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THE ARAB SPRING AND THE EMPLOYABILITY OF YOUTH: EARLY EVIDENCE FROM EGYPT

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Abstract

This paper investigates the school-to-work transition of young people from subsequent graduation cohorts between 2005 and 2012 in Egypt. The analysis compares the early employment outcomes of those who left school after the January 25th, 2011 revolution to that of those who graduated before 2011. Using recent data from the 2014 Survey of Young People in Egypt (SYPE), we estimate the probability of transition to any first job within 18-month of finishing education and that of transitioning to a good quality job, controlling for the year of end of schooling. Preliminary findings show that while transitioning to a first job seemed not to be affected by the event of the 2011 revolution, young people experienced significantly lower chances to transition to good quality jobs.

JEL Classification: J13, J64**,** N35

Keywords: School-to-work transition, youth, survival-analysis, Egypt

ملخص

تبحث هذه الورقة في الانتقال من المدرسة إلى العمل للشباب من مجموعات التخرج اللاحقة بين عامي 2005 و2012 في مصر. يقارن التحليل نتائج العمالة المبكرة لأولئك اللذين تركوا المدرسة بعد ثورة 25 يناير 2011 إلى أولئك اللذين تخرجوا قبل عام 2011. باستخدام التقديرات الأخيرة من مسح الشباب في مصر (سيب)، فإننا نقدر احتمال الانتقال إلى أي وظيفة أولى في غضون 18 شهرا من الانتهاء من التعليم والانتقال إلى وظيفة ذات نوعية جيدة، بالسيطرة على سنة انتهاء الدراسة. وتبين النتائج الأولية أنه في حين أن الانتقال إلى وظيفة أولى يبدو أنه لم يتأثر بحدث ثورة عام 2011، إلا أن الشباب شهدوا فرصا أقل بكثير للانتقال إلى وظائف ذات نوعية جيدة.

1. Introduction

This paper updates the state of knowledge on young people school-to-work transition in Egypt in the wake of the January 25th 2011 revolution. Although Egypt is still considered to be undergoing a transitional period following the recent revolutionary efforts, it is quite vital to document the short-term adjustments of the Egyptian labor market during this critical period of Egypt history. The Egyptian largest demographic cohort, the young people, is currently making its way to adulthood during the slowdown of Egypt's economy following the revolution. This mandates a comprehensive analysis of one of the most vital youth life transitions that is school-to-work transition and early labor market outcomes.

Even before 2011 young people experienced challenging labor market conditions that may have even worsened following the January revolution. Such hard labor market conditions in the aftermath of the revolution have been widely documented in the news, but very little data have been available to appropriately measure the actual impact of the post-revolutionary unstable economic conditions on youth labor market outcomes. To the best of our knowledge, only Heyne and Gebel (2016), Amer (2015) and Assaad and Krafft (2014) investigated how youth transition to first job fared following January 2011 in Egypt using the 2012 Egyptian Labor Market Panel survey (ELMPS). Nevertheless, since the ELMPS was collected in 2012, it offers only one-year data post the revolution. Using more recent data, this paper aims to build on the earlier study of Assaad et al. (2010) and contribute to the existing literature in adding evidence-based results on the post 2011 effects on the status of in the Egyptian labor market.

This paper makes use of the 2014 Survey of Young People in Egypt (SYPE) to provide an analysis of the impact of the 2011 uprising on the pattern of youth transition to first job. Two main aspects of the transition to first job are examined. The first is the dynamics of finding a first job with 18-month from leaving school. The second aspect is the quality of this first job and how the prospects of finding good quality jobs evolved following the 2011 revolution.

The paper is organized into 7 sections. Following this introduction, Section 2 discusses few theoretical and empirical considerations. Section 3 gives an overview of young people's labor market outcomes during the 2009-2014 period, namely examining youth education attainment, labor force participation and unemployment rates. Section 4 presents the data used in this paper and few stylized facts. Section 5 presents the econometrics modeling. Results are discussed in Section 6. Concluding remarks are provided in Section 7.

2. Theoretical and Empirical Considerations

Several studies examined young people transition from school to the labor market and the duration of this transition over the last two decades in Egypt (see Heyne and Gebel 2016; Assaad and Kraft 2014; Amer 2002, 2009, 2015; Angel-Urdinola and Semlali 2010; Matsumoto and Elder 2010; Assaad et al. 2010) and the Middle East (see Huitfeldt and Kabbani 2005; Angel-Urdinola & Semlali 2010; Tansel and Taşçi 2010; Amer 2012).

However, to our knowledge, only Assaad and Krafft (2014), Amer (2015) and Heyne and Gebel (2016) investigated how youth transition to first job fared following January 2011 in Egypt using recent data from the Egypt Labor Market Panel survey (ELMPS). Both Amer (2015) and Assaad and Kraft (2014) used bivariate analysis and descriptive Kaplan-Meier (KM) survival curves while exploiting the longitudinal structure of the three waves of the ELMPS of 1998, 2006 and 2013 to study youth transition trajectories and how these trajectories changed over the 1998-2012 period.

Assaad and Kraft (2014), did not only focus on youth labor market transition as most of the previous literature, but examined three key life course transitions in a young person life: education, employment, and family formation. They relied on a life course perspective to understand how youth transition from adolescent into adult roles and the trajectories they experience during this transition. The authors illustrated how youth life-course transition across education, employment, and marriage varies depending on gender, education and family background. Amer (2015) focused only on youth school to work transition during the period 1998-2012. The findings of that paper highlighted that men were more likely to transition to a first job faster at the beginning of the 2010s as compared to the end of the 1990s or mid-2000s. The author argued that this fast transition was mainly due to higher willingness to accept informal types of employment among men following 2010, due to reduced expectations about their chances to find good jobs.

Heyne and Gebel (2016) also analyzed school-to-work transition patterns but for a long period of time from 1970–2012, using multivariate analysis and the retrospective longitudinal data from the ELMPS 2012. The aim of this paper is to investigate the effect of the profound social, economic and political changes that have taken place in Egypt during the last decades on young people's school-to-work transition and how education affected the duration and quality of this transition. The authors apply a discrete time hazard model using a logistic functional form, to account for youth who have not yet found a first job by the time of the survey. The paper shows that, contrary to expectations, the most recent dramatic transformation in Egypt did not result in a slower school-to-work transition of recent cohorts of school leavers relative to their peers from older cohorts. Particularly, young men with secondary education experienced a faster transition to first job than those with university education. However, once again the authors demonstrated that faster transition to the labor market of secondary graduates came at the expense of job quality; particularly, this group was mainly ending up in low quality private sector jobs.

Nevertheless, since the ELMPS was collected in 2012, it offers only one-year data post the revolution. The aim of this paper is to contribute to this early evidence on the effect of Egypt transitional period on young people insertions trajectory into the labor market using more recent data from the SYPE 2014 and multivariate analysis techniques.

The paper adopts the taxonomy framework proposed by Assaad and Krafft (2014) drawing on Dhillon, Dyer and Youssef (2009) that divides the work transition potential trajectory into a "traditional" and a "modern" transition. The first school-to-work transition path, the traditional one, mainly concerns youth who did not complete their education or with low education level and involves quick transition to work, with barely short or no unemployment spells. The modern trajectory, which is the second transition path, is more observed among youth with higher education levels and involves a search for formal or good quality jobs which often entails a period of extended unemployment. This last trajectory may result in a successful modern transition when a formal job is secured or may lead to a poor outcome when young people end up accepting a low-quality job following a long unemployment spell.

3. Background on Young People Education and Labor Market Outcomes during the 2009-2014 Period

This section provides an overview of youth educational attainment, labor force participation, employment conditions and unemployment rates during the 2009-2014 period. Since many youth are still studying, we focus in this section on the group of young people who left school. Table 2 illustrates educational attainment among the out-of-school young people in 2009 and 2014. Among

this non-student group of young people, we observe a drop in elementary and middle school educational attainment, but a rise in the completion of secondary school and higher education levels. Hence, these figures confirm the fact that more youth are transitioning through the formal schooling system and attaining higher education levels in the process. It is also important to note here that most non-student youth in Egypt are vocational school graduates or university graduates.

However, with such a rise in the percent of educated young people (with post-secondary education) who completed their education, labor force participation rates among the non-student youth aged 15-29 declined from 51.7% in 2009 to 49.4% in 2014. For non-student male youth, labor force participation declined from 86.4% in 2009 to 79% in 2014, while stayed around 18% for female youth during the same period (Table 3). The decline, among young males, was more pronounced among those who have post-secondary education levels (both post-secondary institutes and university or above levels). The same was observed for young educated females, excluding those post-secondary institute graduates who have seen their participation rising. This may highlight that more educated young people tend to participate less in the labor market in 2014 compared to 2009. It is also important to notice that, overall, male labor force participation is more than four times greater than that of females, even among those who ended their schooling, emphasizing the low levels of female youth labor force participation. Yet, Table 2 shows that education matters for young females since their participation is highest among university graduates and lowest among those with less than secondary and the illiterate group. The scenario is reversed for young males, whereas their participation is highest among elementary school graduates and lowest among illiterate youth in 2014, similarly to 2009.

On the unemployment front, we found that the standard unemployment rate of youth aged 15-29 years old has declined from 16.1% in 2009 to about 13.6% in 2014. This is mainly due to the decline of the male youth unemployment rate from 13% to 9.5% during the last five years. In contrast, the female youth unemployment rate peaked up from 31.1% to 33.4% in 2014. However, this decline in the male youth unemployment rate is more than offset by the aforementioned increase in the population outside of the labor market. As shown above, this decline was not associated with an increase in the employment rate among males, but is rather due to the observed decline in male labor force participation. Similarly, the increase in females' unemployment rate goes in line with the previously discussed increase in female labor force participation.

To sum up, a quick investigation of the unemployment rate alone may lead to a misleading conclusion regarding the wellbeing of the labor market in the aftermath of the January 25th revolution. A cautious examination of other labor market indicators demonstrates that youth labor market conditions have in fact worsened since 2009. The decline in the unemployment rate was not associated with an increase in employment levels; instead it was due to a remarkable decline in youth economic activity rates. Also, the share of employment in the government and in formal and informal private wage sector has declined, leading many youth to shift to irregular wage and non-wage jobs

4. Data and Stylized Facts

This paper uses recent data from the nationally representative 2014 Survey of Young People in Egypt (SYPE). SYPE is the most comprehensive source of data on young people key life transitions in Egypt today, including education, employment status, unemployment, job mobility, wage earnings, migration, family formation, health and sexuality, and civic and political participation. SYPE round in 2014 re-interviewed the same sample of young people surveyed in it's the first round of the survey in 2009 in all governorates of Egypt. The initial 2009 SYPE round

targeted a nationally-representative sample of 15,029 young people aged 10 to 29, thus encompassing both "youth" and "adolescents". The purpose of this age range was to track young people throughout the complete duration of their transition to adulthood, allowing for an extended period to account for the phenomenon of delayed marriage and in some cases transition to productive work (Assaad and Barsoum 2007).[1] In the 2014 round we successfully tracked 10,916 young individuals in the age range of 13 to 35.

The analysis of this paper focuses on the sample of young people aged 15-35 in the 2014 SYPE interview. We also limit the analysis to those who finished schooling between 2005 to 2012, in order to capture the effect of the 2011 uprisings on the dynamics of access to first job while taking into consideration the food and financial crisis that might have also affected the labor market prior to 2011. This leads to a sample of about 3,524 youth graduates aged 15-35 from eight consecutive cohorts of graduates: two cohorts before the financial crisis (2005-2006), three cohorts during the financial crisis (2007-2009) and three cohorts following the 2011 uprising (2010-2012). We include those who graduated or left schooling in 2010 among the last group, because most of them have actually started or continued searching for a job in 2011. The availability of cohorts prior and during the financial crisis in addition to cohorts during and after the revolution allows us to capitalize on the natural experiment of the January 25th revolution while taking into account the potential effects of the financial crisis that may have preceded the revolution effects.[2]

Table 1 shows the pattern of overall transition to first job by graduation cohort and gender for this group of eight graduate cohorts. Around 49.2% of this group of graduates found a first job whereas the remaining never transitioned to work (either still unemployed or out of labor force) till 2014. There is an important gender gap in the transition pattern where only 17.2% of the young women's sample transitioned to a first job compared to 75.7% of young males. As expected the likelihood of finding a job increases with the time spent on the labor market, particularly for males. The earlier cohorts had more time to search for a first job and thus were more likely to accomplish their transition to the labor market than the younger cohorts who have not been exposed to the same time frame.

Accordingly, a proper analysis of the transition to first job needs to correct for such potential job search duration of different graduate cohorts. In this paper, we analyze the transition dynamics within a fixed period of time, namely 18 months after the graduation date. We are limiting the exposure time to 18 months to be able to track the 2012 graduates for the same time window as the earlier cohorts of graduates. If we assume that graduation occurs in June of every year and we know that the 2014 SYPE interview started in November/December, then an exposure time of about 18 months since graduation is the maximum we can observe in the data for many of the 2012 graduates' cohort. Hence, in order to avoid any potential bias resulting from unequal periods of potential job search, the following analysis of this paper focuses on comparing early employment outcomes—within a fixed exposure window of time—across different cohorts of graduates.

[1] See Population Council (2010) for more details on the 2009 SYPE sample and its sampling weights.

[2] The labor market adjustments during the financial crisis period have been highlighted in several studies. Assaad and Krafft (2015b) and Roushdy and Gadallah (2012) found that a decline in the job creation rate and an increase in the job destruction rate were observed during that crisis period.

4.1. Prospects of first job within 18 months of ending school

Figure 1 shows the evolution in the percent of youth who secured a job within 18 months of leaving schooling by graduation cohort.[3] Among males, the lowest rates of transition to a first job with 18-month of leaving school are observed among those graduating in 2006 and 2009. The percent of young men who transitioned to a first job within 18-monht from graduation declined from 58.3% in 2005 to 49.1% in 2006. Afterwards, young men started to experience an increase in their transition rates during 2007-2008. However, this increase was followed by a sharp decline once again in 2009. The decline observed in 2006, might be due to the fact that 2006 represented the peak of the youth bulge that may have been translated into an important labor supply pressure on the Egyptian labor market (Assaad and Krafft 2015a). There was a slight rise of work transition within 18 months among youth graduating in 2011 (53.6%), but this trend was slightly reversed for the 2012 graduation cohort (52.7%).

As for young females, the gender gap in transitioning to the labor market is persistent across different cohorts of graduates, as shown by their lower rates of finding a first job within 18 month of leaving education, as compared to their males' peers. Young women experienced a different scenario than their men peers. The percent of young women who found a first job within 18-month actually peaked in 2006 and 2009, as compared to a year before and a year after. The percent of finding a job among females increased from 9.3% among the 2005 graduates to 12.1% among the 2006 graduates then declined again to 35.7% for the 2007 graduate cohort. Also, the percent of young women who transitioned to a first job increased from 10.8% in 2008 to 13.6% among the 2009 graduates. Afterwards, a noticeably increased hardship in entering the labor market was experienced among the 2010 cohort of female graduates where only 9.1% of them managed to transition to a first job within 18-month. The highest prospects of finding a first job among females was observed among those who graduated in 2012 (13.9%).

Such a preliminary investigation seems to indicate that transition to first job among males' new entrants to the labor market slightly stalled starting from the 2009 cohorts onwards, albeit with slightly increasing transition rates in 2011. Yet, younger female graduates in both 2011 and 2012 seemed to experience higher work transition rates than their elder peers.

Let us now move to investigating the quality of this transition to a first job. Figure 2shows the patterns of transition to a first good quality job within 18-month from finding education. We define a job as a good quality job if it is a public-sector job, a formal regular waged job in the private sector, or an informal regular waged job in a formal private sector firm. A formal job is a one that provides the worker with either the benefit of social security coverage or a legal contract. We opt to group an informal first job in a formal firm among the good quality jobs since it is likely to lead to acquiring the social insurance or a contract benefit within the same firm after few months of job start (Roushdy and Sieverding 2015).

There are two cohorts of graduates, mainly the 2008 and 2012 cohorts, who were most disadvantaged in terms of access to first good quality job within 18-month of their graduation, relative to their previous cohorts. First, only around 5.9% of 2008 graduates secured a good job within 18-month as compared to 10.7% of their 2007 peers. As for the 2012 graduates, they experienced a sharp decline in transition to a first good quality job (6.8%) as compared to the 8.6 among the 2011 graduate cohort.

[3] As mentioned above, throughout this paper, the group of youth who never transitioned to a first job includes those who were out of the labor force since graduation.

In short, following both the financial crisis year of 2008 and the 2011 revolution year, the percent of youth transitioning to a job increased, but the quality of this first job significantly decreased. This confirms the evidence of previous research that during crisis time youth are more inclined to accept any quality job rather than waiting for a good job. In other words, youth expectation of getting a good job seem to have declined as they observed the bad economic and labor market conditions following the financial crisis and the 2011 uprising (Amer 2015; Heyne and Gebel 2016).

4.2. Transition to first job by educational attainment

As shown in Figure 3 the likelihood of finding a first job, within 18 months of leaving school, among young people varies greatly by education levels. Although, before the financial crisis year, university graduates had been enjoying the highest level of transition to first job within 18 month from leaving school, recent cohorts of university graduates had significantly lower chances of transitioning to a first job. The percent of university graduates who transitioned to a first job declined to 27.9% among the 2012 cohort from almost 47.4% of the 2005 graduates.

This declining trend was mainly observed among young males, where only 44.7% of 2010 male university graduates secured a first job within 18 months of graduation, compared to over 59.1% of the 2007 male graduates and 67.1% of the 2005 male graduates (Figure 4). Moreover, the 2012 university graduates were the least likely to find a job within a year and a half (31.2%) as compared to their peers who graduated in earlier years. This contrast what females' university graduates experienced during the 2005-2012 period (Figure 5). Similar to the overall trend observed above for females (Figure 1), the likelihood of transitioning from school to work among female university graduates seem to have peaked in 2006, a year following the financial crisis (30.4% in 2009), and a year following the revolution (23.9% in 2012). In contrast, the lowest rates of transition to work was observed in 2010 (16.7%) and 2005 (18.1%).

It is also interesting to notice that both below secondary and secondary graduates experienced a decline in rates of transition to first jobs, from 32.5% in 2008 to 18.2% following the financial crisis year and from 42.4% in 2008 to 32.2% in 2009, respectively. In contrast, cohorts from 2010 onwards have enjoyed increasing rates of transition to work, reaching about 33.3% among the 2012 below secondary graduates and 34.4% among the 2012 secondary level graduates. Once again, these overall trends are mainly affected by the young men transitions levels, rather than that of women.

The 2009 graduates from all education levels, except post-secondary institutes, were less likely to transition to a first job, as compared to their 2008 graduate peers. This suggests that the financial crisis might have increased the hardship of labor market first entry. However, the declining trend of transition to a first job that continued among university graduates after 2009 suggests that this trends are mainly mirroring the quality of first jobs offered after both the financial crisis and the 2011 revolution. Indeed, the declining trend in transition to a good quality first job, as shown in Figure 2, contribute to explaining why males' university graduates who finished education in 2011 and 2012 experienced a slower level of transition to work. Good quality jobs becoming scarce resulted in longer waithood among those who could afford waiting for a good job, presumably the higher educated, but lower expectations of finding good jobs among the low educated that pushed them to enter the labor market and accept a first job at a faster pace (Assaad et al. 2010). This goes in line with the recent literature on school-to-work transition in Egypt following the revolution which argues that the better educated youth prefer the modern transition which involves voluntarily waiting in non-employment till finding a job that matches their expectations (Assaad and Krafft

2014). As for secondary or below graduates, they are typically less likely to afford waiting for long for a good job. Their reduced expectations of getting a good job, following the economic downturn of the transitional period, seem to have induced their acceptance of any job. In other words, the less educated youth were more likely to lean towards a traditional transition (Assaad and Krafft 2014). This scenario while holding for young men, seem not to apply for young women university graduates who experienced higher rates of transition to first job in 2011 and 2012, as compared to their peers who graduated in 2010.

4.3. Type of first job within 18 months of ending school

In order to further understand the above discussed trends and its link with first job quality, this section explores the type of first jobs by different graduation cohort. Figures 7 and 8 show the share of each job type from total first job secured by youth within 18 month from leaving education by graduation cohort. Informal regular job in an informal firm and irregular jobs have always been making the largest share of first job across all graduation cohorts. In particular, irregular jobs has been heaping up during both the economic crisis time and the recent transitional period of Egypt. The share of youth who got an informal regular wage job in informal firms or an irregular job increased to 66.0% among the 2012 graduates, as compared to around 55.9% and 51.7% among the 2010 and 2011 graduate cohorts, respectively.

In contrast, the share of formal private sector wage jobs has significantly declined from 9.5% among the 2010 graduates to almost null in 2011 and to 2.6% in 2012. This substantial decline in the share of formal private jobs seem to be the main drive of the above-mentioned decline in the transition rate to a good quality job following the 2011 revolution (Figures 2).

5. Methodology

In order to investigate the school-to-work transition, this paper relies on two types of analysis: probability models and survival analysis techniques. First, following Farcnik and Domadenik (2012), we estimate the probability of transition to first job within a certain time interval, namely 18 months from the date of end of schooling using probit models. As mentioned above, the choice of this time interval allows the inclusion of the 2012 graduates' cohort while avoiding any potential censoring bias for the 2012 cohort, compared to earlier cohorts. Also, this allows us to follow three graduate cohorts (starting from the 2010 cohort) who made their transition during and after the 2011 revolution.

We estimate the model for three outcomes of interest. The first outcome is securing any job in 18 months, defined by a binary variable that takes the value of 1 if the individual found any job within 18 months after completing education, and 0 otherwise, including those who transitioned to a first job after this time interval as well as those who never transitioned. The second outcome is the probability of finding a good quality job within the same 18-month interval from completing education. As mentioned above, a good quality first job is defined as a public-sector job, a formal regular wage job in the private sector, or an informal regular wage job in a formal firm in the private sector. The third outcome is finding a good quality job among those who made the transition within 18 months.

We control for a large set of individual characteristics, including education level (4 categories: illiterate or read and write (reference category), secondary level, post-secondary institute, and university or above), a dummy for whether the father's education level is above secondary (as a proxy for social class), and an interaction between the latter and the individual's own education level being university or above. This is to test the impact of having a higher educated parent among

university graduates. We also control for the region of birth instead of the current residence to avoid potential endogeneity of current place of residence and work decision. This region variable is grouped in six dummies: Urban governorates (reference category), urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Lower Egypt and Frontier governorates. Finally, year of leaving schooling/ graduation is included where 2005 is the reference year.

Second, survival analysis techniques, including Kaplan-Meier (KM) survival curves as well as discrete time hazard analysis, are used to study the time to transition to a first job while also controlling for the different graduation cohorts before and after the 2011 uprisings. The time to find the first job is measured, in months, as the difference between the date of end of schooling and the date (month and year) of first job start.[4] Survival analysis takes into consideration censored observations, i.e. those individuals who completed their education but did not find a first job until the time of the survey interview (2014).[5] While the time to find a first job is continuous in nature because the job search is a continuous process, we opt to estimate a discrete-time hazard model since the data includes tied observations around specific months (Assaad et al. 2010, Singer and Willet 2003, Sueyoshi 1995).

Based on Jenkins (2005), for each month c_j where j indicates the number of the month the person was at "risk" of finding a first job the discrete hazard rate for an intrinsically continuous variable for an interval of time $(c_{j-1}, c_j]$ can be expressed as

$$h_i(t) = \Pr[c_{j-1} < T \leq c_j | T > c_{j-1}] \quad (1)$$

Where $(c_{j-1}, c_j]$ represents time periods, namely one month in our analysis. The hazard rate indicates the probability that individual *i* finds his/her first job in the month c_j provided he/she was still searching for a job up to month c_{j-1}. Because we assume that duration to first job is continuous, we opt to estimate a logistic complementary log-log hazard function, as it is a discrete time model that satisfies the underlying continuous time proportional hazard assumption. The continuous hazard function in the j[th] month can be expressed as

$$h_{ij} = h_0(t)\exp(X_{ij}'\beta) \quad (2)$$

Where $h_0(t)$ is the baseline hazard function that indicates the duration dependence. We can derive the discrete time hazard from equation 2 as:

$$h_j(X_{ij}) = 1 - \exp\left[-\exp\left(X_{ij}'\beta + \gamma_j\right)\right] \; \gamma_j = log \int_{c_{j-1}}^{c_j} \lambda_0(\tau) d\tau \quad (3)$$

The discrete time integrated baseline hazard is given by γ_j which again summarizes the duration dependence (see Jenkins (2005) for mathematical derivation). The set of covariates X_{ij}' is allowed in this model to include time-invariant as well as time-variant variables. For instance, we control for only time-invariant variables, as discussed above. In order to avoid the potential high correlation between the cohorts of ending school and the time to first job, we introduce two measures. First, instead of controlling for separate years of end of schooling, we control for whether leaving education happened after 2010. Second, we assume a linear exponential specification for the baseline hazard function, introduced by the log of time to first job in months.

[4] We assume that the graduation happens in the month of June. A similar month unit measurement is applied by Assaad et al. (2010).

[5] Following the previous literature, time to first job is considered equal to zero for young people who started their first job before completing their schooling (Amer 2009, Assaad et al. 2010).

We suspect that using a semi-parametric specification for the hazard function, such a piece-wise constant one, could bias the results due to potentially correlation.[6] .

6. Empirical Results

6.1 The effect of graduation cohort on transition to first job and its quality

Table 4shows the probit marginal effects computed for the probability of transition from school-to-work within 18 months of leaving school among young people age 15 and above (all, men and women). Columns 1 to 3 show the results for the first outcome that is the transition to any first job within this time interval for all, men and women respectively. Columns 4-6 show the regression results using as outcome variable the transition to a good quality job within 18 months from completing education. Columns 7-8 show the results of estimating the probability of finding a good quality job, only among those who transitioned within 18 months.

Across the three outcomes, there is no overall significant impact of the year of end of schooling on any of the three outcomes of interest. However, the results highlight an interesting gender difference in transition from school-to-work, and support the recent findings by Assaad and Krafft (2014) which highlights the important role of tertiary education in shaping the type of school-to-work transition, especially for women. While the effect of education is insignificant for young men in their transition to any job within 18 months, this is not true for young women. Women's likelihood of finding first job, significantly increases (at the 95% confidence level) by about 16 percentage points for post-secondary institute graduates and by 11 percentage point for university or above graduates, compared to their non-educated peers. This shows how education helps women participate in the labor market, as early noticed in Table 2. Furthermore, having a tertiary education significantly increases the likelihood of young women's transitioning to a good quality job within 18-month. Specifically, post-secondary institute and university or above female graduates are 36 and 25 percentage points, respectively, higher to find a good quality job than their illiterates or can read or write peers. Thus, the observed positive effect of education on young women's work transition is mainly driven by their higher likelihood of finding a good quality job, indicating that women may not participate in the labor market unless they could secure a good quality job. This is confirmed by the fact that while young women are 41.6 percentage points lower than young men in making their transition to any first job (column 1), conditional on ever transitioning to a first job they are 25.3 percentage point more likely than men to transition to a good quality job (column 7). This is mainly due to a selection effect: young women generally prefer to either transition to a good quality job or not to engage in work.

As for young men, as mentioned above, there is no significant impact of education on the transition to any first job, indicating that they probably work in any case. Nevertheless, tertiary education plays a positive role in the quality of their transition; both post-secondary institute and university graduates are more likely (with 19 and 20 percentage point, respectively) than the reference group to find a good quality job within 18 months of ending school.

Social class, captured by having a father with above secondary education, does not have a significant impact, except for the third set of regressions (column 7 and 8). Among those who could find a job within 18 months, the probability of finding a good quality job is 8.8 percentage points higher for young men whose fathers have a higher than a secondary education relative to those whose fathers have a secondary or less than a secondary education. This goes in line with

[6] As will be discussed in the conclusion, in later version of this paper, we aim to estimate the model with piece-wise specification in order to allow more flexibility and as measures of robustness checks.

the findings of Assaad and Krafft (2014) showing that the social class boosts the chances of good quality jobs.

Some interesting regional differences are also revealed. While young men from rural upper Egypt experience an increased probability of transition to any first job (with 8.5 percentage point) than their peers in urban governorates, they are significantly less likely (by 4 percentage point) to find a good quality job within 18 months of ending school. Young men in urban upper Egypt also have lower likelihood of finding good quality jobs. If we assume that these young people stayed in their region of birth and did not move to urban parts to find a job, the limited supply of formal jobs in these regions could be the main reason behind these results (Assaad et al. 2010). As for young women, they have lower probability of ever finding a first job within 18 months in urban Lower Egypt, urban Upper Egypt, and the Frontier governorates, compared to the reference category. This could be driven by the lower rates of engagement in market work in those regions and points to the disadvantage that women endure in the labor market outside the metropolitan areas.

6.2 Survival Analysis of the time to first job/first good job

Turning to the results of the survival analysis technique, the proportion of young people who transitioned to a first job by time to first job and graduation year is shown in Figure 8. In line with the stylized facts (Figure 1), the proportion of the 2006 graduates who made their transition to the labor market is lower (slightly above 60%) than their 2005 peers (around 70%) with a median of around 36 months compared to 28 months, respectively. Those who graduated in 2007 and 2008 had slightly better chances with a lower median of about 24 months to the first job. However, the 2007 cohort has slightly higher proportion of transition to first job by 60 months (around 75%) compared to the 2008 cohort (around 70%). The 2009 and 2010 graduates' cohorts are quite similar to the 2005 graduates. Yet, the proportion of 2011 and 2012 graduates who transition to a first job is quite lower (slightly less than 50% and 35%, respectively) than their previous peers.

Results from the discrete time proportional hazard model are presented in Table 5, showing the estimated exponentiated coefficients, which can be interpreted as hazard ratio (ratio of the hazard of finding a job in each time period (month) to the baseline hazard). This means that coefficients greater (lower) than 1 indicate that the hazard rate for each time period increases (declines) with respect to the reference hazard, implying a faster (slower) transition. As mentioned above, the data is organized in a person-month structure where an individual is observed as many number of months as he/she was at risk of the event (which is finding a first job). Therefore, our sample consisting of 3,524 individuals, when expanded through spells of job search lead to a sample of 135,646 person-months observations. The number of months is cut to 100 months due to low proportions of event happening after this cutoff. Duration dependence is introduced in logarithmic form, as discussed above in Section 5.

While results confirm the probit model findings shown in Table 2, they shed more light on other several aspects. As previously found in the probit results, education is an important factor in determining young women's transition from school to work. The hazard rate of work transition, at each time period, for young women with post-secondary and university education is around 2.7 and 3 times higher, respectively, than that of women with no education. Moreover, the hazard rate also increases sharply for females with university education who have fathers with an above secondary education (2.5 times higher than the reference group). This reflects that access to the labor market for a young woman is conditional on her social class, captured here by father's education, as well as whether she has a university education or not. Again, women's transition to first job is significantly less likely to happen in Upper and Lower Egypt, as well as in Frontiers

governorates than in urban governorates. Specifically, women living in Lower Egypt (both urban and rural) as well as urban Upper Egypt experience a lower hazard rate (0.32% and 0.58% lower, respectively) of work transition than their peers living in urban governorates. We find no effects of graduates' cohorts on men and women's work transition. The duration dependence is negative and significant suggesting that the longer the time elapsed since graduation with no job, the lower the probability to find a first job. This holds for both men and women and goes in line with the recent evidence from Heyne and Gebel (2016).

In order to better understand the reasons behind such a negative dependence, we estimate the hazard rate to the first good quality job where the time to event is months since leaving school where the individual is at risk of finding a good quality job (Table 3). There is an important cohort effect observed when studying the quality of the transition. Those who finished school after 2010 (included) have almost 70% lower hazard rates to find a good quality first job compared to those who graduated before 2010. This could be a signal of an increasing hardship in getting a good quality job among recent graduates' cohorts, although there is no evidence of a slower transition to any type of work in general.

Tertiary education boosts the hazard rates of finding good quality jobs relative to no education, especially among women with post-secondary institute education (5 times higher) and university education (10 times higher). This also reflects the very low hazard rates of the reference group (women who are illiterate or can read and write) in having good quality jobs. More privileged family background, captured by father's high education level, significantly increases chances of transitioning to a good quality jobs for both men and women.

The duration dependence, for both men and women, is always negative and significant, implying that the transition rate to a good quality job is significantly lower with longer time without working since end of school. While this needs further investigation, mainly by either adopting a semi-parametric specification or allowing for non-linear specification for the duration dependence, this could be a first signal that we observe the third type of transition discussed above: long unemployment spells and bad jobs at the end or no participation at all (in the case of women). For young women, this is expected since a large part of them aspires for a public sector job, and end up never working—i.e. never transitioning. As for young men, this result suggests mixed evidence and needs further investigation.

7. Conclusion

This paper attempts to update the state of knowledge on youth school to work transition in Egypt after the January 25^{th,} 2011 uprisings. Transition from school to work in Egypt is crucial to capitalize on the "youth bulge" induced window of opportunity in terms of economic growth and development. However, given the static labor market and the low net job creation, transition became complicated. This paper examines the transition to a first job across different cohorts of graduates between 2005 to 2012, in order to investigate how easy or difficult this process became after the multiple events and crisis Egypt has experienced during this period. To answer this question, we first estimate the probability of securing a first job, taking into account the quality of this job, within 18 month of ending school. As for the second, we use survival analysis techniques mainly by fitting a discrete time proportional hazard model.

Probit models show no significant effect of the year of ending school on the probability of transition or on the quality of such transition, both within 18-month period. However, the hazard time model suggests that the likelihood to find a good quality first job has significantly declined

for young people who finished education after 2010, as compared to those who graduated before 2010. Also, tertiary Education seems to play an important role in shaping the transition to first job and its quality, particularly among young women.

Our findings will also be verified through further investigation. We plan to take into account parents' occupation as well as time-variant covariates in estimating the discrete time-hazard models, namely local yearly unemployment rates. Also, sensitivity analysis will be conducted assuming different specifications for the baseline hazard function to allow for further flexibility in the duration dependence, namely (1) a piece-wise constant specification and (2) a non-linear specification.

References

Amer, Mona. 2002. Youth Labor Market Trajectories: A Comparison of the 1980s and 1990s. In R. Assaad (Ed.), *The Egyptian Labor Market in an Era of Reform* (pp. 223–257). Cairo, Egypt: The American University in Cairo Press.

Amer, Mona. 2009. The Egyptian Youth Labor Market School-to-Work Transition, 1988-2006. In R. Assaad (Ed.), *The Egyptian Labor Market Revisited* (pp. 177–218). Cairo, Egypt: The American University in Cairo Press.

Amer, Mona. 2012. The School to Work Transition of Jordanian Youth. Economic Research Forum (ERF). Working paper No.686. Cairo, Egypt.

Amer, Mona. 2015. Patterns of Labor Market Insertion in Egypt, 1998-2012. In R. Assaad & C. Krafft (Eds.), *The Egyptian Labor Market in an Era of Revolution*. Oxford, UK: Oxford University Press.

Angel-Urdinola, D. F., & Semlali, A. 2010. Labor Markets and School-to-Work Transition in Egypt: Diagnostics, Constraints, and Policy Framework. Munich, Germany: MPRA Paper 7674, University Library of Munich.

Assaad, Ragui, Christine Binzel, and May Gadallah. 2010. Transitions to Employment and Marriage Among Young Men in Egypt. *Middle East Development Journal*, 2(1), 39–88.

Assaad, Ragui and Ghada Barsoum. 2007. Youth Exclusion in Egypt: In Search of "Second Chances." Middle East Youth Initiative Working Paper, No.2. Washington, D.C.

Assaad, Ragui and Fatma El-Hamidi. 2009. "Women in The Egyptian Labor Market." In The Egyptian Labor Market Revisited. Ragui Assaad (ed.). Cairo: American University in Cairo Press, pp. 217-257.

Assaad, Ragui and Caroline Krafft. 2014. Youth Transitions in Egypt: School, Work, and Family Formation in an Era of Changing Opportunities. Paper Presented at the Silatech Workshop, June 2014, Qatar.

Assaad, Ragui and Caroline Krafft. 2015a. The Evolution of Labor Supply and Unemployment in The Egyptian Economy: 1998 -2012. In R. Assaad & C. Krafft (Eds.), *The Egyptian Labor Market in an Era of Revolution*. Oxford, UK: Oxford University Press.

Assaad, Ragui and Caroline Krafft. 2015b. The Structure and Evolution of Employment in Egypt: 1988-2012. In R. Assaad & C. Krafft (Eds.), *The Egyptian Labor Market in an Era of Revolution*. Oxford, UK: Oxford University Press.

Farcnik, Daša & Polona Domadenik. 2012. Has the Bologna reform enhanced the employability of graduates? Early evidence from Slovenia. *International Journal of Manpower*, Emerald Group Publishing, 33(1), pp. 51-75, June.

Heyne, Stephanie and Michael Gebel. Education Effects on the School-to-Work Transition in Egypt: A Cohort Comparison of Labor Market Entrants 1970-2012, *Research in Social Stratification and Mobility (forthcoming 2016)*. http://dx.doi.org/10.1016/j.rssm.2016.02.007

Huitfeldt, Henrick and Kabbani, Nader. 2005. Returns to Education and the Transition from School to Work in Syria. Paper Presented at the Twelfth Annual Conference of the Economic Research Forum (ERF). Cairo, Egypt.

Jenkins, Steven. 2005. *Survival Analysis*. https://www.iser.essex.ac.uk/files/teaching/stephenj/ec968/pdfs/ec968lnotesv6.pdf

Krafft, C. and R. Assaad. 2014. Why the Unemployment Rate is a Misleading Indicator of Labor Market Health in Egypt. Policy Perspective No.14. Economic Research Forum, Cairo, Egypt.

Population Council. 2010. The Survey of Young People in Egypt: Final Report. Cairo: Population Council.

Roushdy, Rania and Gadallah, 2012. Informality and Labor Market Dynamics during Economic Downturns: Evidence from Egypt. Gender And Work In The Mena Region Working Paper Series, Number 26, September. Population Council, Cairo, Egypt.

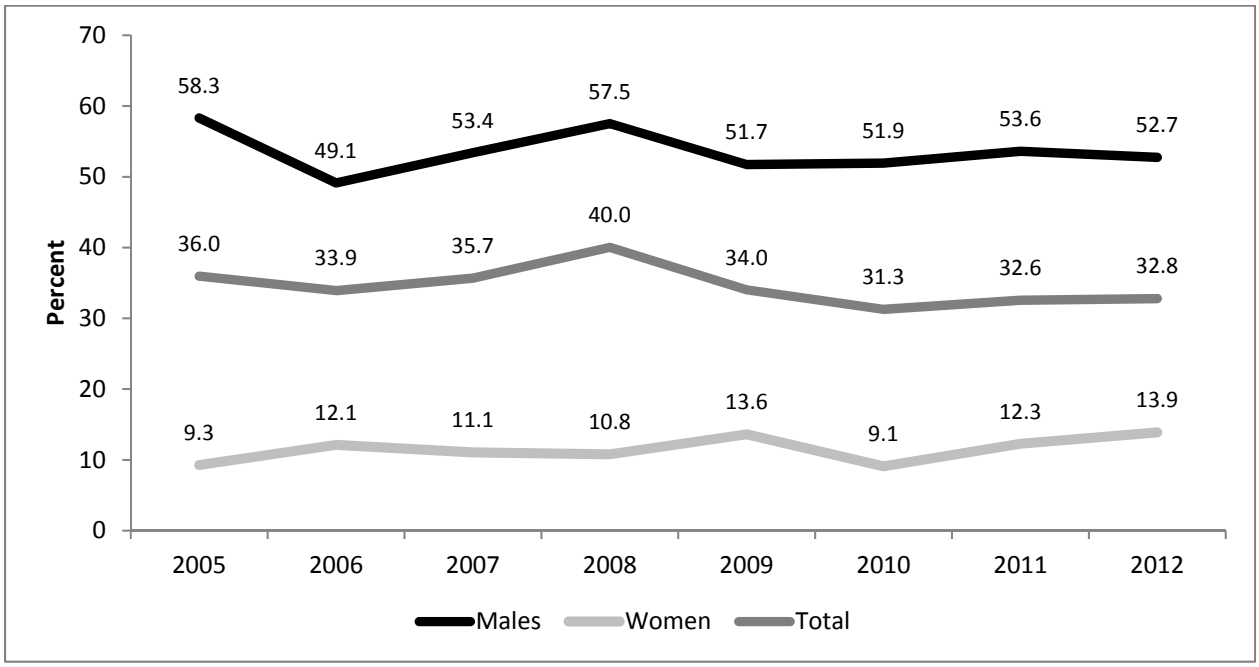
Singer, Judith D., John B. Willet. 2003. *Applied longitudinal data analysis. Modeling change and event occurrence*. Oxford: University Press.

Sueyoshi, Glenn T. 1995. A Class of Binary Response Models for Grouped Duration Data. *Journal of Applied Econometrics,* 10 (4). Wiley: 411–31. http://www.jstor.org/stable/2285055.

Tansel, Aysit & Tasci, H. Mehmet, 2010. Hazard Analysis of Unemployment Duration by Gender in a Developing Country: The Case of Turkey. IZA Discussion Papers 4844, Institute for the Study of Labor (IZA).

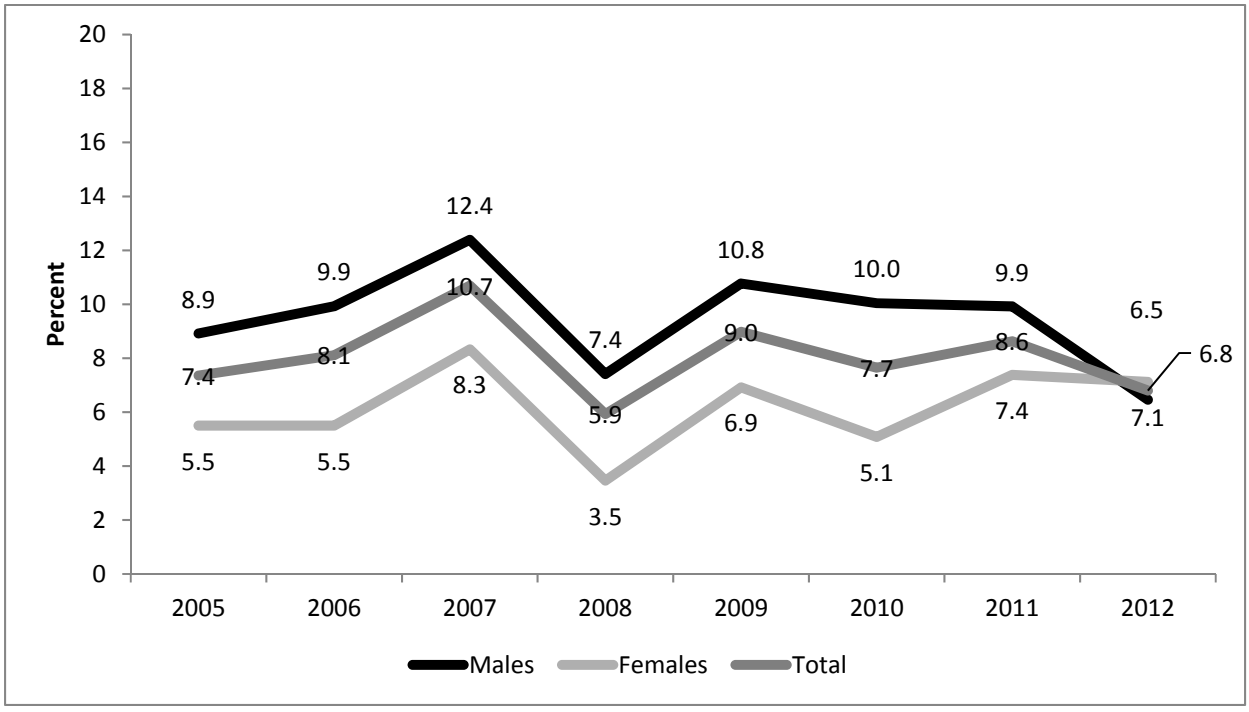
World Bank. 2007. World Development Report 2007: Development and the Next Generation. Washington, DC: World Bank.

Figure 1: The Percent of Youth Transitioning to A First Job Within 18 Months of Ending School by Graduation Cohort, Among All Youth, Ages 15-35, SYPE 2014



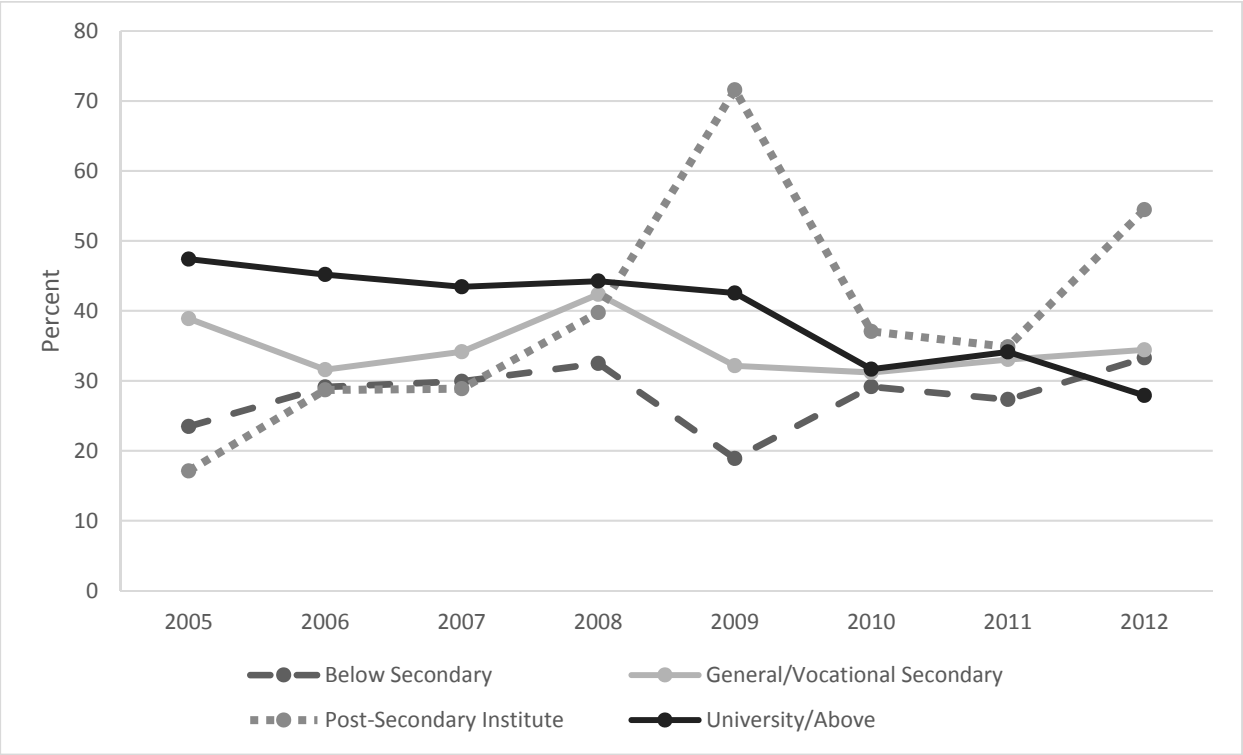
Source: Constructed by the authors using SYPE 2014

Figure 2: The Percent of Youth Transitioning to A Good Quality First Job Within 18 Months by Graduation Cohort, Youth Ages 15+, SYPE 2014



Source: Constructed by the authors using SYPE 2014

Figure 3: The Percent of Youth Transitioning To A First Job Within 18 Months by Graduation Cohort and Education Attainment Level, Youth Ages 15+, SYPE 2014



Source: Constructed by the authors using SYPE 2014

Figure 4: The Percent of Youth Transitioning to A First Job Within 18 Months by Graduation Cohort and Education Attainment Level, Males Ages 15+, SYPE 2014

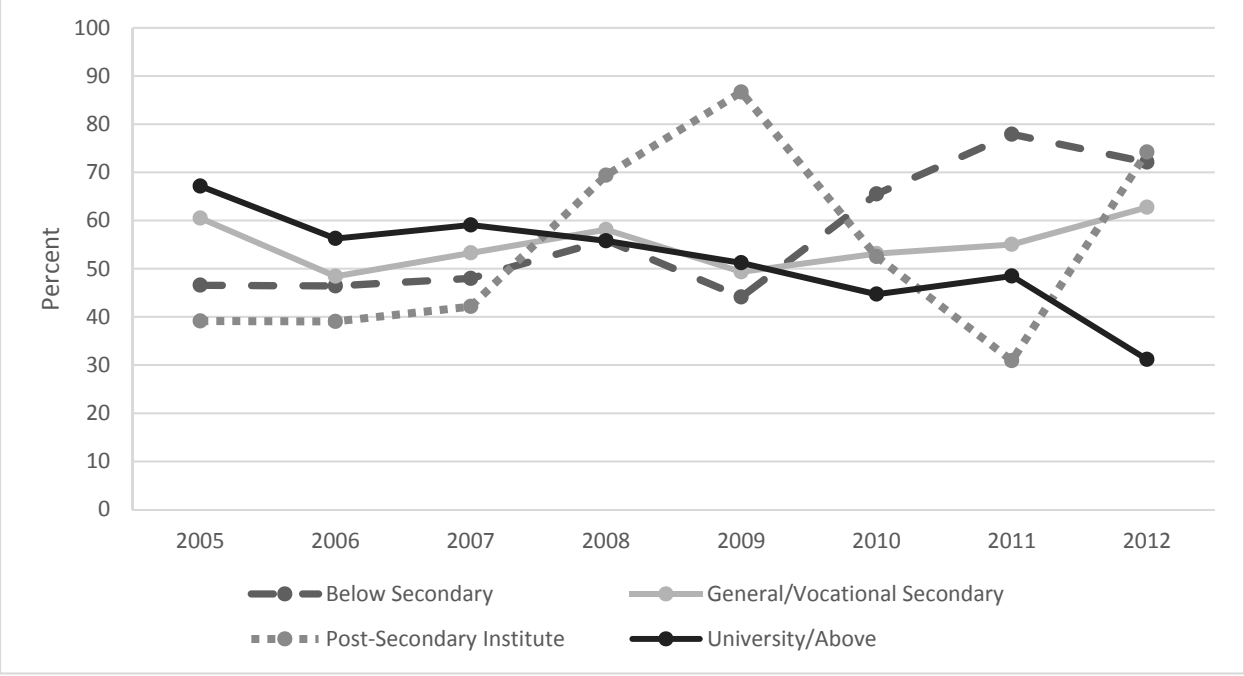


Figure 5: The Percent of Youth Transitioning To A First Job Within 18 Months by Graduation Cohort and Education Attainment Level, Females Ages 15+, SYPE 2014

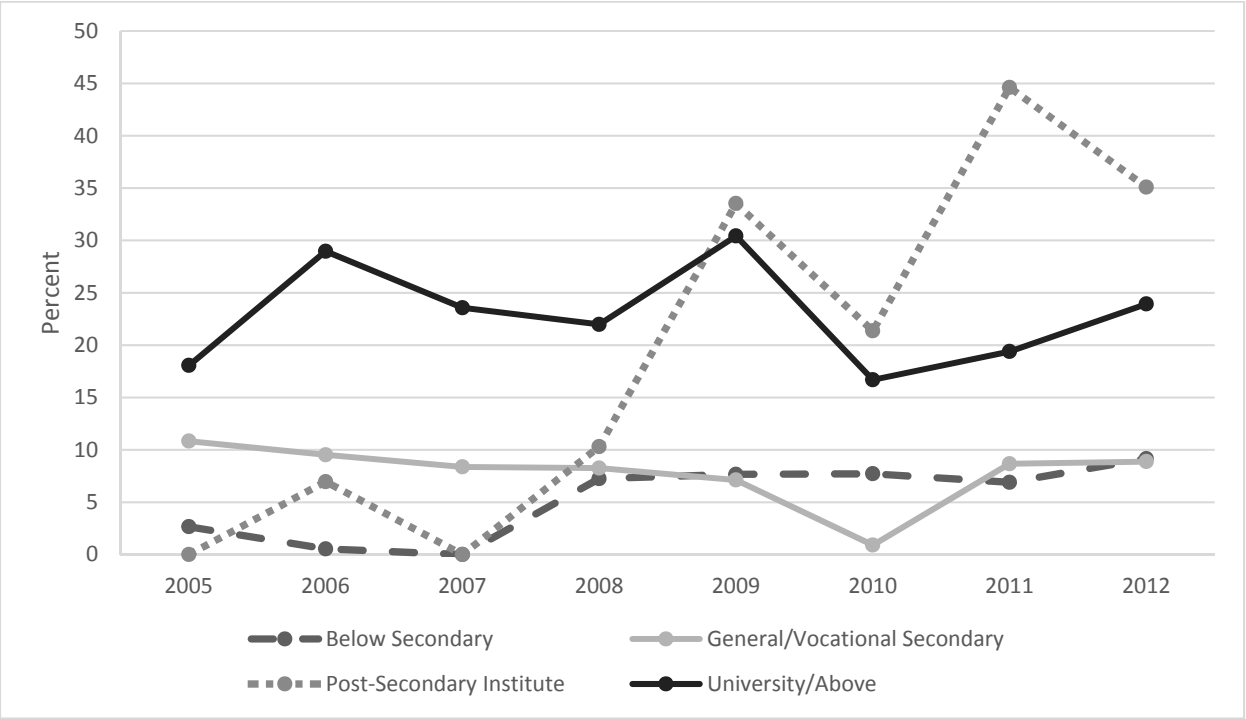
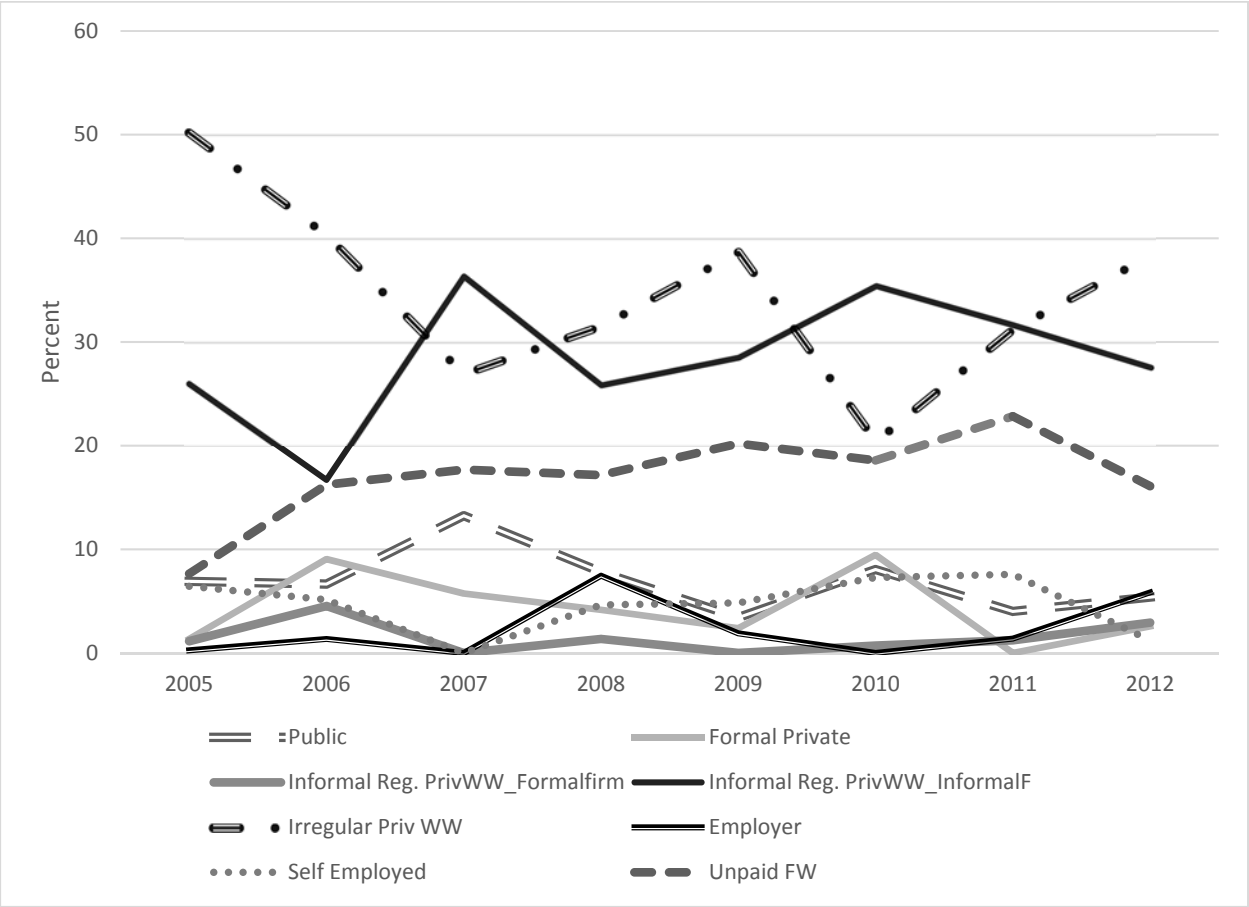
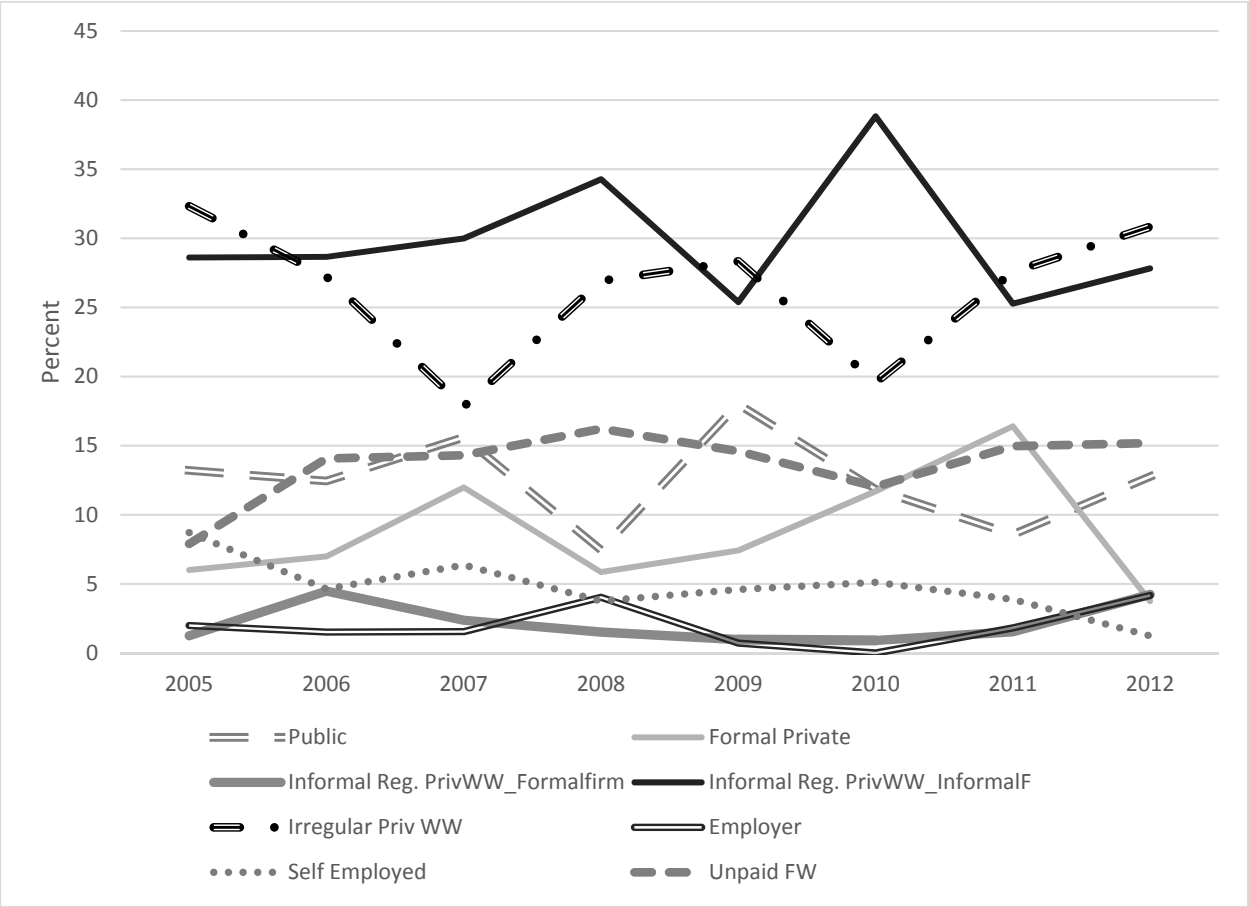


Figure 6: Structure of First Job, Within A Year After Leaving School, by Education Level and Graduation Cohort, Youth Aged 15-35, SYPE 2014



Source: Calculated by the authors using SYPE 2014

Figure 7: Structure of First Job, Within Two Years After Leaving School, by Education Level and Graduation Cohort, Males Aged 15-35, SYPE 2014



Source: Calculated by the authors using SYPE 2014

Figure 8: The Proportion of Young People Who Found a First Job by Time to First Job and Year of End of Schooling, Ages 15+, SYPE 2014

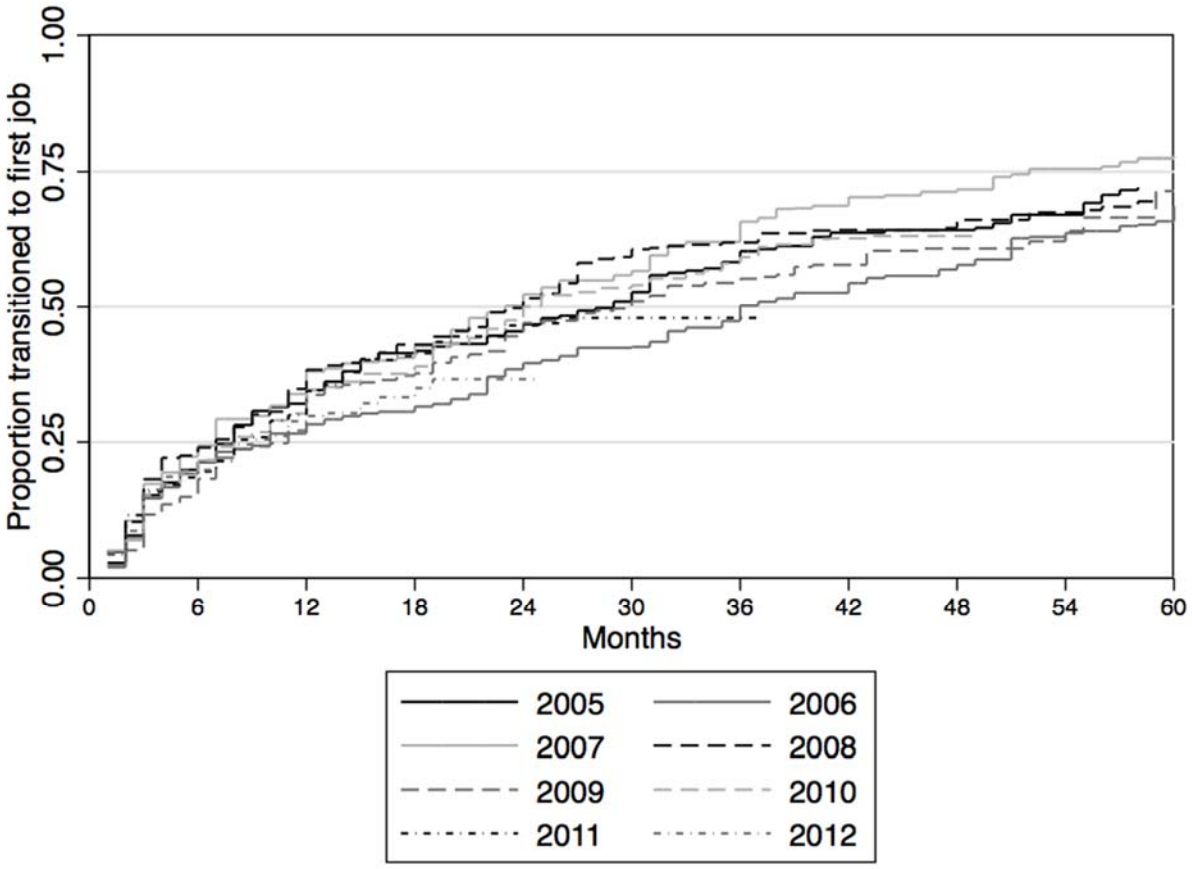


Table 1: Percent of Those Who Completed Their Transition from School-To-Work by Graduation Cohort and Gender, Ages 15+, SYPE 2014

Date End of School	Males	Females	Total
2005	90.55	20.67	58.69
2006	87.06	18.6	58.92
2007	86.52	20.19	58.78
2008	79.32	16.86	55.96
2009	72.9	19.56	48.13
2010	70.74	13.52	43.13
2011	58.78	14.78	36.37
2012	53.17	13.88	32.99
Total	75.67	17.18	49.14
Sample	1,742	1,782	3,524

Table 2: Distribution of Non-Student Young People by Education Level, 2009 and 2014

Education level	2009 Aged 13-29			2014 Aged 13-29			2014 Aged 13-35		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Illiterate	5.8	19.0	12.5	7.7	14.7	11.1	7.9	16.9	12.4
Read & Write	0.0	0.1	0.1	0.8	1.3	1.0	1.0	1.7	1.3
Elementary school	16.0	12.1	14.0	12.0	9.9	11.0	12.1	9.7	10.9
Middle school	15.5	14.0	14.7	10.7	15.9	13.2	10.2	14.1	12.1
General high school	1.7	1.8	1.8	2.5	2.5	2.5	2.4	2.3	2.3
Vocational high school	43.3	36.9	40.0	45.2	37.0	41.2	44.3	36.7	40.6
Post-secondary institutes	3.5	2.9	3.2	3.8	2.8	3.3	3.9	2.8	3.4
University & above	14.3	13.2	13.8	17.4	15.9	16.7	18.3	15.7	17.0
Sample	3,329	4,666	7,995	2,753	3,302	6,055	3,541	4,502	8,043

Source: Calculated by the authors using SYPE 2014

Table 3: Non-Students Labor Force Participation by Education Level and Gender, 2009 and 2014

Education level	2009 Aged15-29			2014 Aged 15-29			2014 Aged 15-35		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Illiterate	76.1	7.1	22.4	76.1	7.3	31.1	79.9	8.3	31.2
Elementary school	89.3	9.9	54.1	84.8	12.4	54.2	87.4	13.1	55.3
Middle school	85.9	9.9	49.3	83.0	8.5	39.8	85.5	8.3	41.4
General high school	71.9	4.3	36.7	77.7	10.8	44.1	79.9	9.1	44.8
Vocational high school	86.8	17.7	54.5	77.7	15.1	50.7	80.6	16.5	52.1
Post-secondary institute	90.5	35.1	64.9	78.7	44.0	64.3	83.0	42.5	66.2
University & above	87.5	46.7	67.6	77.2	41.1	60.4	82.7	43.8	65.0
Total	86.4	18.0	51.7	79.0	17.6	49.4	82.4	18.6	51.0
Sample	3260	4580	7840	2741	3267	6008	3527	4459	7986

Source: Calculated by the authors using SYPE 2014

Table 4: Marginal Effects of The Probit Estimates of Transition to First Job, youth aged 15+, SYPE 2014

	Transition to a first job within 18 months			Transition to a first good quality job within 18 months			Conditional Transition to a good quality first job within 18 months *	
	All	Men	Women	All	Men	Women	All	Men
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	-0.416***			-0.032***			0.253***	
	(0.014)			(0.009)			(0.036)	
Own Educational Attainment Level (*Ref: Below Secondary)*								
General/Vocational Secondary	0.018	-0.008	0.026	0.032	0.009	0.088*	0.043	0.017
	(0.019)	(0.034)	(0.022)	(0.018)	(0.025)	(0.040)	(0.035)	(0.037)
Post Sec. Institute	0.065	-0.025	0.166**	0.232***	0.194**	0.366***	0.389***	0.327***
	(0.039)	(0.064)	(0.061)	(0.049)	(0.063)	(0.104)	(0.068)	(0.084)
University and Above	0.087**	0.037	0.119**	0.196***	0.203***	0.254***	0.380***	0.330***
	(0.028)	(0.047)	(0.036)	(0.032)	(0.042)	(0.075)	(0.057)	(0.062)
Father's Educational Attainment *(Ref: Below Secondary)*								
Father Secondary or Above	-0.036	-0.052	-0.030	0.028	0.042	0.014	0.106**	0.088*
	(0.021)	(0.035)	(0.023)	(0.015)	(0.023)	(0.019)	(0.039)	(0.041)
Interaction: Own*Father's Educational Attainment								
University*Father's Secondary & Above	0.021	-0.068	0.113*	0.007	-0.022	0.036	0.018	0.009
	(0.034)	(0.059)	(0.052)	(0.019)	(0.026)	(0.029)	(0.049)	(0.051)
Region of Birth *(Ref: Urban Governorates)*								
Urb. Lower Egypt	-0.027	0.030	-0.057**	-0.016	-0.018	-0.015	-0.016	-0.050
	(0.025)	(0.045)	(0.018)	(0.012)	(0.020)	(0.014)	(0.035)	(0.033)
Rur. Lower Egypt	0.002	0.043	-0.024	-0.019	-0.023	-0.018	-0.047	-0.055
	(0.020)	(0.034)	(0.019)	(0.011)	(0.017)	(0.013)	(0.028)	(0.029)
Urb. Upper Egypt	-0.022	0.081	-0.078***	-0.036*	-0.050*	-0.024	-0.085	-0.110**
	(0.033)	(0.057)	(0.018)	(0.015)	(0.022)	(0.018)	(0.045)	(0.036)
Rur. Upper Egypt	0.021	0.085*	-0.017	-0.025*	-0.040*	-0.009	-0.085**	-0.094**
	(0.022)	(0.037)	(0.021)	(0.012)	(0.017)	(0.016)	(0.030)	(0.030)
Frontier Governorates	-0.047	-0.029	-0.052*	-0.019	-0.041	0.002	-0.012	-0.061
	(0.028)	(0.050)	(0.022)	(0.016)	(0.022)	(0.023)	(0.047)	(0.042)
Year End of Schooling *(Ref: 2005)*								
2006	-0.015	-0.058	0.008	0.002	0.016	-0.013	0.006	0.049
	(0.028)	(0.049)	(0.030)	(0.017)	(0.030)	(0.018)	(0.043)	(0.051)
2007	-0.008	-0.022	0.002	0.006	0.010	0.002	0.019	0.035
	(0.028)	(0.049)	(0.030)	(0.018)	(0.029)	(0.021)	(0.044)	(0.050)
2008	0.023	0.029	0.015	-0.013	-0.010	-0.015	-0.054	-0.025
	(0.028)	(0.048)	(0.032)	(0.016)	(0.026)	(0.019)	(0.039)	(0.043)
2009	0.018	-0.009	0.037	-0.002	-0.002	-0.001	-0.047	-0.006
	(0.028)	(0.048)	(0.031)	(0.016)	(0.027)	(0.019)	(0.038)	(0.045)
2010	-0.024	-0.027	-0.024	-0.024	-0.009	-0.035*	-0.030	0.014
	(0.028)	(0.050)	(0.026)	(0.015)	(0.027)	(0.015)	(0.042)	(0.049)
2011	0.003	0.010	0.002	-0.017	-0.023	-0.009	-0.058	-0.039
	(0.028)	(0.050)	(0.028)	(0.015)	(0.025)	(0.018)	(0.039)	(0.043)
2012	0.000	-0.012	0.009	-0.026	-0.038	-0.017	-0.067	-0.030
	(0.028)	(0.050)	(0.029)	(0.014)	(0.023)	(0.017)	(0.039)	(0.045)
N (Observations)	3501	1732	1769	3501	1732	1769	1093	905

Notes: (i) Standard errors in parentheses (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The reference individual is a young man living in urban governorates with below secondary education, who finished/left school in 2005 and whose father's education is below secondary. *This outcome is the probability of finding a good quality job among those who found a first job within 18 months. Estimations were not possible for women due to the small sample size, as seen in the total observations.

Table 5: Discrete Time Proportional Hazard Models of Transition To First Job and To a Good Quality First Job, Youth Ages 15+, SYPE 2014

	Any Job			Good Quality Job		
	All	**Men**	**Women**	**All**	**Men**	**Women**
Female	0.131***			0.517***		
	(0.009)			(0.012)		
Own Educational Attainment Level (*Ref: Below Secondary)*						
General/Vocational						
Secondary	1.029	0.968	1.180	2.013***	2.461***	1.481***
	(0.075)	(0.076)	(0.233)	(0.096)	(0.149)	(0.121)
Post Sec. Institute	1.142	0.934	2.774***	4.700***	4.875***	5.779***
	(0.153)	(0.141)	(0.837)	(0.292)	(0.382)	(0.597)
University and Above	1.340**	1.063	3.144***	7.690***	6.901***	10.943***
	(0.128)	(0.114)	(0.692)	(0.387)	(0.453)	(0.875)
Father's Educational Attainment *(Ref: Below Secondary)*						
Father Secondary or Above	0.875	0.893	0.613	1.892***	2.154***	1.217*
	(0.069)	(0.075)	(0.155)	(0.065)	(0.084)	(0.095)
Interaction: Own*Father's Educational Attainment						
University*Father's						
Secondary and Above	1.063	0.916	2.539**	0.984	0.814***	1.721***
	(0.129)	(0.126)	(0.778)	(0.045)	(0.046)	(0.155)
Region of Birth *(Ref: Urban Governorates)*						
Urb. Lower Egypt	0.912	1.035	0.544**	0.715***	0.625***	0.924
	(0.086)	(0.110)	(0.109)	(0.025)	(0.028)	(0.051)
Rur. Lower Egypt	0.933	1.014	0.679*	0.648***	0.595***	0.764***
	(0.067)	(0.081)	(0.112)	(0.019)	(0.021)	(0.042)
Urb. Upper Egypt	0.940	1.137	0.419**	0.771***	0.566***	1.311***
	(0.117)	(0.153)	(0.141)	(0.037)	(0.035)	(0.103)
Rur. Upper Egypt	1.116	1.262**	0.816	0.713***	0.559***	1.253***
	(0.085)	(0.107)	(0.150)	(0.024)	(0.024)	(0.075)
Frontier Governorates	0.858	0.908	0.694	0.976	0.552***	2.367***
	(0.094)	(0.111)	(0.183)	(0.041)	(0.032)	(0.152)
End School After 2010	0.862**	0.886	0.838	0.366***	0.366***	0.366***
	(0.049)	(0.056)	(0.113)	(0.011)	(0.013)	(0.017)
Months (Log)	0.468***	0.467***	0.479***	0.688***	0.693***	0.677***
	(0.009)	(0.010)	(0.022)	(0.007)	(0.008)	(0.011)
N (Observations)	134009	40880	93129	136186	65411	70775

Notes: (i) Exponentiated coefficients are presented. (ii)Standard errors in parentheses (ii) *** p<0.01, ** p<0.05, *p<0.1