	-1.49	-1.52	-1.35	-1.28
HH in fourth rural quintile	0.201	0.181	0.003	-0.001
	(1.73)*	-1.57	-0.03	-0.01

Table 9: Group Tutoring Probits Contd.

	Probit (1)	Bivariate Probit (2)	Governorate Fixed Effects (3)	Governorate Random Effects (4)
HH in fifth rural quintile	0.144	0.138	0.032	0.021
	-1.19	-1.15	-0.25	-0.17
Community characteristics				
Proportion of those working in education Industry / working age population	-0.077 (5.88)***	-0.078 (6.02)***	-0.089 (6.30)***	-0.097 (7.73)***
Alexandria & Canal cities	-0.575 (5.92)***	-0.564 (5.81)***		
Upper Egypt	-0.722 (8.41)***	-0.702 (8.18)***		
Lower Egypt	-0.773 (8.09)***	-0.754 (7.89)***		
Urban	-0.024 -0.22	-0.026 -0.23	-0.043 -0.38	-0.017 -0.15
Teacher pupil ratio in general secondary level	-0.042 -1.42	-0.041 -1.38		
Teacher pupil ratio in preparatory level	-0.009 -0.81	-0.01 -0.87		
Teacher pupil in primary level	0.065 (6.81)***	0.064 (6.77)***		
Constant	-1.015 (4.37)***	-0.979 (4.25)***	-0.186 -1.3	-0.527 (4.11)***
Observations	6114	6114	6114	6114
-Log likelihood	2379	6022	2311	2354
Test for joint significance of interactions with gender (P-value)	0.54	0.55	0.4	0.37

Absolute value of z statistics in parentheses
* Significant at 10%; ** significant at 5%; *** significant at 1%.

Table 10: Marginal Effects for Probit Models

	Marginal Effects	
	Private Tutoring Probit	**Group Tutoring Probit**
Individual characteristics		
Female	-0.005	0.021
Age group 12-14	0.149	0.016
Agegroup15-19	0.132	-0.120
Eldest child	0.017	0.056
Son/daughter of head	0.016	-0.002
Late	-0.010	0.068
Shifts	-0.001	0.027
Diploma year	0.056	0.026
Household characteristics		
Father's years of schooling	0.008	-0.003
Square of father's years of schooling	0.000	0.000
Mother's years of schooling	0.005	0.018
Square of mother's years of schooling	0.000	-0.002
Father absent temporarily	0.034	0.070
Father absent permanently	0.032	-0.024
Mother absent	0.013	0.004
HH in 2nd lowest urban quintile	0.052	-0.036
HH in third urban wealth quintile	0.067	-0.017
HH in fourth urban wealth quintile	0.094	-0.083
HH in fifth urban wealth quintile	0.110	-0.018
HH in 2nd lowest rural quintile	0.046	0.049
HH in third rural quintile	0.001	0.063
HH in fourth rural quintile	0.059	0.073
HH in fifth rural quintile	0.138	0.052
Community characteristics		
Proportion of those working in education Industry / working age pop	0.005	-0.027
Alexandria & Canal cities	-0.003	-0.164
Upper Egypt	-0.010	-0.193
Lower Egypt	0.112	-0.202
Urban	0.078	-0.008
Teacher pupil ratio in general secondary level	-0.010	-0.015
Teacher pupil ratio in preparatory level	0.001	-0.003
Teacher pupil in primary level	0.003	0.022

Table 11: Spending (Tobit) Models

	(1) Private Tutoring Spending	(2) Group Tutoring Spending
Individual characteristics		
Female	-7.410	14.123
	(0.39)	(1.79)*
Age group 12-14	338.651	15.764
	(14.11)***	(1.66)*
Agegroup15-19	489.251	-53.804
	(18.34)***	(4.58)***
Eldest child	37.650	30.032
	(1.65)*	(3.16)***
Son/daughter of head	14.405	4.922
	(0.37)	(0.33)
Late	-78.407	29.774
	(2.41)**	(2.25)**
Shifts	-24.657	13.541
	(1.19)	(1.62)
Diploma year	180.955	18.447
	(8.11)***	(1.92)*
Household characteristics		
Father's years of schooling	15.152	-3.373
	(2.36)**	(1.31)
Square of father's years of schooling	-0.686	0.173
	(1.71)*	(1.04)
Mother's years of schooling	9.045	9.973
	(1.39)	(3.74)***
Square of mother's years of schooling	-0.402	-0.906
	(0.91)	(4.81)***
Father absent temporarily	127.040	40.139
	(2.80)***	(2.25)**
Father absent permanently	31.962	-20.086
	(0.82)	(1.20)
Mother absent	7.279	-1.854
	(0.12)	(0.07)
HH in 2nd lowest urban quintile	108.719	-17.068
	(2.83)***	(1.08)
HH in third urban wealth quintile	116.284	-9.658
	(2.84)***	(0.58)
HH in fourth urban wealth quintile	198.344	-39.094
	(4.66)***	(2.11)**
HH in fifth urban wealth quintile	398.487	13.318
	(8.22)***	(0.65)
HH in 2nd lowest rural quintile	97.905	18.402
	(1.51)	(0.82)
HH in third rural quintile	9.063	31.223
	(0.14)	(1.38)
HH in fourth rural quintile	125.492	50.934
	(1.98)**	(2.28)**
HH in fifth rural quintile	258.613	31.745
	(4.09)***	(1.36)
Community characteristics		
Proportion of those working in education. Industry / working age pop	21.734	-13.167
	(3.90)***	(5.25)***
Alexandria & Canal cities	-114.717	-107.481

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Table 11: Spending (Tobit) Models Contd.

	(1) Private Tutoring Spending	(2) Group Tutoring Spending
	(2.57)**	(5.84)***
Upper Egypt	-253.674	-156.982
	(6.14)***	(9.56)***
Lower Egypt	8.105	-159.520
	(0.18)	(8.73)***
Urban	156.315	-1.795
	(2.60)***	(0.08)
Teacher pupil ratio in general secondary level	-23.278	-6.004
	(1.65)*	(1.06)
Teacher pupil ratio in preparatory level	-3.351	-1.383
	(0.64)	(0.66)
Teacher pupil in primary level	9.943	12.353
	(2.44)**	(6.66)***
Constant	-678.718	-248.886
	(5.66)***	(5.58)***
Observations	6114	6114
-Log likelihood	23122	7751
Test for joint significance of interactions with gender (P-value)	0.32	0.39

Table 12: Marginal Effects for Spending Models

	Marginal Effects	
	Private Tutoring Spending	**Group Tutoring Spending**
Individual characteristics		
Female	-7.410	14.123
Age group 12-14	338.651	15.764
Agegroup15-19	489.251	-53.804
Eldest child	37.650	30.032
Son/daughter of head	14.405	4.922
Late	-78.407	29.774
Shifts	-24.657	13.541
Diploma year	180.955	18.447
Household characteristics		
Father's years of schooling	15.152	-3.373
Square of father's years of schooling	-0.686	0.173
Mother's years of schooling	9.045	9.973
Square of mother's years of schooling	-0.402	-0.906
Father absent temporarily	127.040	40.139
Father absent permanently	31.962	-20.086
Mother absent	7.279	-1.854
HH in 2nd lowest urban quintile	108.719	-17.068
HH in third urban wealth quintile	116.284	-9.658
HH in fourth urban wealth quintile	198.344	-39.094
HH in fifth urban wealth quintile	398.487	13.318
HH in 2nd lowest rural quintile	97.905	18.402
HH in third rural quintile	9.063	31.223
HH in fourth rural quintile	125.492	50.934
HH in fifth rural quintile	258.613	31.745
Community characteristics		
Proportion of those working in education		
Industry / working age pop	21.734	-13.167
Alexandria & Canal cities	-114.717	-107.481
Upper Egypt	-253.674	-156.982
Lower Egypt	8.105	-159.520
Urban	156.315	-1.795
Teacher pupil ratio in general secondary level	-23.278	-6.004
Teacher pupil ratio in preparatory level	-3.351	-1.383
Teacher pupil in primary level	9.943	12.353

Table 13: Private Tutoring, by Education Level

	Primary Level	Preparatory Level	Secondary Level
Individual characteristics			
Female	-0.092	-0.071	0.170
	(1.82)*	(1.09)	(2.02)**
Eldest child	0.124	0.058	0.227
	(1.96)*	(0.71)	(2.36)**
Son/daughter of head	0.163	0.001	0.176
	(1.72)*	(0.01)	(0.97)
Late	-0.011	-0.036	-0.047
	(0.11)	(0.42)	(0.38)
School operates in shifts	-0.006	-0.079	0.224
	(0.11)	(1.14)	(2.48)**
Diploma year	0.394	0.136	0.108
	(6.38)***	(1.90)*	(1.28)
Household characteristics			
Father's years of schooling	0.054	0.082	0.013
	(3.23)***	(3.95)***	(0.47)
Square of father's years of schooling	-0.004	-0.005	-0.000
	(4.02)***	(3.72)***	(0.10)
Mother's years of schooling	0.042	0.004	0.090
	(2.43)**	(0.20)	(3.23)***
Square of mother's years of schooling	-0.004	-0.000	-0.005
	(3.04)***	(0.28)	(2.38)**
Father absent temporarily	0.033	0.397	0.415
	(0.29)	(2.23)**	(1.71)*
Father absent permanently	-0.011	0.357	0.382
	(0.09)	(2.74)***	(2.53)**
Mother absent	0.063	-0.030	0.159
	(0.36)	(0.15)	(0.64)
HH in 2nd lowest urban quintile	0.376	0.364	-0.256
	(3.87)***	(2.88)***	(1.48)
HH in third urban quintile	0.394	0.466	-0.107
	(3.70)***	(3.51)***	(0.58)
HH in fourth urban quintile	0.548	0.548	-0.008
	(4.83)***	(3.76)***	(0.04)
HH in fifth urban quintile	0.551	0.657	0.059
	(4.10)***	(3.94)***	(0.28)
HH in 2nd lowest rural quintile	0.158	0.196	0.326
	(1.05)	(1.02)	(1.16)
HH in third rural quintile	0.075	-0.005	-0.225
	(0.49)	(0.03)	(0.82)
HH in fourth rural quintile	0.237	0.303	0.504
	(1.60)	(1.57)	(1.88)*
HH in fifth rural quintile	0.672	0.522	0.522
	(4.45)***	(2.72)***	(1.95)*
Community characteristics			
Proportion of those working in education industry / working age population	0.010	0.067	0.057
	(0.70)	(3.42)***	(2.28)**
Alexandria & Canal cities	0.182	0.285	-0.329
	(1.83)*	(2.35)**	(2.01)**
Upper Egypt	0.185	-0.001	-0.517
	(1.93)*	(0.01)	(3.37)***
Lower Egypt	0.833	0.609	-0.138
	(8.38)***	(4.51)***	(0.87)
Urban	0.388	0.262	0.518
	(2.77)***	(1.46)	(2.00)**

Table 13: Private Tutoring, by Education Level Contd.

	Primary Level	**Preparatory Level**	**Secondary Level**
Teacher pupil ratio in general secondary level			-0.066
			(2.21)**
Teacher pupil ratio in preparatory level		-0.000	
		(0.01)	
Teacher pupil ratio in primary level	-0.001		
	(0.10)		
Constant	-1.561	-1.041	-0.045
	(6.36)***	(3.40)***	(0.09)
Observations	2848	1665	1069
- Log likelihood	1706	1023	616
Test for joint significance of interactions with gender (P-value)	0.017	0.12	0.09

Absolute value of z statistics in parentheses

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

Table 14: Group Tutoring, by Education Level

	Primary Level	Preparatory Level	Secondary Level
Individual characteristics			
Female	0.005	0.044	0.333
	(0.08)	(0.56)	(2.97)***
Eldest child	0.164	0.215	0.204
	(2.23)**	(2.29)**	(1.69)*
Son/daughter of head	-0.010	-0.118	-0.050
	(0.09)	(0.79)	(0.20)
Late	0.039	-0.048	0.026
	(0.35)	(0.48)	(0.15)
School operates in shifts	0.048	0.206	0.100
	(0.79)	(2.48)**	(0.83)
Diploma year	0.046	-0.060	-0.143
	(0.64)	(0.70)	(1.28)
Household characteristics			
Father's years of schooling	0.006	-0.019	0.005
	(0.29)	(0.78)	(0.13)
Square of father's years of schooling	-0.001	0.002	0.001
	(0.66)	(0.99)	(0.24)
Mother's years of schooling	0.045	0.106	0.005
	(2.27)**	(3.95)***	(0.15)
Square of mother's years of schooling	-0.005	-0.008	-0.001
	(3.48)***	(3.97)***	(0.30)
Father absent temporarily	0.241	0.242	0.022
	(1.95)*	(1.29)	(0.08)
Father absent permanently	-0.063	-0.060	-0.163
	(0.47)	(0.39)	(0.80)
Mother absent	-0.143	0.235	-0.019
	(0.72)	(1.00)	(0.06)
HH in 2nd lowest urban quintile	-0.048	-0.261	-0.181
	(0.42)	(1.63)	(0.81)
HH in third urban quintile	0.046	-0.256	-0.199
	(0.38)	(1.57)	(0.81)
HH in fourth urban quintile	-0.237	-0.261	-0.399
	(1.68)*	(1.44)	(1.56)
HH in fifth urban quintile	0.160	-0.321	-0.147
	(1.02)	(1.56)	(0.54)
HH in 2nd lowest rural quintile	0.183	-0.194	0.222
	(1.16)	(0.94)	(0.59)
HH in third rural quintile	0.280	-0.009	-0.130
	(1.73)*	(0.05)	(0.33)
HH in fourth rural quintile	0.382	-0.143	-0.456
	(2.42)**	(0.70)	(1.09)
HH in fifth rural quintile	0.294	-0.372	0.026
	(1.77)*	(1.74)*	(0.07)
Community characteristics			
Proportion of those working in education industry / working age population	-0.072	-0.077	-0.080
	(4.00)***	(3.12)***	(2.30)**
Alexandria & Canal cities	-0.472	-0.635	0.012
	(4.44)***	(4.57)***	(0.06)
Upper Egypt	-0.917	-0.742	-0.230
	(8.51)***	(4.76)***	(1.17)
Lower Egypt	-0.813	-1.149	-0.149

Table 14: Group Tutoring, by Education Level Contd.

	Primary Level	Preparatory Level	Secondary Level
	(7.22)***	(7.03)***	(0.74)
Urban	0.048	-0.518	0.329
	(0.31)	(2.61)***	(0.93)
Teacher pupil ratio in general secondary level			0.111
			(2.96)***
Teacher pupil ratio in preparatory level		0.020	
		(1.68)*	
Teacher pupil ratio in primary level	0.046		
	(5.33)***		
Constant	-1.183	-0.007	-2.530
	(4.20)***	(0.02)	(3.92)***
Observations	2848	1665	1069
- Log likelihood	1237	688	324
Test for joint significance of interactions with gender (P-value)	0.89	0.9	0.000

Absolute value of z statistics in parentheses

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

Table 15: Wife and Husband Educational Attainment

Woman's Educational Attainment	No Education	Reads & Writes	Less than Secondary	Secondary	Above Secondary	University & Higher	Total	Number of Men
				Husband's Educational Attainment				
No Education	41.24	15.9	23.38	18.6	0.65	0.23	100	323
Reads & Writes	29.94	27.19	27.53	8.93	2.83	3.57	100	51
Less than Secondary	17.08	11.25	36.11	28.49	2.56	4.51	100	209
Secondary	2.84	3.88	10.99	55.51	13.36	13.43	100	416
Above Secondary	0	2.22	3.97	31.19	29.22	33.4	100	97
University & Higher	0	0	0.98	15.86	8.68	74.47	100	150
Total	18.14	9.55	18.53	31.46	7.77	14.55	100	
Number of Women	194	112	227	388	106	219		1,246

Source: ELMS 98

Notes:

1. Based on marriages in the last 10 years (i.e., from 1988 to 1998).

2. Each cell represents the probability of a certain level of husband educational attainment given the educational attainment of the wife.