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SOCIOECONOMIC STATUS AND THE CHANGING  
NATURE OF SCHOOL-TO-WORK TRANSITIONS  
IN EGYPT, JORDAN, AND TUNISIA

Ragui Assaad, Caroline Krafft,  
and Colette Salemi

Working Paper No. 1287

# **SOCIOECONOMIC STATUS AND THE CHANGING NATURE OF SCHOOL-TO-WORK TRANSITIONS IN EGYPT, JORDAN, AND TUNISIA<sup>1</sup>**

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**Working Paper No. 1287**

**February 2019**

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First published in 2018 by  
The Economic Research Forum (ERF)  
21 Al-Sad Al-Aaly Street  
Dokki, Giza  
Egypt  
[www.erf.org.eg](http://www.erf.org.eg)

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### **Abstract**

This paper examines the evolution of initial labor market outcomes across cohorts of school leavers by education and socioeconomic status in Egypt, Jordan and Tunisia. As educational attainment has risen, youth in the Middle East and North Africa have experienced increasingly protracted and difficult school-to-work transitions. The decline in the public sector and the slow growth of the private formal sector have resulted in a limited supply of good jobs. These jobs are increasingly allocated according to socioeconomic status in Egypt and Tunisia, but not in Jordan. In Egypt and Tunisia, we find that the quality of initial jobs deteriorated for educated new entrants, particularly among those with lower socioeconomic status. Protracted school-to-work transitions, with substantial delays in obtaining the first job, remain a challenge in Tunisia. However, in Egypt youth transition relatively quickly to their first job, often into informal jobs, while in Jordan, the “waithood” phenomenon has been declining due to increased opportunities in both the public and private sectors.

**Keywords:** School-to-work transition; Youth, Adulthood; Life course; Egypt; Jordan; Tunisia

**JEL Classifications:** J62, J21, J24

## 1. Introduction

Youth in the Middle East and North Africa (MENA) have been experiencing increasingly protracted and uncertain transitions to adulthood. They have become more educated and aspire to more modern transitions into formal employment and nuclear household living upon marriage, but often fail to fulfill these aspirations. This prolonged and more uncertain transition has been termed “waithood,” short for wait adulthood (Dhillon and Yousef 2009; Salehi-Isfahani and Dhillon 2008; Singerman 2007).

In the early 20<sup>th</sup> century, most families invested little in their children’s education, in part because educational opportunities were limited to the wealthy. The traditional transition to adulthood involved young people entering employment at earlier ages (often in family businesses or farms), marrying at younger ages, and remaining in the groom’s parents’ household for extended periods after marriage. With the expansion of government-provided educational opportunities and job opportunities in the public sector in the second half of the 20<sup>th</sup> century, young people in MENA countries began aspiring to modern transitions to adulthood, where they stay in school longer, complete a secondary or higher education, search for formal wage employment, and marry later, but form nuclear households upon marriage. These modern transitions were becoming increasingly possible with the expansion of mass public education and the greater availability of public sector employment in the state-led economies of the post-independence period.<sup>5</sup>

Yet as educational attainment outpaced the ability of the public sector to absorb graduates, and as structural adjustment policies led to the retrenchment of the role of the state in MENA countries, the transitions of educated youth in the “post-welfare” era of the late 20<sup>th</sup> and early 21<sup>st</sup> century became increasingly difficult. Transitions were characterized by increasingly long periods of unemployment as youth queued for increasingly scarce public sector jobs. With anemic growth in private formal employment, the slowdown in public sector hiring meant that educated youth were ultimately forced to settle for less than desirable jobs in the informal economy or, in the case of young women, simply withdraw from the labor force altogether, thus experiencing a failed modern transition. These failed modern transitions are at the core of the waithood phenomenon and underlie the anxiety and frustration that many educated young people and their families experience in the region as their aspirations to join the middle class remain unfulfilled (Assaad 2014b; Dhillon, Dyer, and Yousef 2009).

A number of recent papers analyzed the transition to first employment among youth in Egypt, Jordan, and Tunisia (Amer 2015, 2014, 2018, Assaad and Krafft 2016, 2014a; Yassine 2015). All of these papers reveal extensive periods of unemployment prior to entry associated with rising educational attainment, as well as increasing informalization and precariousness of employment as public sector hiring declines. Assaad and Krafft (2014a) examine in particular how socioeconomic status, as measured by father’s education, increasingly shapes the labor market

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<sup>5</sup> See Saleh (2016) for an account of the expansion of mass public education and Assaad (1997) for an account of the expansion of public sector hiring of educated workers in Egypt.

outcomes of educated new entrants in Egypt, with a relatively more equitable allocation of public sector jobs giving way to an allocation of private sector formal employment along class lines.

This paper builds on Assaad and Krafft (2014a) by examining the changing relationship between educational attainment, socioeconomic status (SES), and initial labor market statuses across three cohorts of new entrants in three MENA countries: Egypt, Jordan and Tunisia. The cohorts we examine represent those who have left school in the 1980s, 1990s, and 2000s. We classify youth by educational attainment and SES, making socioeconomic distinctions among those who attained relatively more education. We use a combination of parental education and father's occupation as a way to distinguish between high and low SES. We define initial labor market status as the status attained within three years of school exit. We use our rich survey data to distinguish between different types of initial work by employment status, sector, and formality of employment. Furthermore, as a measure of the waitness phenomenon, one of the possible statuses is not having worked yet. This status applies if the individual has not engaged in any employment lasting at least six months in the three years after exiting school. Using a multinomial logit model, we estimate the predicted probability that an individual from a specific cohort, education and SES group, and country has a particular initial labor market status.

The focus of this paper is on the school-to-work transition and how it changed across cohorts of school leavers of different education and SES levels. We do not discuss other aspects of the transition to adulthood, such as the transition to marriage and family formation, which have been covered in some detail elsewhere (Amin and Al-Bassusi 2004; Assaad, Binzel, and Gadallah 2010; Assaad and Krafft 2014b, 2015a; Assaad, Krafft, and Rolando 2016; Salem 2015, 2014). We do recognize the strong interlinkages between the school-to-work transition and the transition to marriage, which have been explored for these countries in some detail (Assaad, Krafft, and Selwaness 2017; Krafft and Assaad 2017; Salem 2016; Selwaness and Krafft 2018; Yount, Crandall, and Cheong 2018).

Our findings show that older generations of educated youth in Egypt and Jordan were able to achieve modern school-to-work transitions by accessing public sector employment opportunities. As these public sector opportunities failed to keep up with rising education levels, the school-to-work transition changed in varying ways across countries, education levels and socioeconomic status. In Egypt, the default option for educated young men unable to obtain public sector employment was informal wage employment, while educated young women simply remained non-employed. Private formal employment never increased sufficiently to make up for the decline in public sector employment and remained the purview of those of high socioeconomic status.

In Jordan, public sector employment, which was available to men of all education and SES backgrounds, declined somewhat but recovered in recent years for the youngest cohorts. Formal private sector work is increasingly available to educated Jordanians, but unlike Egypt, with no differences across SES groups. Because employment in family businesses and farms has declined substantially in Jordan and informal private employment is increasingly dominated by migrant workers, less educated young Jordanians are experiencing long periods of non-employment upon

their exit from school as they wait for opportunities in the public sector. Educated Jordanian women are much more likely to enter the workforce than their less educated counterparts and increasingly so over time thanks to growing opportunities in the private sector. As in the case of men, there are few differences by socioeconomic status in young women's access to various kinds of employment in Jordan.

Tunisia occupies an intermediate position between Egypt and Jordan. Like in Egypt, socioeconomic status is an important determinant of employment opportunities for both young men and young women in Tunisia, especially in the formal private sector, but also in the public sector. Rather than falling back on informal private employment, young Tunisian males and females with high education but low SES remain non-employed for extended periods of time after school exit, in a stark illustration of the waithood phenomenon.

The remainder of the paper is organized as follows. Section 2 outlines our data, including the surveys used, outcome variables constructed, and our approach to categorizing cohorts and education/SES groups. Section 3 describes the multinomial logit approach to our analysis. Section 4 discusses our findings, and we conclude in Section 5.

## **2. Data**

### **2.1 Data Sources**

The data requirements to assess the relationship between school-to-work transitions and socioeconomic status over time are substantial. First, we need data on school leaving and initial labor market transitions for different cohorts, which requires retrospective data about the life course. Second, we need data on natal household socioeconomic status even for those who have left their natal households. In MENA, only the Labor Market Panel Surveys (LMPSs) carried out by the Economic Research Forum (ERF) in collaboration with national statistical offices meet both those data requirements.<sup>6</sup> These household surveys have full educational and labor market histories, as well as information on parents' education and employment (when the respondent was 15) even if parents are no longer in the respondent's household. So far, there are LMPSs in Egypt, Jordan, and Tunisia.

Our analysis specifically uses the Egypt Labor Market Panel Survey of 2012 (ELMPS 2012), Jordan Labor Market Panel Survey 2016 (JLMPS 2016),<sup>7</sup> and the Tunisia Labor Market Panel Survey 2014 (TLMPS 2014).<sup>8</sup> The ELMPS 2012 is the third wave of a panel and the JLMPS 2016 the second wave, while TLMPS 2014 is the base wave of a planned panel. However, since we exploit the retrospective data, we do not make use of previous waves of the panels. The data are nationally representative after weighting (weights are used throughout our analyses). These

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<sup>6</sup> Public use samples of the LMPSs are available through ERF's Open Access Microdata Initiative (OAMDI) (OAMDI 2018).

<sup>7</sup> We only include Jordanians in our analyses, since transitions for Syrian refugees or other migrant groups are likely to be shaped by conflict and migration.

<sup>8</sup> For more information on ELMPS 2012 see Assaad and Krafft (2013). For more information on JLMPS 2016 see Krafft and Assaad (2018). For more information on TLMPS 2014 see Assaad et al. (2016).

household surveys collect detailed individual data with very similar questions, allowing for comparisons across countries.

## **2.2 Outcome**

We are interested in how labor market transitions have evolved across cohorts of new entrants of different education levels and socioeconomic statuses. Our outcome variable is thus an individual's initial labor market status. We create the initial labor market status variable using retrospective data on the individual's initial status (within three years after school exit or age 15, whichever comes later) using information about employment status (wage work vs non-wage work), the sector of employment (public vs. private), the formality of employment (covered by social insurance or a formal contract or not), and the regularity of employment (regular or intermittent/seasonal). If the individual has not yet worked three years after school exit (or age 15), s/he is assigned the status "not yet worked." There are thus five initial labor market statuses that we observe: (1) employment in family businesses or farms, which includes all unpaid family workers, self-employed individuals, and employers, (2) informal private sector wage work, where informality is defined as having neither social insurance coverage nor a formal contract, (3) formal private sector wage work, defined as wage work covered by either a formal contract or appointment, social insurance, or both, (4) a public sector job (either in government or state-owned enterprises), or (5) having not yet worked. Not yet worked identifies individuals who did not ever work as well as those who started to work more than three years after "school exit" and thus had a protracted transition to work. We do not distinguish between unemployment and being out of the labor force in this state, since waitthood might take either form and unemployment is difficult to distinguish from out of labor force in retrospective data (Assaad, Krafft, and Yassin 2018).

Throughout, we undertake our analyses separately by sex, since life course transitions are very distinct for men and women in MENA (Assaad, Krafft, and Selwaness 2017; Dhillon and Yousef 2009; Gebel and Heyne 2014, 2016; Heyne and Gebel 2016; Krafft and Assaad 2017). Female employment rates are very low; they range from 13% in Jordan to 18% in Egypt and 20% in Tunisia (Assaad, Ghazouani, and Krafft 2017; Assaad and Krafft 2015b; Assaad, Krafft, and Keo 2018). Since relatively few women work, in order to avoid very small cell sizes, we simplify the initial labor market statuses for women to (1) private sector work (including both wage and non-wage work), (2) public sector, and (3) not having yet worked.

## **2.3 Covariates**

Our analysis examines how school-to-work transitions have changed across cohorts of school leavers. However, if we simply examined birth cohorts, such as those born in 1990-1999, two sources of bias would result. First, those who left school earlier would have more time to transition. Second, they would be transitioning under different labor market and economic conditions than those who left school later. For example, if an individual were born in 1990 and she left school at age 15 she would be potentially entering the labor market in 2005, whereas someone who was born in 1990 and left school at age 20 would be transitioning to the labor market in 2010 and facing potentially different conditions. To avoid this bias, our cohorts are defined based on the year of school exit. For those who exited school before turning age 15 (or never went to school), we



classify their year of school exit as the year they turned 15, since they would be unlikely to work before that age.

We specifically define three cohorts of school exit, as shown in Table 1. Given our need to identify work within three years of school exit, we start our school exit cohorts three years prior to each survey (e.g. in 2009 for ELMPS 2012) and move backwards by decades (e.g. 2000-2009 is the youngest cohort in Egypt). Each school exit cohort is thus a decade long, but the exact years bounding the cohorts depend on the timing of the survey. We refer to the cohorts as the youngest (most recent school exit), middle, and oldest (school exit starting back in the 1980s and spanning a decade). We exclude individuals who made their school exit less than three years before the survey was conducted, to ensure that all individuals had at least three years to attempt to obtain a job. We also exclude individuals who exited further in the past than the oldest cohort to keep our focus on three decades of school leavers.

**Table 1: Definition of School Exit Cohorts in Egypt, Jordan, and Tunisia**

| <b>Country</b> | <b>Year of school exit:<br/>oldest cohort</b> | <b>Year of school exit:<br/>middle cohort</b> | <b>Year of school exit:<br/>youngest cohort</b> |
|----------------|---|---|---|
| Egypt          | 1980-1989                                     | 1990-1999                                     | 2000-2009                                       |
| Jordan         | 1984-1993                                     | 1994-2003                                     | 2004-2013                                       |
| Tunisia        | 1982-1991                                     | 1992-2001                                     | 2002-2011                                       |

*Note: school exit defined as either the year the respondent left school, or the year the respondent turned 15 (whichever was later)*

While we are interested in how school-to-work transitions have changed across cohorts, we are also interested in how this change may have varied by an individual’s education level and socioeconomic status. Therefore, in addition to cohort, we construct an education and socioeconomic status (SES) taxonomy, hereafter referred to as the taxonomy, defined in the following four categories: (1) low education, (2) intermediate education, (3) high education and low SES, and (4) high education and high SES. Since individuals who do not complete high education are mostly from low SES backgrounds, we did not see the need to distinguish by SES except among the high education group.<sup>9</sup> Because of differences in historical levels of educational attainment in the three contexts, we define these categories somewhat differently in Egypt and Jordan than Tunisia.

For Egypt and Jordan, low education is defined as having less than upper secondary attainment (which includes those with no educational certificates, primary certificates, and lower secondary certificates), intermediate education as having an upper secondary certificate, and high education as having tertiary attainment (which includes 2-year post-secondary certificates, bachelor’s degrees, and post-graduate degrees). The SES groups are defined based on the parents’ characteristics. For Jordan and Egypt, high SES means that both parents had at least basic

<sup>9</sup> We attempted to divide the intermediate education group along SES lines, but the sample size of the high SES group within intermediate was too small to analyze in most cases.

education (primary or lower secondary certificates) or that the father was in a high-skilled occupation.<sup>10</sup> Low SES is defined as one or both parents do not have basic education and the father does not have a high-skilled job.

Because increases in educational attainment in Tunisia are relatively recent, educational attainment is lower among older cohorts than in Egypt and Jordan, as we show in the results below. To account for this difference, we adjust the Tunisia taxonomy to better represent the relative educational and SES differences in that context. We therefore define low education in Tunisia as having less than a basic education (i.e. less than a primary certificate), intermediate education as having a basic education (primary or lower secondary certificate), and high education as having attended an upper secondary school or higher.<sup>11</sup> Additionally, we consider individuals with one or both parents with a basic education as high SES, while those for whom neither parent finished basic schooling are considered low SES. We do not consider father's occupation in Tunisia, since having a parent with a basic education in Tunisia constitutes a very select group. Table 2 presents these taxonomy categories and sample sizes by taxonomy, cohort, sex, and country.

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<sup>10</sup> These high-skilled occupations include professional, managerial, technical, clerical, or sales jobs. Fathers who work in the armed forces in Jordan are also considered high skilled workers.

<sup>11</sup> Sample sizes among those who completed upper secondary schools or higher were so small in Tunisia among older cohorts that we decided to define "high education" as those who even attended upper secondary school but did not necessarily complete it.

**Table 2: Definition of education/SES taxonomy and sample sizes by category, school exit cohort, and country**

| Country | Taxonomy category        | Taxonomy definition  | Men: School exit cohort |        |          | Women: School exit cohort |        |          |
|---------|--------------------------|--|-------------------------|--------|----------|---------------------------|--------|----------|
|         |                          |  | Oldest                  | Middle | Youngest | Oldest                    | Middle | Youngest |
| Egypt   | Low education            | Less than upper secondary attainment   | 984                     | 1,368  | 1,203    | 1,270                     | 1,462  | 1,526    |
|         | Intermediate education   | Upper secondary attainment   | 656                     | 1,454  | 1,979    | 515                       | 1,111  | 2,058    |
|         | High education, low SES  | Tertiary attainment, both parents do not have basic education and father does not have high skilled job. | 176                     | 320    | 455      | 73                        | 163    | 431      |
|         | High education, high SES | Tertiary attainment, both parents have basic attainment or father has high-skilled job                   | 213                     | 370    | 787      | 168                       | 281    | 902      |
| Jordan  | Low education            | Less than upper secondary attainment   | 936                     | 950    | 1,394    | 929                       | 709    | 974      |
|         | Intermediate education   | Upper secondary attainment   | 247                     | 250    | 342      | 220                       | 221    | 315      |
|         | High education, low SES  | Tertiary attainment, both parents do not have basic education and father does not have high skilled job. | 173                     | 112    | 234      | 193                       | 143    | 336      |
|         | High education, high SES | Tertiary attainment, both parents have basic attainment or father has high-skilled job                   | 110                     | 160    | 456      | 155                       | 228    | 636      |
| Tunisia | Low education            | Less than basic education  | 278                     | 166    | 101      | 519                       | 337    | 138      |
|         | Intermediate education   | Basic education  | 159                     | 196    | 274      | 169                       | 210    | 270      |
|         | High education, low SES  | Attended secondary, neither parent has basic attainment  | 159                     | 138    | 116      | 76                        | 90     | 139      |
|         | High education, high SES | Attended secondary, at least one parent has basic attainment   | 83                      | 91     | 126      | 61                        | 115    | 196      |

*Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014*

### 3. Methods

We are interested in how initial labor market status varies by cohort and the education/SES taxonomy for men and women in each country. We initially present descriptive statistics on the evolution of the taxonomy across school exit cohorts by sex in each country. We then model for individual  $i$  how the relative probability of initial labor market status  $j$  depends on taxonomy,  $x$ , cohort,  $c$ , and their interaction, using a multinomial logit model. Multinomial logit estimation assumes that the probability of initial labor market status  $j$ ,  $p_j$ , relative to the probability of the base state labor market status,  $p_0$ , is given by:

$$\ln\left(\frac{p_j}{p_0}\right) = \alpha_j + \sum_{k=1}^3 \beta_{kj} x_{ki} + \sum_{l=1}^2 \gamma_{lj} c_{li} + \sum_{k=1}^3 \sum_{l=1}^2 \delta_{klj} x_{ki} \times c_{li} + \varepsilon_{ij}$$

where the taxonomy,  $x$ , varies across four categories, and is thus represented by three dummy variables ( $k = 1, 2, 3$ ), with the reference state being “high education, high SES.” Cohort,  $c$ , varies across three categories, and is represented by two dummy variables ( $l = 1, 2$ ), with the reference being the oldest cohort. We are particularly interested in the sign and significance of the six interaction coefficients for each status  $j$ ,  $\delta_{klj}$ , as these indicate change across cohorts specific to each education/SES category. We conduct our multivariate analysis for men and women from each country separately, yielding six separate multinomial logit estimations. For men, we use public sector work as the base outcome for the multinomial logit estimates, and for women, we use not having yet worked as the base outcome, as these are the most common labor market statuses for men and women, and thus ideal as the base categories.

Since the coefficient estimates are for a log transformation of an odds ratio, their interpretation is not straightforward. However, when exponentiated, they are interpretable as odds ratios. Thus, all our tables of multinomial logit estimates present the exponentiated coefficients and can be interpreted as odds ratios. In addition, we use our multinomial logit estimates to predict the probabilities for all  $j$  outcomes (including the base category) across cohorts and the taxonomy. We plot these predicted probabilities with the 95% confidence intervals for each initial labor market status by cohort, taxonomy, country, and sex. We then use a series of Wald tests to examine whether the predicted probabilities are significantly different across cohort and taxonomy groups.

### 4. Results

Our results initially describe the taxonomy across cohorts. We then present the predicted probabilities of different initial labor market outcomes, based on the multinomial logit model, examining how these vary across the taxonomy and by cohort for men and women in each country.

#### 4.1 Taxonomy across cohorts

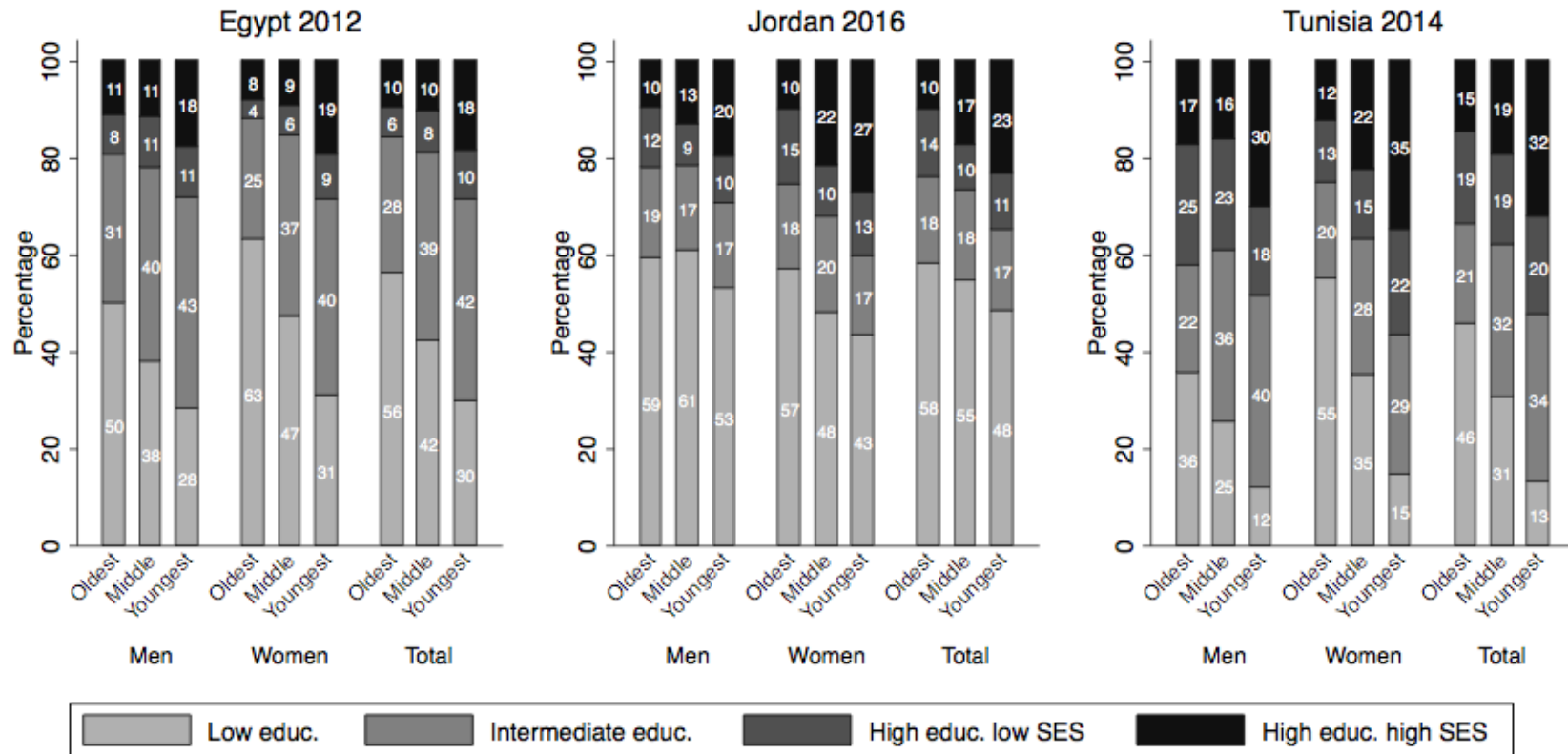
Figure 1 displays the distribution across the categories of the taxonomy by cohort, sex, and country.<sup>12</sup> There have been substantial increases in education across cohorts in all three countries. Educational gains were most pronounced for women. There were large decreases in the percentage

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<sup>12</sup> See the Appendix and Figure 10, Figure 11, and Figure 12 for the evolution of education levels by age and by sex in each country.

of individuals with low levels of education, particularly in Egypt, where the share having low education dropped from 56% of the oldest school leaving cohort to 30% of the youngest cohort. Decreases were also substantial in Tunisia, where it must be kept in mind that low education means less than basic education. In Jordan, a low level of education, often a complete basic education, remained the norm, decreasing only slightly from 58% to 48% across cohorts. As low levels of education declined, intermediate levels increased, particularly in Egypt and Tunisia. High levels of education (tertiary in Egypt and Jordan; entering secondary in Tunisia) also expanded across cohorts. The increases in Egypt and Tunisia were particularly pronounced, with a rise from 16% in Egypt in the oldest cohort to 28% in the youngest cohort, and in Tunisia, from 34% in the oldest cohort to 52% in the youngest cohort. Jordan's expansion was, in contrast, more moderate in both relative and absolute terms, from 24% to 34%. As high education expanded, it did so to a varying degree across SES, with high education, high SES having relatively larger increases in all three countries across cohorts. This shift is likely to be driven both by expansions in high levels of education as well as increases in parental education across cohorts.

Figure 1: Education and taxonomy by cohort, sex, and country



Source: authors' calculations based on ELMPS 2012, TLMPs 2014, JLMPS 201

## 4.2 Models of initial labor market statuses

We discuss the results of our models in terms of the predicted probabilities of different initial labor market statuses across the taxonomy and cohorts. We present our results separately for men and then for women. We examine first how outcomes are different across the taxonomy for each country, focusing on the youngest cohort, to discuss the nature of how the school-to-work transition depends on education and socioeconomic status. Within each cohort, we also test whether the predicted probabilities of different initial labor market statuses vary across the taxonomy. Second, we examine how the relationship between taxonomy and initial labor market status has evolved over time, examining differences by cohort. We test whether the probabilities of an initial labor market status within a taxonomy group are the same across cohorts. The multinomial logit results, in terms of odds ratios, are included in the Appendix (Table 3 and Table 4).<sup>13</sup>

### 4.2.1 Men: Differences across the Taxonomy

We discuss our results for men by country and across the taxonomy. Within a country and taxonomy group the probabilities of different labor market statuses sum to one. We focus our discussion for now on the youngest cohort, and in the subsequent sub-section examine differences across cohorts.

In Egypt, the probability of low and intermediate educated men having an initial labor market status of family business or farm (Figure 2) is 19-20% (the difference between the two is not statistically significant, see Table 5). The probability of family business or farm drops to 13% for those with higher education and low SES and 10% for those with high education and high SES (the differences between high education categories and low and intermediate are statistically significant, but the differences across SES groups are not). The probability of informal private sector work also varies substantially across the taxonomy in Egypt. In the youngest cohort, 62% of men with low education initially transition into informal work (Figure 3), 52% with intermediate education, 36% with high education and low SES, and 29% with high education and high SES. All of these differences are statistically significant. Thus, making either a traditional transition via family business or a failed modern transition, to informal work, is the norm for all but the high educated. Furthermore, the outcome for nearly half the high educated with low SES, as well as nearly two-fifths of the high educated with high SES is one of these two forms of employment.

Correspondingly, in Egypt, men with better backgrounds have more successful transitions to good jobs. While only 1% of low educated men in the youngest cohort initially transition to private sector formal jobs (Figure 4), 6% of the intermediate educated, 14% of the high educated with low SES, and 22% of the high educated with high SES do so (all differences are statistically significant). Formal jobs in the private sector are restricted to the educated and are highly dependent on SES. Access to public sector jobs (Figure 5), although still mostly restricted to the high educated, is more equitable. While only 1% of the low educated in the youngest cohort and

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<sup>13</sup> Graphs descriptively displaying the distribution of outcomes by cohort, taxonomy, sex, and country are included in the Appendix (Figure 13, Figure 14, Figure 15, Figure 16, Figure 17, and Figure 18).

4% of the intermediate educated get public sector jobs, 25% of the high education low SES group and 20% of the high education high SES group enter the public sector (all differences are significant). In fact, the public sector appears to be a key route to good jobs for those from more modest social backgrounds – in contrast to the formal private sector that strongly selects on SES. Waitthood is fairly limited in Egypt, with relatively few men having not yet worked within the three years after their school exit (Figure 6). This ranges from 16% of the low educated (in the youngest cohort) to 19% of the intermediate educated, 12% of the high educated, low SES, and 18% of the high educated, high SES. The latter may be able to be more selective about the kind of job they accept and thus are able to search longer for preferred jobs, given their familial resources. These differences are statistically significant except for high education high SES versus low or intermediate education. Overall, while transitions in Egypt are strongly demarcated along education and SES lines, waitthood, in the form of long unemployment durations after school exit, is somewhat limited among young men.

In Jordan, in the youngest cohort, the probability of initially working in a family business or farm never rises above 5% and is lowest for the intermediate education level (which is significantly different than some of the other categories), but similar for the lowest and both of the high education categories (Figure 2). Thus, the traditional transition in Jordan, at least in the form of joining a family business or farm, is essentially no longer an option. While few Jordanian men work in the informal private sector,<sup>14</sup> the probability of this status does depend on the taxonomy (Figure 3). Transitions into informal employment range from 13% of the youngest cohort among the low educated, to 10% of the intermediate education group, to 9% of high education low SES group, and 6% of the high education high SES group (only some of the differences are statistically significant). The formal private sector is a major employer in Jordan, with even some of the low educated (8%) being able to access such employment in the youngest cohort (Figure 4). The probability of transitioning into formal private employment is 15% for the intermediate education group, and 25% for the high educated at both SES levels (all differences are statistically significant except among the high educated). Notably, unlike in Egypt, or in Tunisia as we will see below, formal private jobs do not depend on SES, but only on educational attainment. Nor are public sector jobs strongly linked to SES, although they are linked to education to some degree. While 23% of low educated men in the youngest cohort work in the public sector and 38% of the intermediate educated, the latter is quite close to the 39% of the high educated low SES group and 40% of the high educated high SES group (Figure 5). Only differences between the low education group and other categories in the taxonomy are statistically significant. Thus, in Jordan, public sector employment is much more broadly available than in Egypt, at higher levels, and across education and SES. Where there is a strong education gradient in Jordan is in terms of waitthood (having not yet worked) (Figure 6). A majority – 51% – of those with low education in the youngest cohort in Jordan have not yet worked, followed by 35% of those with intermediate education, 22% of the high education low SES, and 24% of the high education high SES. Differences are significant except among the two high education groups. Since the low and intermediate education

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<sup>14</sup> Few Jordanians work in the informal sector, which is dominated by the large number of economic migrants and refugees in Jordan (Assaad and Salemi 2018; Malaeb and Wahba 2018).



groups can access public sector jobs but not as readily private formal jobs, they may be queuing for good jobs in the public sector and experiencing waitthood.

In Tunisia, in the youngest cohort, while 10-11% of those with low and intermediate education transitioned to a family business or farm, and 13% of high education low SES, only 7% of high education high SES did so, as shown in Figure 2 (only the high education difference by SES is statistically significant). Informal private sector transitions are strongly delineated by education (Figure 3). Nearly a third of the low education and intermediate education groups transition into informal wage employment, compared to 17% of the high education low SES group, and 13% of the high education high SES group (differences are significant except for low vs. intermediate and among high). While these may be relatively traditional transitions for the less educated, they are likely failed modern transitions for the educated. The private formal sector is much more accessible to the educated and high SES group in Tunisia than to other groups (Figure 4). Among the youngest cohort, only 3% of the low education, 8% of the intermediate education, and 8% of the high education low SES group are able to transition to private formal employment. In contrast, as much as 16% of the high education high SES group is able to do so. Thus, access to private formal wage work depends strongly on SES in Tunisia (differences are significant except for high education low SES versus intermediate and low education). Unlike Egypt, where access to public sector employment depends on education but not SES, the probability of public sector employment in Tunisia depends strongly on both education and SES (Figure 5). In the youngest cohort, the probability ranges from 4% for the low educated and 1% for the intermediate educated to 5% for high education low SES and 16% for high education high SES. Thus, higher education is really only paying off in terms of good jobs for those from better social backgrounds in Tunisia (differences all significant except low education vs. intermediate and low education versus high education and low SES). While Tunisians experience substantial waitthood across education levels, here the high education and low SES are at a particular disadvantage (Figure 6). While in the youngest cohort, 50% of the low educated, 49% of the intermediate educated, and 48% of the high educated high SES have not yet worked after three years, this reaches 58% of the high educated low SES (and the only significant differences are high education low SES versus intermediate education and high education high SES). Thus, while the less educated also struggle to find good jobs and experience waitthood, the high educated but low SES face particularly challenging transitions in Tunisia, with poorer outcomes and more waitthood.

Comparing across countries, joining a family business or farm as an initial status is a traditional transition, but one that is both more common in general and more likely among the less educated in Egypt than in Tunisia or Jordan. Egypt has by far the strongest gradient by taxonomy in the probability of transitioning into informal wage work, which is effectively the fallback position for men in that context. The most common initial status in Jordan and Tunisia is “not yet worked,” suggesting that waitthood is more pronounced in these two contexts. The prevalence of waitthood may be because the option of obtaining formal employment is greater than in Egypt, encouraging young men to search longer for such work rather than fall back on the informal employment option. In contrast to the other two countries, Jordan has public sector options for even the less educated

and good jobs for the high educated there are not demarcated on SES lines. Private formal jobs are strongly dependent on SES among the educated in Egypt and Tunisia, and in Tunisia public sector jobs are also primarily available for higher SES, leaving the high educated from low SES backgrounds particularly challenged in Tunisia.

#### **4.2.2 Men: Changes across cohorts**

Having focused on differences across the taxonomy and across countries for the youngest cohort, we now turn to examining how these relationships have changed across cohorts, by country. Statistical tests are shown in Table 6.

In Egypt, for the low educated, the oldest cohort had a significantly higher probability of making a traditional transition into a family business or farm (Figure 2). There were no significant differences for the intermediate educated or high educated low SES across cohorts, but the high education high SES group in the youngest cohort did have a significantly lower probability of transitioning to a family business or farm than the middle cohort. As shown in Figure 3, the probability of informal wage work rose significantly across cohorts, primarily for the intermediate education and high education low SES group. This difference is especially pronounced when comparing the oldest cohort to the middle and youngest (where there are consistently significant differences). There have been few significant or substantial changes in transitions to formal private wage work across cohorts in Egypt, the largest being that the middle cohort particularly had a somewhat lower chance of such work for the high education low SES group compared to the oldest or youngest (Figure 4). The largest change, by far, across cohorts has been in public sector employment, whose probability has dropped significantly and particularly substantially for the intermediate and high education low SES groups (Figure 5). There are relatively small and only sporadically significant differences across cohorts for the not yet worked state, mostly a slight increase for the youngest cohort. Thus, the major change across cohorts in Egypt for young men has been the decline in the probability of public sector employment, especially for the intermediate and high education and low SES groups, with a commensurate increase in informal private sector wage employment, which has served as the fallback for these groups. The formal private sector has essentially failed to provide a modern transition option for those no longer able to join the public sector in Egypt and has continued to rely on those with high education and high SES.

In Jordan, one of the largest changes has been the decrease in the probability of working in a family business or farm as an initial status; essentially meaning the virtual disappearance of this traditional option for young people in that context (Figure 2). This trend across cohorts is statistically significant at every education level except high education low SES, where the chance of a traditional transition was quite low to start with. There have been relatively few changes across cohorts and only a few significant differences in private informal work for men in Jordan, the probability of which has been consistently low (Figure 3). More dynamics have occurred in the transition to formal private sector wage work, which has grown substantially across cohorts, particularly from the oldest to the middle, and a bit thereafter for the youngest, and particularly for the high educated (Figure 4). Youngest versus oldest differences are significant across the taxonomy (and some other differences as well). While the role of the public sector declined for the

middle cohort, for the youngest cohort it rose to above the levels of the oldest cohort, especially for the intermediate and high education low SES groups (most differences, especially for the youngest versus middle, significant) (Figure 5).<sup>15</sup> Thus, for Jordanian young men, traditional transitions into family businesses or farms have virtually disappeared, transitions into informal wage work remained rare, and the private formal sector has substantially expanded, along with -- for the youngest cohort -- the public sector. As a result, the probability of not yet working and waithood has dropped especially for the high education low SES group (mixed significance of differences) (Figure 6).

In Tunisia, the primary shifts in the probability of transitioning to a family business or farm were a decrease for the intermediate education group in the youngest cohort, but otherwise the patterns were similar across cohorts (and limited significance of differences) (Figure 2). Thus, there was no substantial decline in the incidence of traditional transitions, unlike Jordan. The probability of informal private sector wage work grew for the less educated, but not as much as it did in Egypt (only significant for the youngest versus oldest among the intermediate education level) (Figure 3). The chance to obtain formal private sector work in Tunisia appears to have shrunk as an initial transition for the less educated. It has also declined for the high education low SES group, especially when comparing the youngest and middle cohorts to the oldest cohort (mixed significance in comparisons) (Figure 4). Thus, the decreased chance of obtaining formal private sector work among less educated young men in Tunisia appears to have been counterbalanced by an increase in the probability of informal wage work, which, like Egypt, appears to be serving as the main fallback position for these groups. The probability of public sector work dropped across cohorts in Tunisia, particularly for the high education low SES group and is becoming increasingly dependent on SES (significant differences for at least youngest versus oldest for intermediate education and high education low SES) (Figure 5). Corresponding to the other shifts, the high educated low SES are increasingly experiencing waithood (not yet working), as are, to some extent the intermediate education group (some significant differences) (Figure 6). Thus, in Tunisia, the main change over time has been worsening opportunities for the less educated, as well as the high education low SES group.

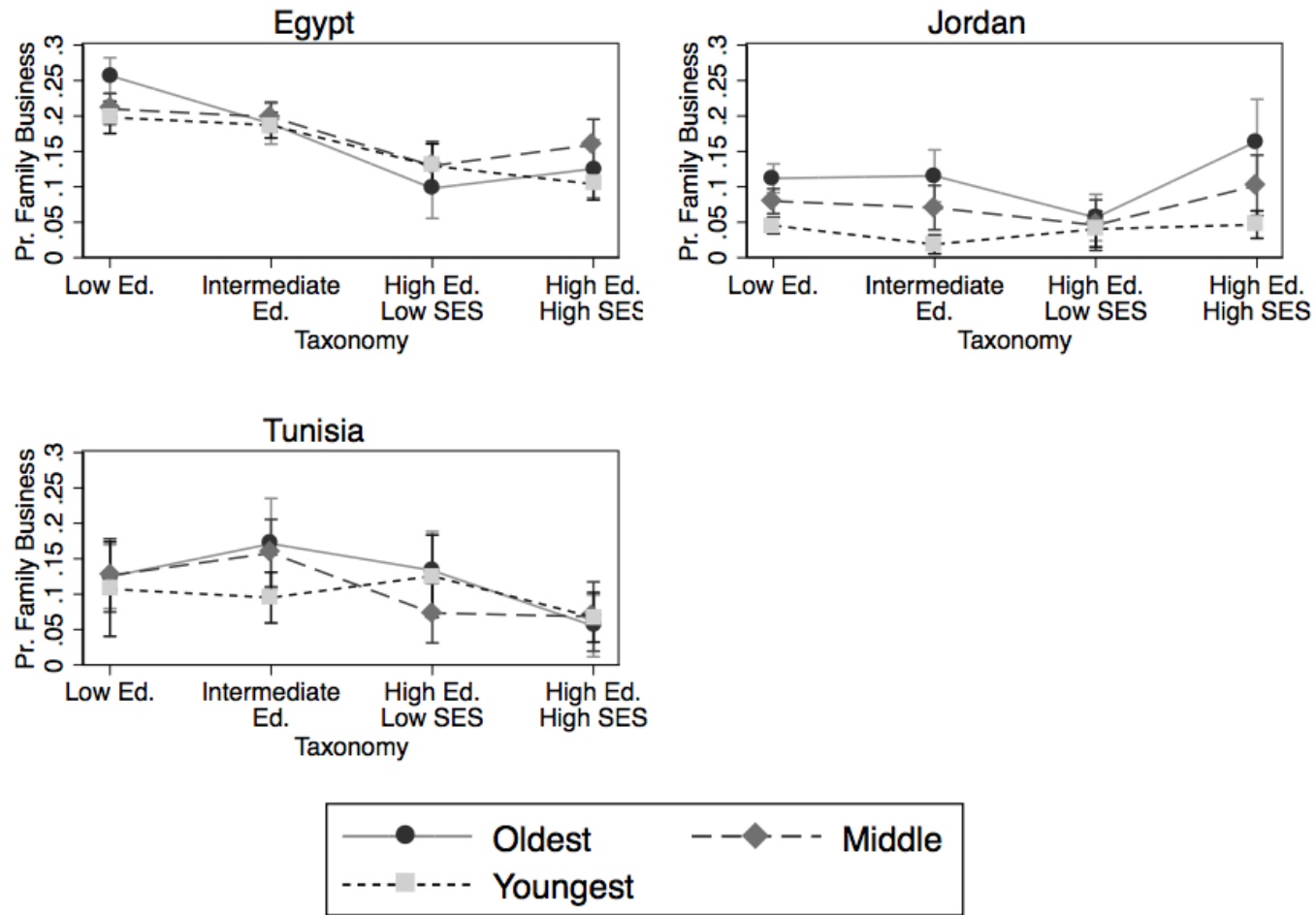
Comparing across countries, in Egypt the public sector retrenchment strongly affected young men with intermediate education and high education but low SES, and formal private sector employment remained the purview of the high educated high SES group. This shift led to a rise in informal wage employment, which became the main fallback option for Egyptian young men. In Jordan traditional transitions into family businesses or farms virtually disappeared, the private formal sector expanded and access to it was not particularly dependent on SES. After a reversal, the public sector also expanded, leading to a decrease in waithood. Informal private wage work does not play a major role in the school-to-work transition of young Jordanian men as it is increasingly becoming dominated by migrant workers in Jordan (Assaad and Salemi 2018; Malaeb and Wahba 2018). In Tunisia, opportunities worsened substantially for the less educated and those

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<sup>15</sup> This recent resumption of public sector hiring in Jordan is discussed in more detail in Assaad and Salemi (2018)

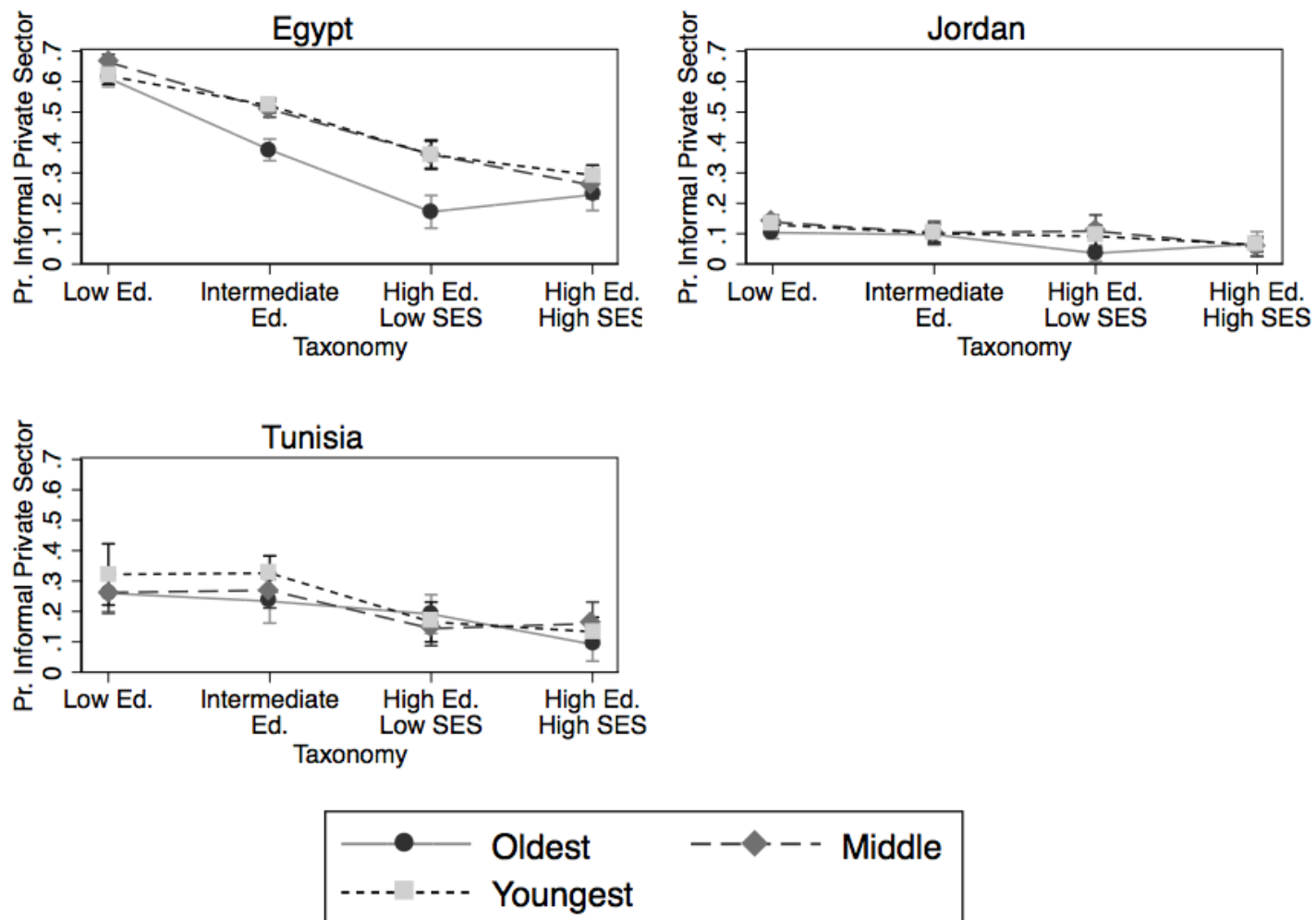
with high education and low SES. While the less educated moved to informal wage work, the high educated low SES moved to very high levels of wealth.

**Figure 2: Predicted Probability of Initial Labor Market Status of Family Business by Cohort, Taxonomy, and Country, Men**



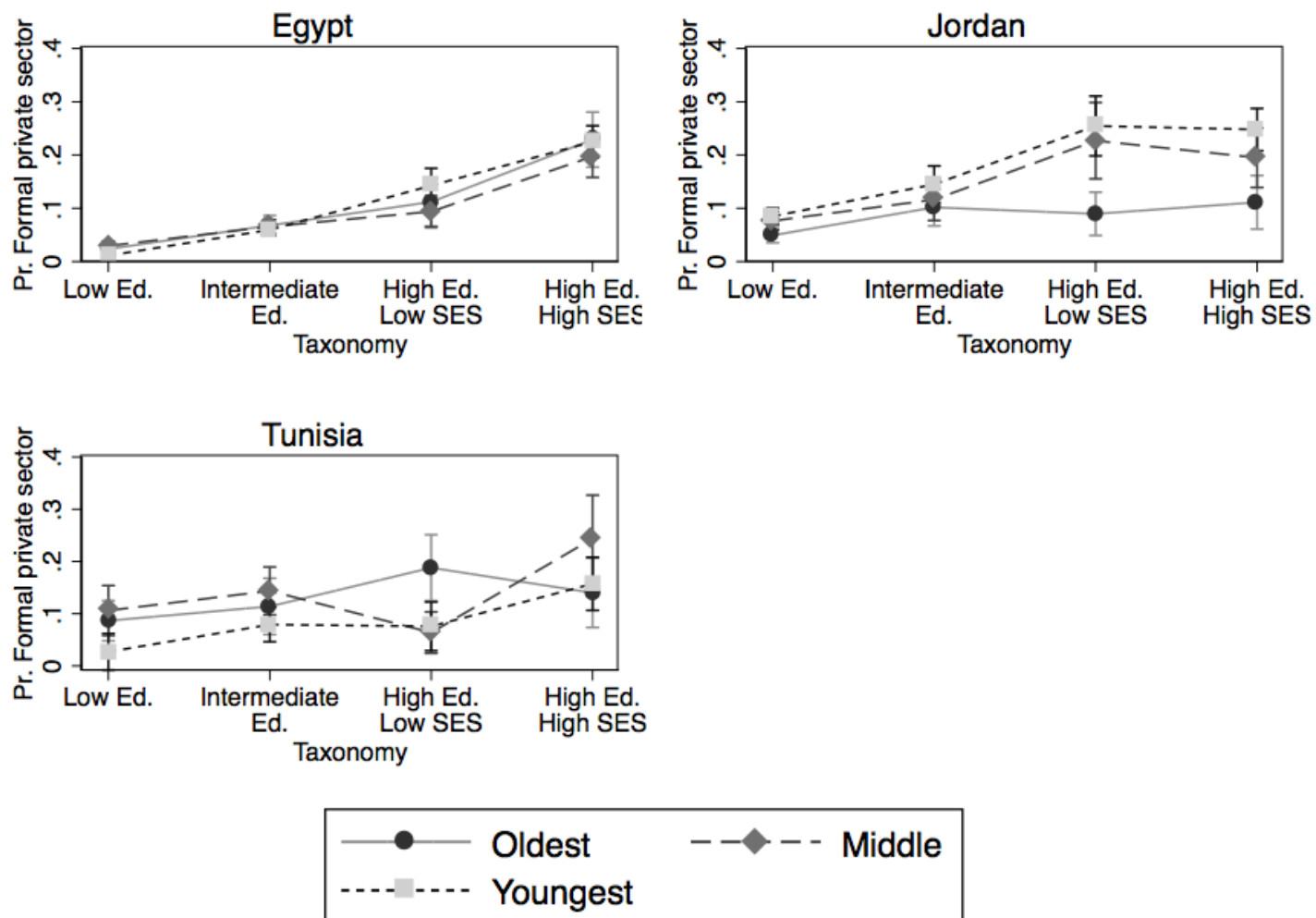
Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

**Figure 3: Predicted Probability of Initial Labor Market Status of Informal Private Sector by Cohort, Taxonomy, and Country, Men**



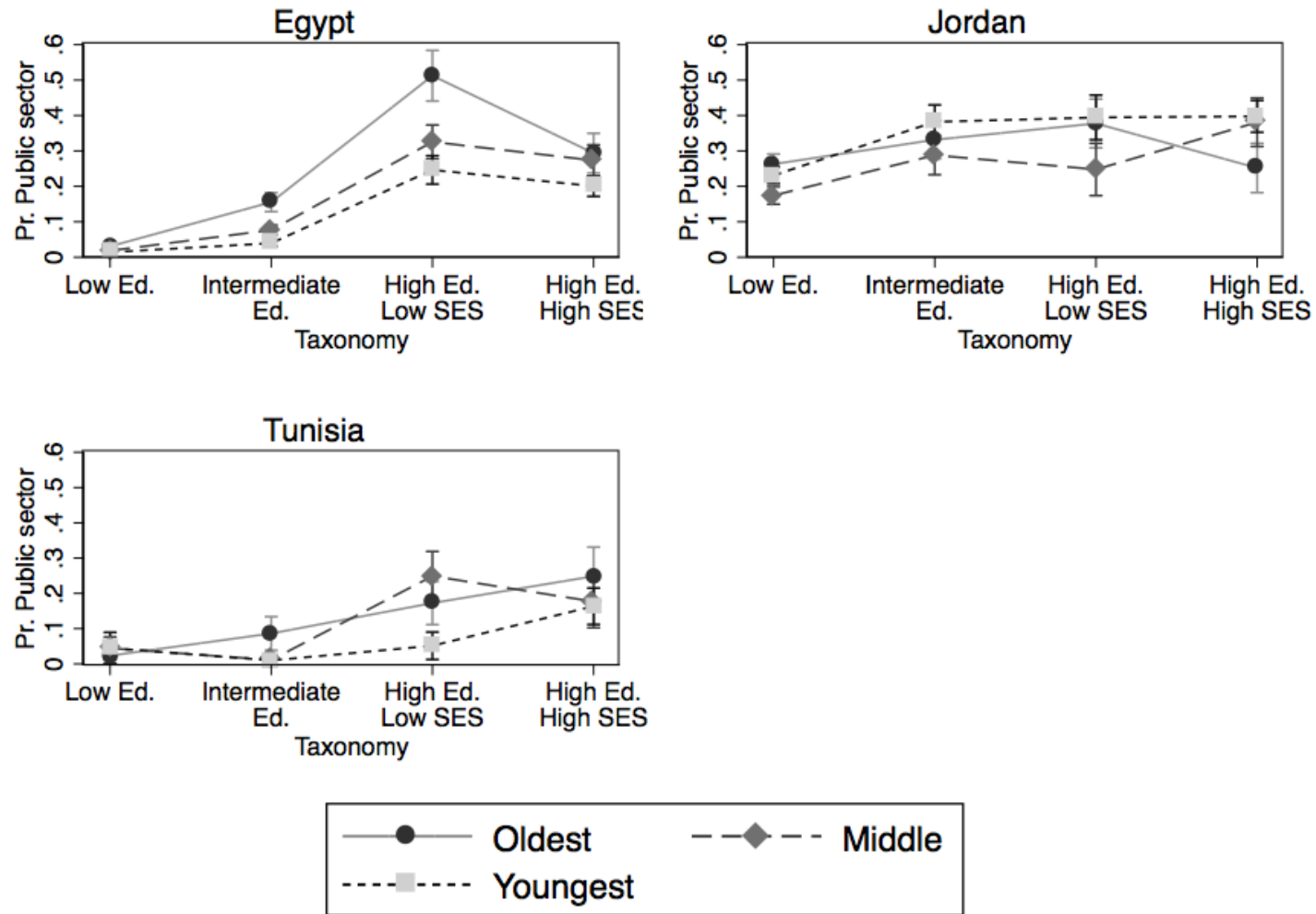
Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

**Figure 4: Predicted Probability of Initial Labor Market Status of Formal Private Sector by Cohort, Taxonomy, and Country, Men**



Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

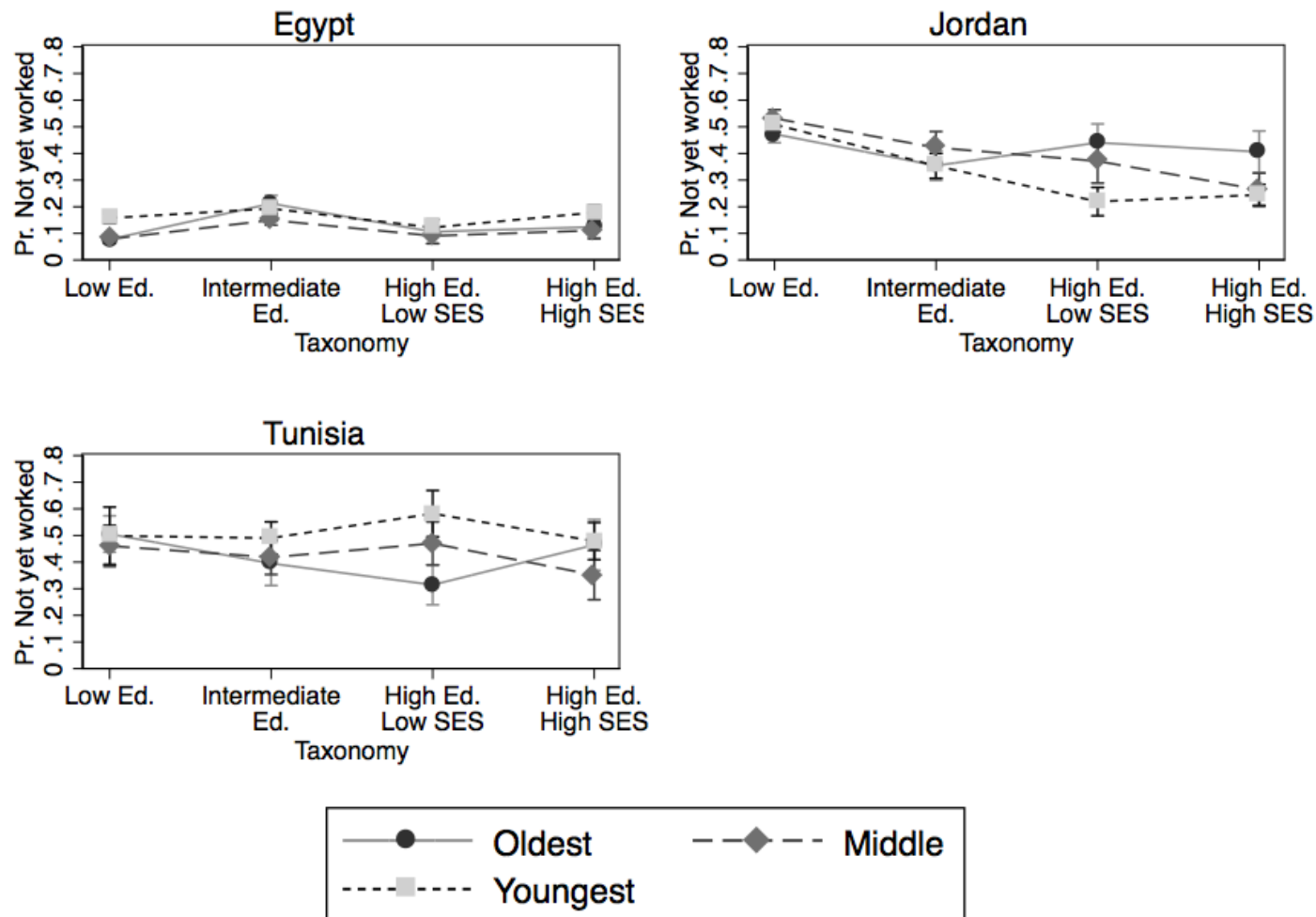
**Figure 5: Predicted Probability of Initial Labor Market Status of Public Sector by Cohort, Taxonomy, and Country, Men**



Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014



Figure 6: Predicted Probability of Initial Labor Market Status of Not Yet Working by Cohort, Taxonomy, and Country, Men



Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

### 4.2.3 Women: Differences across the Taxonomy

As mentioned earlier, since relatively few women transition into work, we collapsed the four initial statuses involving employment into two, namely public sector work and private sector work, in order not to end up with too few observations in each cell. The private sector status includes both formal and informal work as well as wage and nonwage work. In Jordan, very few women engage in nonwage work, but this option is much more common in Egypt, and Tunisia occupies an intermediate position between the two. Non-wage work is also more common for women with lower levels of education (Assaad and Krafft 2015c; Assaad, Krafft, and Selwaness 2017; Assaad and Salemi 2018; Krafft and Assaad 2017). Thus, the private sector category represents somewhat different forms of work by education, but the rarity of private sector work at all for women precludes distinguishing between these states. It is also important to note that women persist to varying degrees across sector; they are much more likely to leave private sector wage work at marriage, but may persist in, or even join the public sector or nonwage work after marriage (Assaad, Krafft, and Selwaness 2017; Selwaness and Krafft 2018).

In Egypt, private sector work among the youngest cohort of women was more or less equally prevalent as an initial status across education and SES groups, keeping in mind that the form such work takes might differ (Figure 7). While 14% of women with low education in the youngest cohort engaged in private sector work, 11% of those with intermediate education, 13% of those with high education low SES, and 16% of those with high education high SES did so. The only significant differences across the taxonomy were some lower probabilities of private sector work at intermediate levels of education (see statistical tests in Table 7). There is a substantial and significant gradient across the taxonomy in the probability of an initial transition to public sector work (Figure 8). Women from the youngest cohort with low education levels have a below 1% chance of obtaining public sector work, compared to 4% for the intermediate education level, 20% for high education and low SES, and 26% for high education and high SES (all differences are statistically significant). Thus, access to public sector work among Egyptian women is dependent upon both education and SES. Unsurprisingly, the residual state of not yet worked thus also varies by education and SES, ranging in the youngest cohort from 86% for the low educated to 85% for the intermediate education group, 67% for high education low SES, and 58% for high education high SES (differences are significant except low versus intermediate) (Figure 9). Thus, women's transitions into work depend first on whether they receive a high education and then on their SES.

In Jordan, among the youngest cohort, women with low or intermediate levels of education have a very low probability of transitioning into private sector work (3% low and 4% intermediate). In contrast, those with high education have a substantially higher probability for such transitions, irrespective of SES, at 19% for those with low SES and 15% for those of high SES (Figure 7). Differences are statistically significant except for low education versus intermediate and by SES among the high educated. Public sector work also shows a strong gradient by education; less than 1% of the low educated and 2% of the intermediate educated initially transition to the public sector (Figure 8). This pattern is a strong contrast to men in Jordan, where the public sector was accessible to the less educated. Although access to public sector work for Jordanian women is strongly

predicated on achieving a high education level, it is not dependent on socioeconomic status. The high educated low SES have a 13% chance of public sector work, similar to the 14% for high educated high SES. All differences are significant except among the high educated by SES. Essentially in Jordan, only women with high education work and they do so regardless of SES (a similar SES result was found for men). As a result, around 97% of low educated and 93% of intermediate educated women in Jordan had not yet worked, compared to 68% of high education low SES and 71% of high education high SES women (Figure 9). Differences are again statistically significant except among the high educated by SES. In Jordan, the transition to work for women is almost exclusively reserved for those with high education, is a mix of public and private opportunities, but does not depend on SES (as was the case for men).

In Tunisia, within the youngest cohort, only 10% of low educated women transitioned to the private sector, compared to 23% of the intermediate educated and 24% of the high educated low SES (Figure 7). The probability of private sector work falls back to 14% for the high educated high SES, probably because these high SES women prefer the working conditions of public sector work (most differences are significant except low education versus high education high SES and intermediate education versus high education low SES). Thus, private sector work is an option for women with some education and even more so for the high education low SES women. Public sector opportunities in Tunisia are limited; less than 1% of the low and intermediate educated women in the youngest cohort transitioned to the public sector, compared to 7% of the high education low SES and 12% of the high education high SES (all significant except low versus intermediate) (Figure 8). While public sector opportunities are limited and depend on SES, women in Tunisia are finding substantial private sector opportunities even if they have intermediate education or high education and low SES. As a result, while 90% of low educated women have not yet worked in the youngest cohort, 77% of intermediate education women, 69% of high education low SES women, and 75% of high education high SES women have not yet worked (only differences versus low education significant) (Figure 9).

Comparing across countries, in Egypt, less educated young women do sometimes transition to work, but in the private sector (likely in non-wage or informal wage work), and likewise in Tunisia. In Jordan, less educated women rarely work. In the public sector, women's employment is preconditioned on education in all countries, but equitable by SES in Jordan – and more probable for the high SES in Egypt and Tunisia. Although women transition to somewhat different types of work depending on their education and SES, they also work at much higher rates across intermediate and high education in Tunisia than in other countries.

#### **4.2.4 Women: Changes across cohorts**

Comparing across cohorts, in Egypt there have been some modest increases in women's initial transition to private sector employment, especially among those with intermediate and high education levels (Figure 7). The differences are only statistically significantly for the youngest versus middle cohorts at the intermediate and high education high SES levels, as well as for the youngest versus oldest at the intermediate education level (See Table 8 for statistical tests). With regard to transitions to the public sector, there has been a large drop across cohorts for intermediate

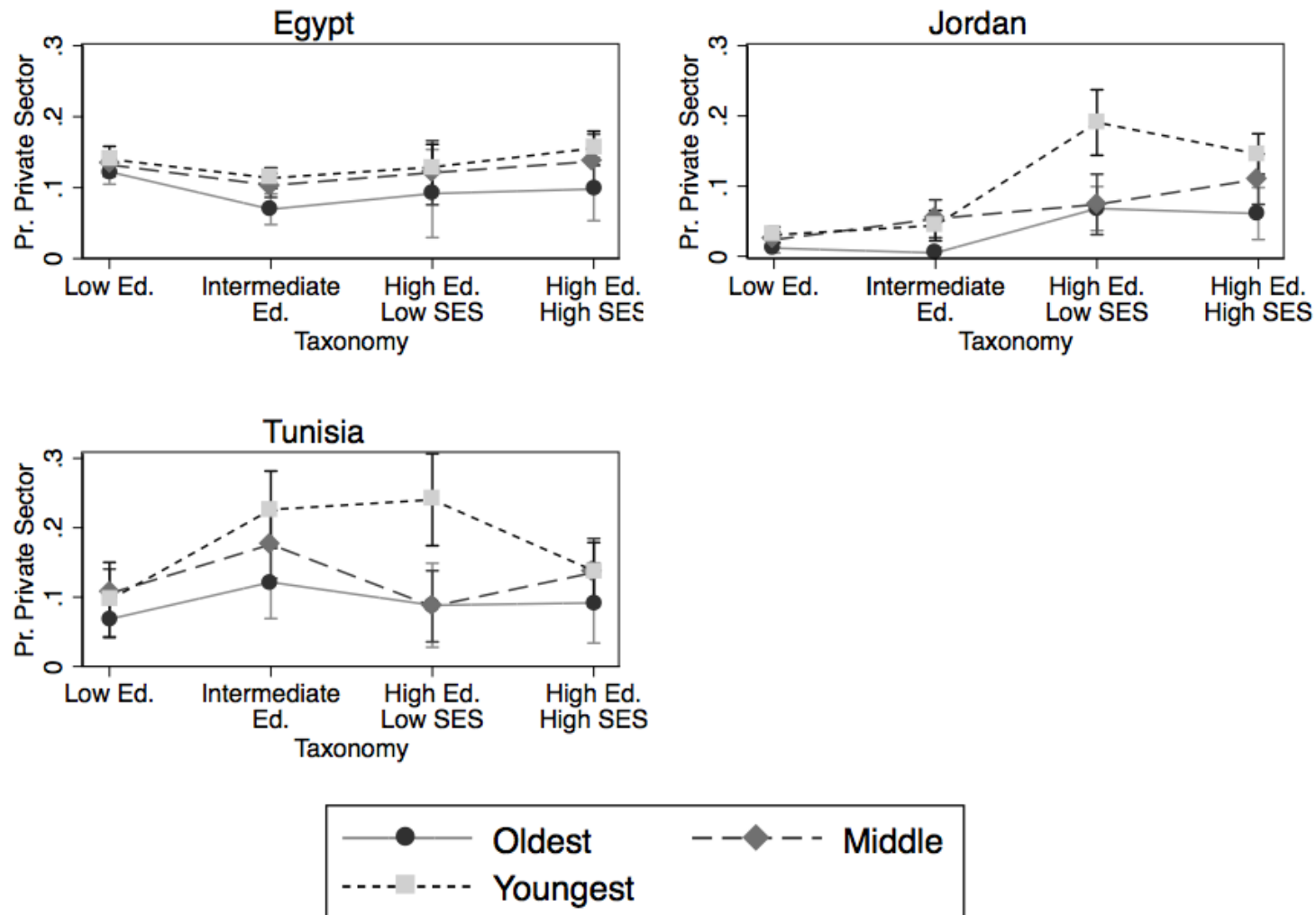
through high education, sharpening the SES gradient among the high education group (all but a couple of differences are significant) (Figure 8). As a result of the decrease in public sector work opportunities, which were only partially counteracted by an increase in private sector work, not yet working has risen across cohorts of women in Egypt, particularly for the educated (all but a couple of differences are significant) (Figure 9).

In Jordan, the probability of private sector work has risen, particularly at the high education level and for women of low SES (usually significant, always so for youngest versus middle cohort) (Figure 7). Public sector work has remained almost constant (only one significant difference, for the intermediate education level between youngest and oldest) (Figure 8). Thus, across cohorts, an initial status of not yet working has declined, largely driven by increases in the probability of private sector work (differences mostly significant, always so for youngest versus middle) (Figure 9).

In Tunisia, there has been a substantial increase in private sector work for women across cohorts, particularly at the intermediate education and high education low SES levels (Figure 7). There have also been slight increases at other levels (with some significant differences). The ability to transition to public sector work fell substantially across cohorts for women (some significant differences) but then recovered partially from the middle to the youngest cohort, although it remains below the levels of the oldest cohort (Figure 8). As a result of these mix of forces, the not yet worked category among women in Tunisia has fallen slightly across cohorts, particularly for the intermediate education and high education low SES groups (Figure 9).

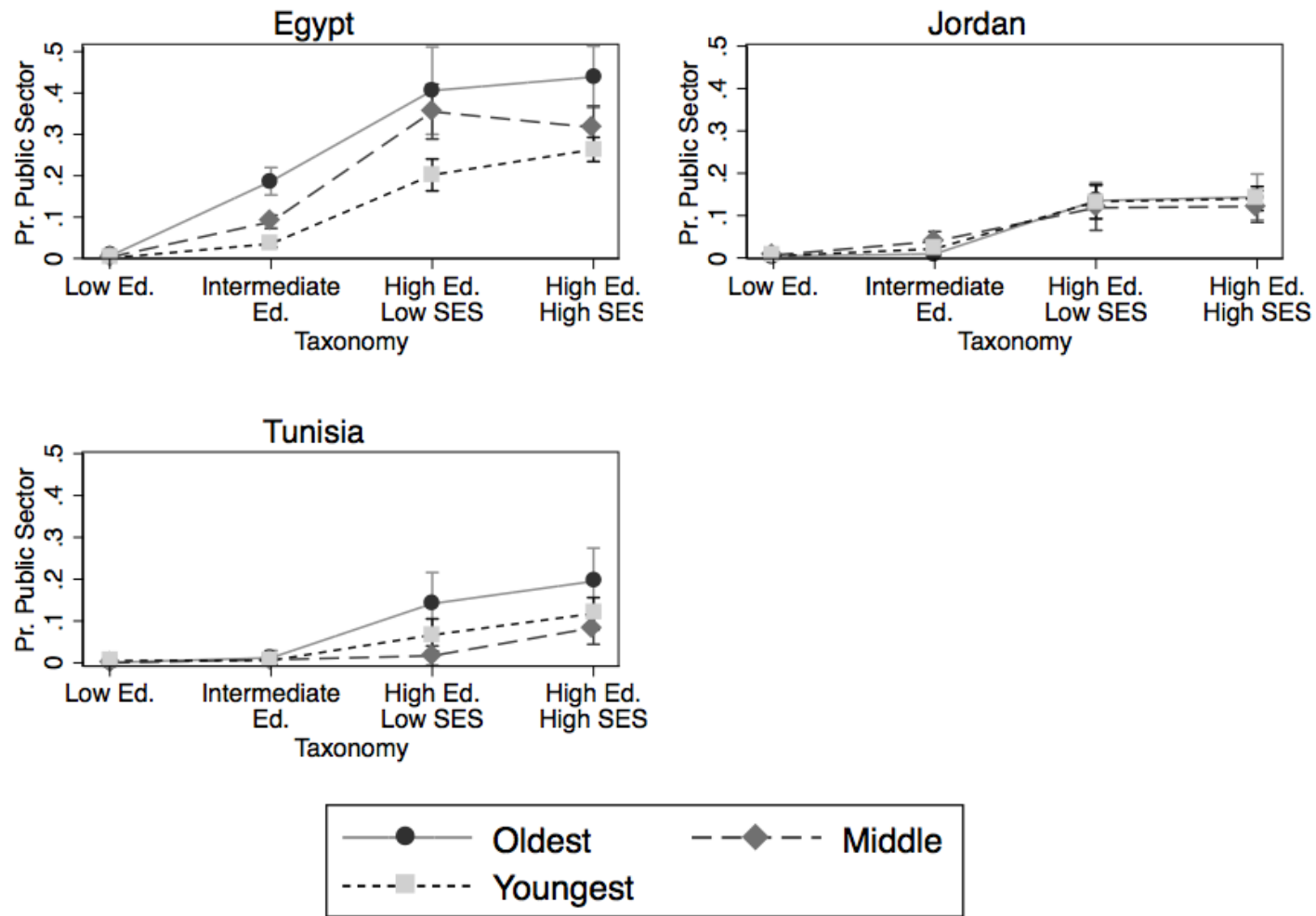
Comparing across countries, while Jordan has low probabilities of transitions to employment for women, the trend across cohorts is more promising among those with high education and is primarily driven by growing opportunities in the private sector. Likewise, in Tunisia the private sector has contributed to increases in transitions to work, particularly for women with intermediate education and high education but low SES. In Egypt, in contrast, women have been less able over time to make the transition to work, particularly at the intermediate and high education low SES levels, due to the large drop in public sector opportunities being met with only a very slight increase in private sector opportunities.

**Figure 7: Predicted Probability of Initial Labor Market Status of Private Sector by Cohort, Taxonomy, and Country, Women**



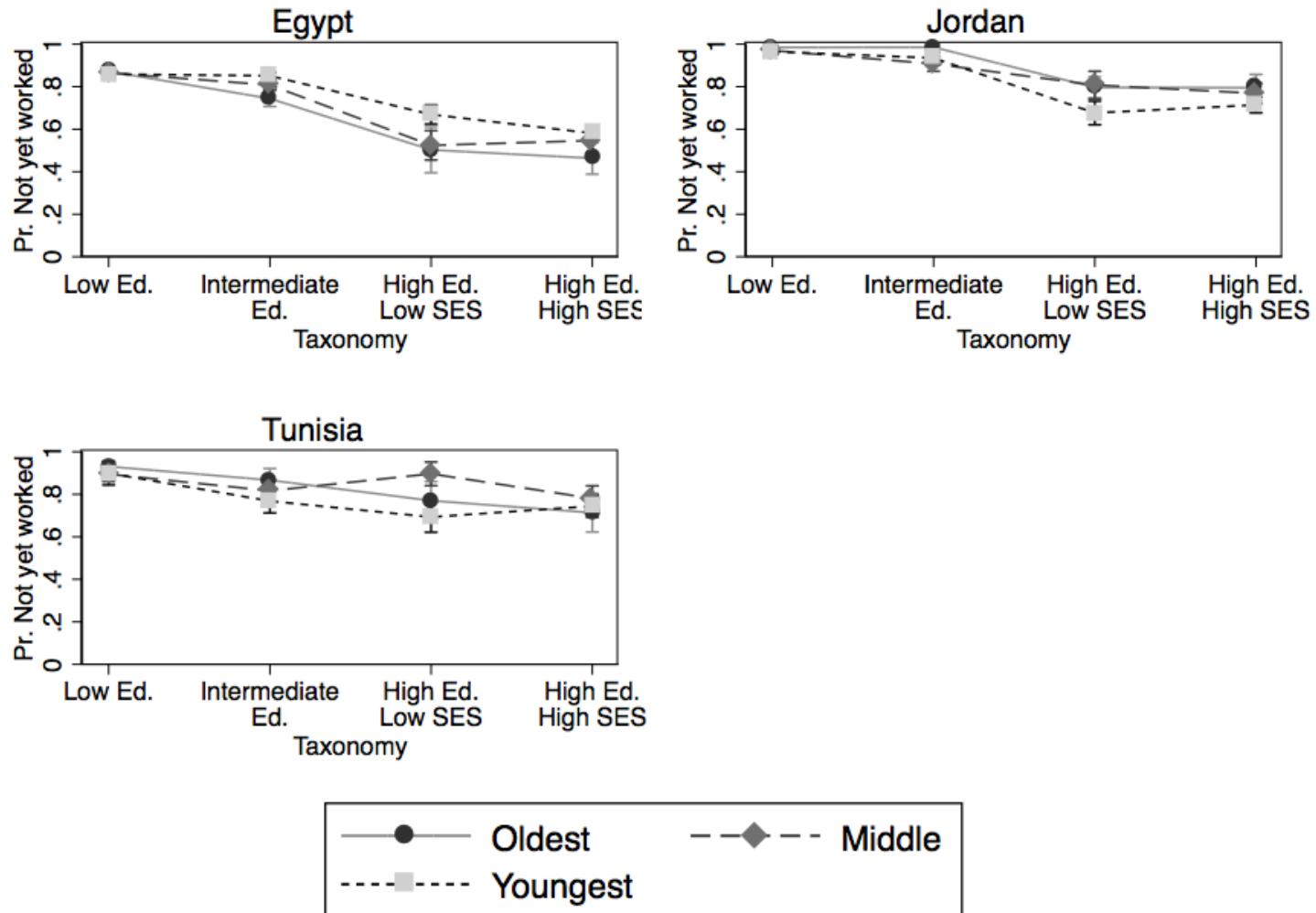
Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

**Figure 8: Predicted Probability of Initial Labor Market Status of Public Sector by Cohort, Taxonomy, and Country, Women**



Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

**Figure 9: Predicted Probability of Initial Labor Market Status of Not Yet Worked by Cohort, Taxonomy, and Country, Women**



Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014

## 5. Discussion and conclusions

In all three countries examined, educated youth who exited school in the 1980s were mostly able to undertake modern school-to-work transitions by entering into public sector employment and to a lesser extent private formal employment. As public sector opportunities declined relative to the rapidly growing number of school leavers, the transition from school-to-work for educated youth became more protracted and uncertain. This change took different forms in each of the three countries and for male and female youth. While the nature of the transition from school-to-work did not change very much across cohorts for less educated workers in the three countries, educated workers experienced substantial but different changes in each setting. In Egypt, the response to the decline in public sector opportunities was to relegate young men with intermediate and high education, but low SES, to informal wage employment. The slow-growing formal private sector continued to favor those with high education and high SES. Waithood, or long periods of unemployment after exiting school, was not so important for educated Egyptian men as informal wage employment became their fallback option. In contrast, the decline in public sector opportunities for educated young women in Egypt was only partially counteracted by an increase in private employment of all types, resulting in higher rates of unemployment and inactivity.

In Jordan, the private formal sector was more dynamic and afforded opportunities to those with high education, irrespective of SES, for young men and, to a lesser extent, young women. The virtual disappearance of the traditional transition to employment via family business and the high prevalence of migrant workers in informal wage work restricted opportunities for lesser educated males in Jordan, who could not compete for the emerging private sector jobs with their more educated counterparts. This led to high levels of waithood and non-employment among young less educated males in Jordan. The educated male workers in Jordan further benefited from a recent reversal of the public sector decline and the fact that these opportunities were allocated to educated workers irrespective of their SES. Less educated Jordanian men participate at very low rates across cohorts, but educated females of all SES levels are beginning to benefit from opportunities in the formal private sector like their male counterparts.

In Tunisia, like in Egypt, SES plays an important role in who is able to access good jobs. Among both men and women in Tunisia, access to both formal private and public sector employment was strongly predicated on SES for the educated. Those with high education but low SES are experiencing very high rates of waithood as their employment opportunities deteriorate. More educated Tunisian men with low SES do not settle for informal jobs, unlike their counterparts who take such jobs in Egypt, but remain non-employed to search for the increasingly scarce formal employment opportunities.

One question that arises is why the private formal sectors in both Jordan and Tunisia have been more able to absorb educated new entrants than in Egypt, albeit with more distinction along SES lines in Tunisia compared to Jordan. The answer probably lies in the degree of flexibility and the cost of formality in each context. All three countries have introduced flexible, defined duration employment contracts, under which an increasing number of young new entrants are being hired (Assaad 2014a; Wahba and Assaad 2017). However, social insurance costs are much higher in



Egypt; 41% of the basic wage compared to 17.5% of the wage in Jordan and 26% of the wage in Tunisia (Roushdy and Selwaness 2015; Alhawarin and Selwaness 2018; Mehdi and Marouani 2016). Social insurance may thus be the binding constraint on the expansion of formal private sector employment in Egypt, more so than the flexibility of employment contracts. While the formal private sectors of Jordan and Tunisia appear more dynamic than in Egypt, they primarily provide jobs for more educated workers, and in the case of Tunisia, primarily for those of high SES.

The potential availability of formal jobs for graduates in Tunisia and Jordan may also be the reason many of them choose to remain unemployed until they locate such positions, rather than fall back on low quality informal jobs. This availability could explain the high rates of waithood in these two contexts compared to Egypt, where young men tend to more readily accept informal jobs. In Jordan, informal jobs are associated with the long hours and poor working conditions that only migrant workers are willing to tolerate, making them particularly unattractive to Jordanians of all educational backgrounds. These conditions may explain why even less educated workers are willing to remain non-employed as they queue for scarce public sector jobs rather than accept informal employment.

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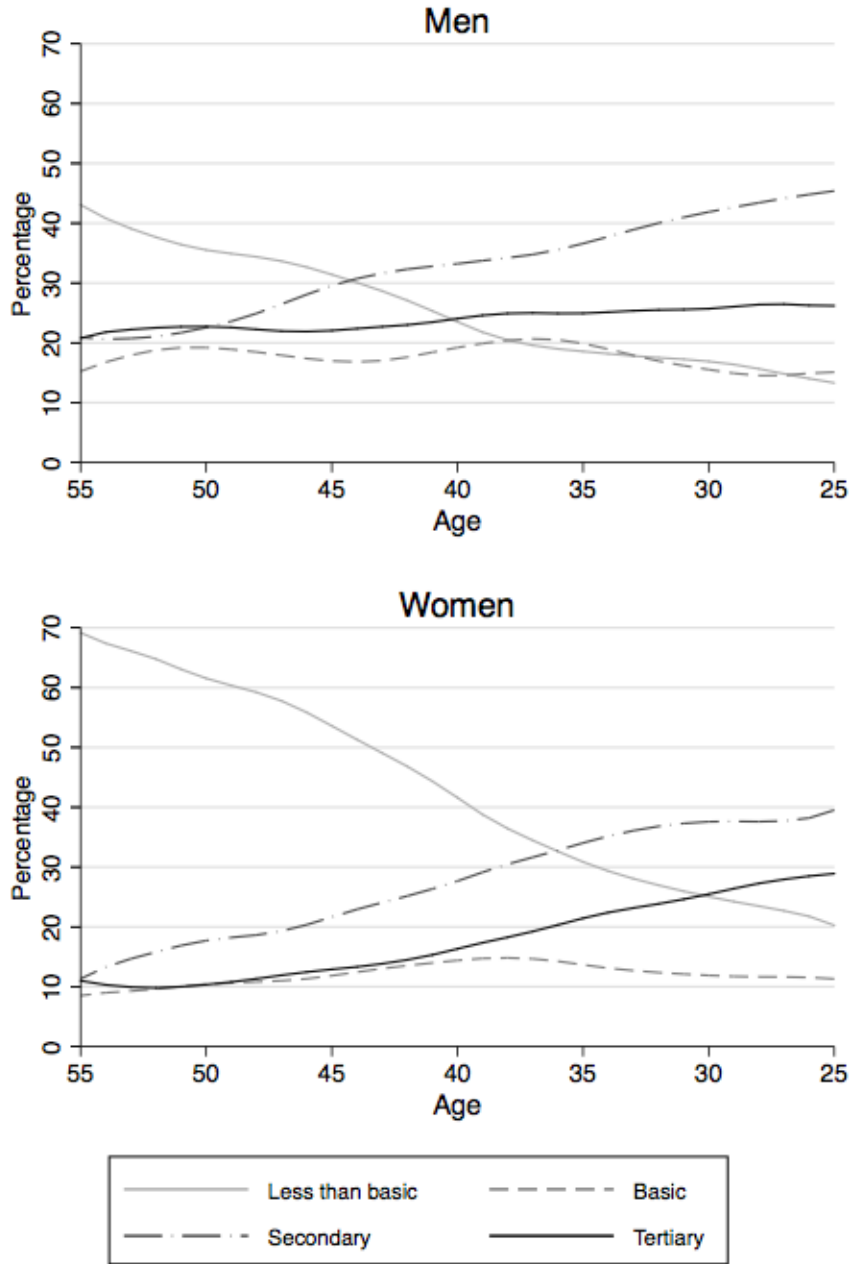
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APPENDIX

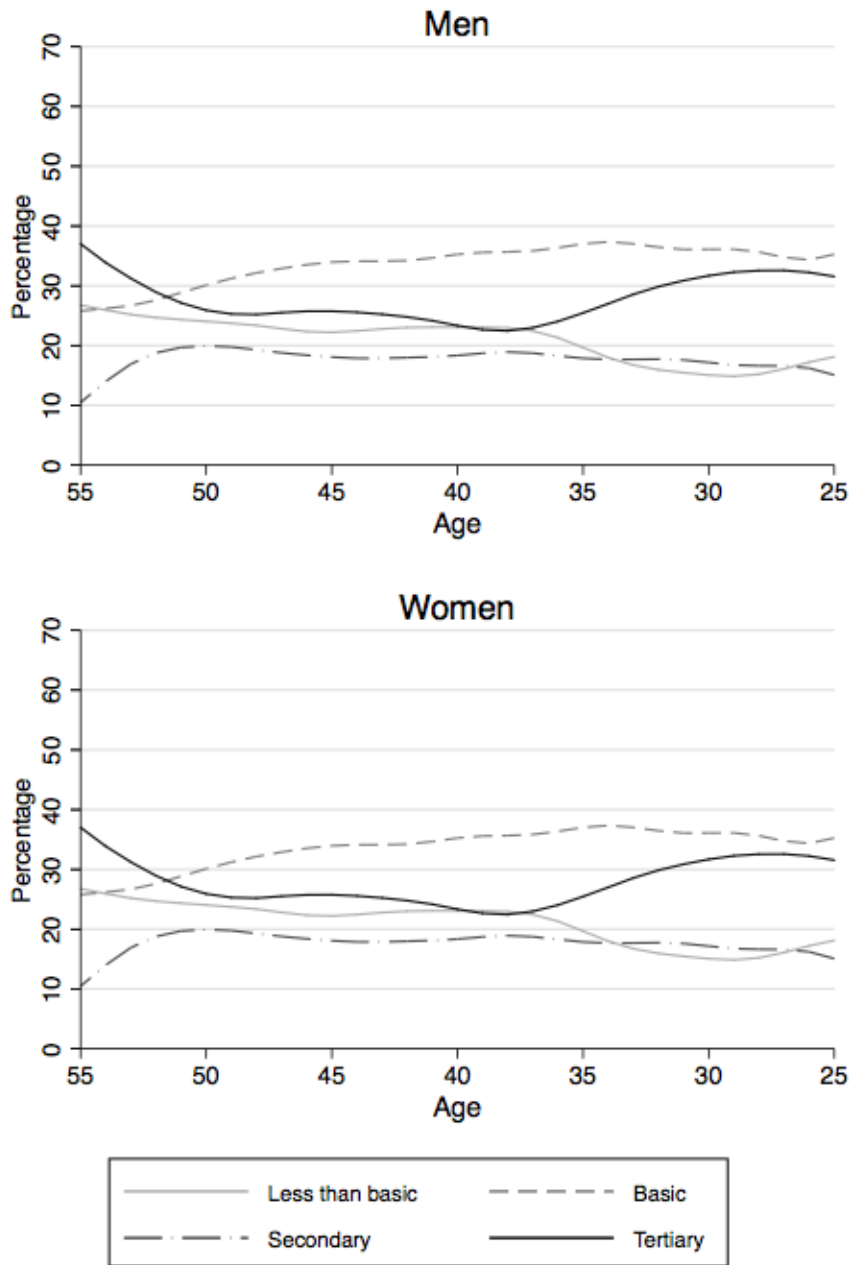
Figure 10: Educational attainment by sex and age (percentage), Egyptians aged 25-55



Source: authors' calculations based on ELMPS 2012

Notes: Lowess smoother with bandwidth 0.5

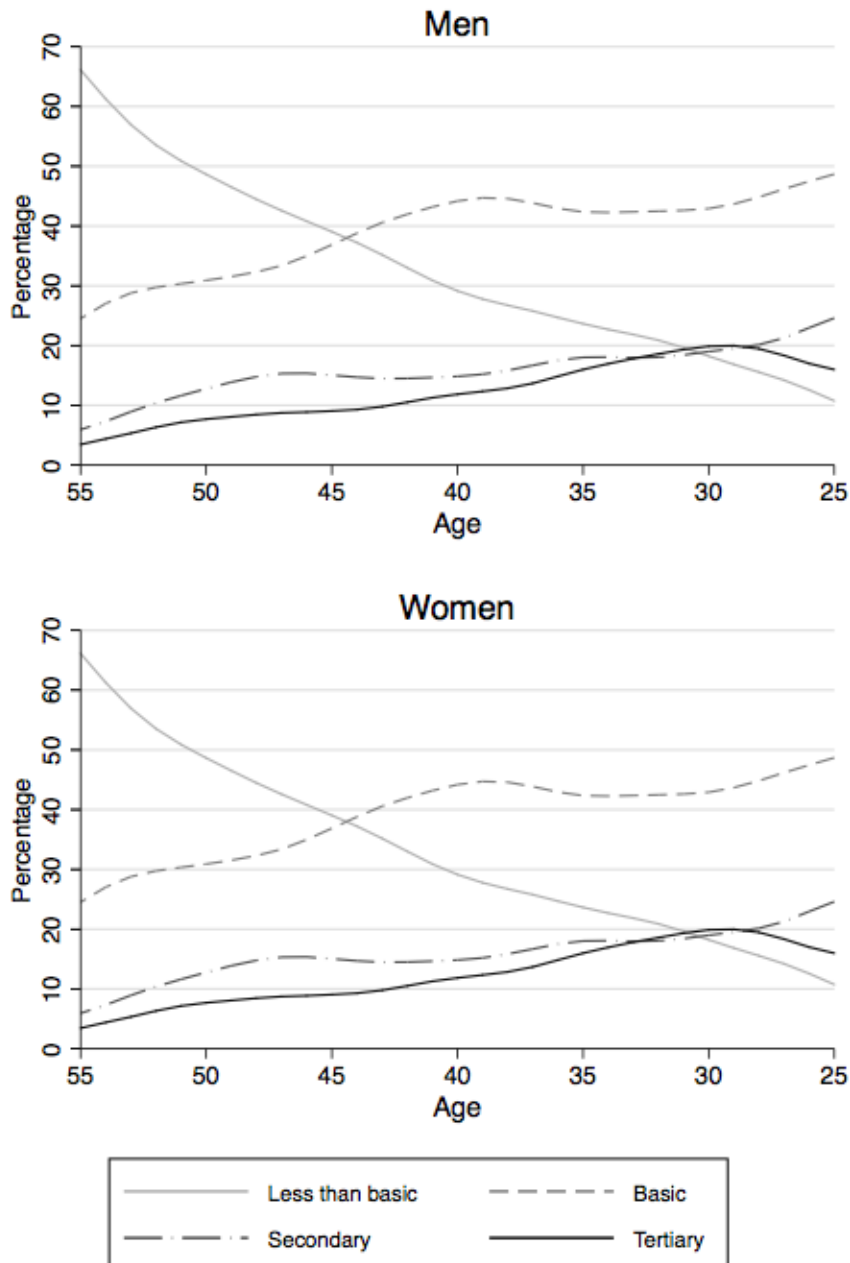
**Figure 11: Educational attainment by sex and age (percentage), Jordanians aged 25-55**



Source: authors' calculations based on JLMPS 2016

Notes: Lowess smoother with bandwidth 0.5

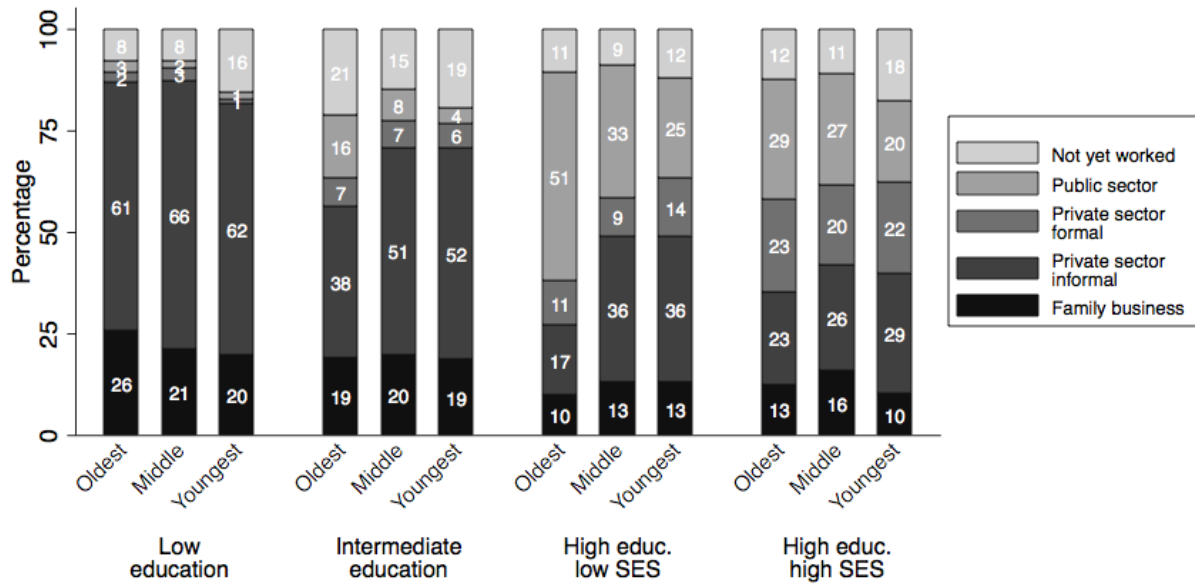
Figure 12: Educational attainment by sex and age (percentage), Tunisians aged 25-55



Source: authors' calculations based on TLMPS 2014

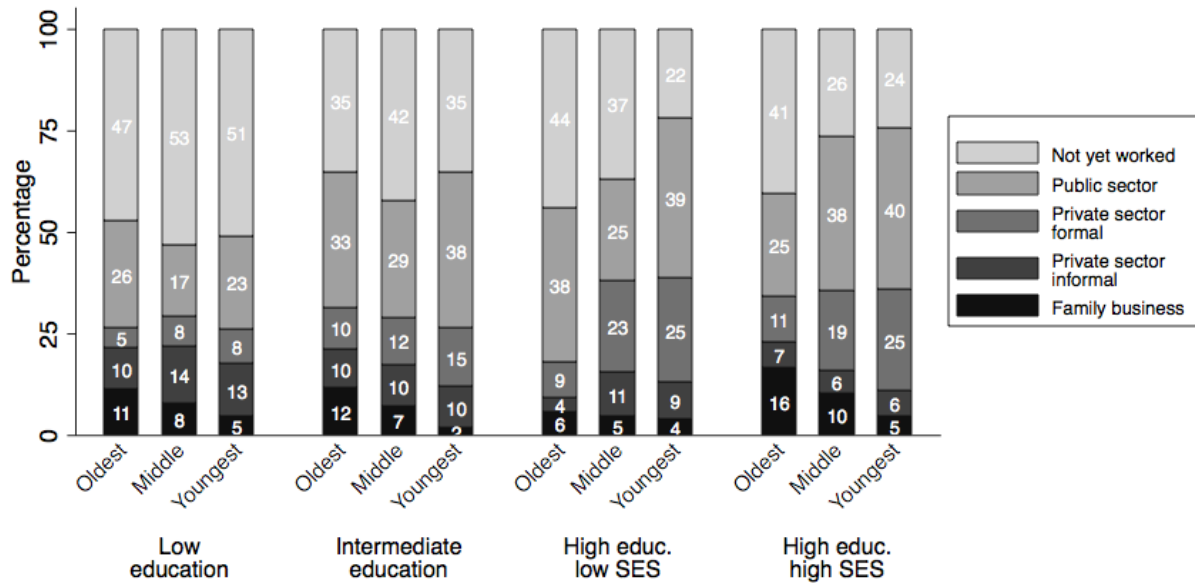
Notes: Lowess smoother with bandwidth 0.5

**Figure 13: Initial Labor Market Status by Taxonomy and Cohort, Egyptian Men**



Source: authors' calculations based on ELMPS 2012

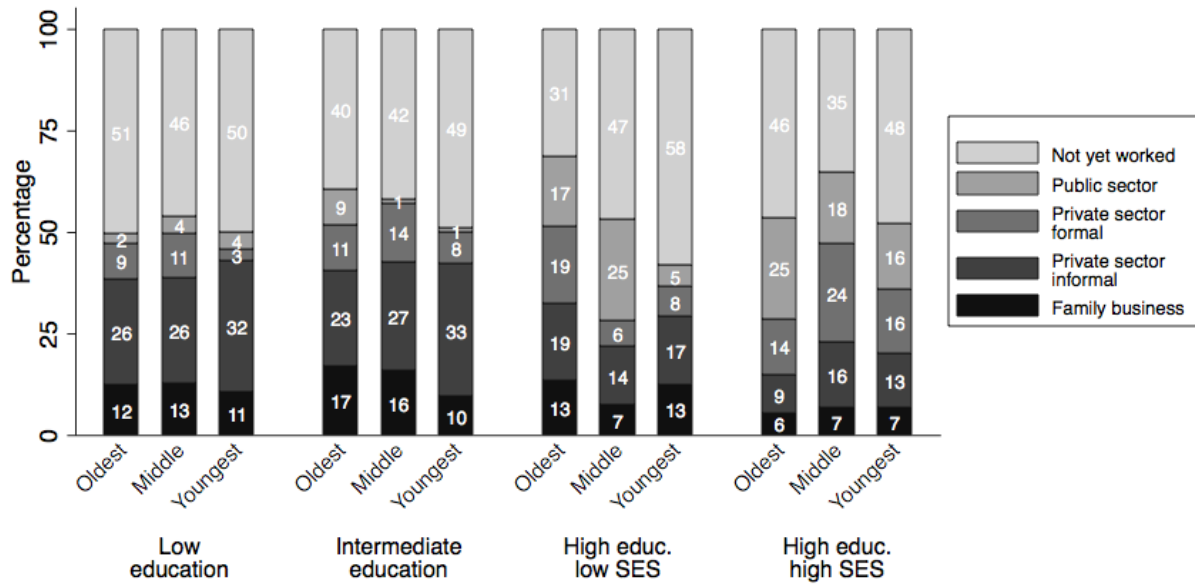
**Figure 14: Initial Labor Market Status by Taxonomy and Cohort, Jordanian Men**



Source: authors' calculations based on JLMPS 2016

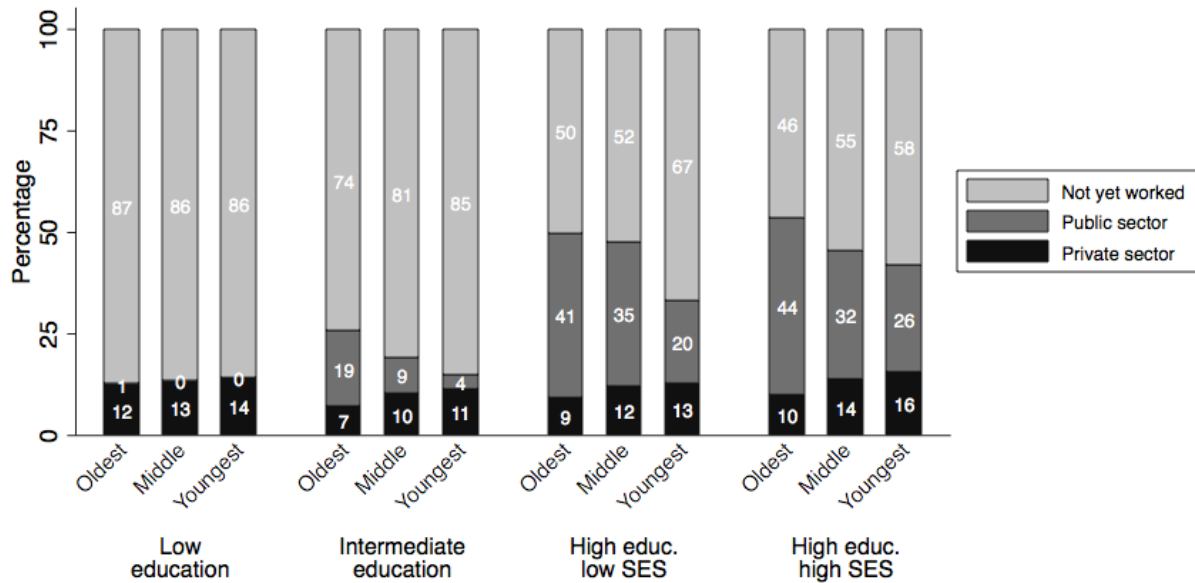


**Figure 15: Initial Labor Market Status by Taxonomy and Cohort, Tunisian Men**



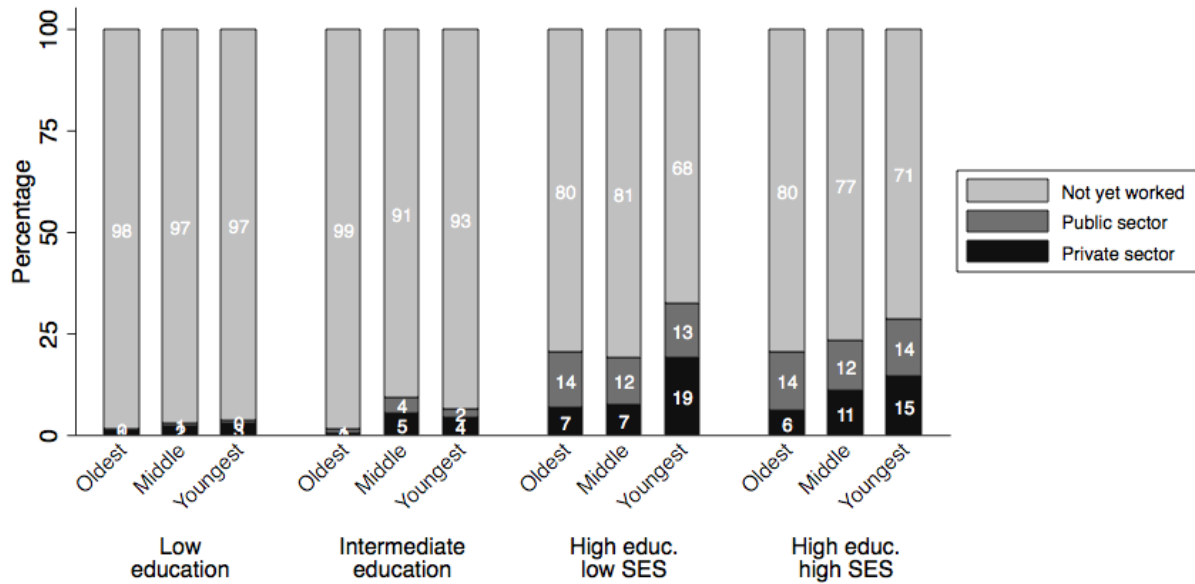
Source: authors' calculations based on TLMPs 2014

**Figure 16: Initial Labor Market Status by Taxonomy and Cohort, Egyptian Women**



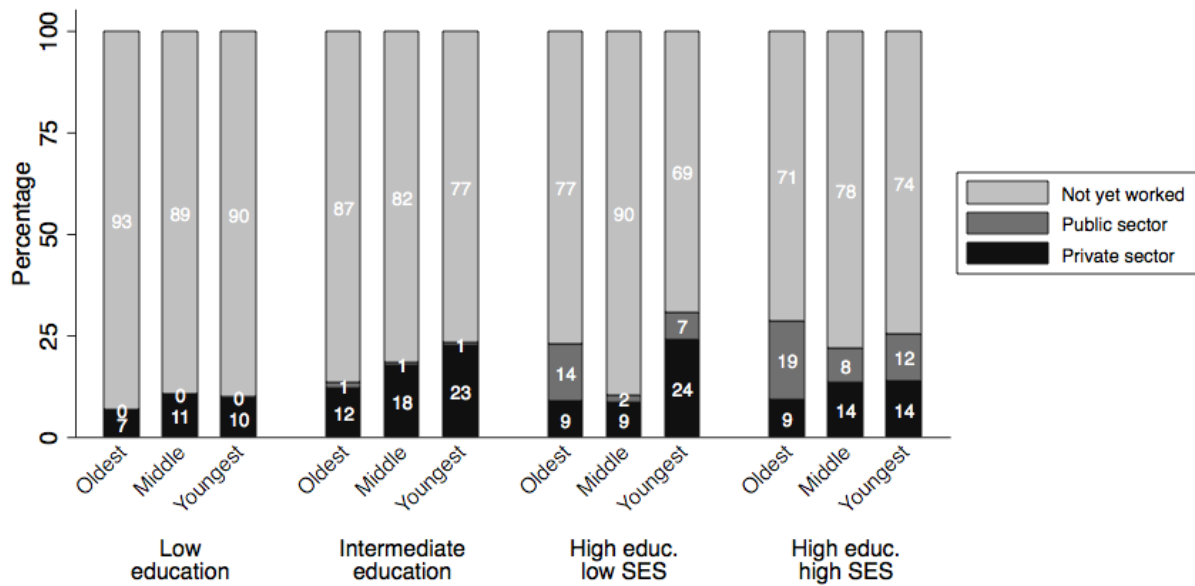
Source: authors' calculations based on ELMPS 2012

**Figure 17: Initial Labor Market Status by Taxonomy and Cohort, Jordanian Women**



Source: authors' calculations based on JLMPS 2016

**Figure 18: Initial Labor Market Status by Taxonomy and Cohort, Tunisian Women**



Source: authors' calculations based on TLMPS 2014

**Table 3: Multinomial Logit for Initial Labor Market Status by Country, Men**

|   | Egypt                |                         |                       |                     | Jordan              |                         |                       |                     | Tunisia               |                         |                       |                      |
|---|----------------------|-------------------------|-----------------------|---------------------|---------------------|-------------------------|-----------------------|---------------------|-----------------------|-------------------------|-----------------------|----------------------|
|   | Family Business      | Private Sector Informal | Private Sector Formal | No Work             | Family Business     | Private Sector Informal | Private Sector Formal | No Work             | Family Business       | Private Sector Informal | Private Sector Formal | No Work              |
| <b>Taxonomy (High ed. high SES omitted)</b>                       |                      |                         |                       |                     |                     |                         |                       |                     |                       |                         |                       |                      |
| <b>Low ed.</b>  | 19.609***<br>(5.435) | 25.693***<br>(6.330)    | 0.982<br>(0.305)      | 5.972***<br>(1.741) | 0.654<br>(0.186)    | 1.487<br>(0.559)        | 0.424*<br>(0.142)     | 1.116<br>(0.248)    | 24.094***<br>(16.302) | 30.158***<br>(18.312)   | 6.583**<br>(4.007)    | 11.593***<br>(6.096) |
| <b>Intermediate ed.</b>   | 2.848***<br>(0.706)  | 3.115***<br>(0.651)     | 0.560*<br>(0.138)     | 3.230***<br>(0.798) | 0.534<br>(0.175)    | 1.107<br>(0.460)        | 0.696<br>(0.251)      | 0.663<br>(0.166)    | 8.950***<br>(5.233)   | 7.334***<br>(3.749)     | 2.345<br>(1.194)      | 2.452*<br>(0.996)    |
| <b>High ed. low SES</b>   | 0.447*<br>(0.148)    | 0.432**<br>(0.116)      | 0.280***<br>(0.083)   | 0.490*<br>(0.159)   | 0.230***<br>(0.096) | 0.357<br>(0.192)        | 0.537<br>(0.214)      | 0.724<br>(0.190)    | 3.486*<br>(1.914)     | 3.004*<br>(1.399)       | 1.934<br>(0.825)      | 0.976<br>(0.338)     |
| <b>Cohort (oldest omitted)</b>                                    |                      |                         |                       |                     |                     |                         |                       |                     |                       |                         |                       |                      |
| <b>Youngest cohort</b>  | 1.366<br>(0.361)     | 1.222<br>(0.273)        | 0.926<br>(0.213)      | 0.961<br>(0.267)    | 0.410*<br>(0.149)   | 0.577<br>(0.276)        | 1.159<br>(0.413)      | 0.430**<br>(0.119)  | 1.742<br>(1.115)      | 2.449<br>(1.245)        | 2.446*<br>(1.099)     | 1.064<br>(0.401)     |
| <b>Middle cohort</b>  | 1.210<br>(0.308)     | 1.878**<br>(0.386)      | 1.437<br>(0.300)      | 2.100**<br>(0.513)  | 0.180***<br>(0.062) | 0.605<br>(0.247)        | 1.411<br>(0.448)      | 0.381***<br>(0.091) | 1.854<br>(1.044)      | 2.207<br>(1.014)        | 1.706<br>(0.702)      | 1.566<br>(0.496)     |
| <b>Taxon. * cohort (oldest cohort, high ed. high SES omitted)</b> |                      |                         |                       |                     |                     |                         |                       |                     |                       |                         |                       |                      |
| <b>Low ed.*youngest cohort</b>                                    | 0.993<br>(0.380)     | 1.473<br>(0.514)        | 2.234<br>(0.961)      | 1.749<br>(0.716)    | 2.613*<br>(1.063)   | 3.496*<br>(1.778)       | 2.019<br>(0.841)      | 3.942***<br>(1.189) | 0.305<br>(0.281)      | 0.216<br>(0.174)        | 0.263<br>(0.214)      | 0.450<br>(0.323)     |
| <b>Low ed.*middle cohort</b>                                      | 1.369<br>(0.548)     | 1.159<br>(0.423)        | 0.707<br>(0.350)      | 2.082<br>(0.844)    | 2.567*<br>(1.011)   | 2.360*<br>(1.032)       | 1.392<br>(0.521)      | 3.214***<br>(0.844) | 0.241<br>(0.234)      | 0.292<br>(0.252)        | 0.095*<br>(0.102)     | 0.328<br>(0.256)     |
| <b>Intermediate ed.*youngest cohort</b>                           | 1.557<br>(0.491)     | 2.244**<br>(0.607)      | 2.114*<br>(0.677)     | 1.487<br>(0.487)    | 1.714<br>(0.840)    | 2.122<br>(1.213)        | 1.134<br>(0.529)      | 3.187***<br>(1.099) | 4.145<br>(4.086)      | 3.686<br>(3.290)        | 4.034<br>(3.582)      | 7.781*<br>(6.328)    |
| <b>Intermediate ed.*middle cohort</b>                             | 3.212***<br>(1.007)  | 2.902***<br>(0.769)     | 2.394**<br>(0.744)    | 1.704<br>(0.518)    | 0.780<br>(0.428)    | 1.492<br>(0.737)        | 0.876<br>(0.360)      | 2.269**<br>(0.685)  | 2.608<br>(2.446)      | 5.501*<br>(4.710)       | 3.544<br>(3.095)      | 6.893*<br>(5.364)    |
| <b>High ed. low SES*youngest cohort</b>                           | 1.527<br>(0.618)     | 2.699**<br>(0.882)      | 1.424<br>(0.547)      | 1.402<br>(0.587)    | 3.008<br>(1.983)    | 8.033**<br>(5.632)      | 3.332*<br>(1.710)     | 2.986**<br>(1.169)  | 0.219<br>(0.172)      | 0.213*<br>(0.136)       | 0.096***<br>(0.062)   | 0.973<br>(0.482)     |
| <b>High ed. low SES*middle cohort</b>                             | 2.275*<br>(0.899)    | 2.318**<br>(0.729)      | 1.844<br>(0.655)      | 1.139<br>(0.438)    | 3.798*<br>(2.228)   | 4.056*<br>(2.520)       | 1.928<br>(0.865)      | 1.250<br>(0.422)    | 1.702<br>(1.350)      | 1.315<br>(0.922)        | 0.794<br>(0.567)      | 3.966*<br>(2.287)    |
| <b>Number of Observations</b>                                     | 9965                 | 9965                    | 9965                  | 9965                | 5364                | 5364                    | 5364                  | 5364                | 1887                  | 1887                    | 1887                  | 1887                 |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Public sector is base state for multinomial logit model. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Table 4: Multinomial Logit Results by Country, Women**

|   | Egypt             |                     | Jordan              |                     | Tunisia          |                     |
|---|-------------------|---------------------|---------------------|---------------------|------------------|---------------------|
|   | Private Sector    | Public Sector       | Private Sector      | Public Sector       | Private Sector   | Public Sector       |
| <b>Taxonomy (High ed. high SES omitted)</b>                       |                   |                     |                     |                     |                  |                     |
| <b>Low ed.</b>  | 0.663<br>(0.187)  | 0.007***<br>(0.003) | 0.154***<br>(0.070) | 0.022***<br>(0.012) | 0.571<br>(0.234) | 0.003**<br>(0.006)  |
| <b>Intermediate ed.</b>   | 0.442*<br>(0.141) | 0.265***<br>(0.052) | 0.065**<br>(0.059)  | 0.053***<br>(0.035) | 1.092<br>(0.478) | 0.051***<br>(0.040) |
| <b>High ed. low SES</b>   | 0.863<br>(0.412)  | 0.852<br>(0.240)    | 1.116<br>(0.467)    | 0.940<br>(0.276)    | 0.893<br>(0.472) | 0.673<br>(0.276)    |
| <b>Cohort (oldest omitted)</b>                                    |                   |                     |                     |                     |                  |                     |
| <b>Youngest cohort</b>  | 1.185<br>(0.378)  | 0.612*<br>(0.126)   | 1.866<br>(0.714)    | 0.874<br>(0.253)    | 1.351<br>(0.566) | 0.394*<br>(0.147)   |
| <b>Middle cohort</b>  | 1.267<br>(0.362)  | 0.479***<br>(0.086) | 2.664**<br>(0.942)  | 1.086<br>(0.280)    | 1.442<br>(0.578) | 0.579<br>(0.187)    |
| <b>Taxon. * cohort (oldest cohort, high ed. high SES omitted)</b> |                   |                     |                     |                     |                  |                     |
| <b>Low ed.*youngest cohort</b>                                    | 0.921<br>(0.311)  | 0.861<br>(0.539)    | 1.101<br>(0.610)    | 1.940<br>(1.516)    | 1.187<br>(0.595) | 0.000<br>(0.015)    |
| <b>Low ed.*middle cohort</b>                                      | 0.918<br>(0.282)  | 0.321<br>(0.322)    | 1.003<br>(0.508)    | 1.049<br>(0.819)    | 1.009<br>(0.554) | 10.931<br>(24.352)  |
| <b>Intermediate ed.*youngest cohort</b>                           | 1.155<br>(0.433)  | 0.715<br>(0.182)    | 6.386<br>(6.227)    | 5.155*<br>(3.870)   | 1.138<br>(0.589) | 1.693<br>(1.914)    |
| <b>Intermediate ed.*middle cohort</b>                             | 1.127<br>(0.385)  | 0.347***<br>(0.086) | 3.556<br>(3.420)    | 2.214<br>(1.691)    | 1.457<br>(0.728) | 0.931<br>(1.130)    |
| <b>High ed. low SES*youngest cohort</b>                           | 1.068<br>(0.593)  | 1.371<br>(0.474)    | 0.574<br>(0.322)    | 0.986<br>(0.427)    | 0.625<br>(0.412) | 0.261<br>(0.227)    |
| <b>High ed. low SES*middle cohort</b>                             | 0.834<br>(0.425)  | 0.781<br>(0.249)    | 1.238<br>(0.573)    | 1.065<br>(0.390)    | 2.099<br>(1.234) | 0.902<br>(0.500)    |
| <b>Number of Observations</b>                                     | 9960              | 9960                | 5059                | 5059                | 2320             | 2320                |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Not yet worked is base state for multinomial logit calculations. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Table 5: Tests of Equal Predicted Probabilities of Initial Labor Market Outcomes across Taxonomy, by Cohort and Country, Men**

|                                |  | Egypt           |                  |                |        |                | Jordan          |                  |                |        |                | Tunisia         |                  |                |        |                |
|--------------------------------|--|-----------------|------------------|----------------|--------|----------------|-----------------|------------------|----------------|--------|----------------|-----------------|------------------|----------------|--------|----------------|
| Predicted probabilities tested |  | Family business | Private informal | Private formal | Public | Not yet worked | Family business | Private informal | Private formal | Public | Not yet worked | Family business | Private informal | Private formal | Public | Not yet worked |
| Youngest Cohort                | Low Ed. vs. Intermediate Ed.           |                 | ***              | ***            | ***    | **             | ***             |                  | ***            | ***    | ***            |                 |                  | ***            |        |                |
|                                | Low Ed. vs. High Ed. Low SES           | ***             | ***              | ***            | ***    | *              |                 | *                | ***            | ***    | ***            |                 | **               |                |        |                |
|                                | Low Ed. vs. High Ed. High SES          | ***             | ***              | ***            | ***    |                |                 | ***              | ***            | ***    | ***            |                 | ***              | ***            | ***    |                |
|                                | Intermediate Ed. vs. High Ed. Low SES  | ***             | ***              | ***            | ***    | ***            |                 |                  | ***            |        | ***            |                 | ***              |                | **     | *              |
|                                | Intermediate Ed. vs. High Ed. High SES | ***             | ***              | ***            | ***    |                | **              | **               | ***            |        | ***            |                 | ***              | **             | ***    |                |
|                                | High Ed. Low SES vs. High Ed. High SES |                 | **               | ***            | *      | ***            |                 |                  |                |        |                | *               |                  | **             | ***    | *              |
| Middle Cohort                  | Low Ed. vs. Intermediate Ed.           |                 | ***              | ***            | ***    | ***            |                 |                  | *              | ***    | ***            |                 |                  |                | *      |                |
|                                | Low Ed. vs. High Ed. Low SES           | ***             | ***              | ***            | ***    |                | *               |                  | ***            | *      | ***            |                 | ***              |                | ***    |                |
|                                | Low Ed. vs. High Ed. High SES          | **              | ***              | ***            | ***    | *              |                 | ***              | ***            | ***    | ***            |                 | **               | ***            | ***    | *              |
|                                | Intermediate Ed. vs. High Ed. Low SES  | ***             | ***              | *              | ***    | ***            |                 |                  | ***            |        |                | ***             | ***              | ***            | ***    |                |
|                                | Intermediate Ed. vs. High Ed. High SES | *               | ***              | ***            | ***    | **             |                 | *                | **             | **     | ***            | **              | **               | **             | ***    |                |
|                                | High Ed. Low SES vs. High Ed. High SES |                 | ***              | ***            |        |                | **              |                  |                | ***    | **             |                 |                  | ***            |        | *              |
| Oldest Cohort                  | Low Ed. vs. Intermediate Ed.           | ***             | ***              | ***            | ***    | ***            |                 |                  | ***            | **     | ***            |                 |                  |                | **     | **             |
|                                | Low Ed. vs. High Ed. Low SES           | ***             | ***              | ***            | ***    |                | ***             | ***              | *              | ***    |                |                 |                  | ***            | ***    | ***            |
|                                | Low Ed. vs. High Ed. High SES          | ***             | ***              | ***            | ***    | **             |                 |                  | **             |        |                | **              | ***              |                | ***    |                |
|                                | Intermediate Ed. vs. High Ed. Low SES  | ***             | ***              | *              | ***    | ***            | **              | ***              |                |        | *              |                 |                  | *              | **     |                |
|                                | Intermediate Ed. vs. High Ed. High SES | **              | ***              | ***            | ***    | ***            |                 |                  |                | *      |                | ***             | ***              |                | ***    |                |
|                                | High Ed. Low SES vs. High Ed. High SES |                 |                  | ***            | ***    |                | ***             |                  |                | **     |                | **              | **               |                |        | **             |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Predicted probabilities based on multinomial logit estimates. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Table 6: Tests of Equal Predicted Probabilities of Initial Labor Market Outcomes across Cohorts, by Taxonomy and Country, Men**

|                                       |                            | Egypt           |                  |                |        |                | Jordan          |                  |                |        |                | Tunisia         |                  |                |        |                |
|---------------------------------------|----------------------------|-----------------|------------------|----------------|--------|----------------|-----------------|------------------|----------------|--------|----------------|-----------------|------------------|----------------|--------|----------------|
|                                       |                            | Family business | Private informal | Private formal | Public | Not yet worked | Family business | Private informal | Private formal | Public | Not yet worked | Family business | Private informal | Private formal | Public | Not yet worked |
| <b>Predicted probabilities tested</b> |                            |                 |                  |                |        |                |                 |                  |                |        |                |                 |                  |                |        |                |
| <b>Low Ed.</b>                        | <b>Youngest vs. Middle</b> |                 | **               | ***            |        | ***            | ***             |                  |                | ***    |                |                 |                  | ***            |        |                |
|                                       | <b>Youngest vs. Oldest</b> | ***             |                  | **             | ***    | ***            | ***             | *                | ***            | *      | *              |                 |                  | **             |        |                |
|                                       | <b>Middle vs. Oldest</b>   | ***             | ***              |                | *      |                | **              | **               | **             | ***    | **             |                 |                  |                |        |                |
| <b>Intermediate Ed.</b>               | <b>Youngest vs. Middle</b> |                 |                  |                | ***    | ***            | ***             |                  |                | **     | *              | **              |                  | **             |        |                |
|                                       | <b>Youngest vs. Oldest</b> |                 | ***              |                | ***    |                | ***             |                  | *              |        |                | **              | **               |                | ***    | *              |
|                                       | <b>Middle vs. Oldest</b>   |                 | ***              |                | ***    | ***            | *               |                  |                |        |                |                 |                  |                | ***    |                |
| <b>High Ed. Low SES</b>               | <b>Youngest vs. Middle</b> |                 |                  | **             | **     |                |                 |                  |                | ***    | ***            |                 |                  |                | ***    | *              |
|                                       | <b>Youngest vs. Oldest</b> |                 | ***              |                | ***    |                |                 | **               | ***            |        | ***            |                 |                  | ***            | ***    | ***            |
|                                       | <b>Middle vs. Oldest</b>   |                 | ***              |                | ***    |                |                 | **               | ***            | **     |                | *               |                  | ***            |        | ***            |
| <b>High Ed. High SES</b>              | <b>Youngest vs. Middle</b> | ***             |                  |                | ***    | ***            | **              |                  |                |        |                |                 |                  | *              |        | **             |
|                                       | <b>Youngest vs. Oldest</b> |                 | **               |                | ***    | **             | ***             |                  | ***            | ***    | ***            |                 |                  |                | *      |                |
|                                       | <b>Middle vs. Oldest</b>   |                 |                  |                |        |                | *               |                  | **             | ***    | ***            |                 |                  | *              |        | *              |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Predicted probabilities based on multinomial logit estimates. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Table 7: Tests of Equal Predicted Probabilities of Initial Labor Market Outcomes across Taxonomy, by Cohort and Country, Women**

|                        | Predicted probabilities tested         | Egypt          |               |                | Jordan         |               |                | Tunisia        |               |                |
|------------------------|--|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|
|                        |  | Private Sector | Public Sector | Not yet worked | Private Sector | Public Sector | Not yet worked | Private Sector | Public Sector | Not yet worked |
| <b>Youngest Cohort</b> | Low Ed. vs. Intermediate Ed.           | **             | ***           |                |                | **            | **             | ***            |               | ***            |
|                        | Low Ed. vs. High Ed. Low SES           |                | ***           | ***            | ***            | ***           | ***            | ***            | ***           | ***            |
|                        | Low Ed. vs. High Ed. High SES          |                | ***           | ***            | ***            | ***           | ***            |                | ***           | ***            |
|                        | Intermediate Ed. vs. High Ed. Low SES  |                | ***           | ***            | ***            | ***           | ***            |                | ***           |                |
|                        | Intermediate Ed. vs. High Ed. High SES | ***            | ***           | **             | ***            | ***           | ***            | **             | ***           |                |
|                        | High Ed. Low SES vs. High Ed. High SES |                | **            | ***            |                |               |                | ***            | *             |                |
| <b>Middle Cohort</b>   | Low Ed. vs. Intermediate Ed.           | **             | ***           | **             | **             | ***           | ***            | **             |               | **             |
|                        | Low Ed. vs. High Ed. Low SES           |                | ***           | ***            | **             | ***           | ***            |                |               |                |
|                        | Low Ed. vs. High Ed. High SES          |                | ***           | ***            | ***            | ***           | ***            |                | ***           | ***            |
|                        | Intermediate Ed. vs. High Ed. Low SES  |                | ***           | ***            |                | ***           | ***            | **             |               | **             |
|                        | Intermediate Ed. vs. High Ed. High SES |                | ***           | ***            | **             | ***           | ***            |                | ***           |                |
|                        | High Ed. Low SES vs. High Ed. High SES |                |               |                |                |               |                |                | ***           | ***            |
| <b>Oldest Cohort</b>   | Low Ed. vs. Intermediate Ed.           | ***            | ***           | ***            |                |               |                | *              |               | **             |
|                        | Low Ed. vs. High Ed. Low SES           |                | ***           | ***            | ***            | ***           | ***            |                | ***           | ***            |
|                        | Low Ed. vs. High Ed. High SES          |                | ***           | ***            | **             | ***           | ***            |                | ***           | ***            |
|                        | Intermediate Ed. vs. High Ed. Low SES  |                | ***           | ***            | ***            | ***           | ***            |                | ***           | *              |
|                        | Intermediate Ed. vs. High Ed. High SES |                | ***           | ***            | ***            | ***           | ***            |                | ***           | ***            |
|                        | High Ed. Low SES vs. High Ed. High SES |                |               |                |                |               |                |                |               |                |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Predicted probabilities based on multinomial logit estimates. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Table 8: Tests of Equal Predicted Probabilities of Initial Labor Market Outcomes across Cohorts, by Taxonomy and Country, Women**

| Predicted probabilities tested |                     | Egypt          |               |                | Jordan         |               |                | Tunisia        |               |                |
|--------------------------------|---------------------|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|
|                                |                     | Private Sector | Public Sector | Not yet worked | Private Sector | Public Sector | Not yet worked | Private Sector | Public Sector | Not yet worked |
| Low Ed.                        | Youngest vs. Middle |                | **            |                | ***            |               | ***            |                |               |                |
|                                | Youngest vs. Oldest |                |               |                | *              |               | *              | *              |               |                |
|                                | Middle vs. Oldest   |                | ***           | ***            |                |               |                |                |               |                |
| Intermediate Ed.               | Youngest vs. Middle | ***            | ***           | ***            | ***            |               | ***            | ***            |               | **             |
|                                | Youngest vs. Oldest | **             | ***           | ***            | ***            | **            | ***            |                |               |                |
|                                | Middle vs. Oldest   |                | ***           | ***            | ***            |               | ***            | ***            | **            | ***            |
| High Ed. Low SES               | Youngest vs. Middle |                | ***           | ***            | ***            |               | ***            | ***            | *             |                |
|                                | Youngest vs. Oldest |                |               |                |                |               |                |                | ***           | **             |
|                                | Middle vs. Oldest   |                | *             |                |                |               | *              |                |               |                |
| High Ed. High SES              | Youngest vs. Middle | **             | ***           | ***            | ***            |               | **             |                | *             |                |
|                                | Youngest vs. Oldest |                | ***           | *              | *              |               |                |                | **            |                |
|                                | Middle vs. Oldest   |                | *             |                | *              |               |                |                | *             |                |

Source: authors' calculations based on ELMPS 2012, JLMPS 2016, TLMPS 2014.

Notes: Predicted probabilities based on multinomial logit estimates. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001