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ABSTRACT

Getting Stuck in the Status Quo Ante: Evidence from the Egyptian Economy*

In this study, for the first time, to our knowledge, we use the propensity score matching algorithm to estimate the probability to remain 'stuck in the status-quo ante' across generations in Egypt. We use repeated cross-sectional data relative to a 20-year period from 1998 to 2018 to build transition matrices of intergenerational occupational mobility. The findings of the econometric analysis hint at a low degree of occupational mobility, with children of fathers in the agricultural sector or holding a blue- or white-collar job remaining linked to the profession of their fathers in most cases and experiencing only rarely upward mobility from agricultural to blue- and white-collar jobs.

JEL Classification: C35, D64, J24, J62, L16

Keywords: intergenerational occupational mobility, status quo bias, propensity score matching, Egypt

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Introduction

Following the seminal contributions of Blau and Duncan (1967), Featherman and Hauser (1975), Erikson and Goldthorpe (1992), both economists and sociologists have been researching the determinants of intergenerational occupation mobility meant as a form of social mobility.

The Egyptian economy has a long-lasting employment guarantee program which was initiated in the early 1960s. The employment guarantee program is well documented in the current literature (see Assaad, 1997; Bayat, 2002; Richards& Waterbury, 2008). However, the Egyptian labor market may exhibit social barriers able to prevent the possibility for an individual whose father is an agricultural worker of moving to a higher more prestigious and complex occupation. The transfer of occupations from fathers to their children is called intergenerational occupational transfer, whereas the move to a more prestigious occupation than that of own father is called upward intergenerational occupational mobility. The case of a move from a white-collar job to a blue-collar or agricultural job is called downward intergenerational occupational mobility.

In this paper, we propose a novel methodology to assess the probability of a child of remaining stuck in the status quo ante, namely the occupation of her/his father: the propensity score matching (PSM) approach. This is used for the first time in the literature in this paper to select samples of children with exactly the same observed characteristics of their peers except for the occupational status of their parents. Then, we compare the probability to experience an upward mobility for individuals that are otherwise similar, except for the occupational status of their parents. In particular, we compare similar children of fathers who work in agriculture and of young people whose fathers is working in a blue- or white-collar job.

As explained in more detail in the methodological section, the matching approach is based on a two-step procedure. At step one, we estimate the probability to have a father in agriculture in terms of a number of individual characteristics and, based on this estimate, we extract a random sample of individuals with exactly the same characteristic, but with a father owning a blue collar (or a white collar) job. The two samples are chosen in such a way to have a very similar value of the propensity score, which is computed based on the probability model of having a father in agriculture. At step two we run another probit model to see which of the two groups has a higher probability to find a blue (or a white collar) job, namely the children of fathers working in agriculture or the children of fathers working in a blue- or white-collar job. Thereafter, we compare also the probability to find a white-collar job for children of fathers working in blue and in white collar jobs.

We focus on the Egyptian economy and use the Labor Market Panel Surveys (LMPS) for Egypt, for which we own the 1998, 2006, 2012, and 2018 survey cross-section rounds[1]. The case of Egypt is interesting under many respects: first, it is a dynamic economy, experiencing important periods of structural change around the Arab spring (2011) period which is covered in our data (see Assaad et al., 2019 for an overview of recent economic changes in the country's economy). The ongoing structural change is a possible driving factor of occupational mobility and certainly a low degree of intergenerational occupational mobility may be a factor able to slow down the process of structural change and economic growth, by reducing the supply of labor and human resources available in the expanding manufacturing and services sector. This may happen to a greater extent if the labor force is constrained by their skill level, developed across generations in the agricultural sector and

[1] See Assaad (2014) and Krafft (2021) for a discussion of the advantages of the dataset at hand, closely linked to the time-varying nature of the data.

there are not sufficient training programs to allow young people from the agricultural sector to take on jobs in the expanding manufacturing and service sectors.

The main benefit of using the ELMPS is that we can observe the time-varying probability of being stuck in the status-quo ante over a very long period of time, which is rarely available for other countries. We can compare the situation up to 20 years apart and follow the process of structural change through changes in the occupational structure of the society.

The matching estimator allows us to produce the best "like for like" estimates of intergenerational mobility, also compared to other countries. In other words, we control for any possible source of bias due to omitted heterogeneity at least on observable differences among target (young people with parents in agriculture) and control group (young people with parents in blue-collar and white-collar jobs). A well-known limitation of our PSM approach is that it cannot control for unobserved heterogeneity, which would be there if, say the children of fathers working in agriculture had a greater/lower motivation or talent for social mobility than the children of fathers in other types of occupations. However, our methodology should provide more accurate measures of the occupational stability/mobility than previous estimates based on Logit or other more traditional models, in as much as they control better for observed heterogeneity and sample selection bias.

Our findings show that the probability of a young person to remain stuck in the status-quo ante is very high and persistent, even over a 20 year's time period.

We submit that our empirical approach and the data available allow us shedding a new light on the intergenerational occupational mobility in the country considered. We expect that our PSM approach be followed also by future studies relative to other countries so as to provide terms of comparison for the findings of this study.

The remaining part of the paper is organized as follows. Section 2 presents a literature review and defines the main hypotheses to be tested. Section 3 provides discussion of methodology and data. Section 4 presents the main findings of the econometric analysis. The concluding section discusses the findings, data limitations and policy suggestions.

Literature Review

In the MENA context, social mobility is a much-debated social issue, but still in need of being fully addressed from an empirical point of view. Much of the discussion remains, therefore, ideological. Empirical evidence is still missing, while anecdotal evidence points to very low social mobility across generations. There is a scarce and apparently inconsistent literature on intergenerational social mobility in the MENA Region. Most of the studies that examine the intergenerational social transfer are based on the education transmission across fathers and their sons' pairs. Nugent and Saleh (2009) found that intergenerational educational mobility was on the rise, and that parental education had positive influences on the returns to children's education that go well beyond its direct influence on children's education. Assaad and Krafft (2021) find the reverse by using the 2012 survey dataset of the ERF. They state that only 10% of the offspring had the same level of education as their fathers.

Binzel & Carvalho (2017) find that there is low degree of social mobility in Egypt. Binzel (2011) finds both low occupational and educational mobility in Egypt in 2006, namely in the pre-Arab Spring period. Probably, this was one of the underlying forces of the Arab spring.

Assad (2014) underlines that the labor market in the Arab countries in general, and in Egypt in particular, has a very high youth unemployment rate, while there has been a declining trend in the

public sector share of employment, due to increasing budget constraints on public finances. Assaad (2014)'s analyses are based mostly on the pre-Arab Spring period, but his conclusions are still valid in the post-Arab Spring period. This macroeconomic context might have affected the degree and extent of intergenerational transfers in the country, by reducing the opportunities to find public sector jobs, which is especially important for women.

In addition, Ibrahim (1982) found a substantial degree of social mobility in Egypt in 1978, hinting at the possibility that social mobility was higher in the past than it is now. However, there is little systematic and comprehensive evidence.

Researching occupational mobility across generations is important for the MENA countries, as this type of research is still neglected in these countries. Moreover, to our knowledge, there are no previous studies specifically focused on occupational mobility. With our paper we try to fill an important lacuna in the current literature both by focusing on an understudied country and by proposing the matching approach from a methodological point of view.

In the Egyptian economy, the historical transformation of the labor market has an important role and has represented an important constraint because the high degree of rigidity has meant that workers have remained stuck in the status-quo ante for decades, possibly slowing down the process of structural change and the related process of economic growth. One positive outcome of the Nasser regime, back in 1962, was that higher education was made and has remained free for both man and woman (see Antoninis, 2001). As Assad (1997), Assaad (2008), Barsoum (2004) emphasized, right after this free education movement, employment in the public sector was guaranteed for the graduates from vocational secondary, and post-secondary schools starting from 1964. This was a gender-blinded hiring policy and the life expectations of woman in Egypt has changed since this public employment guarantee policy in the early 1960s.

Assaad (2008) emphasizes that the policy for public employment guaranteed program shaped the expectations of employment for well-educated Egyptians (see Sieverding, 2015 for women employment in Egypt). In addition, studies by the WEO (2017), IMF (2019) and ILO (2021) stress that there is a need to create more jobs for the Arab countries by 2025. The discrepancies between increasing educational outcomes and a staggeringly low degree of job creation appear to be one of the main reasons for the existing gap between social and education mobility in Arab countries (Driouchi & Gamar, 2016).

With our study, we cover one of the key countries in the much-neglected MENA region: Egypt. We do so by introducing an important methodological novelty in the existing literature, not only that relative to MENA countries, namely the matching approach to estimating the degree of intergenerational occupational mobility.

Hypotheses

The hypotheses of the present study are as follows.

Hypothesis 1: A child whose father holds an agricultural job has a lower chance to get an occupation in higher ranked jobs (blue- or white-collar jobs) relative to her peer whose father is a blue-collar or a white-collar worker.

Hypothesis 2: Also, a child whose father is a blue-collar worker has a lower chance to access a white-collar job than her peer whose father was already in a white-collar job.

These hypotheses are implicitly based on a social ranking of occupations (from agricultural jobs, to blue- and white-collar jobs). Before testing these hypotheses by means of our matching approach, we provide some descriptive empirical evidence based on transition matrices of intergenerational mobility at an occupational level between fathers and children.

Dataset and Methodology

In our transition matrix estimations, at the beginning, we prefer to use all available occupational categories (according to the ISCO 88 classifications) to examine the social mobility across generations, rather than only the three main categories of agricultural jobs, blue-collar and white-collar jobs. The classification is as follows:

* Managers

* Professionals

* Technicians and associate professionals

* Clerical support workers

* Service and sales workers

* Skilled agricultural, forestry and fish

* Craft and related trades workers

* Plant and machine operators, and assemblers

* Elementary occupations

In our propensity score matching analysis, however, for shortness' sake, we use the ISCO classification, based on which we determine the white-collar and blue-collar jobs according to the criterions defined below. We define an occupation as a white-collar job if it falls in one of the following ISCO codes:

- Managers
- Professionals
- Technicians & associate professionals
- Clerks

Second, we define blue-collar jobs those including the following occupations:

- Service workers, and shop, and market sales workers
- Crafts and related trade workers
- Plant and machine operators
- Elementary occupations

The third category includes workers in agriculture. As noted above, we assume that these workers have a lower-than-average chance of entering one of the above-mentioned occupations: blue collar and white-collar jobs.

Transition Matrices Estimations

In the present study, we also estimate the transition matrices, which are a well-known empirical tool in the social mobility literature. We compute different types of PkxK transition matrix. They

are studied, first by means of two synthetic indices and then analyzed in detail to understand the actual extent of intergenerational occupational mobility/stability. The first index, the Prais-Shorrock (1978), is based on Equation 1:

$$\text{Prais (trace)} \ (\mathrm{K}-1)-1\{\mathrm{K}-\text{trace(P)}\} \tag{1}$$

It is a tool to measure the overall degree of social mobility in a country. When the index is close to 1, it shows a very low degree of social mobility.

Another indicator is the Bartholomew (1973) index, which is defined as follows:

$$\left\{K(K-1)\right\}^{-1}\sum_i \sum_j p_{i,j}\left|i-j\right| \tag{2}$$

This index is used to estimate the average jump across occupational classes to examine the occupational mobility across generations and understand the overall degree of social mobility across generations. When the index takes a value close to 0 it suggests perfect occupational mobility across generations. The higher the Bartholomew index, the lower is the average jump of social classes across generations.

Table 3 shows that, according to Bartholomew and Prais-Shorrocks indexes, Egyptian children are stuck at the occupation of their fathers, denoting a low degree of social mobility transmission. In fact, the Prais-Shorrock index is around 0.84 and 0.86, which is very close to 1, while the Bartholomew index is around 0.26 and 0.29, namely close to 0.

Propensity Score Matching Method

The Propensity Score Matching approach, established in Rosembaum & Rubin (1983) and extended by Heckman (1997), is generally used for two purposes in applied works: first, to reduce non-random sample selection bias in a given sample, and, second, to compare differences across a target group and a control group. It is considered a quasi-experimental approach, since it compares the outcome of a target group and a control group, the latter being chosen for having exactly the same observed characteristics of the target group, except for one characteristic, which is the treatment. In the last two decades, it has become an increasingly popular method in economics, for its properties of statistical accuracy and effectiveness, especially in the context of cross-section data. The main aim of the PSM approach is obtaining propensity scores, which are denoted as e(X) and are used to select individuals from the control group exactly with the same characteristics of individuals from the target group.

The PSM approach is developed in two steps. In the first step, we estimate a probit model of the probability that the father of all the individuals aged 23 or more is involved in an agricultural job (our treatment), in terms of a number of observed variables:

$$Pr(Y_j \neq 0|X_j) = \Phi\left(\beta_0+\beta_1 G + \beta_2 edf + \beta_3 edc + \beta_4 I + \beta_5 W + \beta_6 R + \sum_{i=1}^{14}\beta_i Gov_i\right) \tag{3}$$

Where *Yj* denotes the probability of an individual to have a father involved in an agricultural job (the target group) as a function of gender (*G*), the education level of fathers (*edf*), the education level of offspring (*edc*), household income (*I*), household wealth (*W*), living in a rural area (*R*), one of the

20 governorate where the offspring is living in ($\sum_{i=1}^{20} Gov_i$),[2]. Equation (3) is estimated by a standard probit model. The education levels of fathers and children are defined as follows: illiterate, reads&writes, less than intermediate, intermediate, above intermediate, university, and postgraduate. Living in a rural area is a dummy variable that takes 1 if the offspring is living in a rural area, 0 otherwise. Household income is measured as total of basic wage income (for 3 months) for each member within a household. For governorate dummies, we use dummy variables for each governorate that the offsprings are living in as follows: Alexandria, Port Said, Saez, Damietta, Dakahlia, Sharkia, Kalyoubia, Kafr-Elsheikh, Gharbia, Menoufia, Behera, Ismailia, Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, and Luxur.

Based on (3), we predict the propensity score of the individuals in the control group (with parents owning, first, a blue and, later, a white-collar job) with exactly the same characteristics as the target group. We use the nearest neighborhood matching approach without replacement and with common support option.

In the second step, after having identified the control group with a father in a blue- or a white-collar job by selecting the individuals with the closest propensity scores to those having a father in agriculture, we compute, by probit again, the average treatment effect on the treated (ATeT) or the probability of an individual whose father was employed in agriculture to find a blue-, first, and a white-collar job, later (outcome variable) as compared to an individual whose father had already a blue or a white collar job. As noted above, with our methodology, we are able to compare individuals with exactly the same characteristics, except for the fact that their fathers have a different occupational background. The outcome variable is the probability to move up the social ladder from the occupation of their father to a superior occupation, namely a blue- or white-collar job.

We compute standard errors of these estimates by bootstrapping since the first step standard errors are downward biased if they are used in the second step[3].

. In our case, there is common support for almost all the individuals in the sample. Moreover, to check the efficiency of our matching procedure, we test for statistically significant differences between target and control group in terms of the observed characteristics mentioned above before and after matching. We will show that our matching procedure reduces to non-statistical significance all pre-matching differences in observed characteristics.
We define our measure of 'relative social mobility" by using our estimated Average Treatment Effect on Treated (henceforth, ATeT) which can be defined as follows:

$$E(AgF_1 - OF_0 \mid D=1) = E(AgF_1 \mid D=1) - E(OF_0 \mid D=1) \qquad [4]$$

[2] We use the household wealth score estimated by ERF. We cannot use the number of siblings as a covariate since there is not a sufficiently large number of observations to do first-stage probit, and the psm estimations.
[3] As Rosenbaum and Rubin (1983) note, it is difficult to establish an asymptotic approximation to the distribution of matching estimators when a matching variable is estimated in a first step. Therefore, the bootstrapped errors are used in the present study as it is usually the case in the PSM literature.

In our case, AgF_1 is the treatment group, which is the offspring having a father with an agricultural occupation, OF_0 is the control group (offspring have fathers with occupation other than agricultural: blue- or white-collar workers).

Estimation Results

Transition Matrix Estimations

Before analysing the transition matrices, we propose the aforementioned indices of mobility for all the years considered (Table 1). The table shows that both indices point consistently and concurrently to a very low degree of intergenerational occupational mobility all over the 20 years considered. In fact, the Shorrock index tends to 1, while the Bartholomew index tends to 0. There seems to be little difference over time and, probably, such differences are not statistically significant.

Table 1. Indices of intergenerational occupational mobility

	Shorrock	Bartholomew	Number of observations
1998	0.86	0.27	3544
2006	0.85	0.27	4615
2012	0.84	0.29	4623
2018	0.86	0.26	4074

Source: our elaboration on the ERF Surveys.

Table 2 provides the transition matrix estimations across generations in 1998 for all occupational categories. The column of the matrix reports the occupation of fathers and the row represents the occupation of their offspring. The Tables 3 through 5 present the same transition matrices for each of the following waves of the survey. The ERF occupational classifications used in the survey are based on the ISCO 1988 classification. Only 9 occupational categories can be used. We drop the armed forces occupations since they fall outside of the aims of the present study (we cannot classify it as a white-collar, blue-collar, or agricultural occupation). Table 2 shows a high degree of persistence across generations of especially the agricultural and the white-collar occupations in 1998.

The highest degree of persistence belongs with the child whose father is an agricultural worker. If we consider the entire period covered in our data, there is a high degree of immobility for the occupational categories of service and sales workers, clerks, technicians

and associate professionals, and elementary occupations. For white-collar workers, there is also a high degree of persistence across generations. The findings based on Table 2 suggest that most children were stuck at the status-quo ante in the Egyptian economy at the end of the 1990s.

Table 2. Transition Matrices Estimations: Occupation Based Estimations (1998)

	Father's Occupation							
Child's Occupation	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers
Managers	**18.13**	10.00	16.07	11.90	6.32	3.97	7.48	5.85
Professionals	17.95	**40.00**	19.64	23.81	13.05	6.42	9.98	12.87
Technicians and associate professionals	4.40	6.67	**8.93**	8.33	4.63	2.44	5.22	6.43
Clerical support workers	8.61	7.33	7.14	**13.10**	8.63	3.42	9.30	14.04
Service and sales workers	13.55	8.00	5.36	8.93	**10.11**	8.09	9.98	5.26
Skilled agricultural, forestry and fish	20.15	23.33	33.93	22.62	36.00	**61.58**	23.58	24.56
Craft and related trades workers	12.27	4.00	7.14	9.52	13.89	8.23	**28.34**	17.54
Plant and machine operators, and assemblers	3.48	0.67	1.79	1.19	4.84	3.70	2.95	**12.28**
Elementary occupations	1.47	0.00	0.00	0.60	2.53	2.16	3.17	1.17
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: We use the ISCO Classification. See the text for the description of occupational categories. The figures represent column percentages.

Overall, the transition matrices contained in the tables from 2 to 5 allow us assessing the long-run evolution of the probability to remain stuck in the status-quo ante. Table 4 suggests that occupational immobility across generations still continues, although the percentages slightly shrink in 2006. Similarly, Table 5 confirms the high degree of persistence of the occupational structure across generations for white-collar and agricultural occupations, but the persistence of white-collar occupations is lower than that in 1998, while that relative

to agricultural occupations is lower than that in 2006. The degree of persistence of the social structure increases for white-collar occupations from 1998 to 2012. In 2018, the degree of persistence decreased, though it remained still high, especially for professionals.

Table 3. Transition Matrices Estimations: Occupation Based Estimations, 2006

	Father's Occupation							
Child's Occupation	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers
Managers	**24.80**	8.92	8.73	5.26	6.82	3.94	8.30	5.31
Professionals	18.10	**40.76**	20.96	25.00	8.53	6.01	7.04	14.16
Technicians and associate professionals	9.67	12.74	**16.16**	14.47	10.39	5.03	7.04	10.03
Clerical support workers	3.43	3.82	5.68	**18.42**	4.19	1.53	6.14	8.26
Service and sales workers	12.01	11.46	10.48	17.11	**18.29**	9.02	12.64	10.03
Skilled agricultural, forestry and fish	14.20	11.46	15.72	10.53	26.36	**58.34**	15.70	18.58
Craft and related trades workers	11.23	8.28	14.41	5.26	15.97	10.11	**33.03**	15.63
Plant and machine operators, and assemblers	4.52	2.55	4.80	3.95	7.13	4.10	7.76	**15.63**
Elementary occupations	2.03	0.00	3.06	0.00	2.33	1.91	2.35	2.36
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 4. Transition Matrices Estimations: Occupation Based Estimations, 2012

	Father's Occupation							
Child's Occupation	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers
Managers	**24.13**	10.87	9.93	8.70	6.91	5.66	5.61	6.64
Professionals	21.72	**43.91**	24.82	29.35	9.87	7.61	9.15	13.50
Technicians and associate professionals	10.11	9.13	**21.63**	10.87	7.89	5.47	9.56	9.84
Clerical support workers	3.32	3.91	3.90	**6.52**	1.64	2.01	2.70	2.75
Service and sales workers	13.12	10.00	12.06	8.70	**22.37**	8.11	12.27	8.47
Skilled agricultural, forestry and fish	7.99	10.87	6.03	17.39	16.78	**46.01**	9.77	12.36
Craft and related trades workers	9.50	6.52	10.28	5.43	17.76	13.26	**33.47**	17.39
Plant and machine operators, and assemblers	6.79	2.61	6.74	8.70	9.87	5.85	9.98	**21.97**
Elementary occupations	3.32	2.17	4.61	4.35	6.91	6.03	7.48	7.09
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The transition matrix relative to 2018 proposed in Table 5 shows that the degree of social immobility for the white-collar occupations decreases compared to 1998. For children of parents employed in the service sector and sales workers, the degree of social immobility becomes persistent across generations.

Table 5. Transition Matrices Estimations: Occupation Based Estimations, 2018

	Father's Occupation							
Child's Occupation	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers
Managers	**10.96**	7.88	4.86	8.12	5.84	2.92	4.89	6.17
Professionals	25.57	**42.86**	25.00	25.46	12.35	6.46	8.41	12.01
Technicians and associate professionals	5.02	8.37	**13.89**	5.54	5.05	2.85	3.72	6.17
Clerical support workers	10.05	8.37	11.81	**12.55**	7.30	3.68	7.44	8.44
Service and sales workers	16.89	15.76	14.58	14.02	**26.15**	14.44	18.00	17.86
Skilled agricultural, forestry and fish	13.24	8.87	10.42	14.39	18.63	**49.03**	15.07	12.34
Craft and related trades workers	10.50	5.91	13.89	12.92	12.57	13.19	**30.53**	13.64
Plant and machine operators, and assemblers	5.48	0.99	4.86	6.27	9.54	4.86	9.00	**20.78**
Elementary occupations	2.28	0.99	0.69	0.74	2.58	2.57	2.94	2.60
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

For White, Blue, and Agricultural Occupation Classifications

Table 6 gives the transition matrices with the classical three categories occupational classification for each round of the survey from 1998 (panel a) to 2018 (panel d). In other words,

we group the previous 9 ISCO categories in the three main ones. The table suggests that the children of parents working in the agricultural sector experience the highest degree of persistence within that occupation (from about 61% in 1998 to about 64% in 2018), followed by children of parents working as white collar workers (from 46% in 1998 to 56% in 2018) and, eventually, by children of parents working as blue collar workers (from about 44% in 1998 to about 39% in 2018). In other words, the agricultural occupations are the most persistent ones, but they are followed, quite surprisingly, by the children of parents involved in white collar jobs, rather than manual jobs. The latter is the least immobile category, probably due to the weakness of the manufacturing sector in the country and the relatively low level of expansion it has experienced over the last decades.

When we compare the matrices over time, we can see a high degree of persistence of this pattern: first are children of parents in the agricultural sector, then of white-collar parents and eventually of manual workers. The differences over time are not particularly sizeable. This confirms the high degree of social immobility existing in the country over a long period of time. In turn, the latter is a sign of a relatively stagnant production structure with little evolution of the size of sectors in terms of employment shares.

This notwithstanding, there are also signs of upward social mobility from agriculture to blue- and white-collar jobs and from blue to white collar job: from 20 to 30% of children experience upward mobility, according to the year and type of job. There are also cases of downward social mobility from white collar jobs to manual jobs and agriculture. Again, the shares involved are of an order of about 20%.

Table 6. Transition Matrix Estimations, Occupational Classifications,
Panel A. In 1998

Father's occupation				
Child's occupation	White collar	Blue collar	Agriculture	N
White collar	**46.10**	34.30	24.12	1,099
Blue collar	22.56	**44.49**	14.12	1,067
Agriculture	31.33	21.20	**61.74**	1,430
	100	100	100	3,596

Panel B. In 2006

Father's occupation				
Child's occupation	White collar	Blue collar	Agriculture	N
White collar	**51.31**	34.76	22.98	1,190
Blue collar	20.01	**44.08**	9.66	920
Agriculture	28.68	21.16	**67.36**	1,434
	100	100	100	3,544

Panel C. In 2012

Father's occupation				
Child's occupation	White collar	Blue collar	Agriculture	N
White collar	**52.54**	31.59	22.45	1,765
Blue collar	20.02	**47.89**	10.21	1,267
Agriculture	27.44	20.52	**67.34**	1,591

	100	100	100	4,623

Panel D. In 2018

Father's occupation				
Child's occupation	White collar	Blue collar	Agriculture	N
White collar	**56.17**	42.33	26.84	1,797
Blue collar	15.12	**38.78**	9.16	837
Agriculture	28.71	18.89	**64.01**	1,440
	100	100	100	4,074

Propensity Score Matching Analysis Results

Our propensity score matching estimation results are reported in the following tables. We compare the probability to occupy a given job for children of fathers with different occupations with any other child with a father in other occupations. The Tables 7 and 8 present the psm estimate of the probability of the offspring of an agricultural worker to move to a blue-collar job, compared to that of the offspring of a blue-collar worker and of a white-collar worker for all years considered. The Tables 9 and 10 present the PSM estimate of the probability of the offspring of an agricultural worker to move to a white-collar job, compared to that of the offspring of a blue-collar worker and of a white-collar worker for all years considered. For the sake of clarity, the first stage probit estimation coefficients obtained from the unmatched samples are given in the right columns of each table as a term of comparison to see the effect on the raw and unconditional coefficient to change once controlling for omitted heterogeneity on observables.

Having a father whose occupation is in agriculture implies a lower probability to move up the social ladder in all years. The coefficient is always negative for moves to blue-collar jobs for the offspring of an agricultural worker compared to the both the other control groups confirming the presence of a gap against individuals whose father is working in an agricultural job, but also the low appeal and diffusion of blue-collar jobs (Tables 7 and 8). The ATeT results of our PSM estimations show that the offspring of fathers working in agriculture has a lower probability to become a blue-collar worker than the offspring whose father is blue-collar worker. Such a relative probability reduces from -6% in 1998 to -9% in 2018 and is always statistically significant (see Table 7).

The offspring of fathers working in agriculture has a lower probability to reach blue-collar occupations than their peers whose father works in white-collar occupations. The probability is -7% in 1998; it decreases to -5% in 2012; and -4% in 2018 (see Table 8).

Table 7. PSM Estimates of probability of becoming a blue-collar worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	-0.06*** (0.01)	-0.04 (0.009)	T=2424 C=2997 N=5421
2006	-0.05*** (0.01)	-0.06 (0.009)	T=2780 C=3868

			N=6648
2012	-0.09*** (0.01)	-0.09 (0.001)	T=2968 C=4217 N=7185
2018	-0.09*** (0.01)	-0.08 (0.009)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses. Treatment group: a father with an agricultural occupation. Control groups are a father with blue collar occupations in the first model.

Table 8. PSM Estimates of probability of becoming a blue-collar worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	-0.07*** (0.02)	0.01 (0.009)	T=2424 C=2416 N=4840
2006	-0.05*** (0.03)	0.04 (0.009)	T=2780 C=3016 N=5796
2012	-0.05*** (0.02)	0.02 (0.009)	T=2968 C=3389 N=6357
2018	-0.04*** (0.02)	-0.03 (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses

Table 9 shows the relative probability of becoming a white-collar worker for the offspring of a father working in agricultural occupations compared with the offspring of a father working as a blue-collar worker. When we compare these two groups, the former has a higher probability than the latter, with values of around 1 ppt in all years, except for 2012, when the value equals 8 ppt.

Table 10 shows that the probability for the offspring of a father working in agriculture to become a white-collar worker relative to their peers whose father works in white-collar occupations. It is sometimes positive and sometimes negative, but always very small in absolute value. The relative probability is around 1 ppt., and the relative probability is positive of 1, 1 and 0.2% in the following years, respectively.

Interestingly, the impact is larger and show a higher statistical significance in the case of the probability to reach a blue, rather than a white-collar job. The former coefficient is in most years, sizeable and highly statistically significant. The latter coefficient is, instead, in most years close to zero, though remaining statistically significant.

Table 9. PSM Estimates of probability of becoming a white-collar worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

Year	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.01*** (0.01)	-0.03 (0.007)	T=2424 C=2997 N=5421

2006	0.03*** (0.01)	-0.02 (0.008)	T=2780 C=3868 N=6648
2012	0.008*** (0.01)	-0.02 (0.007)	T=2968 C=4217 N=7185
2018	0.001*** (0.01)	-0.07 (0.007)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 10. PSM Estimates of probability of becoming a white-collar worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.01*** (0.01)	-0.11 (0.01)	T=2424 C=2416 N=4840
2006	0.01*** (0.01)	-0.10 (0.009)	T=2780 C=3016 N=5796
2012	-0.01*** (0.01)	-0.12 (0.009)	T=2968 C=3389 N=6357
2018	0.002*** (0.01)	-0.15 (0.009)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

The Tables 11 and 12 compare the offspring with a father owning an agricultural job with the offspring of fathers in blue- and white-collar occupations, respectively, in the probability to remain in an agricultural occupation. Table 11 shows the relative probability to become an agricultural worker for the offspring whose father works in agriculture relative to their peers whose father works in a blue-collar occupation: their coefficients fluctuate between 2 and 8 ppt. For the offspring whose father is an agriculture relative to their peers whose father is a white-collar worker the probability to become an agricultural worker is also positive and fluctuates between 4 and 7 ppt (Table 12).

Table 11. PSM Estimates of probability of becoming an agricultural worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.04*** (0.01)	0.07 (0.01)	T=2424 C=2997 N=5421
2006	0.02*** (0.02)	0.08 (0.01)	T=2780 C=3868 N=6648
2012	0.08*** (0.02)	0.11 (0.01)	T=2968 C=4217 N=7185
2018	0.08*** (0.02)	0.15 (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 12.PSM Estimates of probability of becoming an agricultural worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.05*** (0.02)	0.09 (0.01)	T=2424 C=2416 N=4840
2006	0.04*** (0.03)	0.05 (0.01)	T=2780 C=3016 N=5796
2012	0.07*** (0.02)	0.10 (0.01)	T=2968 C=3389 N=6357
2018	0.04*** (0.03)	0.18 (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

In a nutshell, our findings based on matching confirm the main conclusion drawn from inspection of the intergenerational transition matrices, namely that there is a very low degree of social mobility across generations, especially for the offspring whose father is an agricultural worker. Surprisingly, becoming a white-collar worker is more likely for the offspring who has a father in agriculture relative to the offspring of a blue-collar worker. Such type of mobility is persistent over the 20 years considered.

Efficiency of the PSM estimates

The diagnostic test results show that there is no statistically significant difference between the observed characteristics of the matched samples, although differences between the unmatched samples were statistically significant and sizeable. This confirms the effectiveness of the matching approach in reducing only to the treatment variable the difference between target and control at least in terms of observed characteristics. The relevant tests and figures are given in Appendix A.

Appendix A also reports Figures that show that there is common support in the estimates of psm. These figures show that there is a wide variation in the common support to control for the different characteristics that were used in the PSM procedure and documented in Equation [1]. These wide variation in the common support is adequate for the PSM method (see Pastore & Pompili, 2020). Moreover, the common support is also found to be generally more complete and satisfactory when there is a large number of observations from which the control group is selected (see Pastore & Pompili, 2020).

Robustness Checks

As a robustness check, we use the Mahalanobis matching methodology (MM, henceforth). The MM is a more flexible methodology than the propensity score matching method. MM matching is very useful and effective to overcome the anomaly problems in the dataset. As Pastore and Pompili (2020) show the MM method completely eliminates the statistical differences in the observed characteristics of the target and control group, as it selects as control group only observations which are almost identical in terms of observed characteristics to one observation in the target

group. We run all the estimates above (see the Tables 13 through 18) and find very similar coefficients to the ones found with PSM.

Table 13. MM estimates of the probability of becoming a blue-collar worker for the offspring of agricultural workers versus the offspring of blue-collar workers

	Outcome	Observations per group and total
1998	-0.01*** (0.01)	T=2424 C=2997 N=5421
2006	-0.03*** (0.01)	T=2780 C=3868 N=6648
2012	-0.10*** (0.01)	T=2968 C=4217 N=7185
2018	-0.08*** (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 14. MM estimates of the probability of becoming a blue-collar worker for the offspring of agricultural workers versus the offspring of white-collar workers

	Outcome	Observations per group and total
1998	-0.03*** (0.01)	T=2424 C=2416 N=4840
2006	-0.02*** (0.01)	T=2780 C=3016 N=5796
2012	-0.02*** (0.01)	T=2968 C=3389 N=6357
2018	-0.06*** (0.02)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses

Table 15. MM estimates of the probability of becoming a white-collar worker for the offspring of agricultural workers versus the offspring of blue-collar workers

Year	Outcome	Observations per group and total
1998	0.01*** (0.008)	T=2424 C=2416 N=4840
2006	0.03*** (0.01)	T=2780 C=3016 N=5796
2012	0.02*** (0.008)	T=2968 C=3389 N=6357
2018	0.01*** (0.009)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 16. MM estimates of the probability of becoming a white-collar worker for the offspring of agricultural workers versus the offspring of white-collar workers

	Outcome	Observations per group and total
1998	0.002*** (0.01)	T=2424 C=2416 N=4840
2006	-0.01*** (0.01)	T=2780 C=3016 N=5796
2012	-0.02*** (0.01)	T=2968 C=3389 N=6357
2018	0.001*** (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 17. MM estimates of the probability of becoming an agricultural worker for the offspring of agricultural workers versus the offspring of blue-collar workers

	Outcome	Observations per group and total
1998	0.008*** (0.01)	T=2424 C=2997 N=5421
2006	0.003*** (0.01)	T=2780 C=3868 N=6648
2012	0.07*** (0.01)	T=2968 C=4217 N=7185
2018	0.07*** (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 18. MM estimates of the probability of becoming an agricultural worker for the offspring of agricultural workers versus the offspring of a white-collar worker

	Outcome	Observations per group and total
1998	0.03*** (0.01)	T=2424 C=2416 N=4840
2006	0.03*** (0.01)	T=2780 C=3016 N=5796
2012	0.05*** (0.02)	T=2968 C=3389 N=6357
2018	0.06*** (0.03)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Concluding remarks

In the present study, we examine the process of intergenerational social mobility, especially across occupations, in an important MENA country, Egypt, over the 20 years covered by the PLFS (1998, 2006, 2012, 2018). We use the repeated cross-sections of the data. We do so by means of transition matrix estimations first with 9 and then with 3 grouped occupational categories. At an ensuing step of the analysis, we estimate by propensity score matching (and by Mahalanobis distance for robustness check) the probability for the offspring of agricultural workers to find a blue- or a white-collar job. With the same approach, we compare the offspring of blue-collar workers and white-collar workers to access other types of occupations. The estimates provide a vivid picture of the extent of downward and upward occupational mobility in Egypt over the long period of observation considered. PSM estimates are used to compare the like with the like and, indeed, at the first step of the analysis, we select samples of offspring from other social groups based on a propensity score obtained from a probit analysis of the observed determinants of the target group. Each social group is used as a target and a control group in successive estimates to compare the occupational groups with each other. The matching approach allows us comparing groups that differ only for the treatment, which is belonging to a given occupational category rather than the other, after obtained matched samples with exactly the same observed characteristics.

We submit that the very low degree of social mobility existing in the country is the consequence of the low level of economic development and structural change, while also being able to prevent further economic development, by constraining the necessary condition of structural change from agriculture to manufacturing and services. Social mobility is key to economic development and growth not only for the MENA countries, but for all developing countries and may represent a constraint to the process of structural change which may be a pre-condition for economic development. We contribute to the understanding of the process of structural change by studying the trends in terms of social and occupational mobility by controlling for the observed heterogeneity of the different social groups and the possible sample selection bias that may accrue as a consequence of observed heterogeneity.

We find that the offspring of fathers who work in the agricultural sector has a lower chance than the offspring of a father working in a blue-collar occupation but not compared to the offspring of a white-collar worker. Therefore, our results indicate that many young people remain stuck in the status quo ante across generations. This applies especially for the offspring of agricultural workers. We find also a high degree of social immobility among the offspring of white-collar workers. These social phenomena depend on the archaic nature of the agricultural sector and its stability over time in the country considered, but also on the stagnancy of the manufacturing sector, which is probably located in the low to middle skill levels of production and is therefore crashed between low- and high-skill intensive countries' competition in international markets. The public sector still maintains a certain stability of employment over the decades, granting to a middle to upper class in urban areas to maintain their living standard.

Our analysis helps identifying special social groups to whom to address special policy interventions. Policy intervention may be addressed to reduce the borrowing constraints in Egypt, so as to favor the creation of more enterprises and jobs and, at the same time, social mobility. Moreover, the policy makers should consider the talented children of fathers working in agriculture for their education and occupation policies. Skill upgrading of productions can be fostered with adequate incentives to R&D and innovation by firms, in addition to public investment in material and immaterial infrastructures. Albeit Egypt is a well characterized country for free higher education and public job guarantee programs which has been implemented since the late 1960s, there has been a growing trend of decreasing public jobs in Egypt. In Egypt, lower-level educational

institutions should develop cognitive as well as soft skills for children with a poor occupational background. Higher secondary schools and university should provide also work-related skills and work experience. Last, but not least, for the current population, training policy for those wishing to move out of the agricultural sector should be provided for free.

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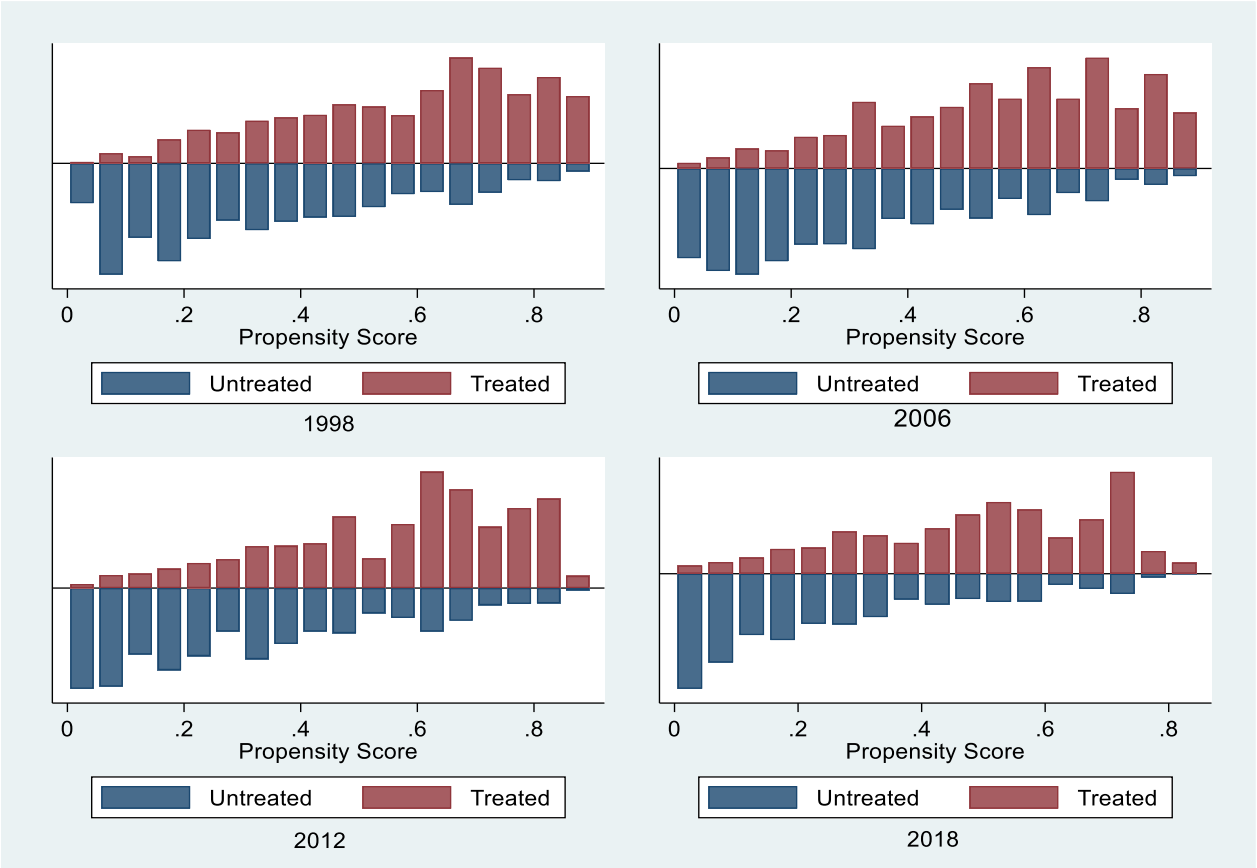
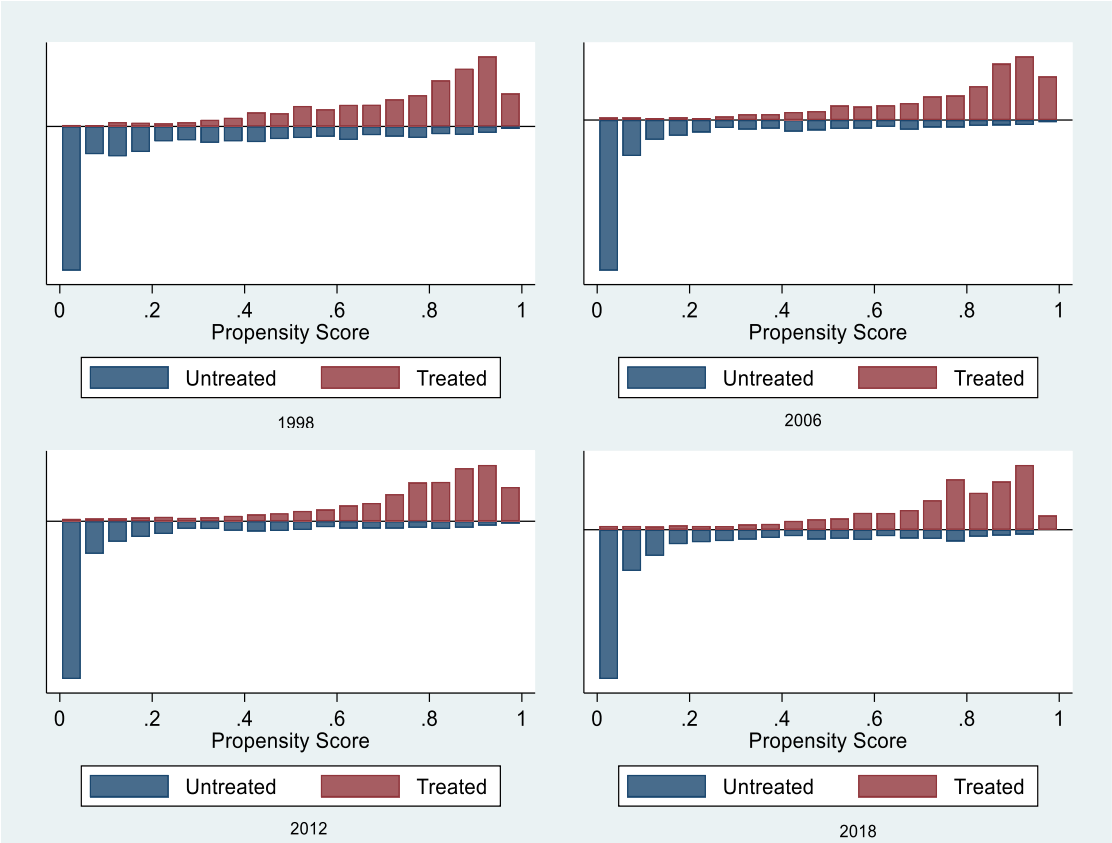
Appendix

PSM Graphs

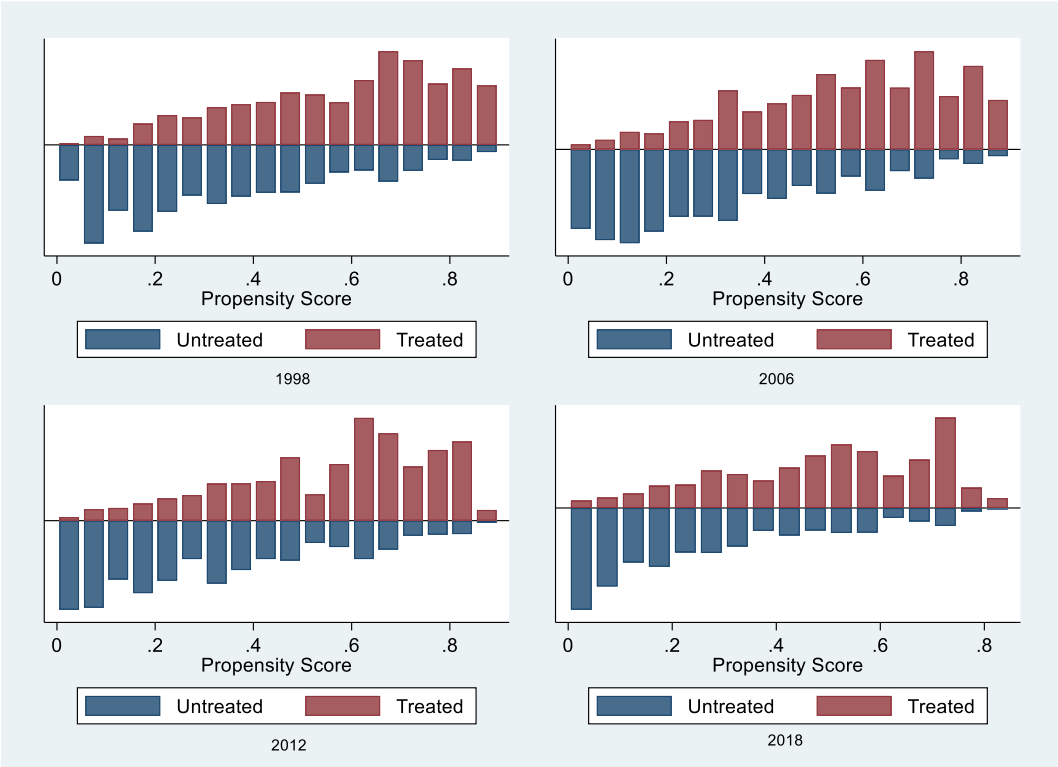
I. Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father



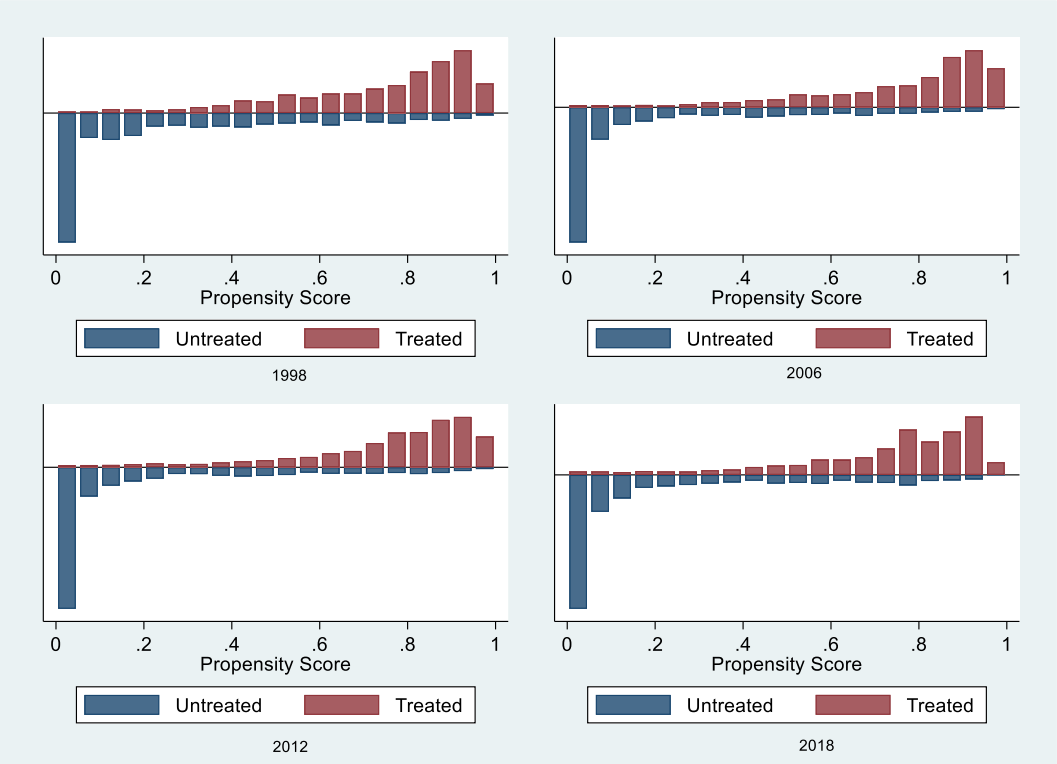
II. Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father



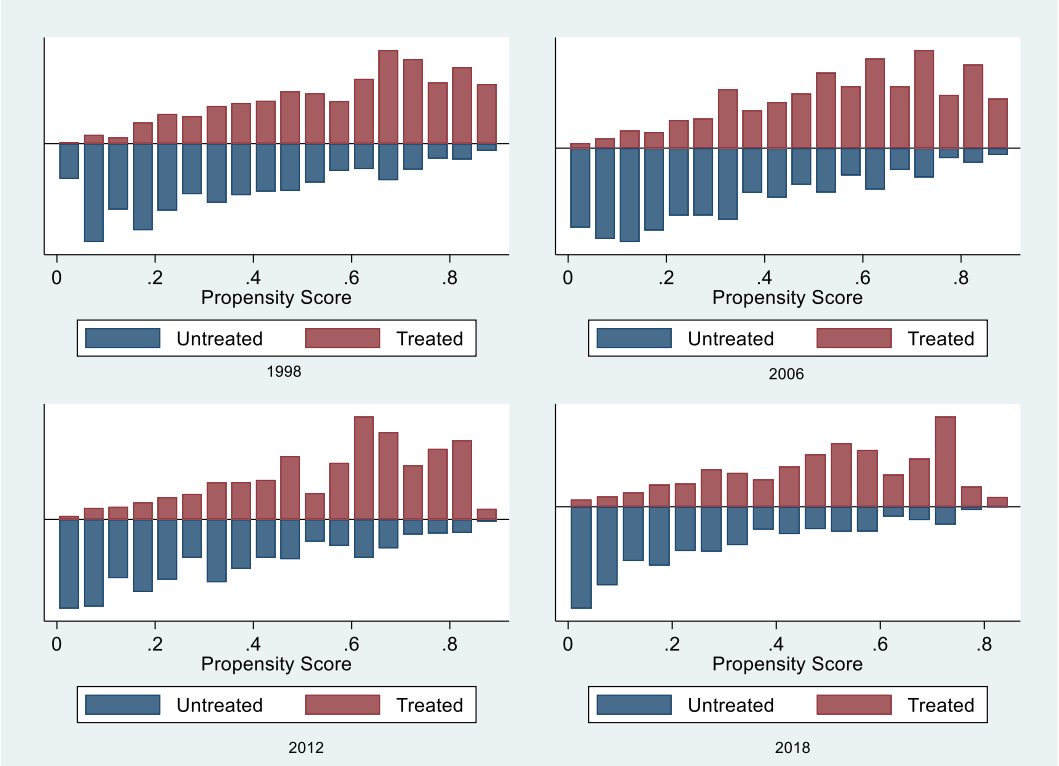
III. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father



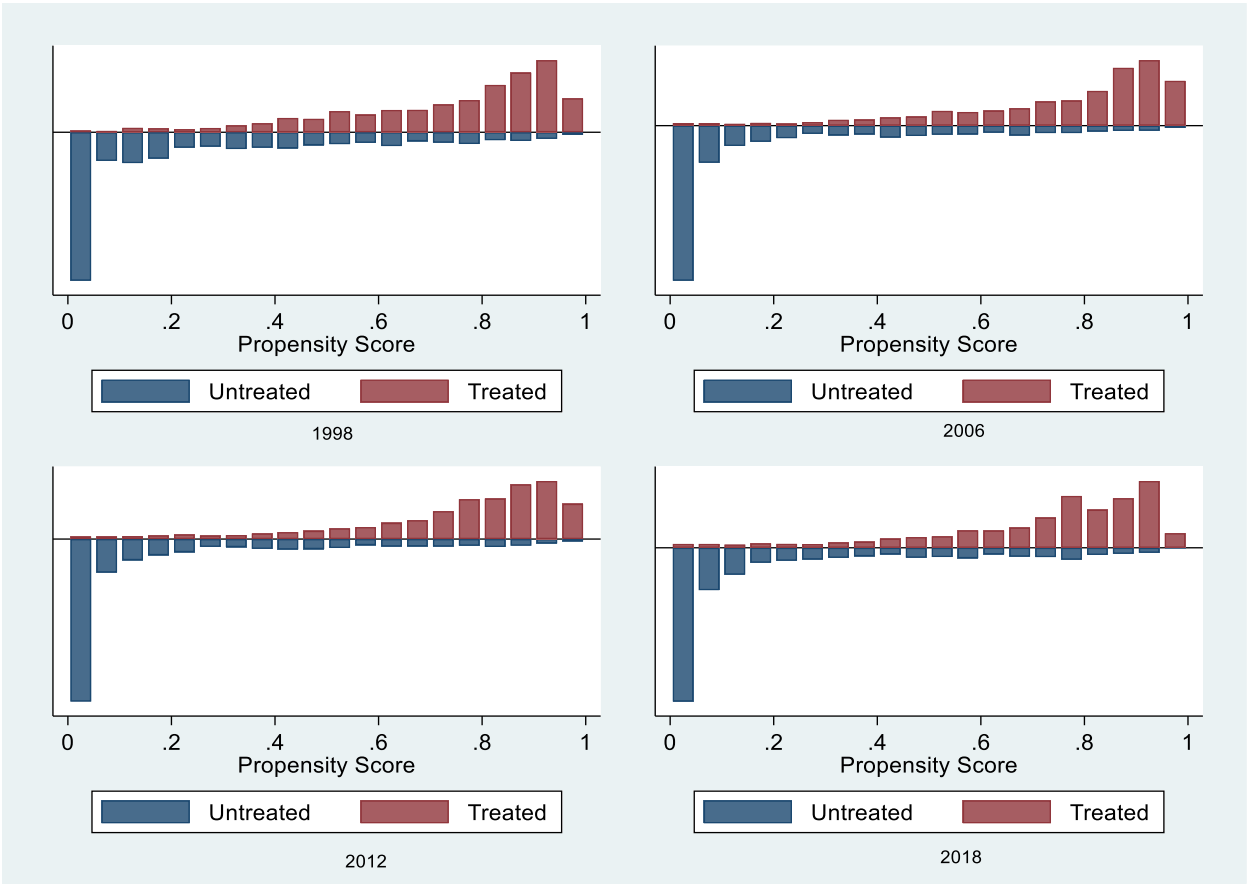
IV. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father



V. Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a blue-collar father



VI. Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a white-collar father


0
.2
.4
.6
.8
1
Propensity Score
Untreated
Treated
1998
2006
2012
2018

PSM T Test Results

I. Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.7038 .71246	-1.8	-0.66 0.507	.	
reads&writes for a father	.17987 .18729	-1.7	-0.67 0.504	.	
less than intermediate for a father	.04208 .03342	3.0	1.58 0.114	.	
İntermediate for father	.00866 .00619	1.7	1.00 0.316	.	
above intermediate for father	.00041 .00124	-1.7	-1.00 0.317	.	
University for a father	.00165 .00083	1.6	0.82 0.414	.	
reads&writes	.14645 .12252	6.6	2.44 0.015	.	
less than intermediate	.19719 .20957	-2.9	-1.07 0.285	.	
İntermediate	.13861 .14563	-1.8	-0.70 0.485	.	
above intermediate	.02145 .02682	-3.3	-1.22 0.224	.	
University	.02847 .02475	2.0	0.80 0.422	.	
post graduate	.00041 0	1.1	1.00 0.317	.	
Alexandria	.01898 .02104	-0.9	-0.51 0.608	.	
Port Said	.00413 .00454	-0.5	-0.22 0.827	.	
Saez	.0033 .00371	-0.4	-0.24 0.808	.	
Damietta	.06064 .06642	-2.8	-0.82 0.410	.	
Dakahlia	.04002 .03135	4.5	1.63 0.104	.	
Sharkia	.05116 .04662	2.1	0.73 0.464	.	
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143	.	

Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512	.	
Gharbia	.05363 .05322	0.2	0.06 0.949	.	
Menoufia	.00784 .01031	-2.1	-0.91 0.364	.	
Behera	.07178 .06106	4.3	1.50 0.134	.	
Ismailia	.04455 .04043	1.8	0.71 0.477	.	
Giza	.04827 .04909	-0.4	-0.13 0.894	.	
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257	.	
Fayoum	.07219 .06229	4.5	1.38 0.169	.	
Menia	.06147 .04909	5.7	1.89 0.059	.	
Asyout	.06642 .06642	0.0	0.00 1.000	.	
Suhag	.04703 .06271	-7.4	-2.40 0.017	.	
Qena	.05817 .05982	-0.7	-0.24 0.807	.	
Aswan	.05281 .06188	-4.2	-1.36 0.174	.	
Luxur	.00041 .00041	0.0	-0.00 1.000	.	
female	.53878 .53754	0.2	0.09 0.931	.	
householdincome	199.67 221.38	-5.2	-1.79 0.073	0.74*	
wealth	-.47616 - .48457	1.0	0.36 0.722	0.94	

* if variance ratio outside [0.92; 1.08]

2006

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
rural	.73345 .7464	-2.8	-1.10 0.271	.	
reads&writes for a father	.15288 .15863	-1.4	-0.59 0.554	.	
less than intermediate for a father	.05647 .05108	1.7	0.89 0.373	.	

İntermediate for father	.00755 .01043	-1.7	-1.14 0.256	.	
above intermediate for father	.00072 .00108	-0.6	-0.45 0.655	.	
University for a father	.00288 .00288	0.0	0.00 1.000	.	
reads&writes	.11655 .12086	-1.3	-0.50 0.619	.	
less than intermediate	.19209 .21403	-5.2	-2.03 0.042	.	
İntermediate	.18813 .18921	-0.3	-0.10 0.918	.	
above intermediate	.01439 .01295	1.0	0.46 0.644	.	
University	.04317 .04281	0.2	0.07 0.947	.	
post graduate	.0018 .00216	-0.8	-0.30 0.763	.	
Alexandria	.01367 .01259	0.5	0.35 0.724	.	
Port Said	.0036 .00216	1.7	1.00 0.317	.	
Saez	.00468 .00324	1.5	0.85 0.393	.	
Damietta	.06583 .06511	0.3	0.11 0.914	.	
Dakahlia	.04532 .03849	3.3	1.27 0.204	.	
Sharkia	.05144 .05683	-2.5	-0.89 0.374	.	
Kalyoubia	.04209 .04029	0.8	0.34 0.736	.	
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778	.	
Gharbia	.0536 .05504	-0.7	-0.24 0.813	.	
Menoufia	.00612 .00396	1.9	1.14 0.256	.	
Behera	.06942 .07734	-3.3	-1.13 0.258	.	
Ismailia	.04209 .03777	1.9	0.82 0.411	.	
Giza	.04353 .04137	1.1	0.40 0.690	.	
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738	.	
Fayoum	.07338 .08345	-4.3	-1.40 0.163	.	
Menia	.05899 .05468	2.0	0.69 0.487	.	

Asyout	.07158 .06367	3.1	1.17 0.240	.	
Suhag	.04676 .04784	-0.5	-0.19 0.850	.	
Qena	.06511 .05863	2.6	1.00 0.316	.	
Aswan	.0464 .05863	-5.8	-2.04 0.041	.	
Luxur	.00036 0	1.0	1.00 0.317	.	
Female	.52482 .51835	1.3	0.48 0.629	.	
householdincome	412.18 427.72	-1.4	-0.74 0.459	0.97	
Wealth	-.44189 - .43651	-0.7	-0.25 0.804	0.95	

2012

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.71597 .74023	-5.2	-2.10 0.036	.	
reads&writes for a father	.1004 .10916	-2.4	-1.10 0.271	.	
less than intermediate for a father	.03706 .03841	-0.4	-0.27 0.785	.	
İntermediate for father	.0155 .01381	0.9	0.54 0.589	.	
above intermediate for father	.00067 .00067	0.0	-0.00 1.000	.	
University for a father	.00101 .00034	0.7	1.00 0.317	.	
reads&writes	.04919 .04852	0.3	0.12 0.904	.	
less than intermediate	.19744 .20822	-2.5	-1.03 0.302	.	
İntermediate	.24057 .25101	-2.3	-0.93 0.350	.	
above intermediate	.01247 .01516	-1.8	-0.89 0.374	.	
University	.05391 .0529	0.4	0.17 0.863	.	
post graduate	.00202 .00034	3.2	1.89 0.059	.	
Alexandria	.01415 .01348	0.3	0.22 0.824	.	

Port Said	.00404 .00202	2.4	1.42 0.157	.	
Saez	.00404 .00472	-0.7	-0.39 0.694	.	
Damietta	.05829 .05728	0.5	0.17 0.867	.	
Dakahlia	.04582 .04346	1.2	0.44 0.660	.	
Sharkia	.0465 .05627	-4.6	-1.71 0.088	.	
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689	.	
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928	.	
Gharbia	.04919 .04852	0.3	0.12 0.904	.	
Menoufia	.00708 .00708	0.0	-0.00 1.000	.	
Behera	.06907 .06233	2.8	1.05 0.295	.	
Ismailia	.03605 .03437	0.8	0.35 0.725	.	
Giza	.03706 .04111	-2.1	-0.80 0.422	.	
Beni-Suef	.08625 .08861	-0.9	-0.32 0.748	.	
Fayoum	.07244 .07143	0.4	0.15 0.880	.	
Menia	.06233 .06334	-0.5	-0.16 0.873	.	
Asyout	.07884 .07513	1.5	0.54 0.592	.	
Suhag	.05559 .06233	-3.1	-1.10 0.271	.	
Qena	.06435 .06031	1.6	0.64 0.519	.	
Aswan	.05627 .05189	2.0	0.75 0.456	.	
Luxur	.00067 .00067	0.0	0.00 1.000	.	
female	.51988 .51819	0.3	0.13 0.897	.	
householdincome	887.02 921.27	-1.3	-0.50 0.617	0.89*	
wealth	-.43018 - .37851	-6.6	-2.65 0.008	1.11*	

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.72051 .72704	-1.4	-0.54 0.588	.	
reads&writes for a father	.08457 .09111	-1.9	-0.86 0.392	.	
less than intermediate for a father	.03303 .0323	0.3	0.15 0.880	.	
İntermediate for father	.01996 .01597	1.7	1.12 0.265	.	
above intermediate for father	.00218 .00254	-0.5	-0.28 0.781	.	
University for a father	.00218 .0029	-0.5	-0.54 0.593	.	
reads&writes	.07187 .06316	3.5	1.29 0.198	.	
less than intermediate	.12341 .13466	-3.3	-1.25 0.213	.	
İntermediate	.27804 .27332	1.0	0.39 0.695	.	
above intermediate	.01633 .01924	-1.8	-0.82 0.415	.	
University	.05517 .05517	0.0	-0.00 1.000	.	
post graduate	.00327 .00327	0.0	0.00 1.000	.	
Alexandria	.01162 .0098	0.9	0.65 0.513	.	
Port Said	.00363 .00436	-0.9	-0.43 0.669	.	
Saez	.00472 .00363	1.1	0.63 0.531	.	
Damietta	.06062 .05771	1.4	0.46 0.648	.	
Dakahlia	.03702 .03848	-0.7	-0.28 0.777	.	
Sharkia	.05082 .05626	-2.6	-0.90 0.369	.	
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538	.	
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962	.	
Gharbia	.04537 .04283	1.2	0.46 0.646	.	
Menoufia	.00508 .00399	1.0	0.60 0.548	.	

Behera	.08494 .0882	-1.3	-0.43 0.666	.	
Ismailia	.0363 .03993	-1.6	-0.70 0.482	.	
Giza	.04283 .05263	-5.1	-1.71 0.088	.	
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699	.	
Fayoum	.07877 .0726	2.7	0.87 0.387	.	
Menia	.06534 .0686	-1.4	-0.48 0.628	.	
Asyout	.08203 .07731	1.9	0.65 0.518	.	
Suhag	.05045 .05299	-1.2	-0.43 0.670	.	
Qena	.05372 .05154	0.9	0.36 0.717	.	
Aswan	.05263 .04392	4.0	1.51 0.132	.	
Luxur	.00109 .00073	0.7	0.45 0.655	.	
female	.53285 .52922	0.7	0.27 0.787	.	
householdincome	1888.1 1959.3	-1.0	-0.40 0.691	1.57*	
Wealth	-.36785 - .35466	-1.6	-0.72 0.470	0.98	

II. Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.7038 .70503	-0.3	-0.09 0.925	.
reads&writes for a father	.17987 .19389	-3.4	-1.25 0.210	.
less than intermediate for a father	.04208 .04084	0.5	0.22 0.829	.
İntermediate for father	.00866 .00701	0.5	0.65 0.515	.
above intermediate for father	.00041 0	0.3	1.00 0.317	.
University for a father	.00165 .00165	0.0	-0.00 1.000	.

reads&writes	.14645 .2203	-20.5	-6.67 0.000	.
less than intermediate	.19719 .20338	-1.4	-0.54 0.590	.
İntermediate	.13861 .11427	6.2	2.55 0.011	.
above intermediate	.02145 .01733	2.3	1.04 0.298	.
University	.02847 .03053	-0.8	-0.42 0.671	.
post graduate	.00041 0	0.8	1.00 0.317	.
Alexandria	.01898 .01238	3.3	1.85 0.064	.
Port Said	.00413 .00578	-1.8	-0.82 0.413	.
Saez	.0033 .00206	1.2	0.83 0.405	.
Damietta	.06064 .0755	-7.0	-2.05 0.040	.
Dakahlia	.04002 .03507	2.3	0.91 0.365	.
Sharkia	.05116 .03507	7.5	2.76 0.006	.
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084	.
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545	.
Gharbia	.05363 .06147	-3.5	-1.17 0.241	.
Menoufia	.00784 .0099	-1.8	-0.77 0.444	.
Behera	.07178 .04002	12.6	4.82 0.000	.
Ismailia	.04455 .05817	-6.3	-2.15 0.032	.
Giza	.04827 .10025	-27.1	-6.93 0.000	.
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532	.
Fayoum	.07219 .05239	8.7	2.85 0.004	.
Menia	.06147 .07137	-4.2	-1.38 0.166	.
Asyout	.06642 .04414	9.3	3.40 0.001	.
Suhag	.04703 .04868	-0.8	-0.27 0.788	.
Qena	.05817 .06436	-2.9	-0.90 0.369	.
Aswan	.05281 .04167	4.9	1.83 0.068	.

Luxur	.00041 0	0.6	1.00 0.317	.
female	.53878 .52682	2.4	0.83 0.404	.
householdincome	199.67 235.29	-6.5	-2.90 0.004	0.70*
wealth	-.47616 - .45761	-2.3	-0.80 0.426	1.00

* if variance ratio outside [0.92; 1.08]

2006

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.73345 .73417	-0.2	-0.06 0.952	.
reads&writes for a father	.15288 .14892	1.1	0.41 0.680	.
less than intermediate for a father	.05647 .0464	3.4	1.70 0.089	.
İntermediate for father	.00755 .00612	0.4	0.65 0.515	.
above intermediate for father	.00072 .00144	-0.4	-0.82 0.414	.
University for a father	.00288 .0054	-1.0	-1.46 0.144	.
reads&writes	0 0	.	. .	.
less than intermediate	.11655 .13669	-5.9	-2.26 0.024	.
İntermediate	.19209 .19964	-1.8	-0.71 0.478	.
above intermediate	.18813 .17374	3.4	1.39 0.164	.
University	.01439 .01835	-2.4	-1.16 0.245	.
post graduate	.04317 .03993	1.1	0.60 0.545	.
Alexandria	.0018 .00108	1.2	0.71 0.479	.
Port Said	.01367 .01655	-1.5	-0.88 0.379	.
Saez	.0036 .0018	2.1	1.29 0.196	.
Damietta	.00468 .00468	0.0	-0.00 1.000	.
Dakahlia	.06583 .08237	-7.9	-2.36 0.019	.
Sharkia	.04532 .04712	-0.9	-0.32 0.750	.

Kalyoubia	.05144 .04424	3.3	1.26 0.209	.
Kafr-Elsheikh	.04209 .0518	-5.0	-1.71 0.087	.
Gharbia	.09065 .11475	-9.5	-2.96 0.003	.
Menoufia	.0536 .07374	-9.2	-3.08 0.002	.
Behera	.00612 .00863	-2.3	-1.10 0.273	.
Ismailia	.06942 .05036	7.6	3.00 0.003	.
Giza	.04209 .02374	8.3	3.84 0.000	.
Beni-Suef	.04353 .03633	3.8	1.37 0.171	.
Fayoum	.08453 .04496	16.3	6.01 0.000	.
Menia	.07338 .08058	-3.2	-1.01 0.314	.
Asyout	.05899 .05216	2.9	1.11 0.266	.
Suhag	.07158 .05899	5.3	1.90 0.057	.
Qena	.04676 .07194	-11.3	-3.98 0.000	.
Aswan	.06511 .05396	5.0	1.76 0.079	.
Luxur	.0464 .05971	-5.6	-2.21 0.027	.
female	.00036 .00108	-1.1	-1.00 0.317	.
householdincome	.52482 .56367	-7.8	-2.91 0.004	.
wealth	412.18 449.28	-3.9	-1.44 0.150	0.48*
Rural	-.44189 - .41315	-3.5	-1.31 0.192	0.90*

2012

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.71597 .69677	4.2	1.62 0.104	.
reads&writes for a father	.1004 .11354	-4.1	-1.64 0.102	.

less than intermediate for a father	.03706 .02864	3.0	1.82 0.069	.
İntermediate for father	.0155 .01516	0.1	0.11 0.916	.
above intermediate for father	.00067 .00168	-0.6	-1.13 0.257	.
University for a father	.00101 .00135	-0.1	-0.38 0.705	.
reads&writes	.04919 .06031	-5.8	-1.88 0.060	.
less than intermediate	.19744 .21395	-3.9	-1.57 0.116	.
İntermediate	.24057 .21597	5.5	2.26 0.024	.
above intermediate	.01247 .01247	0.0	0.00 1.000	.
University	.05391 .04279	3.3	2.00 0.046	.
post graduate	.00202 .00202	0.0	-0.00 1.000	.
Alexandria	.01415 .01617	-1.0	-0.64 0.524	.
Port Said	.00404 .00674	-3.3	-1.42 0.156	.
Saez	.00404 .00303	0.9	0.66 0.512	.
Damietta	.05829 .06772	-4.7	-1.50 0.135	.
Dakahlia	.04582 .03066	7.1	3.05 0.002	.
Sharkia	.0465 .04683	-0.2	-0.06 0.951	.
Kalyoubia	.03841 .03369	2.5	0.97 0.330	.
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000	.
Gharbia	.04919 .05593	-3.2	-1.16 0.245	.
Menoufia	.00708 .01247	-4.7	-2.11 0.035	.
Behera	.06907 .03942	12.1	5.05 0.000	.
Ismailia	.03605 .05559	-8.8	-3.60 0.000	.
Giza	.03706 .04178	-2.6	-0.93 0.350	.
Beni-Suef	.08625 .07008	6.7	2.32 0.020	.

Fayoum	.07244 .08693	-6.4	-2.06 0.039	.
Menia	.06233 .05728	2.1	0.82 0.412	.
Asyout	.07884 .09872	-8.1	-2.69 0.007	.
Suhag	.05559 .03807	7.7	3.20 0.001	.
Qena	.06435 .07446	-4.4	-1.53 0.126	.
Aswan	.05627 .07581	-8.2	-3.03 0.002	.
Luxur	.00067 .00067	0.0	0.00 1.000	.
female	.51988 .51449	1.1	0.42 0.678	.
householdincome	887.02 896.83	-0.3	-0.14 0.890	0.77*
wealth	-.43018 - .49788	8.0	3.33 0.001	0.94

2018

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.72051 .74483	-5.3	-2.04 0.041	.	
reads&writes for a father	.08457 .0824	0.7	0.29 0.770	.	
less than intermediate for a father	.03303 .03412	-0.4	-0.22 0.823	.	
İntermediate for father	.01996 .01815	0.6	0.49 0.622	.	
above intermediate for father	.00218 .00145	0.5	0.63 0.527	.	
University for a father	.00218 .0029	-0.3	-0.54 0.593	.	
reads&writes	.07187 .06897	1.3	0.42 0.674	.	

less than intermediate	.12341 .13575	-4.0	-1.36 0.173	.	
İntermediate	.27804 .29038	-2.6	-1.02 0.310	.	
above intermediate	.01633 .01851	-1.3	-0.62 0.537	.	
University	.05517 .04574	2.6	1.60 0.110	.	
post graduate	.00327 .00218	1.0	0.78 0.438	.	
Alexandria	.01162 .00907	1.3	0.93 0.351	.	
Port Said	.00363 .00327	0.4	0.23 0.818	.	
Saez	.00472 .00544	-0.7	-0.38 0.705	.	
Damietta	.06062 .06098	-0.2	-0.06 0.955	.	
Dakahlia	.03702 .05299	-7.9	-2.86 0.004	.	
Sharkia	.05082 .04356	3.3	1.27 0.204	.	
Kalyoubia	.03884 .03303	2.9	1.16 0.247	.	
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887	.	
Gharbia	.04537 .0392	3.0	1.14 0.255	.	
Menoufia	.00508 .00363	1.3	0.82 0.413	.	
Behera	.08494 .08857	-1.5	-0.48 0.632	.	
Ismailia	.0363 .0461	-4.5	-1.83 0.067	.	
Giza	.04283 .05372	-5.4	-1.89 0.059	.	
Beni-Suef	.08312 .05989	9.5	3.35 0.001	.	
Fayoum	.07877 .07151	3.2	1.02 0.307	.	
Menia	.06534 .07768	-5.2	-1.78 0.075	.	
Asyout	.08203 .08421	-0.9	-0.29 0.770	.	
Suhag	.05045 .06388	-5.9	-2.15 0.032	.	
Qena	.05372 .04138	5.9	2.15 0.031	.	
Aswan	.05263 .05118	0.6	0.24 0.808	.	
Luxur	.00109 .00073	0.8	0.45 0.655	.	

female	.53285 .49583	7.4	2.75 0.006	.	
householdincome	1888.1 1906.6	-0.3	-0.10 0.924	1.11*	
wealth	-.36785 - .36944	0.2	0.09 0.929	1.07	

III. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.7038 .71246	-1.8	-0.66 0.507	.	
reads&writes for a father	.17987 .18729	-1.7	-0.67 0.504	.	
less than intermediate for a father	.04208 .03342	3.0	1.58 0.114	.	
İntermediate for father	.00866 .00619	1.7	1.00 0.316	.	
above intermediate for father	.00041 .00124	-1.7	-1.00 0.317	.	
University for a father	.00165 .00083	1.6	0.82 0.414	.	
reads&writes	.14645 .12252	6.6	2.44 0.015	.	
less than intermediate	.19719 .20957	-2.9	-1.07 0.285	.	
İntermediate	.13861 .14563	-1.8	-0.70 0.485	.	
above intermediate	.02145 .02682	-3.3	-1.22 0.224	.	
University	.02847 .02475	2.0	0.80 0.422	.	
post graduate	.00041 0	1.1	1.00 0.317	.	
Alexandria	.01898 .02104	-0.9	-0.51 0.608	.	
Port Said	.00413 .00454	-0.5	-0.22 0.827	.	
Saez	.0033 .00371	-0.4	-0.24 0.808	.	
Damietta	.06064 .06642	-2.8	-0.82 0.410	.	
Dakahlia	.04002 .03135	4.5	1.63 0.104	.	
Sharkia	.05116 .04662	2.1	0.73 0.464	.	
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143	.	
Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512	.	

Gharbia	.05363 .05322	0.2	0.06 0.949	.	
Menoufia	.00784 .01031	-2.1	-0.91 0.364	.	
Behera	.07178 .06106	4.3	1.50 0.134	.	
Ismailia	.04455 .04043	1.8	0.71 0.477	.	
Giza	.04827 .04909	-0.4	-0.13 0.894	.	
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257	.	
Fayoum	.07219 .06229	4.5	1.38 0.169	.	
Menia	.06147 .04909	5.7	1.89 0.059	.	
Asyout	.06642 .06642	0.0	0.00 1.000	.	
Suhag	.04703 .06271	-7.4	-2.40 0.017	.	
Qena	.05817 .05982	-0.7	-0.24 0.807	.	
Aswan	.05281 .06188	-4.2	-1.36 0.174	.	
Luxur	.00041 .00041	0.0	-0.00 1.000	.	
female	.53878 .53754	0.2	0.09 0.931	.	
householdincome	199.67 221.38	-5.2	-1.79 0.073	0.74*	
wealth	-.47616 - .48457	1.0	0.36 0.722	0.94	

2006

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.73345 .7464	-2.8	-1.10 0.271	.
reads&writes for a father	.15288 .15863	-1.4	-0.59 0.554	.
less than intermediate for a father	.05647 .05108	1.7	0.89 0.373	.
İntermediate for father	.00755 .01043	-1.7	-1.14 0.256	.
above intermediate for father	.00072 .00108	-0.6	-0.45 0.655	.
University for a father	.00288 .00288	0.0	0.00 1.000	.
reads&writes	.11655 .12086	-1.3	-0.50 0.619	.
less than intermediate	.19209 .21403	-5.2	-2.03 0.042	.
İntermediate	.18813 .18921	-0.3	-0.10 0.918	.
above intermediate	.01439 .01295	1.0	0.46 0.644	.
University	.04317 .04281	0.2	0.07 0.947	.
post graduate	.0018 .00216	-0.8	-0.30 0.763	.
Alexandria	.01367 .01259	0.5	0.35 0.724	.
Port Said	.0036 .00216	1.7	1.00 0.317	.
Saez	.00468 .00324	1.5	0.85 0.393	.
Damietta	.06583 .06511	0.3	0.11 0.914	.
Dakahlia	.04532 .03849	3.3	1.27 0.204	.
Sharkia	.05144 .05683	-2.5	-0.89 0.374	.
Kalyoubia	.04209 .04029	0.8	0.34 0.736	.
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778	.
Gharbia	.0536 .05504	-0.7	-0.24 0.813	.
Menoufia	.00612 .00396	1.9	1.14 0.256	.

Behera	.06942 .07734	-3.3	-1.13 0.258	.
Ismailia	.04209 .03777	1.9	0.82 0.411	.
Giza	.04353 .04137	1.1	0.40 0.690	.
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738	.
Fayoum	.07338 .08345	-4.3	-1.40 0.163	.
Menia	.05899 .05468	2.0	0.69 0.487	.
Asyout	.07158 .06367	3.1	1.17 0.240	.
Suhag	.04676 .04784	-0.5	-0.19 0.850	.
Qena	.06511 .05863	2.6	1.00 0.316	.
Aswan	.0464 .05863	-5.8	-2.04 0.041	.
Luxur	.00036 0	1.0	1.00 0.317	.
female	.52482 .51835	1.3	0.48 0.629	.
householdincome	412.18 427.72	-1.4	-0.74 0.459	0.97
wealth	-.44189 - .43651	-0.7	-0.25 0.804	0.95

2012

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.71597 .74023	-5.2	-2.10 0.036	.

reads&writes for a father	.1004 .10916	-2.4	-1.10 0.271	.
less than intermediate for a father	.03706 .03841	-0.4	-0.27 0.785	.
İntermediate for father	.0155 .01381	0.9	0.54 0.589	.
above intermediate for father	.00067 .00067	0.0	-0.00 1.000	.
University for a father	.00101 .00034	0.7	1.00 0.317	.
reads&writes	.04919 .04852	0.3	0.12 0.904	.
less than intermediate	.19744 .20822	-2.5	-1.03 0.302	.
İntermediate	.24057 .25101	-2.3	-0.93 0.350	.
above intermediate	.01247 .01516	-1.8	-0.89 0.374	.
University	.05391 .0529	0.4	0.17 0.863	.
post graduate	.00202 .00034	3.2	1.89 0.059	.
Alexandria	.01415 .01348	0.3	0.22 0.824	.
Port Said	.00404 .00202	2.4	1.42 0.157	.
Saez	.00404 .00472	-0.7	-0.39 0.694	.
Damietta	.05829 .05728	0.5	0.17 0.867	.
Dakahlia	.04582 .04346	1.2	0.44 0.660	.
Sharkia	.0465 .05627	-4.6	-1.71 0.088	.
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689	.
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928	.
Gharbia	.04919 .04852	0.3	0.12 0.904	.
Menoufia	.00708 .00708	0.0	-0.00 1.000	.
Behera	.06907 .06233	2.8	1.05 0.295	.
Ismailia	.03605 .03437	0.8	0.35 0.725	.
Giza	.03706 .04111	-2.1	-0.80 0.422	.

Beni-Suef	.08625 .08861	-0.9	-0.32 0.748	.
Fayoum	.07244 .07143	0.4	0.15 0.880	.
Menia	.06233 .06334	-0.5	-0.16 0.873	.
Asyout	.07884 .07513	1.5	0.54 0.592	.
Suhag	.05559 .06233	-3.1	-1.10 0.271	.
Qena	.06435 .06031	1.6	0.64 0.519	.
Aswan	.05627 .05189	2.0	0.75 0.456	.
Luxur	.00067 .00067	0.0	0.00 1.000	.
female	.51988 .51819	0.3	0.13 0.897	.
householdincome	887.02 921.27	-1.3	-0.50 0.617	0.89*
wealth	-.43018 - .37851	-6.6	-2.65 0.008	1.11*

2018

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.72051 .72704	-1.4	-0.54 0.588	.	
reads&writes for a father	.08457 .09111	-1.9	-0.86 0.392	.	
less than intermediate for a father	.03303 .0323	0.3	0.15 0.880	.	
İntermediate for father	.01996 .01597	1.7	1.12 0.265	.	

above intermediate for father	.00218 .00254	-0.5	-0.28 0.781	.	
University for a father	.00218 .0029	-0.5	-0.54 0.593	.	
reads&writes	.07187 .06316	3.5	1.29 0.198	.	
less than intermediate	.12341 .13466	-3.3	-1.25 0.213	.	
İntermediate	.27804 .27332	1.0	0.39 0.695	.	
above intermediate	.01633 .01924	-1.8	-0.82 0.415	.	
University	.05517 .05517	0.0	-0.00 1.000	.	
post graduate	.00327 .00327	0.0	0.00 1.000	.	
Alexandria	.01162 .0098	0.9	0.65 0.513	.	
Port Said	.00363 .00436	-0.9	-0.43 0.669	.	
Saez	.00472 .00363	1.1	0.63 0.531	.	
Damietta	.06062 .05771	1.4	0.46 0.648	.	
Dakahlia	.03702 .03848	-0.7	-0.28 0.777	.	
Sharkia	.05082 .05626	-2.6	-0.90 0.369	.	
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538	.	
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962	.	
Gharbia	.04537 .04283	1.2	0.46 0.646	.	
Menoufia	.00508 .00399	1.0	0.60 0.548	.	
Behera	.08494 .0882	-1.3	-0.43 0.666	.	
Ismailia	.0363 .03993	-1.6	-0.70 0.482	.	
Giza	.04283 .05263	-5.1	-1.71 0.088	.	
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699	.	
Fayoum	.07877 .0726	2.7	0.87 0.387	.	
Menia	.06534 .0686	-1.4	-0.48 0.628	.	
Asyout	.08203 .07731	1.9	0.65 0.518	.	

Suhag	.05045 .05299	-1.2	-0.43 0.670	.	
Qena	.05372 .05154	0.9	0.36 0.717	.	
Aswan	.05263 .04392	4.0	1.51 0.132	.	
Luxur	.00109 .00073	0.7	0.45 0.655	.	
female	.53285 .52922	0.7	0.27 0.787	.	
householdincome	1888.1 1959.3	-1.0	-0.40 0.691	1.57*	
wealth	-.36785 - .35466	-1.6	-0.72 0.470	0.98	

IV. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.7038 .70503	-0.3	-0.09 0.925	.
reads&writes for a father	.17987 .19389	-3.4	-1.25 0.210	.
less than intermediate for a father	.04208 .04084	0.5	0.22 0.829	.
İntermediate for father	.00866 .00701	0.5	0.65 0.515	.
above intermediate for father	.00041 0	0.3	1.00 0.317	.
University for a father	.00165 .00165	0.0	-0.00 1.000	.
reads&writes	0 0	.	. .	.
less than intermediate	.14645 .2203	-20.5	-6.67 0.000	.
İntermediate	.19719 .20338	-1.4	-0.54 0.590	.
above intermediate	.13861 .11427	6.2	2.55 0.011	.
University	.02145 .01733	2.3	1.04 0.298	.
post graduate	.02847 .03053	-0.8	-0.42 0.671	.

Alexandria	.01898 .01238	3.3	1.85 0.064	.
Port Said	.00413 .00578	-1.8	-0.82 0.413	.
Saez	.0033 .00206	1.2	0.83 0.405	.
Damietta	.06064 .0755	-7.0	-2.05 0.040	.
Dakahlia	.04002 .03507	2.3	0.91 0.365	.
Sharkia	.05116 .03507	7.5	2.76 0.006	.
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084	.
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545	.
Gharbia	.05363 .06147	-3.5	-1.17 0.241	.
Menoufia	.00784 .0099	-1.8	-0.77 0.444	.
Behera	.07178 .04002	12.6	4.82 0.000	.
Ismailia	.04455 .05817	-6.3	-2.15 0.032	.
Giza	.04827 .10025	-27.1	-6.93 0.000	.
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532	.
Fayoum	.07219 .05239	8.7	2.85 0.004	.
Menia	.06147 .07137	-4.2	-1.38 0.166	.
Asyout	.06642 .04414	9.3	3.40 0.001	.
Suhag	.04703 .04868	-0.8	-0.27 0.788	.
Qena	.05817 .06436	-2.9	-0.90 0.369	.
Aswan	.05281 .04167	4.9	1.83 0.068	.
Luxur	.00041 0	0.6	1.00 0.317	.
female	.53878 .52682	2.4	0.83 0.404	.
householdincome	199.67 235.29	-6.5	-2.90 0.004	0.70*
wealth	-.47616 - .45761	-2.3	-0.80 0.426	1.00

2006

	Mean		t-test	V(T)/

Variable	Treated Control	%bias	t p>t	V(C)
Rural	.73345 .73417	-0.2	-0.06 0.952	.
reads&writes for a father	.15288 .14892	1.1	0.41 0.680	.
less than intermediate for a father	.05647 .0464	3.4	1.70 0.089	.
İntermediate for father	.00755 .00612	0.4	0.65 0.515	.
above intermediate for father	.00072 .00144	-0.4	-0.82 0.414	.
University for a father	.00288 .0054	-1.0	-1.46 0.144	.
reads&writes	.11655 .13669	-5.9	-2.26 0.024	.
less than intermediate	.19209 .19964	-1.8	-0.71 0.478	.
İntermediate	.18813 .17374	3.4	1.39 0.164	.
above intermediate	.01439 .01835	-2.4	-1.16 0.245	.
University	.04317 .03993	1.1	0.60 0.545	.
post graduate	.0018 .00108	1.2	0.71 0.479	.
Alexandria	.01367 .01655	-1.5	-0.88 0.379	.
Port Said	.0036 .0018	2.1	1.29 0.196	.
Saez	.00468 .00468	0.0	-0.00 1.000	.
Damietta	.06583 .08237	-7.9	-2.36 0.019	.
Dakahlia	.04532 .04712	-0.9	-0.32 0.750	.
Sharkia	.05144 .04424	3.3	1.26 0.209	.
Kalyoubia	.04209 .0518	-5.0	-1.71 0.087	.
Kafr-Elsheikh	.09065 .11475	-9.5	-2.96 0.003	.
Gharbia	.0536 .07374	-9.2	-3.08 0.002	.
Menoufia	.00612 .00863	-2.3	-1.10 0.273	.
Behera	.06942 .05036	7.6	3.00 0.003	.

Ismailia	.04209 .02374	8.3	3.84 0.000	.
Giza	.04353 .03633	3.8	1.37 0.171	.
Beni-Suef	.08453 .04496	16.3	6.01 0.000	.
Fayoum	.07338 .08058	-3.2	-1.01 0.314	.
Menia	.05899 .05216	2.9	1.11 0.266	.
Asyout	.07158 .05899	5.3	1.90 0.057	.
Suhag	.04676 .07194	-11.3	-3.98 0.000	.
Qena	.06511 .05396	5.0	1.76 0.079	.
Aswan	.0464 .05971	-5.6	-2.21 0.027	.
Luxur	.00036 .00108	-1.1	-1.00 0.317	.
female	.52482 .56367	-7.8	-2.91 0.004	.
householdincome	412.18 449.28	-3.9	-1.44 0.150	0.48*
wealth	-.44189 - .41315	-3.5	-1.31 0.192	0.90*

2012

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.71597 .69677	4.2	1.62 0.104	.	
reads&writes for a father	.1004 .11354	-4.1	-1.64 0.102	.	
less than intermediate for a father	.03706 .02864	3.0	1.82 0.069	.	
İntermediate for father	.0155 .01516	0.1	0.11 0.916	.	
above intermediate for father	.00067 .00168	-0.6	-1.13 0.257	.	
University for a father	.00101 .00135	-0.1	-0.38 0.705	.	
reads&writes	.04919 .06031	-5.8	-1.88 0.060	.	

less than intermediate	.19744 .21395	-3.9	-1.57 0.116	.	
İntermediate	.24057 .21597	5.5	2.26 0.024	.	
above intermediate	.01247 .01247	0.0	0.00 1.000	.	
University	.05391 .04279	3.3	2.00 0.046	.	
post graduate	.00202 .00202	0.0	-0.00 1.000	.	
Alexandria	.01415 .01617	-1.0	-0.64 0.524	.	
Port Said	.00404 .00674	-3.3	-1.42 0.156	.	
Saez	.00404 .00303	0.9	0.66 0.512	.	
Damietta	.05829 .06772	-4.7	-1.50 0.135	.	
Dakahlia	.04582 .03066	7.1	3.05 0.002	.	
Sharkia	.0465 .04683	-0.2	-0.06 0.951	.	
Kalyoubia	.03841 .03369	2.5	0.97 0.330	.	
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000	.	
Gharbia	.04919 .05593	-3.2	-1.16 0.245	.	
Menoufia	.00708 .01247	-4.7	-2.11 0.035	.	
Behera	.06907 .03942	12.1	5.05 0.000	.	
Ismailia	.03605 .05559	-8.8	-3.60 0.000	.	
Giza	.03706 .04178	-2.6	-0.93 0.350	.	
Beni-Suef	.08625 .07008	6.7	2.32 0.020	.	
Fayoum	.07244 .08693	-6.4	-2.06 0.039	.	
Menia	.06233 .05728	2.1	0.82 0.412	.	
Asyout	.07884 .09872	-8.1	-2.69 0.007	.	
Suhag	.05559 .03807	7.7	3.20 0.001	.	
Qena	.06435 .07446	-4.4	-1.53 0.126	.	
Aswan	.05627 .07581	-8.2	-3.03 0.002	.	

Luxur	.00067 .00067	0.0	0.00 1.000	.	
female	.51988 .51449	1.1	0.42 0.678	.	
householdincome	887.02 896.83	-0.3	-0.14 0.890	0.77*	
wealth	-.43018 - .49788	8.0	3.33 0.001	0.94	

2018

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.72051 .74483	-5.3	-2.04 0.041	.
reads&writes for a father	.08457 .0824	0.7	0.29 0.770	.
less than intermediate for a father	.03303 .03412	-0.4	-0.22 0.823	.
İntermediate for father	.01996 .01815	0.6	0.49 0.622	.
above intermediate for father	.00218 .00145	0.5	0.63 0.527	.
University for a father	.00218 .0029	-0.3	-0.54 0.593	.
reads&writes	.07187 .06897	1.3	0.42 0.674	.
less than intermediate	.12341 .13575	-4.0	-1.36 0.173	.
İntermediate	.27804 .29038	-2.6	-1.02 0.310	.
above intermediate	.01633 .01851	-1.3	-0.62 0.537	.
University	.05517 .04574	2.6	1.60 0.110	.
post graduate	.00327 .00218	1.0	0.78 0.438	.
Alexandria	.01162 .00907	1.3	0.93 0.351	.
Port Said	.00363 .00327	0.4	0.23 0.818	.
Saez	.00472 .00544	-0.7	-0.38 0.705	.
Damietta	.06062 .06098	-0.2	-0.06 0.955	.

Dakahlia	.03702 .05299	-7.9	-2.86 0.004	.
Sharkia	.05082 .04356	3.3	1.27 0.204	.
Kalyoubia	.03884 .03303	2.9	1.16 0.247	.
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887	.
Gharbia	.04537 .0392	3.0	1.14 0.255	.
Menoufia	.00508 .00363	1.3	0.82 0.413	.
Behera	.08494 .08857	-1.5	-0.48 0.632	.
Ismailia	.0363 .0461	-4.5	-1.83 0.067	.
Giza	.04283 .05372	-5.4	-1.89 0.059	.
Beni-Suef	.08312 .05989	9.5	3.35 0.001	.
Fayoum	.07877 .07151	3.2	1.02 0.307	.
Menia	.06534 .07768	-5.2	-1.78 0.075	.
Asyout	.08203 .08421	-0.9	-0.29 0.770	.
Suhag	.05045 .06388	-5.9	-2.15 0.032	.
Qena	.05372 .04138	5.9	2.15 0.031	.
Aswan	.05263 .05118	0.6	0.24 0.808	.
Luxur	.00109 .00073	0.8	0.45 0.655	.
female	.53285 .49583	7.4	2.75 0.006	.
householdincome	1888.1 1906.6	-0.3	-0.10 0.924	1.11*
wealth	-.36785 - .36944	0.2	0.09 0.929	1.07

V. Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.7038 .71246	-1.8	-0.66 0.507	.
reads&writes for a father	.17987 .18729	-1.7	-0.67 0.504	.
less than intermediate for a father	.04208 .03342	3.0	1.58 0.114	.
İntermediate for father	.00866 .00619	1.7	1.00 0.316	.
above intermediate for father	.00041 .00124	-1.7	-1.00 0.317	.
University for a father	.00165 .00083	1.6	0.82 0.414	.
reads&writes	.14645 .12252	6.6	2.44 0.015	.
less than intermediate	.19719 .20957	-2.9	-1.07 0.285	.
İntermediate	.13861 .14563	-1.8	-0.70 0.485	.
above intermediate	.02145 .02682	-3.3	-1.22 0.224	.
University	.02847 .02475	2.0	0.80 0.422	.
post graduate	.00041 0	1.1	1.00 0.317	.
Alexandria	.01898 .02104	-0.9	-0.51 0.608	.
Port Said	.00413 .00454	-0.5	-0.22 0.827	.
Saez	.0033 .00371	-0.4	-0.24 0.808	.
Damietta	.06064 .06642	-2.8	-0.82 0.410	.
Dakahlia	.04002 .03135	4.5	1.63 0.104	.
Sharkia	.05116 .04662	2.1	0.73 0.464	.
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143	.
Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512	.

Gharbia	.05363 .05322	0.2	0.06 0.949	.
Menoufia	.00784 .01031	-2.1	-0.91 0.364	.
Behera	.07178 .06106	4.3	1.50 0.134	.
Ismailia	.04455 .04043	1.8	0.71 0.477	.
Giza	.04827 .04909	-0.4	-0.13 0.894	.
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257	.
Fayoum	.07219 .06229	4.5	1.38 0.169	.
Menia	.06147 .04909	5.7	1.89 0.059	.
Asyout	.06642 .06642	0.0	0.00 1.000	.
Suhag	.04703 .06271	-7.4	-2.40 0.017	.
Qena	.05817 .05982	-0.7	-0.24 0.807	.
Aswan	.05281 .06188	-4.2	-1.36 0.174	.
Luxur	.00041 .00041	0.0	-0.00 1.000	.
female	.53878 .53754	0.2	0.09 0.931	.
householdincome	199.67 221.38	-5.2	-1.79 0.073	0.74*
wealth	-.47616 - .48457	1.0	0.36 0.722	0.94

2006

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.73345 .7464	-2.8	-1.10 0.271	.
reads&writes for a father	.15288 .15863	-1.4	-0.59 0.554	.

less than intermediate for a father	.05647 .05108	1.7	0.89 0.373	.
İntermediate for father	.00755 .01043	-1.7	-1.14 0.256	.
above intermediate for father	.00072 .00108	-0.6	-0.45 0.655	.
University for a father	.00288 .00288	0.0	0.00 1.000	.
reads&writes	.11655 .12086	-1.3	-0.50 0.619	.
less than intermediate	.19209 .21403	-5.2	-2.03 0.042	.
İntermediate	.18813 .18921	-0.3	-0.10 0.918	.
above intermediate	.01439 .01295	1.0	0.46 0.644	.
University	.04317 .04281	0.2	0.07 0.947	.
post graduate	.0018 .00216	-0.8	-0.30 0.763	.
Alexandria	.01367 .01259	0.5	0.35 0.724	.
Port Said	.0036 .00216	1.7	1.00 0.317	.
Saez	.00468 .00324	1.5	0.85 0.393	.
Damietta	.06583 .06511	0.3	0.11 0.914	.
Dakahlia	.04532 .03849	3.3	1.27 0.204	.
Sharkia	.05144 .05683	-2.5	-0.89 0.374	.
Kalyoubia	.04209 .04029	0.8	0.34 0.736	.
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778	.
Gharbia	.0536 .05504	-0.7	-0.24 0.813	.
Menoufia	.00612 .00396	1.9	1.14 0.256	.
Behera	.06942 .07734	-3.3	-1.13 0.258	.
Ismailia	.04209 .03777	1.9	0.82 0.411	.
Giza	.04353 .04137	1.1	0.40 0.690	.
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738	.

Fayoum	.07338 .08345	-4.3	-1.40 0.163	.
Menia	.05899 .05468	2.0	0.69 0.487	.
Asyout	.07158 .06367	3.1	1.17 0.240	.
Suhag	.04676 .04784	-0.5	-0.19 0.850	.
Qena	.06511 .05863	2.6	1.00 0.316	.
Aswan	.0464 .05863	-5.8	-2.04 0.041	.
Luxur	.00036 0	1.0	1.00 0.317	.
female	.52482 .51835	1.3	0.48 0.629	.
householdincome	412.18 427.72	-1.4	-0.74 0.459	0.97
wealth	-.44189 - .43651	-0.7	-0.25 0.804	0.95

2012

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.71597 .74023	-5.2	-2.10 0.036	.
reads&writes for a father	.1004 .10916	-2.4	-1.10 0.271	.
less than intermediate for a father	.03706 .03841	-0.4	-0.27 0.785	.
İntermediate for father	.0155 .01381	0.9	0.54 0.589	.
above intermediate for father	.00067 .00067	0.0	-0.00 1.000	.
University for a father	.00101 .00034	0.7	1.00 0.317	.
reads&writes	.04919 .04852	0.3	0.12 0.904	.
less than intermediate	.19744 .20822	-2.5	-1.03 0.302	.
İntermediate	.24057 .25101	-2.3	-0.93 0.350	.
above intermediate	.01247 .01516	-1.8	-0.89 0.374	.
University	.05391 .0529	0.4	0.17 0.863	.

post graduate	.00202 .00034	3.2	1.89 0.059	.
Alexandria	.01415 .01348	0.3	0.22 0.824	.
Port Said	.00404 .00202	2.4	1.42 0.157	.
Saez	.00404 .00472	-0.7	-0.39 0.694	.
Damietta	.05829 .05728	0.5	0.17 0.867	.
Dakahlia	.04582 .04346	1.2	0.44 0.660	.
Sharkia	.0465 .05627	-4.6	-1.71 0.088	.
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689	.
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928	.
Gharbia	.04919 .04852	0.3	0.12 0.904	.
Menoufia	.00708 .00708	0.0	-0.00 1.000	.
Behera	.06907 .06233	2.8	1.05 0.295	.
Ismailia	.03605 .03437	0.8	0.35 0.725	.
Giza	.03706 .04111	-2.1	-0.80 0.422	.
Beni-Suef	.08625 .08861	-0.9	-0.32 0.748	.
Fayoum	.07244 .07143	0.4	0.15 0.880	.
Menia	.06233 .06334	-0.5	-0.16 0.873	.
Asyout	.07884 .07513	1.5	0.54 0.592	.
Suhag	.05559 .06233	-3.1	-1.10 0.271	.
Qena	.06435 .06031	1.6	0.64 0.519	.
Aswan	.05627 .05189	2.0	0.75 0.456	.
Luxur	.00067 .00067	0.0	0.00 1.000	.
female	.51988 .51819	0.3	0.13 0.897	.
householdincome	887.02 921.27	-1.3	-0.50 0.617	0.89*
wealth	-.43018 - .37851	-6.6	-2.65 0.008	1.11*

2018

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.72051 .72704	-1.4	-0.54 0.588	.
reads&writes for a father	.08457 .09111	-1.9	-0.86 0.392	.
less than intermediate for a father	.03303 .0323	0.3	0.15 0.880	.
İntermediate for father	.01996 .01597	1.7	1.12 0.265	.
above intermediate for father	.00218 .00254	-0.5	-0.28 0.781	.
University for a father	.00218 .0029	-0.5	-0.54 0.593	.
reads&writes	.07187 .06316	3.5	1.29 0.198	.
less than intermediate	.12341 .13466	-3.3	-1.25 0.213	.
İntermediate	.27804 .27332	1.0	0.39 0.695	.
above intermediate	.01633 .01924	-1.8	-0.82 0.415	.
University	.05517 .05517	0.0	-0.00 1.000	.
post graduate	.00327 .00327	0.0	0.00 1.000	.
Alexandria	.01162 .0098	0.9	0.65 0.513	.
Port Said	.00363 .00436	-0.9	-0.43 0.669	.
Saez	.00472 .00363	1.1	0.63 0.531	.
Damietta	.06062 .05771	1.4	0.46 0.648	.
Dakahlia	.03702 .03848	-0.7	-0.28 0.777	.
Sharkia	.05082 .05626	-2.6	-0.90 0.369	.
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538	.
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962	.
Gharbia	.04537 .04283	1.2	0.46 0.646	.

Menoufia	.00508 .00399	1.0	0.60 0.548	.
Behera	.08494 .0882	-1.3	-0.43 0.666	.
Ismailia	.0363 .03993	-1.6	-0.70 0.482	.
Giza	.04283 .05263	-5.1	-1.71 0.088	.
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699	.
Fayoum	.07877 .0726	2.7	0.87 0.387	.
Menia	.06534 .0686	-1.4	-0.48 0.628	.
Asyout	.08203 .07731	1.9	0.65 0.518	.
Suhag	.05045 .05299	-1.2	-0.43 0.670	.
Qena	.05372 .05154	0.9	0.36 0.717	.
Aswan	.05263 .04392	4.0	1.51 0.132	.
Luxur	.00109 .00073	0.7	0.45 0.655	.
female	.53285 .52922	0.7	0.27 0.787	.
householdincome	1888.1 1959.3	-1.0	-0.40 0.691	1.57*
wealth	-.36785 - .35466	-1.6	-0.72 0.470	0.98

VI. Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

	Mean		t-test	V(T)/	
Variable	Treated Control	%bias	t p>t	V(C)	
Rural	.7038 .70503	-0.3	-0.09 0.925	.	
reads&writes for a father	.17987 .19389	-3.4	-1.25 0.210	.	
less than intermediate for a father	.04208 .04084	0.5	0.22 0.829	.	

İntermediate for father	.00866 .00701	0.5	0.65 0.515	.	
above intermediate for father	.00041 0	0.3	1.00 0.317	.	
University for a father	.00165 .00165	0.0	-0.00 1.000	.	
reads&writes	.14645 .2203	-20.5	-6.67 0.000	.	
less than intermediate	.19719 .20338	-1.4	-0.54 0.590	.	
İntermediate	.13861 .11427	6.2	2.55 0.011	.	
above intermediate	.02145 .01733	2.3	1.04 0.298	.	
University	.02847 .03053	-0.8	-0.42 0.671	.	
post graduate	.00041 0	0.8	1.00 0.317	.	
Alexandria	.01898 .01238	3.3	1.85 0.064	.	
Port Said	.00413 .00578	-1.8	-0.82 0.413	.	
Saez	.0033 .00206	1.2	0.83 0.405	.	
Damietta	.06064 .0755	-7.0	-2.05 0.040	.	
Dakahlia	.04002 .03507	2.3	0.91 0.365	.	
Sharkia	.05116 .03507	7.5	2.76 0.006	.	
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084	.	
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545	.	
Gharbia	.05363 .06147	-3.5	-1.17 0.241	.	
Menoufia	.00784 .0099	-1.8	-0.77 0.444	.	
Behera	.07178 .04002	12.6	4.82 0.000	.	
Ismailia	.04455 .05817	-6.3	-2.15 0.032	.	
Giza	.04827 .10025	-27.1	-6.93 0.000	.	
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532	.	
Fayoum	.07219 .05239	8.7	2.85 0.004	.	
Menia	.06147 .07137	-4.2	-1.38 0.166	.	

Asyout	.06642 .04414	9.3	3.40 0.001	.	
Suhag	.04703 .04868	-0.8	-0.27 0.788	.	
Qena	.05817 .06436	-2.9	-0.90 0.369	.	
Aswan	.05281 .04167	4.9	1.83 0.068	.	
Luxur	.00041 0	0.6	1.00 0.317	.	
female	.53878 .52682	2.4	0.83 0.404	.	
householdincome	199.67 235.29	-6.5	-2.90 0.004	0.70*	
wealth	-.47616 - .45761	-2.3	-0.80 0.426	1.00	

2006

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.73345 .73417	-0.2	-0.06 0.952	.
reads&writes for a father	.15288 .14892	1.1	0.41 0.680	.
less than intermediate for a father	.05647 .0464	3.4	1.70 0.089	.
İntermediate for father	.00755 .00612	0.4	0.65 0.515	.
above intermediate for father	.00072 .00144	-0.4	-0.82 0.414	.
University for a father	.00288 .0054	-1.0	-1.46 0.144	.
reads&writes	.11655 .13669	-5.9	-2.26 0.024	.
less than intermediate	.19209 .19964	-1.8	-0.71 0.478	.
İntermediate	.18813 .17374	3.4	1.39 0.164	.
above intermediate	.01439 .01835	-2.4	-1.16 0.245	.
University	.04317 .03993	1.1	0.60 0.545	.
post graduate	.0018 .00108	1.2	0.71 0.479	.
Alexandria	.01367 .01655	-1.5	-0.88 0.379	.
Port Said	.0036 .0018	2.1	1.29 0.196	.

Saez	.00468 .00468	0.0	-0.00 1.000	.
Damietta	.06583 .08237	-7.9	-2.36 0.019	.
Dakahlia	.04532 .04712	-0.9	-0.32 0.750	.
Sharkia	.05144 .04424	3.3	1.26 0.209	.
Kalyoubia	.04209 .0518	-5.0	-1.71 0.087	.
Kafr-Elsheikh	.09065 .11475	-9.5	-2.96 0.003	.
Gharbia	.0536 .07374	-9.2	-3.08 0.002	.
Menoufia	.00612 .00863	-2.3	-1.10 0.273	.
Behera	.06942 .05036	7.6	3.00 0.003	.
Ismailia	.04209 .02374	8.3	3.84 0.000	.
Giza	.04353 .03633	3.8	1.37 0.171	.
Beni-Suef	.08453 .04496	16.3	6.01 0.000	.
Fayoum	.07338 .08058	-3.2	-1.01 0.314	.
Menia	.05899 .05216	2.9	1.11 0.266	.
Asyout	.07158 .05899	5.3	1.90 0.057	.
Suhag	.04676 .07194	-11.3	-3.98 0.000	.
Qena	.06511 .05396	5.0	1.76 0.079	.
Aswan	.0464 .05971	-5.6	-2.21 0.027	.
Luxur	.00036 .00108	-1.1	-1.00 0.317	.
female	.52482 .56367	-7.8	-2.91 0.004	.
householdincome	412.18 449.28	-3.9	-1.44 0.150	0.48*
wealth	-.44189 - .41315	-3.5	-1.31 0.192	0.90*

2012

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)

Rural	.71597 .69677	4.2	1.62 0.104	.
reads&writes for a father	.1004 .11354	-4.1	-1.64 0.102	.
less than intermediate for a father	.03706 .02864	3.0	1.82 0.069	.
İntermediate for father	.0155 .01516	0.1	0.11 0.916	.
above intermediate for father	.00067 .00168	-0.6	-1.13 0.257	.
University for a father	.00101 .00135	-0.1	-0.38 0.705	.
reads&writes	.04919 .06031	-5.8	-1.88 0.060	.
less than intermediate	.19744 .21395	-3.9	-1.57 0.116	.
İntermediate	.24057 .21597	5.5	2.26 0.024	.
above intermediate	.01247 .01247	0.0	0.00 1.000	.
University	.05391 .04279	3.3	2.00 0.046	.
post graduate	.00202 .00202	0.0	-0.00 1.000	.
Alexandria	.01415 .01617	-1.0	-0.64 0.524	.
Port Said	.00404 .00674	-3.3	-1.42 0.156	.
Saez	.00404 .00303	0.9	0.66 0.512	.
Damietta	.05829 .06772	-4.7	-1.50 0.135	.
Dakahlia	.04582 .03066	7.1	3.05 0.002	.
Sharkia	.0465 .04683	-0.2	-0.06 0.951	.
Kalyoubia	.03841 .03369	2.5	0.97 0.330	.
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000	.
Gharbia	.04919 .05593	-3.2	-1.16 0.245	.
Menoufia	.00708 .01247	-4.7	-2.11 0.035	.
Behera	.06907 .03942	12.1	5.05 0.000	.
Ismailia	.03605 .05559	-8.8	-3.60 0.000	.

Giza	.03706 .04178	-2.6	-0.93 0.350	.
Beni-Suef	.08625 .07008	6.7	2.32 0.020	.
Fayoum	.07244 .08693	-6.4	-2.06 0.039	.
Menia	.06233 .05728	2.1	0.82 0.412	.
Asyout	.07884 .09872	-8.1	-2.69 0.007	.
Suhag	.05559 .03807	7.7	3.20 0.001	.
Qena	.06435 .07446	-4.4	-1.53 0.126	.
Aswan	.05627 .07581	-8.2	-3.03 0.002	.
Luxur	.00067 .00067	0.0	0.00 1.000	.
female	.51988 .51449	1.1	0.42 0.678	.
householdincome	887.02 896.83	-0.3	-0.14 0.890	0.77*
wealth	-.43018 - .49788	8.0	3.33 0.001	0.94

2018

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Rural	.72051 .74483	-5.3	-2.04 0.041	.
reads&writes for a father	.08457 .0824	0.7	0.29 0.770	.
less than intermediate for a father	.03303 .03412	-0.4	-0.22 0.823	.
İntermediate for father	.01996 .01815	0.6	0.49 0.622	.
above intermediate for father	.00218 .00145	0.5	0.63 0.527	.
University for a father	.00218 .0029	-0.3	-0.54 0.593	.
reads&writes	.07187 .06897	1.3	0.42 0.674	.
less than intermediate	.12341 .13575	-4.0	-1.36 0.173	.
İntermediate	.27804 .29038	-2.6	-1.02 0.310	.

above intermediate	.01633 .01851	-1.3	-0.62 0.537	.
University	.05517 .04574	2.6	1.60 0.110	.
post graduate	.00327 .00218	1.0	0.78 0.438	.
Alexandria	.01162 .00907	1.3	0.93 0.351	.
Port Said	.00363 .00327	0.4	0.23 0.818	.
Saez	.00472 .00544	-0.7	-0.38 0.705	.
Damietta	.06062 .06098	-0.2	-0.06 0.955	.
Dakahlia	.03702 .05299	-7.9	-2.86 0.004	.
Sharkia	.05082 .04356	3.3	1.27 0.204	.
Kalyoubia	.03884 .03303	2.9	1.16 0.247	.
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887	.
Gharbia	.04537 .0392	3.0	1.14 0.255	.
Menoufia	.00508 .00363	1.3	0.82 0.413	.
Behera	.08494 .08857	-1.5	-0.48 0.632	.
Ismailia	.0363 .0461	-4.5	-1.83 0.067	.
Giza	.04283 .05372	-5.4	-1.89 0.059	.
Beni-Suef	.08312 .05989	9.5	3.35 0.001	.
Fayoum	.07877 .07151	3.2	1.02 0.307	.
Menia	.06534 .07768	-5.2	-1.78 0.075	.
Asyout	.08203 .08421	-0.9	-0.29 0.770	.
Suhag	.05045 .06388	-5.9	-2.15 0.032	.
Qena	.05372 .04138	5.9	2.15 0.031	.
Aswan	.05263 .05118	0.6	0.24 0.808	.
Luxur	.00109 .00073	0.8	0.45 0.655	.
female	.53285 .49583	7.4	2.75 0.006	.
householdincome	1888.1 1906.6	-0.3	-0.10 0.924	1.11*

wealth	-.36785 -.36944	0.2	0.09 0.929	1.07