ECONOMIC RESEARCH FORUM

منتدى البحوث الاقتصادية

2018

working paper series

THE PROMISE AND PERIL OF YOUTH ENTREPRENEURSHIP IN MENA

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Working Paper No. 1257

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November 2018

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[1] This work was supported by a grant to the Economic Research Forum from the Ford Foundation on "Youth and Vulnerability in the Middle East and North Africa." The contents and recommendations do not necessarily reflect the views of the Economic Research Forum.
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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

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Abstract

Entrepreneurship is promoted by government policies and international agencies as a solution to high rates of youth unemployment in the Middle East and North Africa. This paper investigates the potential for entrepreneurship to deliver on promises of alleviating unemployment. We specifically examine who entrepreneurs are (in comparison to the unemployed), their working conditions and earnings, and the dynamics of their occupational choices. We find that entrepreneurs, and especially the employers who are relatively more successful entrepreneurs and who can create jobs for others, are essentially the opposite of the unemployed. For example, entrepreneurs are older and less educated, while the unemployed are highly educated new entrants. Entrepreneurship does not generally lead to higher earnings, and does have fewer benefits. Thus, promoting entrepreneurship is not only unlikely to be successful in reducing unemployment, but also, if it is successful, may even be harmful to youth.

Keywords: Entrepreneurship, Self-Employment, Youth, Unemployment, Middle East and North Africa

JEL Classifications: J24, J21, J31, N15

ملخص

يتم الترويج لريادة الأعمال من خلال السياسات الحكومية والوكالات الدولية كحل لمعدلات بطالة الشباب المرتفعة في منطقة الشرق الأوسط وشمال أفريقيا. تبحث هذه الورقة في إمكانات ريادة الأعمال الوفاء بوعود التخفيف من البطالة. نحن ندرس على وجه التحديد من هم رواد الأعمال (بالمقارنة مع العاطلين عن العمل) ، وظروف عملهم وأرباحهم ، وديناميات خياراتهم المهنية. نجد أن رواد الأعمال ، وخاصة أصحاب الأعمال الذين هم أكثر نجاحًا في مجال الأعمال الحرة والذين يمكنهم خلق فرص عمل للآخرين ، هم في الأساس عكس العاطلين عن العمل. على سبيل المثال ، رواد الأعمال أكبر سناً وأقل تعليماً ، في حين أن العاطلين عن العمل هم من الوافدين الجدد ذوي التعليم العالي. كما لا تؤدي ريادة الأعمال بشكل عام إلى ارتفاع الإيرادات ، ولا تتمتع إلا بفوائد أقل. وبالتالي ، من غير المحتمل أن ينجح تشجيع ريادة الأعمال في الحد من البطالة، بل إذا نجحً في ذلك ، فقد يكون ضارًا بالشباب.

1. Introduction

How can countries in the Middle East and North Africa (MENA) address high rates of youth unemployment? One popular solution to this challenge has been promoting entrepreneurship. When youth start businesses, they can not only alleviate their own unemployment but also create jobs for others. The job-creation potential of entrepreneurship has led governments and international agencies to prioritize entrepreneurship as a solution to unemployment in the region (Angel-Urdinola, Kuddo, Semlali, et al., 2013; Bury, 2016; European Training Foundation, 2014; Momani, 2017; World Economic Forum & Booz & Company, 2011).

The global evidence on entrepreneurship promotion programs suggests they may shift some attitudes and behaviors but do not have large employment effects (Cho & Honorati, 2014; Grimm & Paffhausen, 2014; McKenzie & Woodruff, 2014). The evidence from MENA is very limited but equally unpromising (Barsoum, Crépon, Michel, & Parienté, 2016; Bausch, Dyer, Gardiner, Kluve, & Kovacevic, 2017; Premand, Brodmann, Almeida, Grun, & Barouni, 2012). Programs may be ineffective in part because they do not understand the differences between the unemployed and entrepreneurs. To better understand the potential of entrepreneurship to address youth unemployment in MENA, this paper investigates who entrepreneurs are, the characteristics of their work, and their earnings in Egypt, Jordan, and Tunisia.

Comparing entrepreneurs to the unemployed, we find that entrepreneurs are essentially the opposite of the unemployed. While the unemployed are educated new entrants, entrepreneurs are older individuals with lower levels of education. The findings suggest youth are rational and making optimal occupational choices in selecting away from entrepreneurship, as it provides fewer benefits and is unlikely to provide higher earnings. Although entrepreneurship promotion is not likely to be successful in creating entrepreneurs, if such programs do succeed, they may even be harmful to youth.

In order to better understand why there is such a gap between the idea of entrepreneurship and the realities facing youth, in the next section we discuss the global and MENA literature on what entrepreneurship is and who entrepreneurs are, evidence on entrepreneurship promotion's effects, and the assumptions embedded in entrepreneurship promotion. We then, in section three, describe the data and methods we use to examine occupational choice and entrepreneurship in Egypt, Jordan and Tunisia. The results, in section four, are organized around who the unemployed are, who entrepreneurs are (in contrast to other labor market statuses), and labor market outcomes (including working conditions, earnings, and benefits) for entrepreneurs. Section five discusses the implications of the results for understanding both unemployment and entrepreneurship in MENA. While unemployment is a problem, entrepreneurship is not the solution.

2. Background and Literature Review

2.1. What is entrepreneurship?

The idea of entrepreneurship is associated with innovation, organization formation, creating value, uniqueness, and growth (Gartner, 1990). Definitions of entrepreneurship typically center around individuals (entrepreneurs) exploiting opportunities they observe in the market to create a

new product or firm (Naudé, 2010; Shane, 2003). This *opportunity* definition of entrepreneurship is why entrepreneurship is considered to have great potential in MENA, and in developing countries generally.

One of the reasons for high hopes for the role of entrepreneurship is the somewhat tautological definition of entrepreneurship; if entrepreneurship is defined in terms of creating jobs or creating value, inherently it is the solution to youth unemployment or economic development. This characterization is popular, but the academic literature characterizes both a positive potential for entrepreneurship and that entrepreneurship can undermine economic development either by promoting activities with private profit and social harms, or by promoting low-quality entrepreneurs (Naudé, 2008).

The operationalization of entrepreneurship tends to be more prosaic. Entrepreneurship is measured either on the individual level, in terms of self-employment or business ownership (being an employer), or on a firm level, in terms of new firm (start-up) rates (Naudé, 2010; Shane, 2003). Such an operationalization of entrepreneurship adds a *necessity* dimension to entrepreneurship, where those who have no other option undertake self-employment or start a business.

While globally opportunity entrepreneurship is dominant, this is not necessarily the case in MENA. For example, Egypt ranks last out of 54 countries in terms of opportunity entrepreneurship relative to necessity entrepreneurship (GEM, 2018). The prevalence of necessity entrepreneurship is not inherently problematic; self-employment activities can play a critical role in precluding or reducing the depth of poverty (Burchell & Coutts, 2018; Naudé, 2010). However, necessity entrepreneurship is unlikely to be very productive for the economy or to provide a good job for a young person struggling with the transition from school to work.

2.2. How do individuals decide to become entrepreneurs?

The decision to become an entrepreneur is typically modeled as a decision about occupational choice. The utility from entrepreneurship is compared to utility from wage work and the occupation with the highest utility is chosen (Lucas, 1978; Parker, 2004). This can also be modeled as a choice over different expected earnings, with the occupation with the highest earnings across different types of work chosen (Roy, 1951). When multiple occupations are being considered, this decision is most typically modeled with a multinomial logit (Parker, 2004). Capital constraints, credit market imperfections, uncertainty and risk aversion, differential (entrepreneurial) ability, dynamism, policy factors, and other constraints and complexities can be added to this model. Individual characteristics as well as the policy environment have been shown to play an important role in entrepreneurship decisions across the world (Ardagna & Lusardi, 2010).

2.3. Who are entrepreneurs?

The characteristics of entrepreneurs and their enterprises illustrate the nature of entrepreneurship and its potential role in facilitating difficult school-to-work transitions and reducing unemployment. The ability of entrepreneurs is a particularly important aspect of their potential contribution to the economy, but this is an area that is hard to quantify, particularly in developing

countries. In terms of education and cognitive ability, a study comparing employers, the self-employed, and wage workers in Sri Lanka found that the self-employed were the lowest ability on across measures, while employers had the greatest ability (de Mel, Mckenzie, & Woodruff, 2010). The self-employed also tended to come from the poorest backgrounds and the employers the best backgrounds. In terms of psychological attitudes, employers were the most willing to take risks, the self-employed intermediately so, and wage workers were the most risk averse. However, employers and wage-workers were more motivated and tenacious than the self-employed, while both employers and the self-employed tended to be more willing to manage multiple tasks and be in control than wage workers.

Globally, entrepreneurs (both employers and the self-employed) tend to be older than wage workers (de Mel, Mckenzie, & Woodruff, 2010; Mondragón-Vélez & Peña, 2010). In Africa, there are not only relatively fewer youth entrepreneurs, youthful entrepreneurs are less productive (Nagler & Naudé, 2014a, 2014b). Households with entrepreneurs tend to be wealthier than other households (Nagler & Naudé, 2014b), although the direction of causality in this relationship is unclear. Evidence from Kenya comparing households that were dependent on entrepreneurial activities for all their income to wage indicates that most of those engaged in entrepreneurship earned less than in wage work, although a minority made more (Daniels, 1999).

Transitions into entrepreneurial activity are often used to understand the nature of entrepreneurial activity. Particularly in developing country contexts where there is a large sector, including informal self-employment, questions have arisen as to the rigidity and segmentation of the labor market. Examining panel data on transitions and wages in Mexico suggests that transitions to self-employment may come with increases in wages, suggesting opportunity dynamics (Maloney, 1999). However, evidence from Colombia indicates that the dynamics from unemployment are predominantly into wage work, not entrepreneurship (Mondragón-Vélez & Peña, 2010).

The evidence on entrepreneurs in MENA shares common themes with the global literature. Non-farm enterprises in Egypt are disproportionately owned by men, who are older and have lower levels of education (El Mahdi & Rashed, 2007; Rashed & Sieverding, 2015). Likewise, in Jordan, entrepreneurs are consistently more male, less educated, older, and had more work experience (Rizk & Salemi, 2018). As well as being less educated, evidence from Egypt suggests that those who start non-farm enterprises have less educated fathers on top of their own low education (although they do have relatively higher wealth after accounting for other factors) (Krafft, 2016). This relationship suggests entrepreneurship may provide opportunities to those of lower class backgrounds, but who have successfully accumulated assets.

Women in the MENA region face unique barriers to entrepreneurship, yet may also have unique preferences for entrepreneurship. Female labor force participation in the region is the lowest in the world, and female-led firms in MENA are rarer than in other regions (World Bank, 2013). Attitudes, norms, and also challenges balancing work and home life limit both work and entrepreneurship (Bastian, Sidani, & El Amine, 2018; Caputo, Mehtap, Pellegrini, & Alrefai, 2016; El Mahdi, 2016; Mehtap, Pellegrini, Caputo, & Welsh, 2017). Access to finance is a particular challenge for women (Mehtap, Pellegrini, Caputo, & Welsh, 2017). At the same time,

non-wage work may be more reconcilable with social norms than other types of work. Women tend to leave the private sector at marriage, but continue or even increase non-wage work (largely self-employment) (Assaad, Krafft, & Selwaness, 2017; Hoodfar, 1997; Selwaness & Krafft, 2018). The relative role of women in entrepreneurship in MENA has remained relatively stable over at least the period 2009-2016 (Hill & Akhrass, 2018).

2.4. Policies and programs to promote entrepreneurship and evidence on their effectiveness

Entrepreneurship promotion programs often fall under the umbrella of active labor market policies (ALMPs). ALMPs include public employment (or subsidy) programs, entrepreneurship, skills, and vocational training, and programs to improve the flow of information in the labor market. The global evidence shows that ALMPs are, generally, not effective. Yet governments and international agencies continue to pursue such programs, despite the evidence on their ineffectiveness and high costs (Blattman & Ralston, 2015). Meta-analyses of entrepreneurship programs demonstrate some behavioral and knowledge changes, but little employment creation (Cho & Honorati, 2014; Grimm & Paffhausen, 2014; McKenzie & Woodruff, 2014).

Entrepreneurship promotion ALMPs tend to address some combination of entrepreneurship/business training, access to finance, business support services, and access to markets (ILO, 2017). For example, microfinance programs target credit constraints. Despite high hopes for their impact, microfinance programs tend to have modest effects on entrepreneurial activities (Angelucci, Karlan, & Zinman, 2015; Attanasio, Augsburg, de Haas, Fitzsimons, & Harmgart, 2015; Augsburg, De Haas, Harmgart, & Meghir, 2015; Banerjee, Duflo, Glennester, & Kinnan, 2015; Banerjee, Karlan, & Zinman, 2015; Crépon, Devoto, Duflo, & Pariente, 2015; Tarozzi, Desai, & Johnson, 2015).

In MENA, entrepreneurship promotion programs tend to target higher education graduates, who experience the highest rates of unemployment (Angel-Urdinola, Kuddo, Semlali, et al., 2013; Angel-Urdinola & Leon-Solano, 2011; Assaad & Krafft, 2016; European Training Foundation, 2014; Groh, Krishnan, McKenzie, & Vishwanath, 2012). In Tunisia over 2010-2012, approximately 11,700 individuals (mostly university graduates) benefited from entrepreneurship programs (European Training Foundation, 2014). In Egypt, skills training and entrepreneurship promotion programs are the dominant form of ALMPs among the 182 youth employment programs (ILO, 2017). A study of the 28 organizations supporting entrepreneurs in Jordan found most (79%) provided support for female entrepreneurs. The majority were non-profits, along with some public agencies as well as private companies. The services were primarily training (59%) but also included incubation, funding, and networking, with most offering multiple forms of support (Caputo, Mehtap, Pellegrini, & Alrefai, 2016).

One important aspect of the landscape of ALMPs generally and entrepreneurship promotion programs specifically in MENA is the fragmentation, with numerous different programs and policies (Angel-Urdinola, Kuddo, Semlali, et al., 2013; European Training Foundation, 2014; ILO, 2017). Although the landscape of such programs is fragmentary, its reach is large. For example, Injaz, a MENA-wide entrepreneurship promotion program, aims to reach a million students annually by 2022 (Reimers & Ortega, 2018). Silatech, a MENA organization with the

tagline "Young people… enterprise… employment" has spent $377 million on its initiatives, including entrepreneurship promotion (Silatech, 2018). Yet there have been very few rigorous evaluations of programs effectiveness, despite the substantial resources invested.

The (limited) rigorous evidence on ALMPs and entrepreneurship promotion programs in MENA suggests that they are ineffective. A randomized experiment of Turkey's vocational training programs for the unemployed found no effect of training on employment, and only a transitory effect on employment quality (Hirshleifer, McKenzie, Almeida, & Ridao-Cano, 2014). In Morocco, an experimental evaluation of a skills and entrepreneurship training program lasting 100 hours found it did not increase employment (Bausch, Dyer, Gardiner, Kluve, & Kovacevic, 2017). An experimental evaluation of an entrepreneurial track in Tunisian higher education found a small increase in self-employment, but no increase in overall employment rates (Premand, Brodmann, Almeida, Grun, & Barouni, 2012). An edutainment program in Egypt around entrepreneurship improved attitudes towards entrepreneurship but did not change any employment outcomes (Barsoum, Crépon, Michel, & Parienté, 2016). Programs may be better able to promote self-employment among marginalized communities and women. Although not an experimental intervention, a program offering vocational, business, and life skills training in rural Egypt saw increases primarily in self-employment (Elsayed & Roushdy, 2017).

2.5. What assumptions are embedded in entrepreneurship promotion?

The theories of change embedded in entrepreneurship programs rest on a number of assumptions about the factors constraining entrepreneurship among youth. Although this paper does not evaluate an entrepreneurship program directly, assessing local conditions against assumptions built in to theories of change can help shed light on potential impact (Bates & Glennerster, 2017). In general, the case for government intervention in a market rests on some form of market failure. There are two main potential market failures, information and credit problems, that could limit entrepreneurship when youth are making their occupational choices (Blattman & Ralston, 2015; Brudevold-Newman, Honorati, Jakiela, & Ozier, 2017; Osman, 2014). Youth may have inaccurate information about the returns to entrepreneurship or their own abilities (Osman, 2014). There may be credit market imperfections that prevent them from acquiring finance to invest in the appropriate physical or human capital to run businesses (Blattman & Ralston, 2015).

The rhetoric around entrepreneurship and youth is embedded with assumptions about who is responsible for challenges with employability. The essential assumption of entrepreneurship promotion is that youth can (perhaps with the help of a skills training program) become entrepreneurs. One implication is that youth are thus responsible for their own success, and if they are not employable, are responsible for self-improvement to become so (Sukarieh & Tannock, 2008). For example, the Egypt Global Entrepreneurship Monitor (2016) states that entrepreneurial attitudes are positive and intentions are strong; the real constraint is that potential entrepreneurs lack self-confidence in their abilities to start a new venture, and that training needs to provide them with skills and confidence. This thinking leads to an emphasis on changing mindsets or the reputation of entrepreneurship (Barsoum, Crépon, Michel, & Parienté, 2016; ILO, 2017) programs as a part of entrepreneurship promotion in MENA.

In the MENA region, there was a strong social contract and ongoing norms around social and state responsibility for employment (Barsoum, 2015; Brixi, Lust, & Woolcock, 2015) that run counter to this concept of individual responsibility for employment. The public sector had historically been the primary employer of the educated (disproportionately youth) through job guarantees. This unsustainable historical model of state-led development has shifted towards private-sector led development with varying degrees of success. The history and trajectory are important contributors to difficult school-to-work transition, as they distorted education and labor markets (Assaad, 1997, 2014; Assaad, Krafft, & Salehi-Isfahani, 2017).

Entrepreneurship promotion programs are designed to provide youth with skills that make them (self-)employable. Thus, they continue the trend towards policies that tackle only the labor supply side of labor market dysfunction in the region. Skills improvements may come through entrepreneurial training in school (Premand, Brodmann, Almeida, Grun, & Barouni, 2012) or programs with, for example, 100 hours of training outside of school (Bausch, Dyer, Gardiner, Kluve, & Kovacevic, 2017). These models assume not only that skills are the central constraint, but also that such entrepreneurship promotion programs are an adequate substitute for years of experience, the building of social networks, and the accumulation of financial capital.

Although the goal is to create labor demand from enterprises, entrepreneurship promotion policies or programs do not address any of the constraints on demand for firms' goods and services; the assumption is that there are opportunities in the economy that are untapped and can be tapped by youth trained through such programs. The empirical evidence in MENA suggests that, despite weak skills, labor supply factors are not the main constraint to job creation; factors such as corruption and lack of competition have been linked to reduced job creation (Diwan & Haidar, 2016; Diwan, Keefer, & Schiffbauer, 2014; Loewe, Blume, & Speer, 2008). These are not solvable by entrepreneurship promotion programs. When asked about upgrading of their enterprises (and therefore potential for job creation) existing entrepreneurs in Egypt did not identify their skills as a constraint (only 14% identified their education and experience as a constraint). Instead, deficient law enforcement (63%) and worker quality and retention (58%) were driving obstacles. Essentially, external challenges, not internal ones affected entrepreneurs' success (Hampel-Milagrosa, Loewe, & Reeg, 2015).

A further assumption of entrepreneurship promotion programs is that, at least once skills, credit, or other constraints are reduced, youth will prefer entrepreneurship to the alternatives of unemployment or wage work. There is a strong preference for the public sector or at least formal work in the region (Barsoum, 2015; Boughzala, 2017). Assuming youth are risk averse, the lower employment security of entrepreneurship will be unappealing, particularly in challenging macroeconomic times, which primarily harm the private sector and enterprises (Assaad & Krafft, 2015; Krafft, 2016). The unwillingness to hold certain jobs can also be characterized as "reservation working conditions" (Dougherty, 2014) or "reservation prestige" (Groh, McKenzie, Shammout, & Vishwanath, 2014), both of which may limit the impacts of entrepreneurship promotion.

In what follows, we investigate occupational choices and the role of entrepreneurship in three MENA countries. We examine factors relating to the assumptions, such as the earnings and age of entrepreneurs, to assess the viability of entrepreneurship as a solution to difficult school-to-work transitions in MENA.

3. Data and Methods

3.1. Surveys

Our analyses rely on a number of Labor Market Panel Surveys (LMPSs) that have detailed information on labor market status, work characteristics, and individuals' background. We specifically use the Egypt LMPS (ELMPS) 2012 (OAMDI, 2013), Jordan LMPS (JLMPS) 2016 (OAMDI, 2018), and Tunisia LMPS (TLMPS) 2014 (OAMDI, 2016).[4] All are nationally representative (after application of sample weights, used throughout). The surveys are the work of the Economic Research Forum (ERF) in collaboration with local national statistics agencies. The ELMPS 2012 included 49,186 individuals in 12,060 households, the JLMPS 2016 included 33,450 individuals in 7,229 households, and the TLMPS 2014 included 16,430 individuals in 4,521 households. We restrict our analyses to individuals aged 15-64. For a few specific analyses around dynamics, we also include the preceding rounds of the ELMPS (specifically ELMPS 2006 and 1998) and JLMPS (specifically JLMPS 2010) (TLMPS does not yet have multiple rounds).

3.2. Outcomes

The primary outcome we examine is labor market status, as a form of occupational choice. Specifically, we classify individuals as one of the following: (1) an employer, (2) self-employed, (3) a wage worker, (4) unemployed, or (5) out of the labor force (OLF). We use the "standard market" definition of labor market status in terms of the employed/unemployed/OLF distinctions. The market definition of employment restricts employment to those working for market exchange; those working for subsistence only are excluded from employment. We use a three-month reference period for employment. The standard definition of unemployment restricts the category of unemployment to those who did not work (not even for just one hour), are ready and willing to work, could start within two weeks, and have searched for work in the reference period.[5] Those OLF are neither employed nor unemployed (neither working nor searching for work). Among the employed, distinctions between employers, the self-employed, and wage workers are based on self-reported employment status, categorized as wage worker, employer, self-employed, or unpaid family worker. We consider unpaid family workers to be self-employed. We consider either being an employer or self-employed to be entrepreneurship, although we clearly distinguish between the two types of entrepreneurship in our analyses.

An additional outcome we examine, in relation to type of work for the employed, is earnings. We have data (for ELMPS 2012 and TLMPS 2014), on earnings from entrepreneurship as well as

[4] See Assaad and Krafft (2013) for more details on the ELMPS 2012. See Krafft and Assaad (2018) for further information on the JLMPS 2016. See Assaad, Ghazouani, Krafft, and Rolando (2016) for details about the TLMPS 2014. Data are all publicly available at www.erfdataportal.com

[5] Reference periods for search are country-specific to align with national statistics.

wages for wage workers. We can therefore compare earnings (wages or entrepreneurship earnings) across employment statuses. In the case of Egypt, we can even examine some dynamics in earnings in the panel.

3.3.Covariates

A number of different characteristics are likely to affect occupational decisions. We are particularly interested in whether entrepreneurship might be a good match for the young and educated (since, as we show below, these are the unemployed). Therefore, two key covariates are age and education. We categorize age primarily as: 15-19, 20-29, 30-39, 40-49, 50-59, and 60-64, but occasionally show results by single years of age or with more aggregated age groups. We categorize education as no education, basic, secondary, or higher education. A key division of labor market behavior is by sex, therefore we distinguish between men and women in a number of our analyses. Labor market statuses have a dynamic interplay with other lifecourse events, such as marriage (Assaad, Krafft, & Selwaness, 2017; Krafft & Assaad, 2017). Therefore we include a control for being (ever) married. We investigate urban versus rural differences, since different opportunities may arise in these different contexts. In our multivariate models, we include but do not show governorates (country-specific) as controls as well.

In terms of socio-economic background, we rely on rich information on parents' characteristics, available even when parents are not in the household. We specifically examine mother's education and father's education (categorized as for own education). We also categorize father's employment status (when the individual was 15) as (1) employer (2) self-employed (3) wage worker or (4) not employed/missing. We include a similar categorization for mothers, but combine employers and the self-employed into one category, since so few mothers engaged in work and especially such entrepreneurial work.

Descriptively, we examine the relationship between wealth quintiles and labor market status. However, since we have only wealth at a point in time, we do not incorporate it into our model, as it as likely to be an outcome as a determinant of labor market status. We further examine, descriptively, how labor market status relates to different work characteristics, but again do not incorporate these into our multivariate model. The work characteristics include economic activities, occupations, establishment size, work hours, job satisfaction, workplace health insurance, and social insurance. These work characteristics can help explain the conditions and benefits that are attached to different employment statuses, and therefore occupational choices.

3.4. Methods

A number of important analyses, investigating the characteristics of entrepreneurs and their work, are presented descriptively. We then consider the joint relationship between covariates and the outcome of labor market status using a multinomial logit model. We show the predicted probabilities of different labor market statuses by key covariates graphically, based on our multinomial logit model. We present the results of the multinomial logit model as marginal effects (average marginal effects, estimated with other characteristics as observed) in an appendix. We present the models for all individuals and then separately only for men; there is

not sufficient sample size of employed and entrepreneurial women to estimate models for them separately.

We model earnings in Egypt and Tunisia in log form in a linear regression model that fully interacts education and age group with employment status (wage worker, employer, or self-employed) to predict the earnings individuals could earn across combinations of these characteristics in different types of employment. These and other results are inherently associations; selection into occupations based on unobservables is a limitation throughout.

4. Results

4.1. Who are the unemployed?

Entrepreneurship is promoted as the solution to youth unemployment in MENA. To assess the appropriateness of this solution, in this section we examine who the unemployed are in MENA. We begin by examining the percentage of the labor force who are unemployed new entrants or unemployed and worked before (together these sum to the unemployment rate). Figure 1 shows these statistics by sex, age group, and country. Unemployment rates are highest for youth, with rates among 20-24 year olds of 22% in Egypt, 34% in Jordan, and 38% in Tunisia. In Egypt and Tunisia this is the age group that experiences the highest unemployment; in Jordan it is 15-19 year olds (40% unemployment rate). Unemployment rates drop with age and are 3% (Egypt) to 6% (Jordan) for ages 35-64. The vast majority of the unemployed are new entrants; 19% of the 20-24 year olds in the labor force in Egypt are unemployed new entrants, 31% in Jordan, and 27% in Tunisia. Women have higher unemployment rates than men, ranging from 43% (Tunisia) to 52% (Egypt) for women aged 20-24. Unemployed women are also predominantly new entrants, to an even greater extent than men. Thus, unemployment is highest for the young, those with no work experience, and women.

Unemployment is also primarily experienced by the educated. Figure 2 shows that unemployment rates are highest among those with higher education in all three countries (13% in Egypt, 20% in Jordan, and 26% in Tunisia). Among men, those with higher education have the highest unemployment rates (7% in Egypt and 15% in Tunisia), except in Jordan, where less educated men have the highest rates of unemployment (13% for no education and basic). Among women, those with secondary education have the highest unemployment rates (37%) in Egypt, while women with basic education do so in Jordan (40%) and women with higher education have the highest rates of unemployment in Tunisia (39%).

Among those who are unemployed and searching for work, Figure 3 shows the prevalence of search through entrepreneurial behaviors, specifically searching for a private project/business or seeking finance for such a business. Such forms of search are uncommon. Among men, 18% in Jordan search entrepreneurially, followed by 10% in Egypt, and 1% in Tunisia. Among women, 5% in Egypt search entrepreneurially, followed by 4% in Jordan and 1% in Tunisia. Overall, we can see that the unemployed are primarily those with little work experience, young, educated, and who are rarely trying to resolve their unemployed state with entrepreneurial activity.

4.2. Who are entrepreneurs?

Keeping in mind the profile of the unemployed, in this section, we now work to understand who entrepreneurs are, in comparison to other labor market statuses. We mix the results from the multivariate models and our descriptive results. As shown in Figure 4, relatively few people aged 15-64 are entrepreneurs; just 2-5% are employers and slightly more self-employed (in Tunisia 9%, Egypt 8%, and Jordan 3%). More individuals are wage workers, 34% of the population in Egypt, 31% in Tunisia and 29% in Jordan. Most of the remainder are out of the labor force.

Among men, 9% are employers in Egypt compared to 5% in Tunisia and 3% in Jordan. More men are self-employed in Tunisia (14%) and Egypt (11%) than Jordan (6%). Few women are employers in any of the three countries. However, a relatively stable share are self-employed among women, around 9% in Jordan, 5% in Egypt, and 4% in Tunisia. In the multivariate model (multinomial logit marginal effects), women are significantly less likely than men to be employers in all three countries (by between 3.0 and 9.4 percentage points). Likewise they are significantly less likely to be self-employed (by 5.8 to 11.1 percentage points), primarily because they are significantly more likely to be out of the labor force.

The preceding statistics included those out of the labor force; Figure 5 examines the share of entrepreneurs among employed workers. This share is higher in Egypt (27%) and Tunisia (26%) than in Jordan (14%). Among (the few) employed women, 32% are entrepreneurs in Egypt, 4% in Jordan, and 21% in Tunisia. The prevalence of wage work compared to entrepreneurship suggests that wage work is the predominant form of work; if workers are optimizing they are thus predominantly choosing wage work.

Entrepreneurs tend to be older than wage workers and much older than the unemployed. Figure 6 shows the distribution, by year of age, of each labor market status. While the mode of the unemployed is around 25 in each country, the mode for being a wage worker is around 30-35 and the mode for being an employer or self-employed (except in Egypt) is at older ages, around 40-45. Although the figure does not examine work experience directly, it does suggest that the unemployed are ill-suited to entrepreneurship, which is predominantly undertaken by older adults (with greater work experience and associated forms of capital).

The predicted probabilities of different labor market statuses in Figure 7 and underlying model confirm that entrepreneurship increases with age, after accounting for other characteristics. The probability of being an employer is highest in the 50-59 or 60-64 year old age group across countries. This is the opposite of unemployment, which is highest in the 20-29 year old age group. Self-employment is significantly lower for 15-19 year olds, but more comparable across other ages, while wage work peaks in the 30-39 or 40-49 age group.

Entrepreneurship is higher among those who are less educated (Figure 8), again the opposite of the pattern among the unemployed, who are more educated. Correspondingly, wage work is highest among those with higher education. For example, in Egypt 12% of those with no education are self-employed and 8% of those with no education are employers. This compares to 4% of Egyptians who are employers and 4% who are self-employed among those with higher education. Even after accounting for other characteristics, in the multivariate model and

predicted probabilities (Figure 9), there are significantly lower chances of entrepreneurship for the more educated. The gradient is strongest in Egypt, where someone with higher education is 3.6 percentage points less likely to be an employer and 5.0 percentage points less likely to be self-employed than someone with no education. In Jordan and Tunisia there is a weaker education gradient in being an employer, but stronger and significant differences in being self-employed (for example, compared to a worker with no education, a worker with higher education in Tunisia is 6.7 percentage points less likely to be self-employed). Thus, even after accounting for other characteristics, the education pattern of entrepreneurship is the opposite of that for unemployment, which is significantly higher among those with higher education.

Parents' education signals socio-economic status, which may affect both labor market aspirations and outcomes. Figure 10 shows the composition of labor market status by father's education. Individuals with less educated fathers are more likely to be employers or self-employed. The pattern is also similar by mother's education across the three countries (not shown). The predicted probabilities (Figure 11) and the multivariate model confirm that entrepreneurship is largely the provenance of those from lower socio-economic statuses. For example, those with a mother with higher education in Egypt are 4.2 percentage points less likely to be self-employed.

Entrepreneurship is often linked to family businesses, particularly the human, physical, and social capital that may be passed through families. Individuals whose fathers are employers and self-employed are more likely to be employers or self-employed in all the three countries (Figure 12). These differences persist in the multivariate model predictions after accounting for other characteristics (Figure 13). In Tunisia, for example, an individual with an employer father is 5.6 percentage points more likely to be an employer, and 7.9 percentage points more likely to be self-employed. Patterns by mother's employment status, although not always significant, also suggest that individuals with entrepreneurial mothers are more likely to pursue such work, and less likely to undertake wage work.

A few additional characteristics are included in the model but not presented graphically. Compared to urban areas, those living in rural areas are significantly more likely to be employers or self employed in Egypt, significantly less likely to be employers or self employed in Jordan, have no significant differences in being employers in Tunisia, and are significantly more likely to be self-employed in Tunisia. Compared to the never married, those who are ever married are significantly more likely to be employers and wage workers in all three countries. Only in Jordan are there significant differences in the probability of self-employment (higher) for the married.

Synthesizing the results of the observed relationships in the descriptive figures and the predicted probabilities of labor market statuses from the multivariate models, there is substantial distance between the unemployed and entrepreneurs. The unemployed are young and educated; entrepreneurs, especially more successful entrepreneurs (employers) are older and less educated, even after accounting for age. Entrepreneurship is strongly connected to having a family business, which is difficult to replicate through promotion policies. Women are less likely to be entrepreneurs, particularly employers. These patterns suggests that the current profile of

entrepreneurs is, if anything, the *opposite* of the unemployed, making proposals to resolve unemployment via entrepreneurship improbable on a variety of dimensions.

4.3. What type of work do entrepreneurs do?

The nature and conditions of entrepreneurship can be informative of whether workers are optimizing their occupational choices, as well as the benefits and costs of entrepreneurship. This section therefore explores conditions of work by employment statuses. Figure 14 shows the economic activities by employment status across the three countries. Entrepreneurs are disproportionately in wholesale and retail trades (for example, 36% of employers and 38% of the self-employed in Jordan compared to 13% of wage workers). Entrepreneurs are also more likely to be engaged in agriculture (in Egypt and Tunisia, there is very little agricultural employment in Jordan). Wage workers are much more likely to be in other various professional or service activities. The predominance of agriculture and retail among entrepreneurs suggests existing entrepreneurial work is not in high-productivity fields, nor in high-prestige fields, suggesting two reasons that individuals may select away from entrepreneurship and into wage work.

Figure 15 shows the distribution of occupations by employment status. Here there are important differences between employers and the self-employed; the self-employed are the least likely to be in managerial and professional occupations across countries (2% in Tunisia to 15% in Egypt), while employers have a more comparable share to wage workers of managerial and professional occupations. Blue collar work, in contrast, is predominant among the self-employed (58% in Jordan to 67% in Tunisia). Although occupational outcomes for employers are comparable, those for the self-employed are lower, creating a disincentive to engage in such work.

Figure 16 examines whether an individual is in an establishment or not and firm size for those in establishments by employment status. The self-employed are predominantly working outside a fixed establishment (68% in Jordan up to 74% in Egypt). Necessarily the self-employed are rarely working in a workplace with other employees, even when they are in establishments. In Egypt and Tunisia (but not Jordan) employers are also often outside of establishments. Those with establishments are predominantly in micro firms, with 1-4 employees (27% in Jordan to 31% in Egypt and Tunisia). Wage workers are much more likely to be in larger firms with 10+ workers (47% in Tunisia to 54% in Jordan). This disparity in working conditions suggests an important reason that women, in particular, have low rates of entrepreneurship, as women strongly prefer to work in contexts with more (female) workers and less public engagement (and risk of harassment or reputational harms).

One argument in favor of entrepreneurship may be more flexibility in hours. However, average hours of employment vary only slightly by employment status and country as shown in Figure 17. Average hours of employment overall are generally highest for Egypt at 47 hours per week compared to 45 hours per week for both Jordan and Tunisia. Across the three countries, employers have consistently higher average hours per week at 48 hours (Jordan and Tunisia) hours to 53 hours (Egypt). Self-employment hours vary more across countries, from 37 hours per week in Jordan to 45 hours per week in Egypt. At the same time, hours of employment for wage workers are relatively similar across countries, 45 hours per week in both Jordan and Tunisia and

47 hours in Egypt. While the self employed may be able to work slightly fewer hours, it is not clear that this is the preferred choice, and employers definitely do work longer hours, which may make that form of entrepreneurship challenging for workers and women especially, who face a "second shift" of domestic responsibilities (Assaad, Krafft, & Selwaness, 2017).

Job satisfaction is an important metric of the value of entrepreneurial work. Figure 18 shows reported job satisfaction (percentage fully satisfied with various aspects of their work) across the three countries by employment status. Overall, there were higher levels of satisfaction among employers than wage workers or the self-employed. In Jordan, wage workers were consistently more satisfied than the self-employed. However, there were more mixed differences in Egypt and Tunisia. While the self-employed in Tunisia were much less likely to be satisfied with their earnings than wage workers, in Egypt the self-employed were slightly more satisfied with their earnings. Match quality between qualifications and work was a bit lower for the self-employed than wage workers in Egypt and Tunisia, but self-employed workers were more likely to be satisfied with the hours, schedule, and commute. If we take being an employer as a sign of *successful* entrepreneurship, when entrepreneurs succeed they are more satisfied, but the self-employed are not substantially better off than wage workers in terms of job satisfaction.

Although there are not direct questions about satisfaction with benefits, this is an important dimension of work quality that may be taken into consideration, along with earnings, when making occupational choices. Estimates in Egypt suggest that the total compensation (earnings plus benefits) is 1.9 times wages in the public sector (where effectively all workers receive benefits) (Assaad, 1997). Workers value these benefits (as well as the better working conditions) and are willing to accept lower wages to work in the public sector, and to some degree the private formal sector, compared to the private informal sector (which encompasses much of entrepreneurship) (Barsoum, 2015). Figure 19 explores receipt of workplace health insurance by employment status in Egypt and Tunisia (data were only available for wage workers in Jordan). Wage workers have similar rates of workplace health insurance, around 48-49% across countries. In Egypt almost no employers (4%) or the self-employed (2%) have workplace health insurance. In Tunisia rates of coverage for entrepreneurs are better but still below wage workers, with 22% of the self employed and 37% of employers having workplace health insurance.

Another critical benefit is social insurance, which is rare among entrepreneurs as well (Figure 20). While half (47% in Jordan to 55% in Tunisia) of wage workers have social insurance, only in Tunisia, where 62% of employers have social insurance, are any groups of entrepreneurs better off. Employers have low rates in Jordan (12%) and Egypt (17%). The self-employed have social insurance coverage rates of 4% in Jordan, 7% in Egypt, and 28% in Tunisia. Although entrepreneurs may be selecting out of the social insurance system due to the perceived costs, they are therefore at a long-run financial disadvantage compared to wage workers.

Overall, the type of work entrepreneurs do is disproportionately in agriculture and retail, in less desirable occupations, with similar hours of work to other employment statuses. Employers are more satisfied with their work but the self-employed are comparable to wage workers in satisfaction. Entrepreneurs generally have fewer benefits attached to their work and are more

likely to work outside establishments or in microenterprises. These results suggest that entrepreneurship is not likely to be, overall, more appealing than wage work to the unemployed (who are disproportionately women, young, and educated).

4.4. How much do entrepreneurs earn?

Models of occupational choice emphasize that earnings across choices are a key driver of deciding on a particular type of work. In this section, we therefore explore earnings by employment status. Figure 21 presents the distribution of earnings by employment status for Egypt and Tunisia (where data are available on earnings). It is important to keep in mind that wage workers also are much more likely to receive benefits on top of earnings, and thus their total compensation is under-estimated. In contrast, entrepreneurs' true labor earnings are likely over-estimated, since their earnings include returns to capital as well. In Egypt, the mode of earnings for employers and the self-employed is similar and substantially lower than for wage workers. The self-employed have a consistently lower representation past approximately 1000 LE of monthly earnings. Employers, although lower earning than wage workers through the median (843 for employers vs. 900 for wage workers and 500 for the self-employed), do have a longer right tail—a small group of high earners. For example, the 75th percentile for employers is 1827, compared to 1300 for wage workers. In Tunisia, the self-employed are also the lowest earners, but unlike Egypt, employers' distribution of earnings is better than wage workers, albeit only slightly at moderate levels of earnings, with a long right tail.

Although the earnings distributions in Figure 21 are suggestive of important differences, we also know that very different individuals undertake entrepreneurship. Therefore, in Figure 22 (for Egypt) and Figure 23 (for Tunisia), we present predicted log-earnings, by education level, for different age groups and employment statuses. These are based on a model that interacts age group and employment status as well as education and employment status. In Egypt, across ages, earnings are lower for employers and the self-employed for the less educated. With basic or secondary education, wage work and being an employer have similar earnings (but self-employment low earnings). Only with higher education do employers earn more (and wage workers and the self-employed comparably). In Tunisia (Figure 23), those (unusual, select) young employers earn more than other groups, but this dissipates with age. Wage workers earn more than the self-employed in most education groups, except secondary. Particularly among the highly educated, where unemployment is highest, earnings in entrepreneurship and especially self-employment are much lower than wage work.

Since wage workers have additional benefits, and entrepreneurship earnings embed returns to capital, the results of these models suggest that, if anything, individuals should be shifting into wage work over entrepreneurship. An important caveat in this interpretation is that, presumably, individuals choose the occupation where they can maximize their earnings, but the degree of ability-based selection into different occupations may bias results.

Household wealth status of entrepreneurs also suggests that entrepreneurship is not a direct route to wealth, although it must be kept in mind that entrepreneurs are coming from poorer socioeconomic backgrounds, so the direction of causality is not clear. Figure 24 illustrates labor

market status by wealth quintile, based on an asset index. In Jordan, entrepreneurship rates are very low but do rise with wealth quintile. In Egypt, rates of entrepreneurship fall with wealth, although there is a similar share of employers (5%) among the poorest and richest quintiles. In Tunisia, self-employment is highest (12%) among those from the poorest quintile, while being an employer is highest (6%) among those in the highest quintile. The results suggest a very complex relationship between wealth and entrepreneurship, as the direction of causality is not clear. However, except in Jordan, entrepreneurship is not clearly associated with greater wealth, further decreasing its perceived value as an occupational choice.

4.5. Transitions into and out of entrepreneurship

Having assessed the cross-sectional occupational choices of individuals, in this section we take advantage of the panel nature of the ELMPS and JLMPS to examine transitions between labor market statuses. Examining the trajectories of individuals allows us to understand whether there are transitions from unemployment or being out of the labor force into entrepreneurship, where entrepreneurs originate, and where entrepreneurs go. We can also assess the persistence of entrepreneurship as a strategy; we expect more persistent states to be preferred.

Looking at the transitions in Egypt from 2006 to 2012 as shown in Table 1, the most stable category is wage worker; 78% of wage workers in 2006 remained there in 2012. Just 1% of the unemployed became employers and just 6% became self-employed. In contrast, 38% became wage workers. Even among men, who more frequently transition to employment generally, only 3% of the unemployed became employers, 12% self-employed, and 73% wage workers. In contrast to persistence in wage work, only 43% of employers and 28% of the self-employed persisted. A large share of entrepreneurs moved to wage work; 27% of employers in 2006 became wage workers in 2012 and 25% of the self-employed transitioned to wage workers. There are also important dynamics between self-employed and employers that suggest that many entrepreneurs switch between these statuses. Relatively few wage workers switch to entrepreneurship; just 4-5% transitioned to employers and self-employment over time.

Table 2 examines similar dynamics for Jordan. Just 2% of the unemployed became employers over 2010 to 2016, and 5% became self-employed. Persistence in entrepreneurship was low (24% for employers and 29% in self-employment). Although 18% of employers became self-employed (and 5% of the self-employed employers), more (31-35%) transitioned to wage work. Across Egypt and Jordan, if we interpret persistence and transitions as the dynamics of moving to preferred states and that individuals are optimizing, wage work is clearly preferred. Additionally, very few unemployed become entrepreneurs. This further reinforces the mismatch between the unemployed and entrepreneurship. The dynamics between self-employment and employers (as well as the prevalence of microenterprises among entrepreneurs, Figure 16, and other research (Krafft, 2016)) suggest that employers are often self-employed who are having a good year and hired on help.

4.6. Earnings dynamics and transitions into and out of entrepreneurship

With the ELMPS, we can look at wage dynamics for those who transitioned into and out of entrepreneurship. We have wages in 1998, 2006, and 2012, and examine: (1) the wages in 1998

of those who became entrepreneurs in 2006, (2) the wages in 2006 of those who were entrepreneurs in 1998 and became wage workers in 2006, (3) the wages in 2006 of those who became entrepreneurs in 2012, and (4) the wages in 2012 of those who were entrepreneurs in 2006. These are compared to the median wages in each year in Figure 25. It is important to keep in mind that those who left entrepreneurship or entered it are a select group, who likely did so due to comparative opportunities, such as business failure or seeing a new business opportunity. The figure shows that those who switched to entrepreneurship between 1998 and 2006 were low wage earners in 1998. However, those who were entrepreneurs in 1998 and became wage workers in 2006 actually earned a similar amount in 2006 as the wage earners in 1998. Both groups had a mode below the median for their period. Those who left wage work to become entrepreneurs over 2006 to 2012 were again below the median, but relatively similar or slightly lower earning than those in 2012 who left enterprises for wage work. These dynamic results reinforce that those switching into and out of entrepreneurship are a select, low-earning group.

Although Figure 25 is suggestive of comparable (and low) earnings opportunities for switchers, Figure 26 investigates this dynamic directly, comparing the wages in 2006 to earnings in 2012 for those who started enterprises (only available in 2012). Since six years passed, we would expect earnings growth. However, the median is a slight decrement (48 LE), although the mean is an increase (297 LE). There is clearly a long right tail in the changes; while many individuals experienced moderate drops and some moderate gains, a group also experienced large gains. These results suggest that individuals switching to entrepreneurship were only rarely better off, particularly after considering that earnings should be going up over time and with work experience, that entrepreneurship earnings embed returns to capital, and that entrepreneurs are less likely to be compensated with benefits.

5. Discussion and conclusions

5.1. Assumptions and realities of entrepreneurship

Entrepreneurship is touted as a solution to high rates of youth unemployment in MENA. This paper has demonstrated that the profile of the unemployed is essentially the opposite of entrepreneurs. While the unemployed are young, entrepreneurs are much older. While the unemployed are highly educated, entrepreneurs are primarily less educated. While women have high unemployment rates, they are less likely to be entrepreneurs than men. Some of this disparity is due to the nature of entrepreneurship, which is disproportionately blue-collar work, outside establishments or in microenterprises, and in agriculture or retail, all ill-suited to the characteristics of the unemployed. It is very unlikely that even multi-dimensional entrepreneurship programs can bridge these gaps between the unemployed and entrepreneurs. Indeed, youth themselves recognize this: Egyptian youth consider entrepreneurship to be an option only after wage work, gaining the necessary experience and human, physical, or social capital (Sieverding, 2012).

There are two main market failures that would justify promoting entrepreneurship: information problems or a credit market failure. Although we do not test either of these directly, as our results are observational, the evidence is strongly suggestive that neither is a binding constraint

that justifies entrepreneurship promotion policies as a solution to unemployment in MENA. First, in terms of information, we see that earnings in self-employment are lower than in wage work across the age-education distribution. While employers sometimes earn more, they are also less likely to have benefits and their earnings additionally embed returns to capital. Further, earnings do not typically increase when transitioning into entrepreneurship in Egypt. These results suggests that, if anything, entrepreneurship is being chosen more frequently than is optimal (likely a case of necessity entrepreneurship). A study of Egyptian students' expectations about earnings in self-employment versus wage work (compared to statistics on these earnings) demonstrated that, indeed, youth are too optimistic about the returns to entrepreneurship; they over-estimate self-employment earnings and under-estimate wage earnings (Osman, 2014). Work with youth who attended entrepreneurship promotion programs suggests that they raise false hopes (Pettit, 2018). Entrepreneurship promotion policies assume youth are not optimizing their occupational choices, but none of the evidence supports that. Thus, correcting an information failure would actually require entrepreneurship discouragement.

The second possible market failure would be if credit market imperfections precluded entrepreneurship by preventing the acquisition of necessary human or physical capital. There is evidence from other contexts that capital or credit may be a binding constraint to entrepreneurship among poor youth (Blattman & Dercon, 2016). That those in MENA with lower education and worse socio-economic backgrounds (likely poorer backgrounds, with less access to family savings or capital) are *more* likely to be entrepreneurs suggests that capital constraints are not binding. The educated youth from better backgrounds are disproportionately unemployed.

The intergenerational transmission of entrepreneurship does suggest that there are important forms of human, social, or physical capital that can be acquired, but it is not at all clear that or how entrepreneurship promotion programs can deliver the equivalent of growing up with a family business. Nor can they deliver the equivalent of multiple years of work experience. The best entrepreneurship training program may be working in a business (potentially as an apprentice) (Krafft, 2018)), which is, necessarily, going to preclude a direct route from being an unemployed new entrant to entrepreneurship.

Entrepreneurship promotion policies as the solution to youth unemployment place the burden on those *least* able to undertake entrepreneurship to nonetheless do so to solve a structural economic problem. The programs assume that the problem of unemployment is derived from deficiencies in labor supply, which is the evidence does not support. Programs assume that there are readily available high(er)-return opportunities in the economy for entrepreneurial youth to obtain, which is not consistent with the earnings of entrepreneurs. Programs assume such jobs are or should be preferable, but their conditions and earnings do not appear to be preferable (although employers, relatively successful entrepreneurs, are more satisfied). The essential assumptions of entrepreneurship promotion programs do not pertain to MENA. At best, entrepreneurship promotion as a solution to unemployment is a waste of money. At worst, if programs do work,

they are potentially pushing youth into worse labor market outcomes, as well as generating inefficiencies through poor-quality enterprises and misallocation of resources.

5.2. Implications for policy

Policymakers, when considering alternative approaches to insufficient good jobs, can tackle the quantity of employment by increasing competitiveness in the economy, as well as the quality of employment by addressing barriers to formality. Even those promoting entrepreneurship as a potential "engine" (Momani, 2017) for job creation nonetheless may note the need for improvements in the entrepreneurial 'eco-system' in order for entrepreneurship to deliver on its promise. In a related vein, researchers have pointed to the importance of a "pro-market" approach, that reduces the costs of business-government interactions and enhances competition, rather than a "pro-business" approach that favors particular businesses (Diwan & Haidar, 2017). Such reforms could create a more level playing field for entrepreneurs, but also underlines the fact that favoring (new) entrepreneurs may itself be a distortion; removing favorable conditions for small and medium enterprises in India actually increased employment growth (Martin, Nataraj, & Harrison, 2017).

Entrepreneurship promotion is not a viable solution to youth unemployment—which is disproportionately a challenge for the highly educated youth whose characteristics are ill-matched to existing entrepreneurs. However, open unemployment is primarily a status experienced by the relatively privileged; youth from poorer backgrounds tend to transition straight in to work (Assaad & Krafft, 2014). These youth are also more likely to engage in entrepreneurship. Improvements in the entrepreneurship eco-system may particularly benefit these less-privileged youth while enhancing job creation.

While institutions encourage identifying and targeting small, high-growth potential "gazelles" for support (Stone & Badawy, 2011), in MENA, small firms do not necessarily create more jobs. In Tunisia, they create relatively fewer jobs (Rijkers, Arouri, Freund, & Nucifora, 2014). In Egypt, after accounting for other characteristics, in general the only difference in job creation by firm size was significantly lower growth in large firms (Assaad, Yassin, & Krafft, 2018).

In Egypt, stakeholders have raised concerns that focusing on entrepreneurship support (with most entrepreneurs being small scale) is essentially supporting the informal sector (ILO, 2017). The informality of existing enterprises has an important role in the shortfall of good jobs in the region. Therefore, an important area for creating more good jobs may be encouraging formalization of firms. Firm owners presumably are comparing the costs and benefits of formalization, and when informal, choosing informality as more beneficial. Policies to encourage formalization must therefore alter this cost-benefit calculation. There is evidence that policies and programs to raise the benefits of formalization or lower the costs can increase formalization, although such programs are not without (social) costs (Benhassine, Mckenzie, Pouliquen, & Santini, 2016; Fajnzylber, Maloney, & Montes-Rojas, 2011). Rigid labor laws that make it difficult to fire workers disincentivize hiring workers (formally) in the first place. Relaxing labor laws may increase formality (Wahba & Assaad, 2017).

Youth unemployment has been a long-term structural challenge for MENA. While entrepreneurship promotion is conceptually appealing as a solution to job creation, it resolves none of the underlying structural challenges that created youth unemployment. Programs are unlikely to be effective in creating entrepreneurs, and if they do, it may be to the detriment of youth. Although it is more complex and challenging to address the constraints on labor demand of existing firms than to provide entrepreneurship promotion, such reforms have substantially greater potential to create jobs and good jobs.

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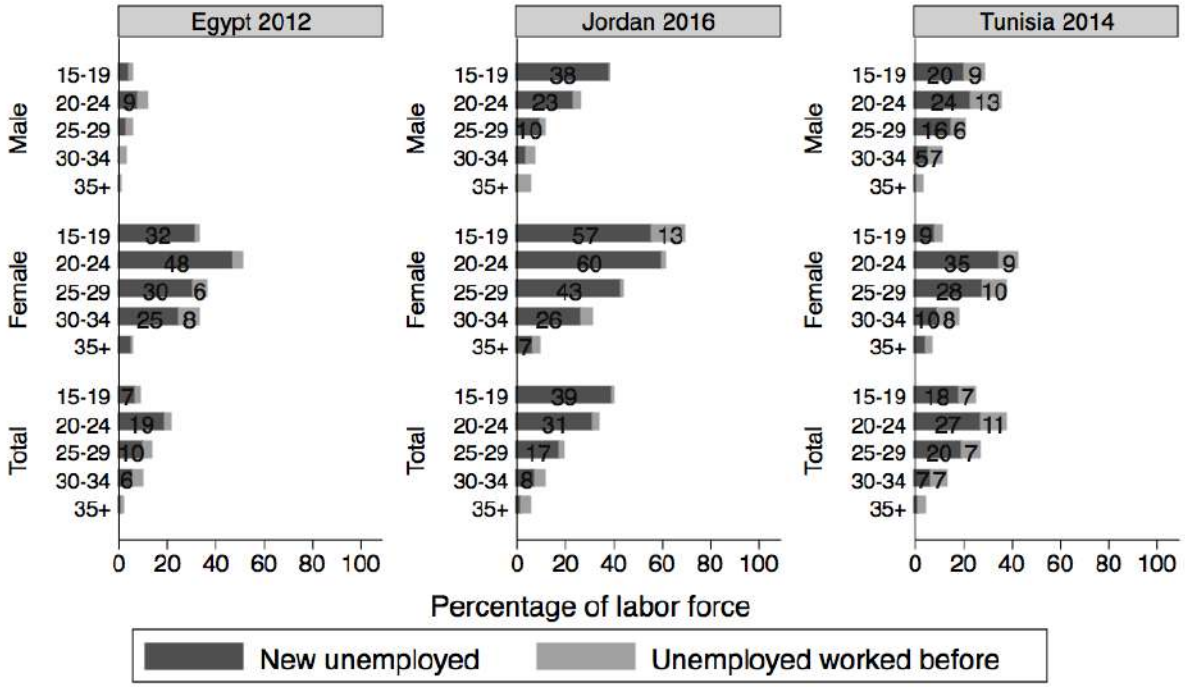
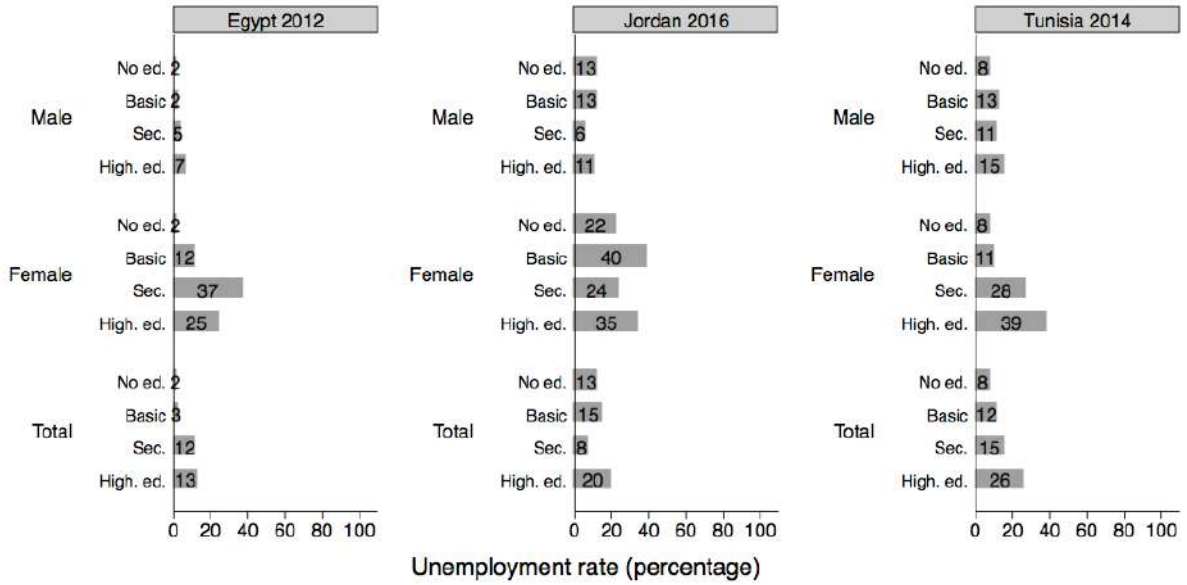
Figure 1. Percentage of labor force who are unemployed new entrants or unemployed and worked before by sex, age group, and country, ages 15-64



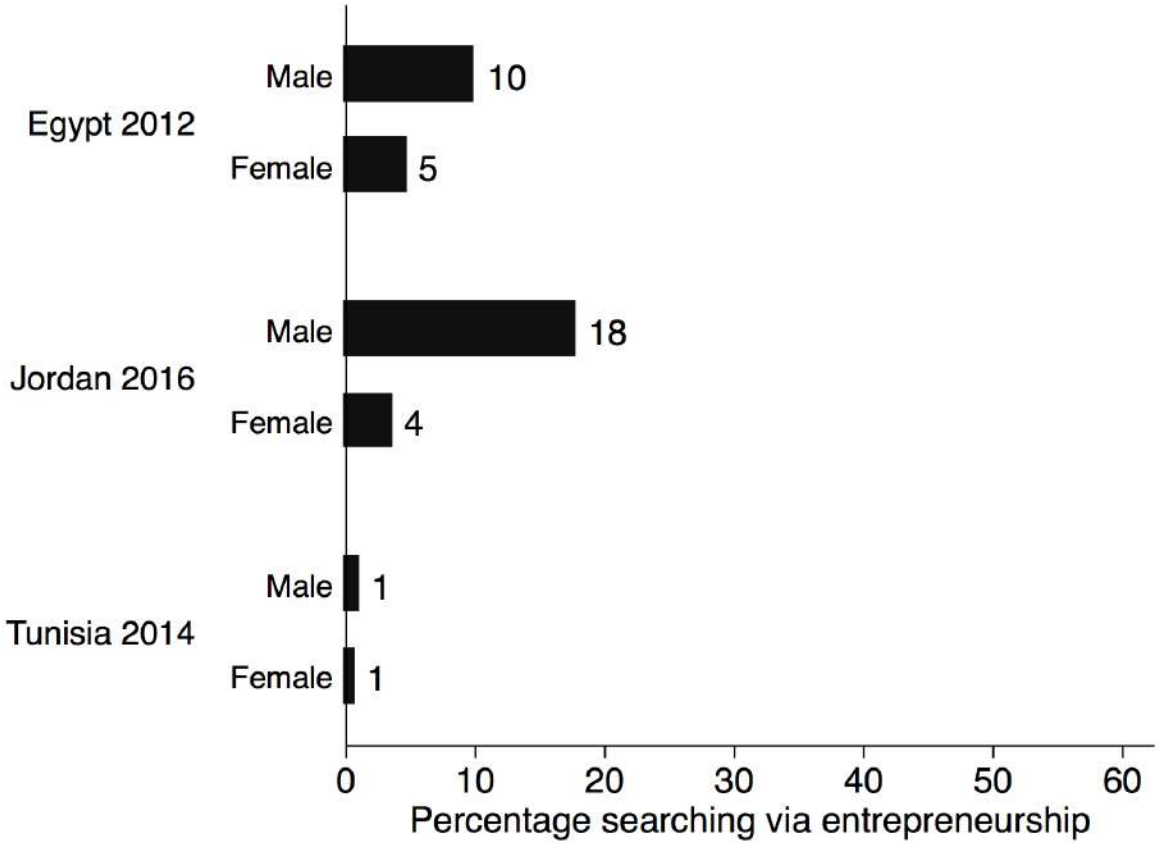
Notes: Bar labels under 5% suppressed.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 2. Unemployment rate (percentage) by sex, education, level and country, ages 15-64



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

Figure 3. Job search through entrepreneurial behaviors, as a percentage of the unemployed actively searching, by sex and country, ages 15-64

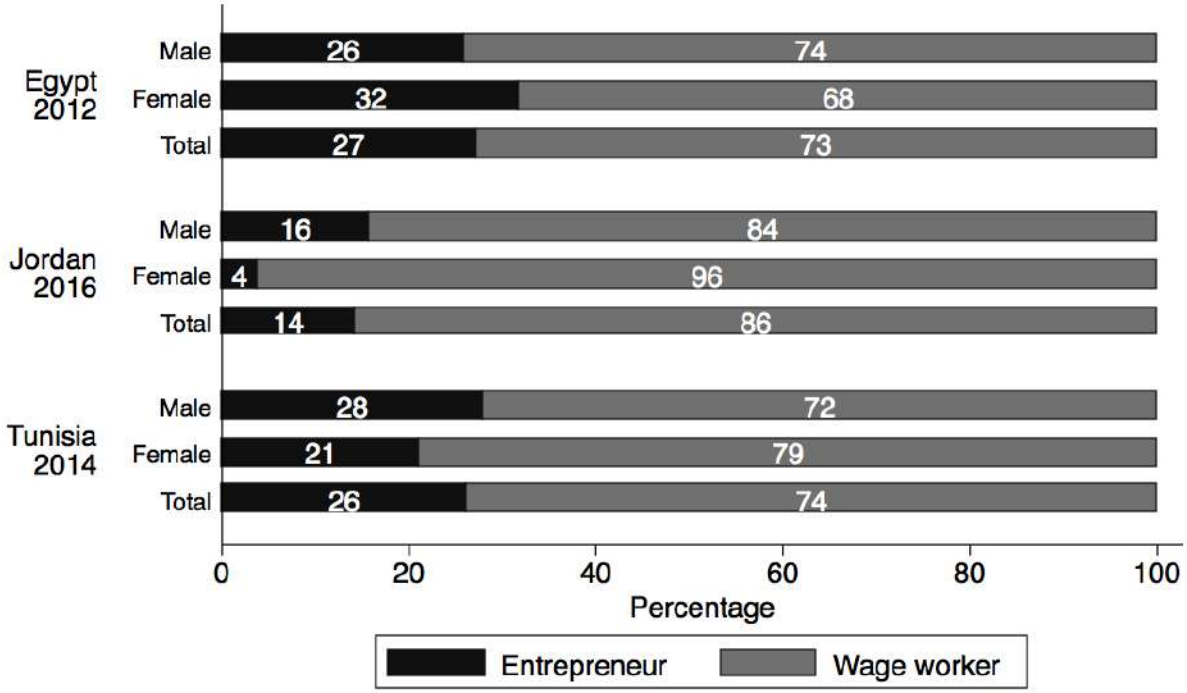


Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 4. Labor market status by sex and country (percentage), ages 15-64

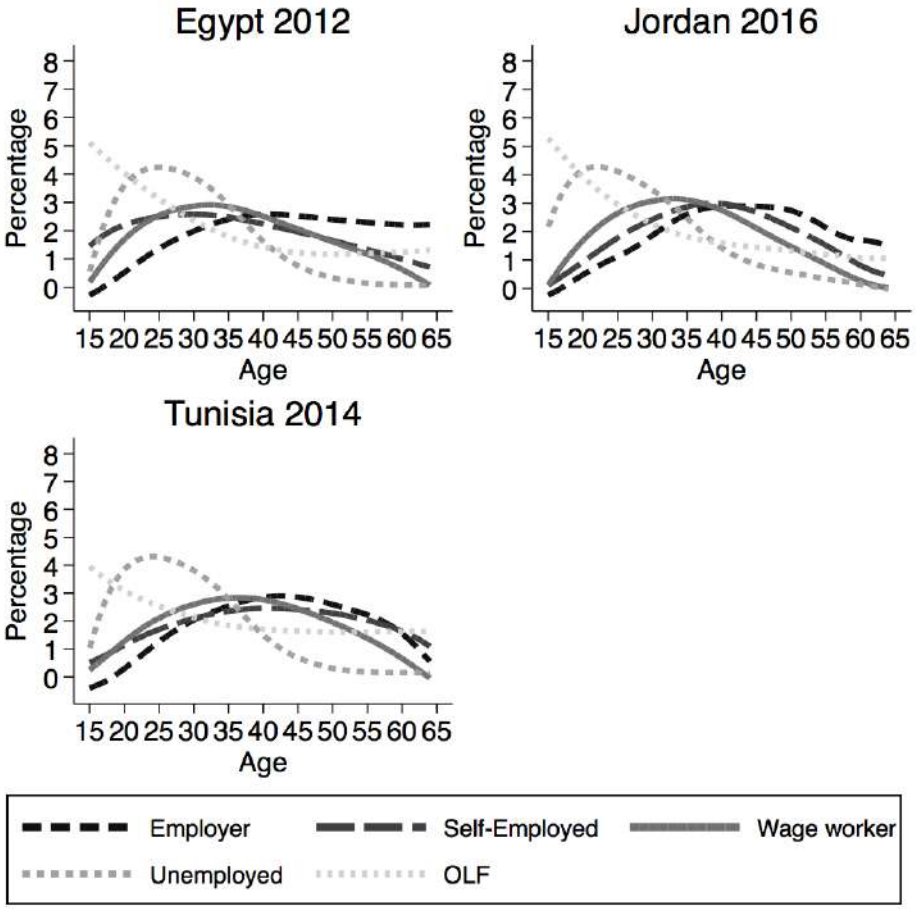
Source: Authors' calculations based on ELMPS 2012, JLMPS 2012, and TLMPS 2014

Figure 5. Percentage of the employed who are entrepreneurs or wage workers by sex and country, ages 15-64



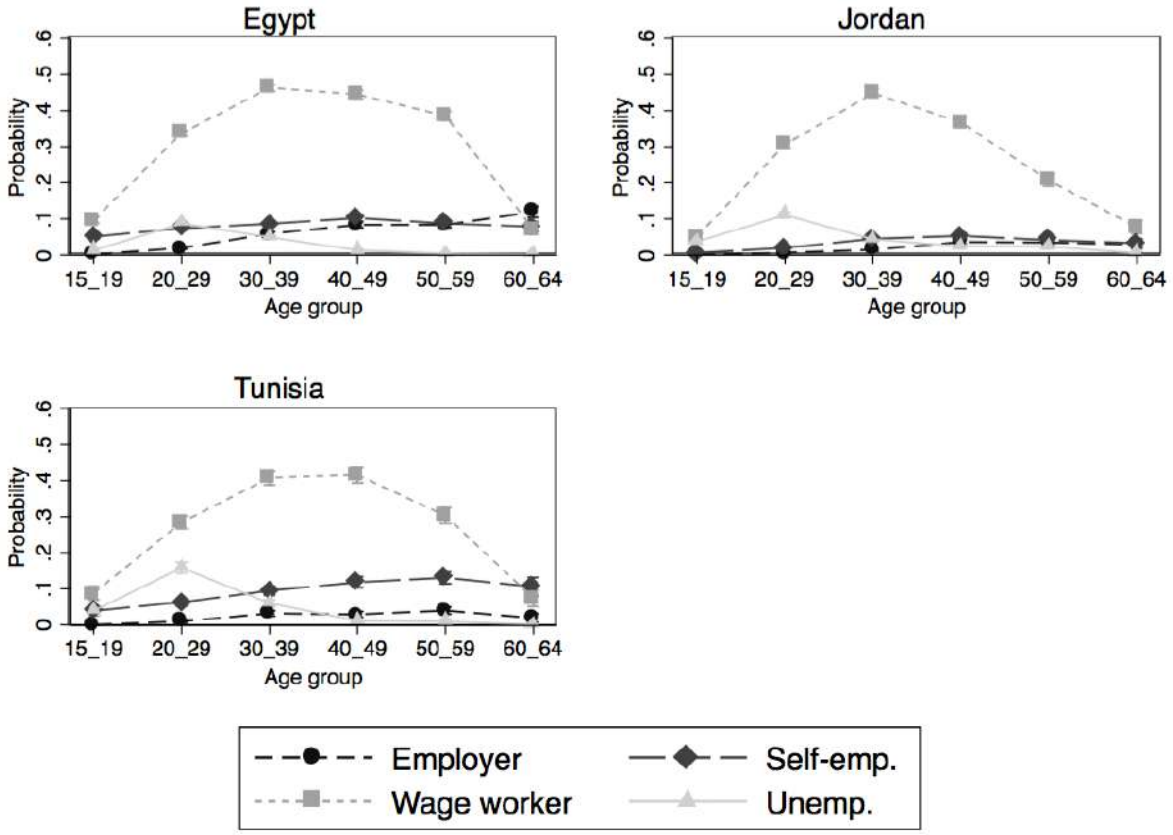
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 6. Percentage at each year of age by labor market status and country, ages 15-64



Notes: Lowess smoothed with bandwidth one.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 7. Predicted probabilities of labor market statuses by age group and country, ages 15-64

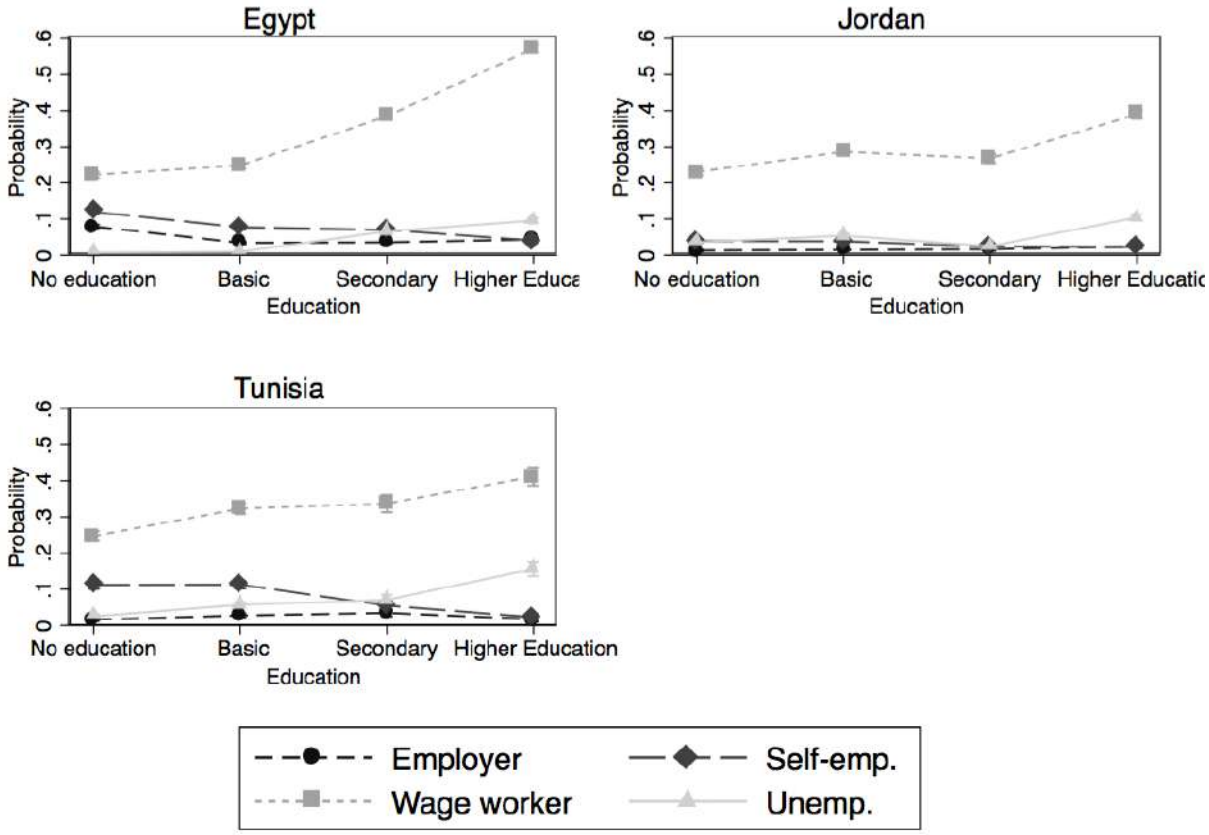


Note: Based on models in appendix (all). Bars indicate 95% confidence intervals. Not showing OLF.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 8. Labor market status by sex, education and country (percentage), ages 15-64

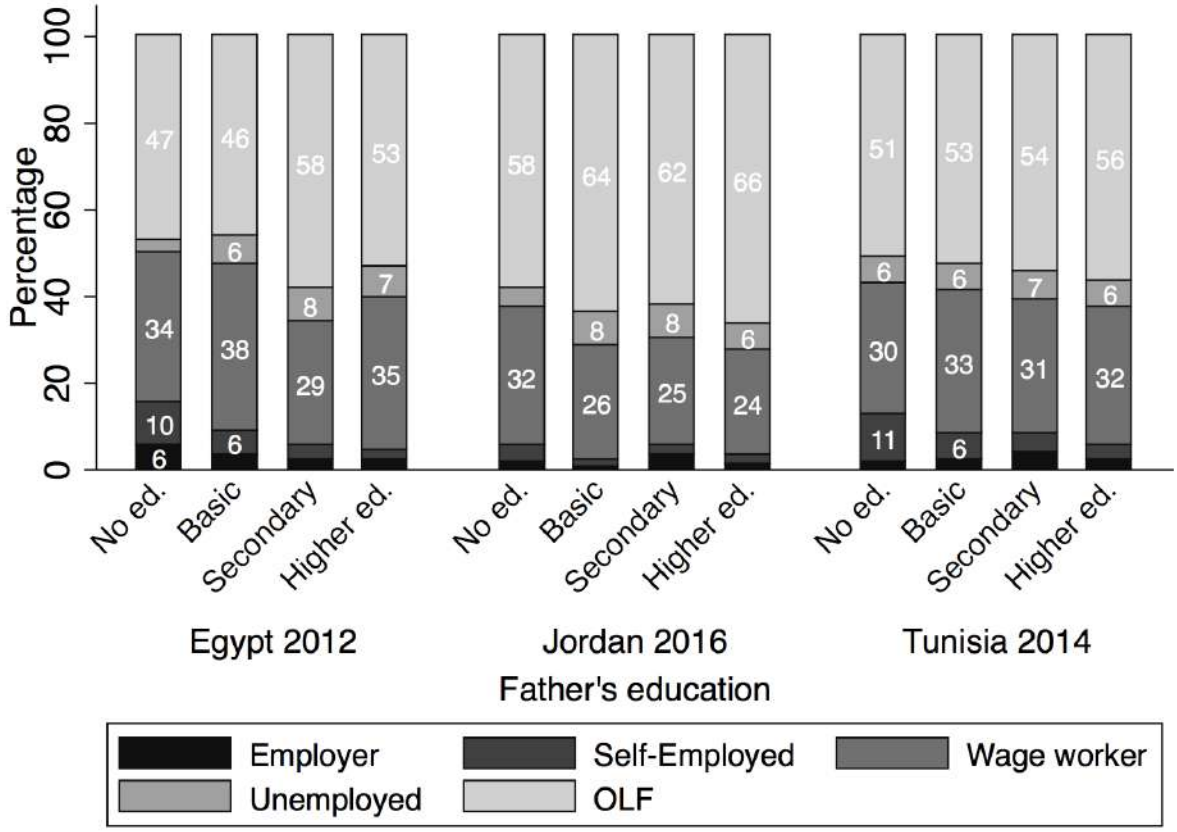
Notes: Bar labels under 5% suppressed.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 9. Predicted probabilities of labor market statuses by education and country, ages 15-64



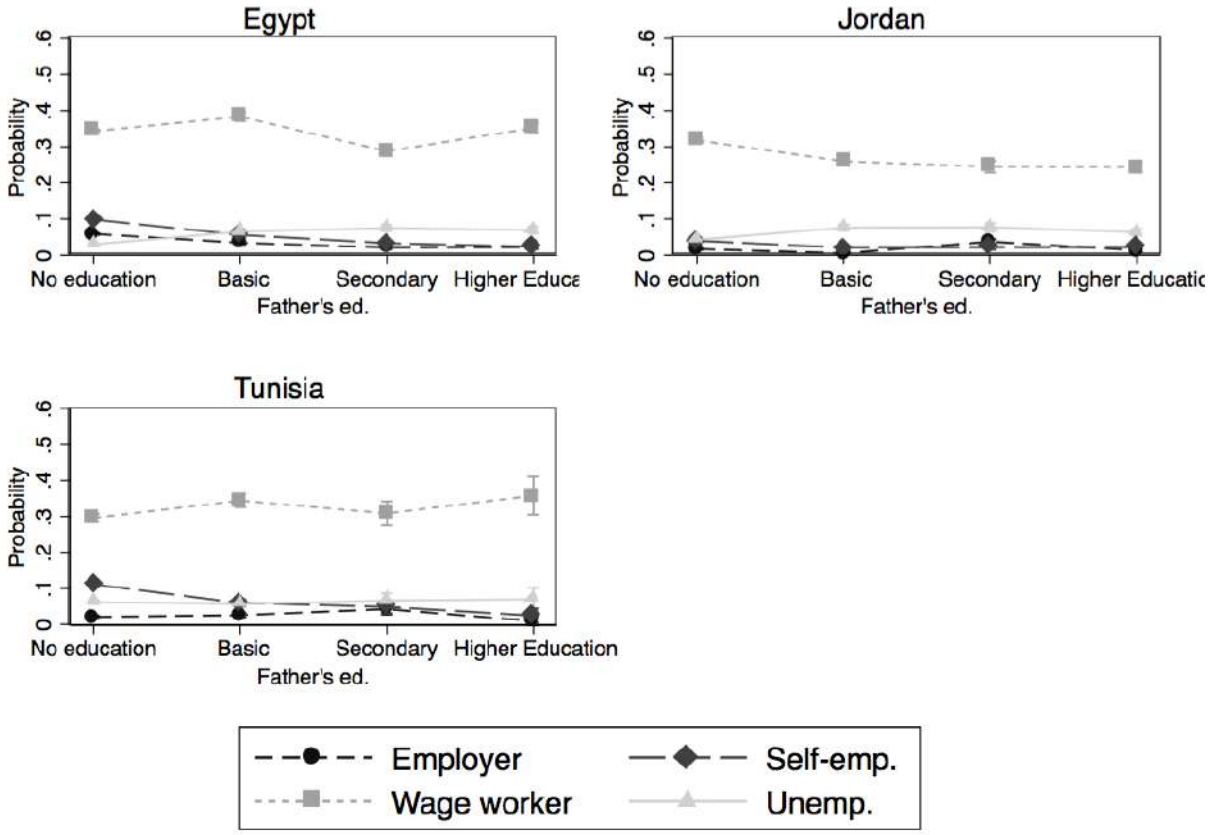
Note: Based on models in appendix (all). Bars indicate 95% confidence intervals. Not showing OLF.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 10. Labor market status by father's education and country (percentage), ages 15-64



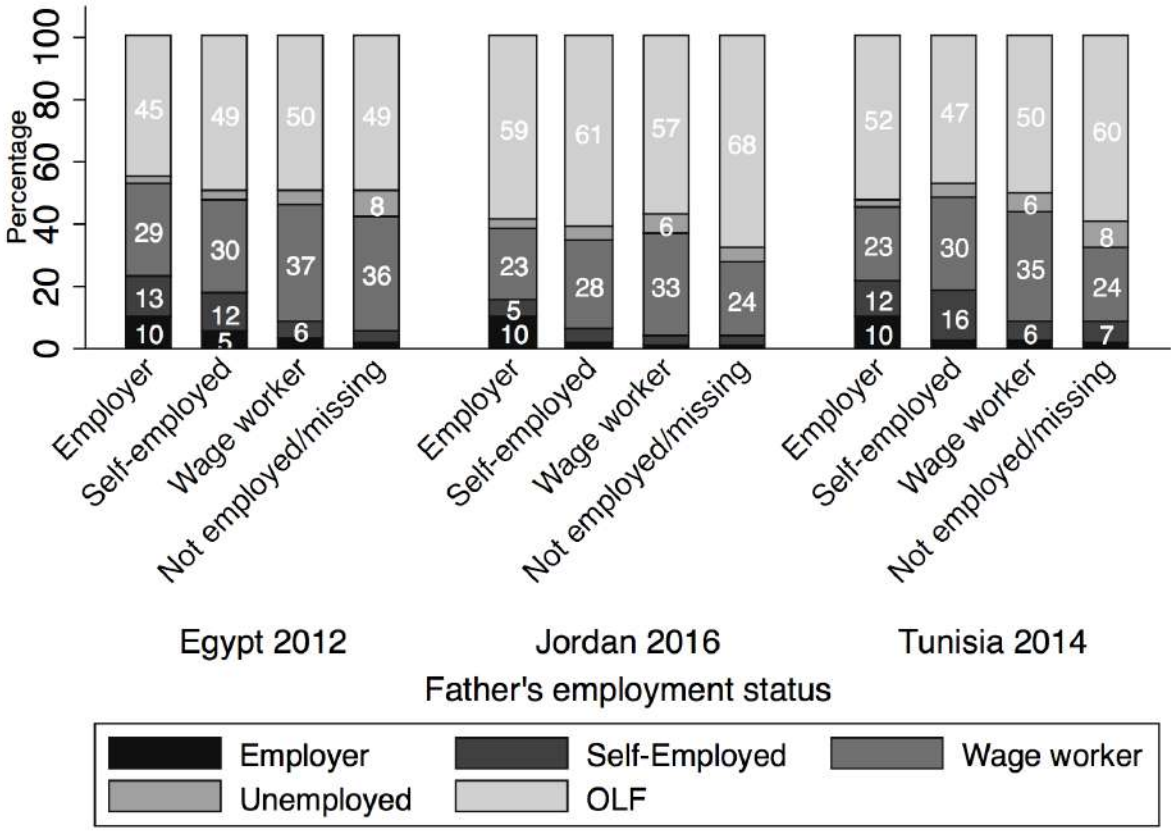
Notes: Bar labels under 5% suppressed.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 11. Predicted probabilities of labor market statuses by country and father's education, ages 15-64



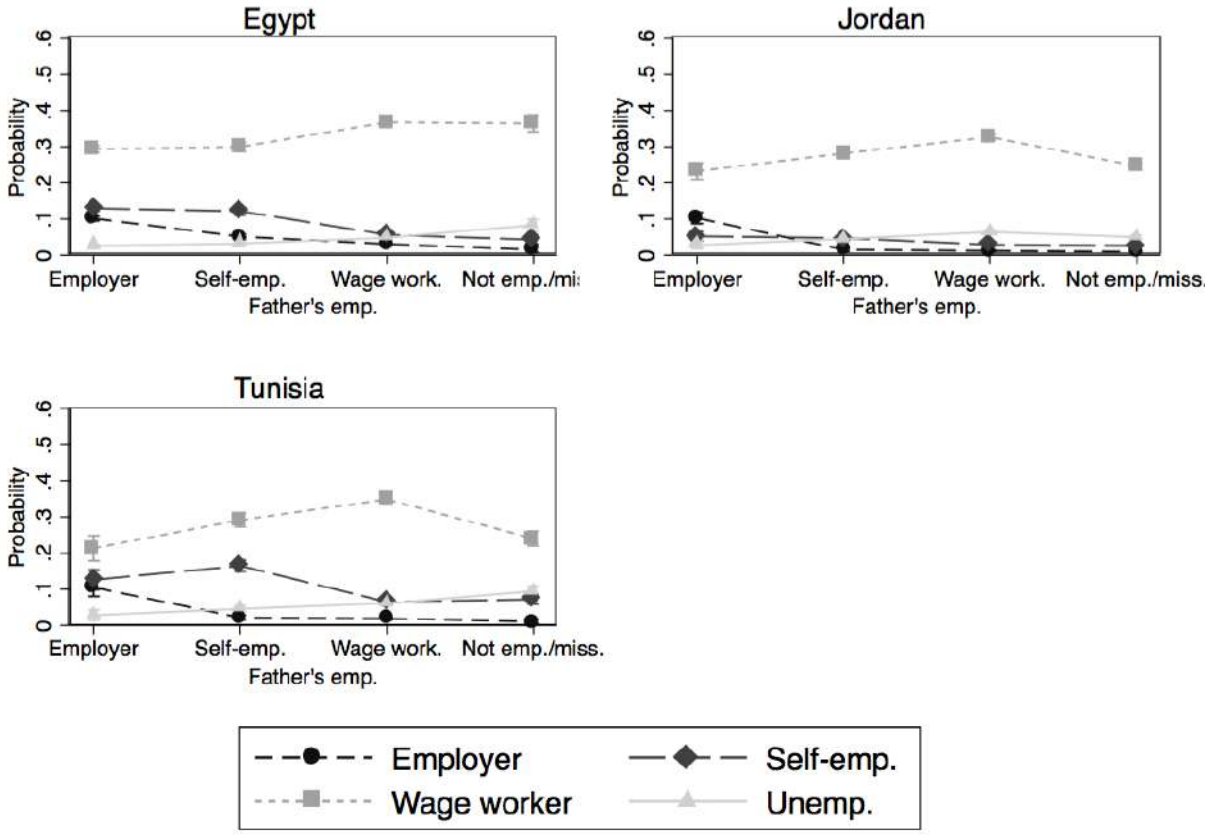
Note: Based on models in appendix (all). Bars indicate 95% confidence intervals. Not showing OLF.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 12. Labor market status by father's employment status and country (percentage), ages 15-64



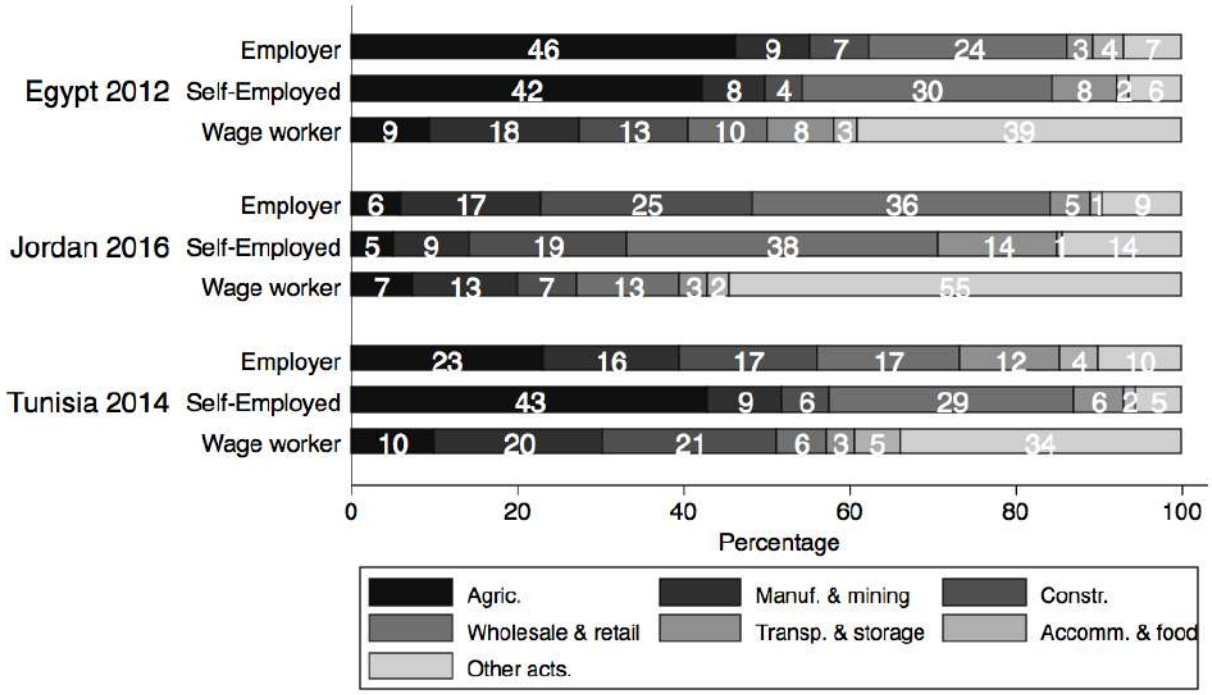
Notes: Bar labels under 5% suppressed.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 13. Predicted probabilities of labor market statuses by country and father's employment, ages 15-64



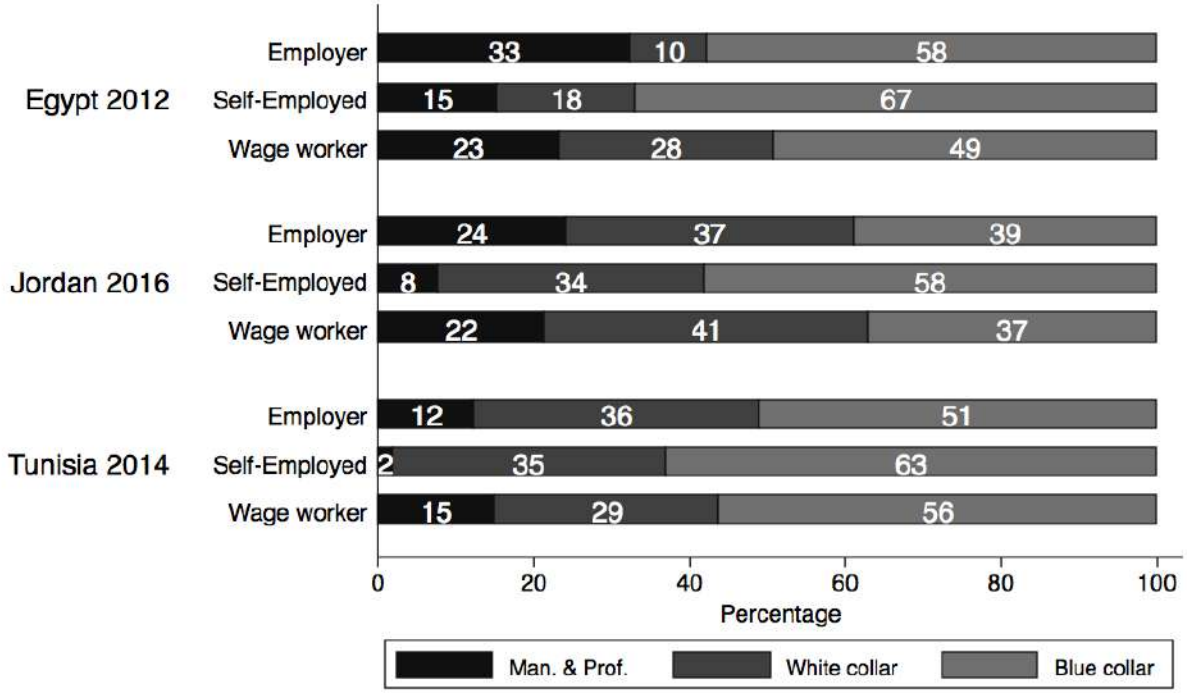
Note: Based on models in appendix (all). Bars indicate 95% confidence intervals. Not showing OLF.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 14. Economic activity by employment status and country (percentage), ages 15-64



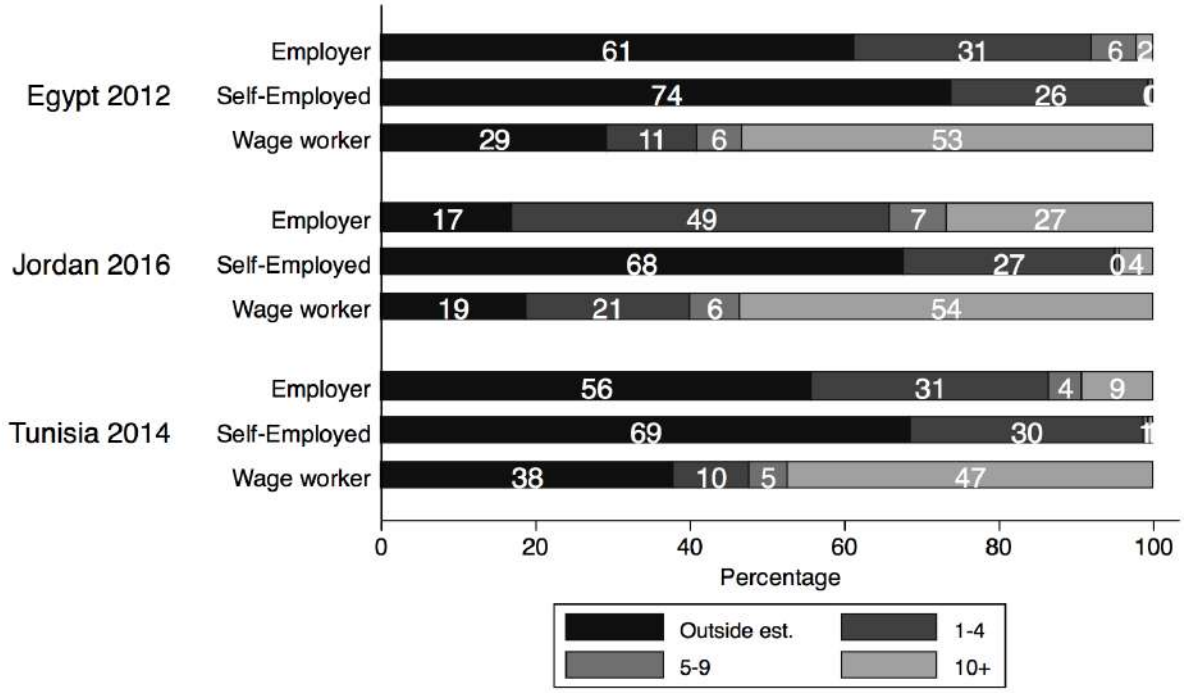
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 15. Occupation by employment status and country (percentage), ages 15-64



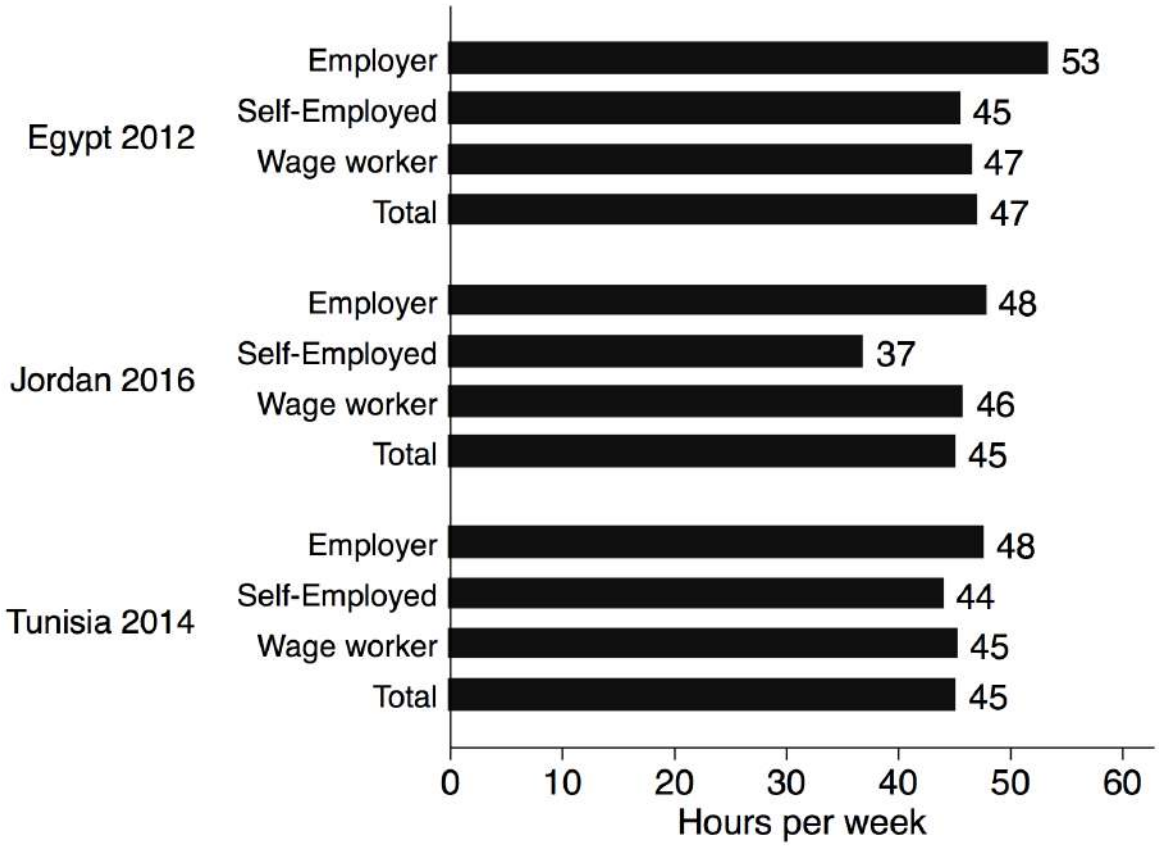
Source: Authors calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 16. Establishment size by employment status (percentage) and country, ages 15-64



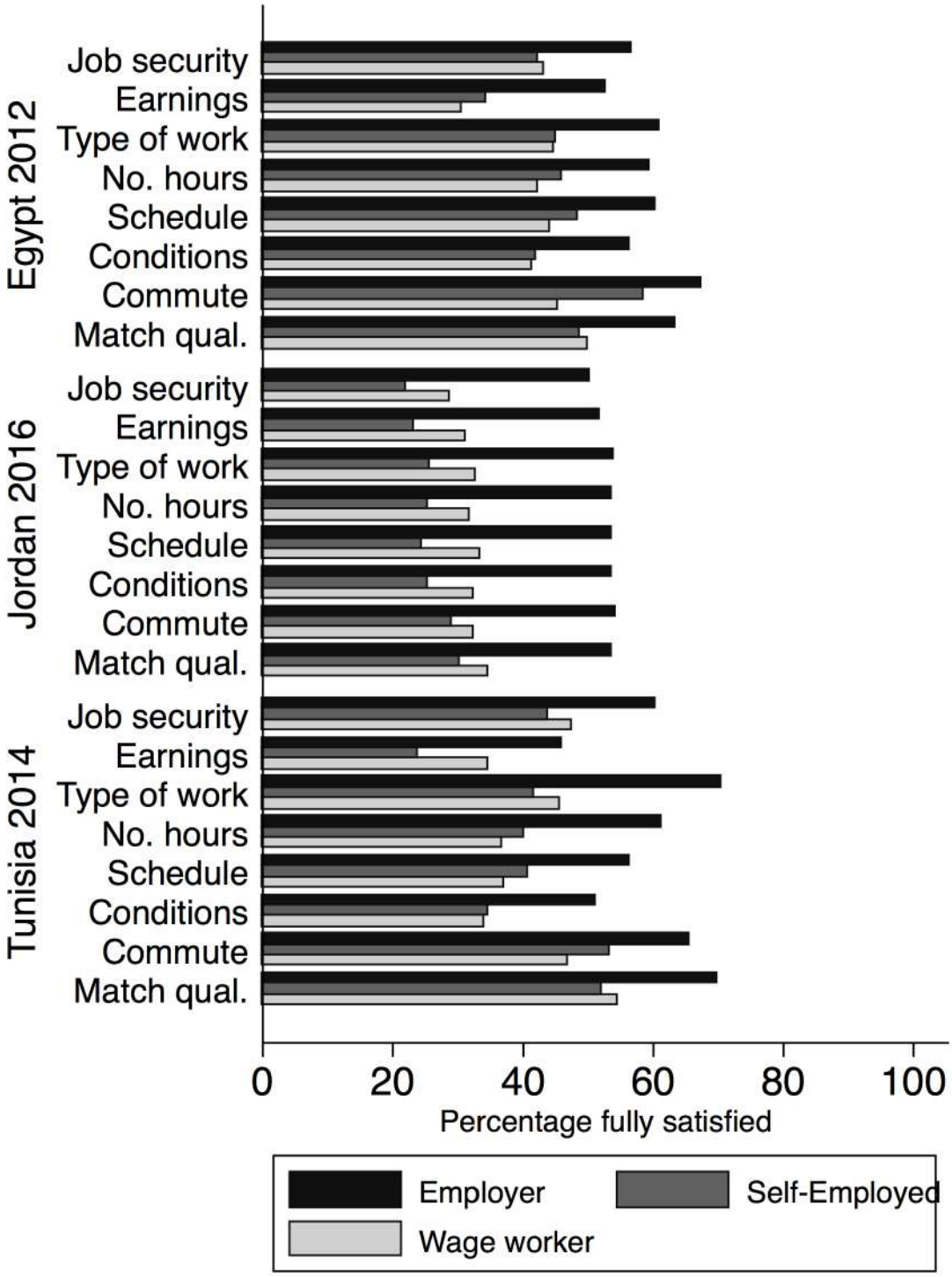
Source: Authors calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014.
"Outside est." indicates that the worker works outside of a fixed establishment.

Figure 17. Work hours per week (mean) by employment status and country, ages 15-64



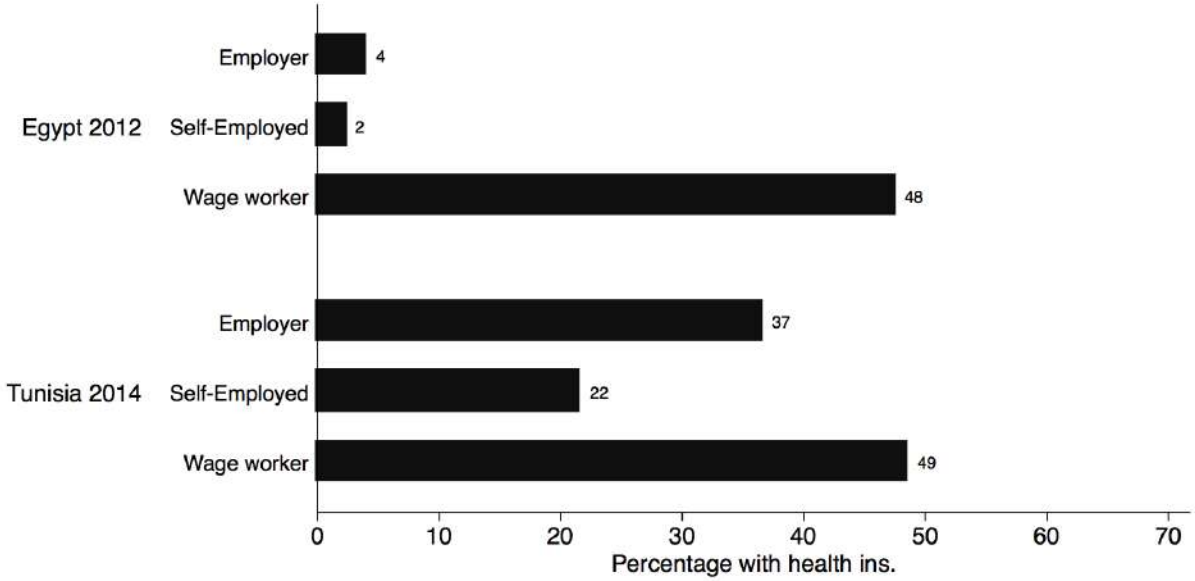
Source: Authors calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014.

Figure 18. Job satisfaction by employment status (percentage), ages 15-64



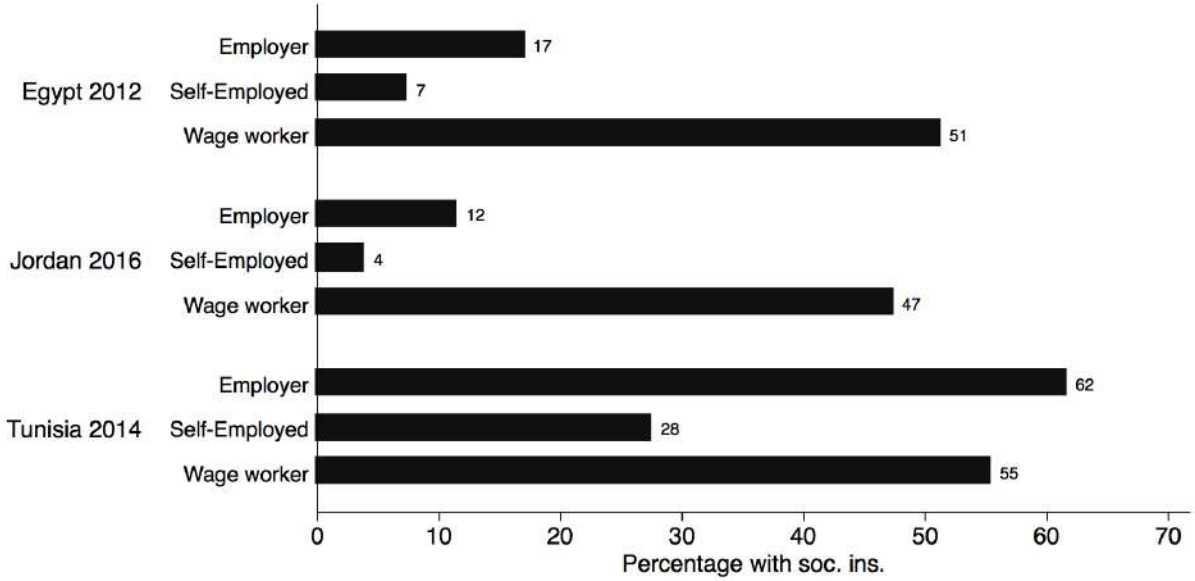
Source: Authors calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 19. Workplace health insurance by employment status (percentage) and country, ages 15-64



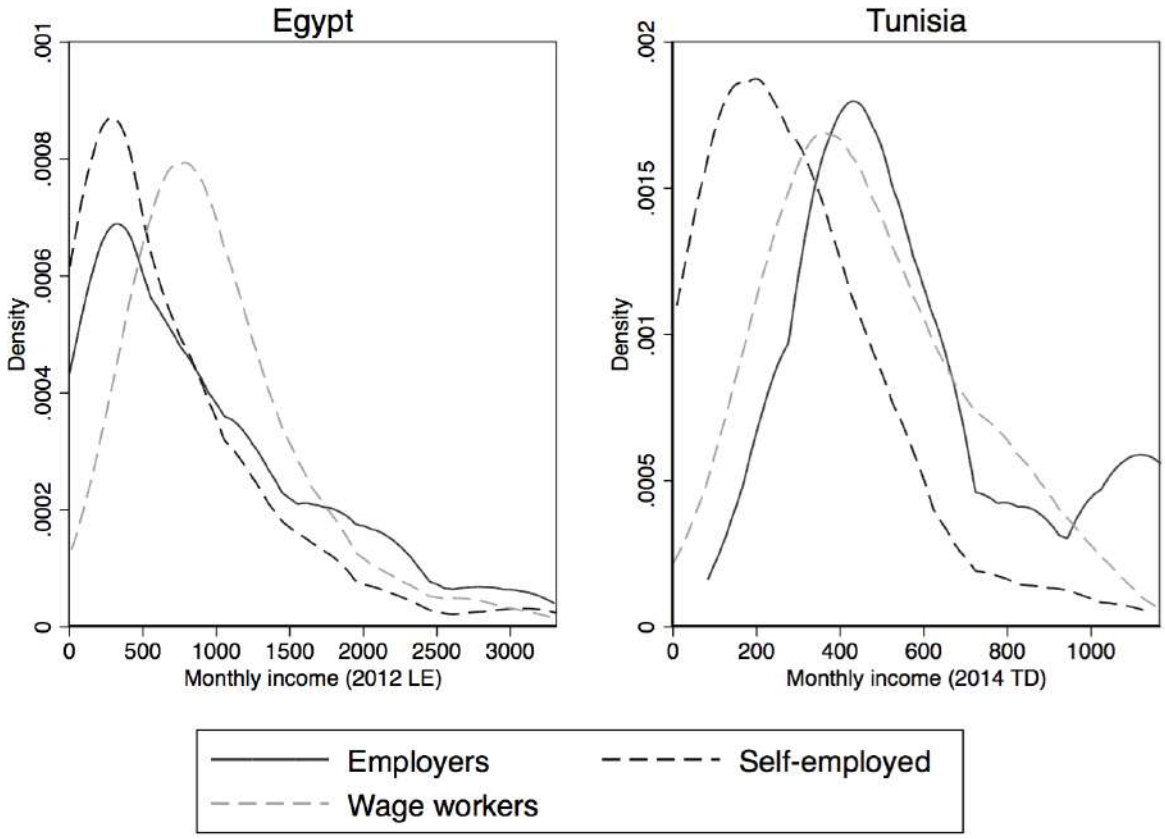
Notes: Only asked of wage workers in Jordan, not shown.
Source: Authors calculations based on ELMPS 2012, and TLMPS 2014

Figure 20. Social insurance by employment status (percentage) and country, ages 15-64



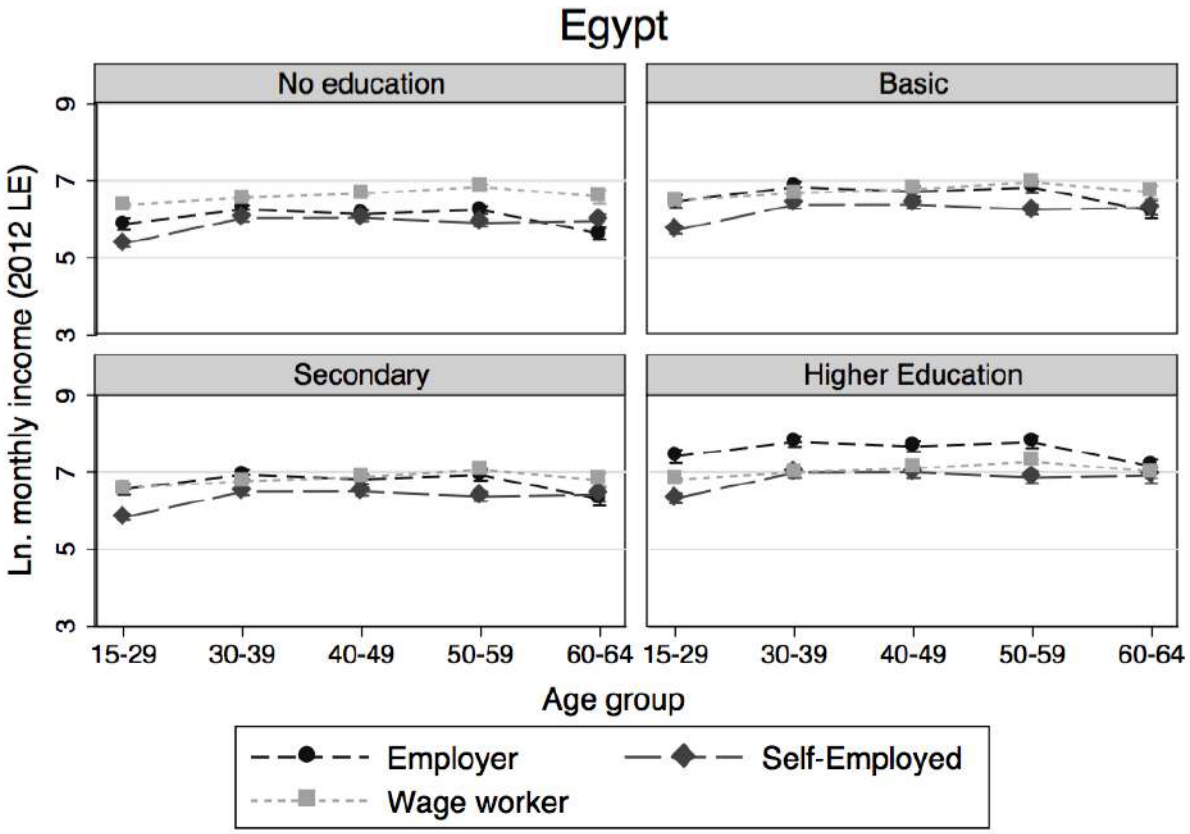
Source: Authors calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 21. Distribution of earnings by employment status and country, ages 15-64



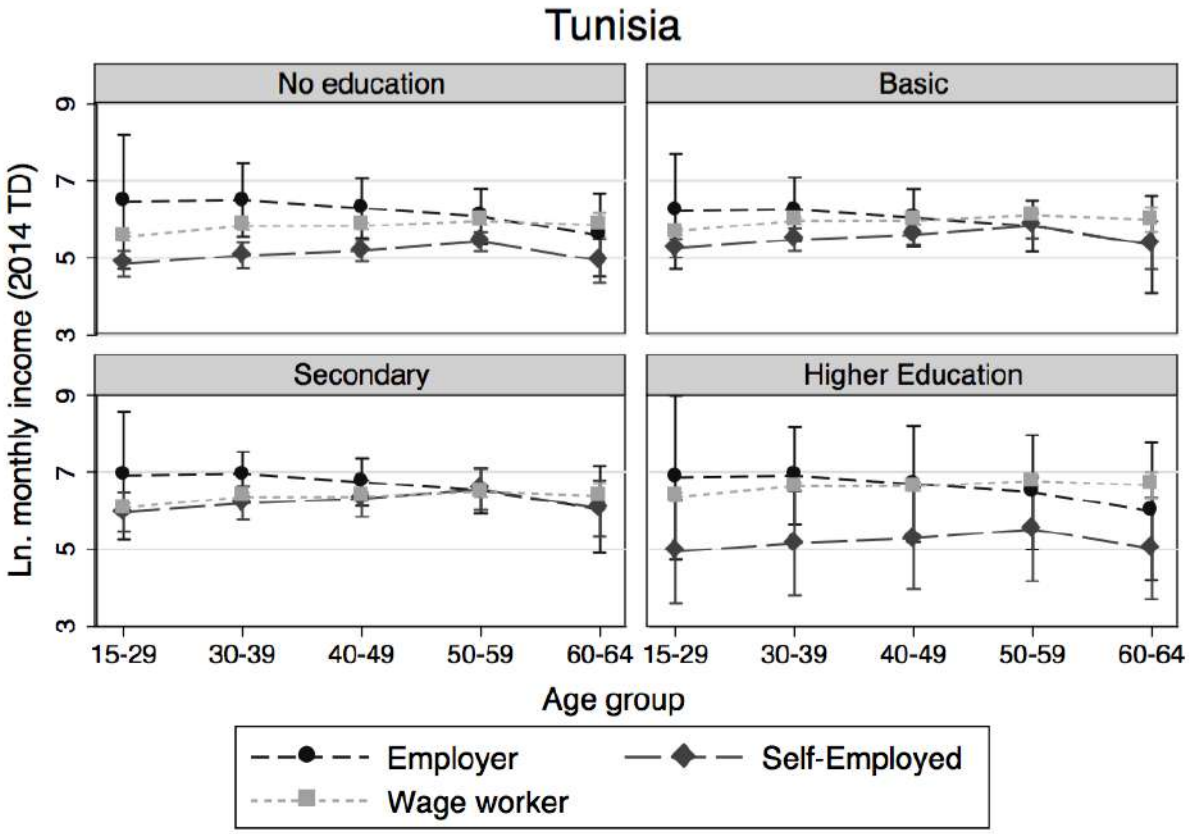
Source: Authors' calculations based on ELMPS 2012 and TLMPS 2014
Notes: Restricted to <95th percentile for visualization purposes. Kernel distributions (epanechnikov) with bandwidth 200 in Egypt and 100 in Tunisia.

Figure 22. Predicted earnings at each age group by education and employment status, Egypt



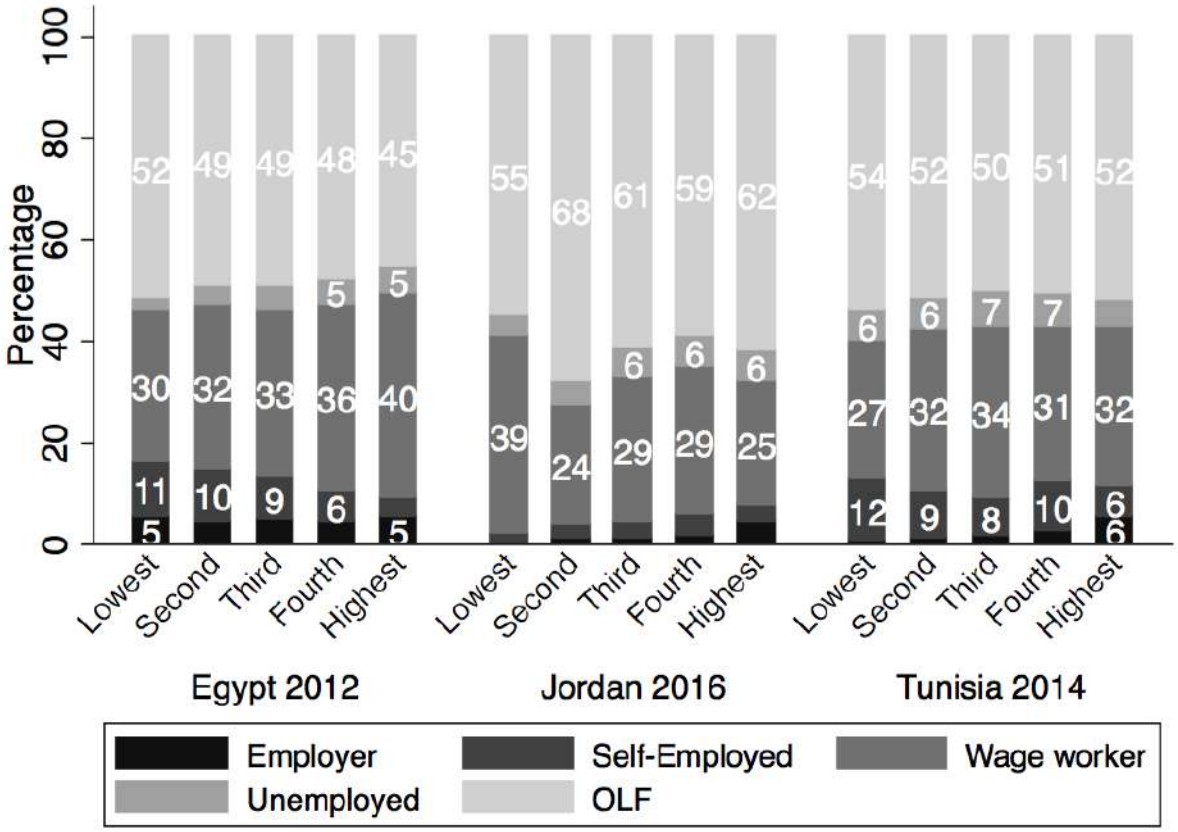
Source: Authors' calculations based on ELMPS 2012
Notes: Bars indicate 95% confidence intervals from predictions at each age, by education and employment status

Figure 23. Predicted earnings at each age group by education and employment status, Tunisia



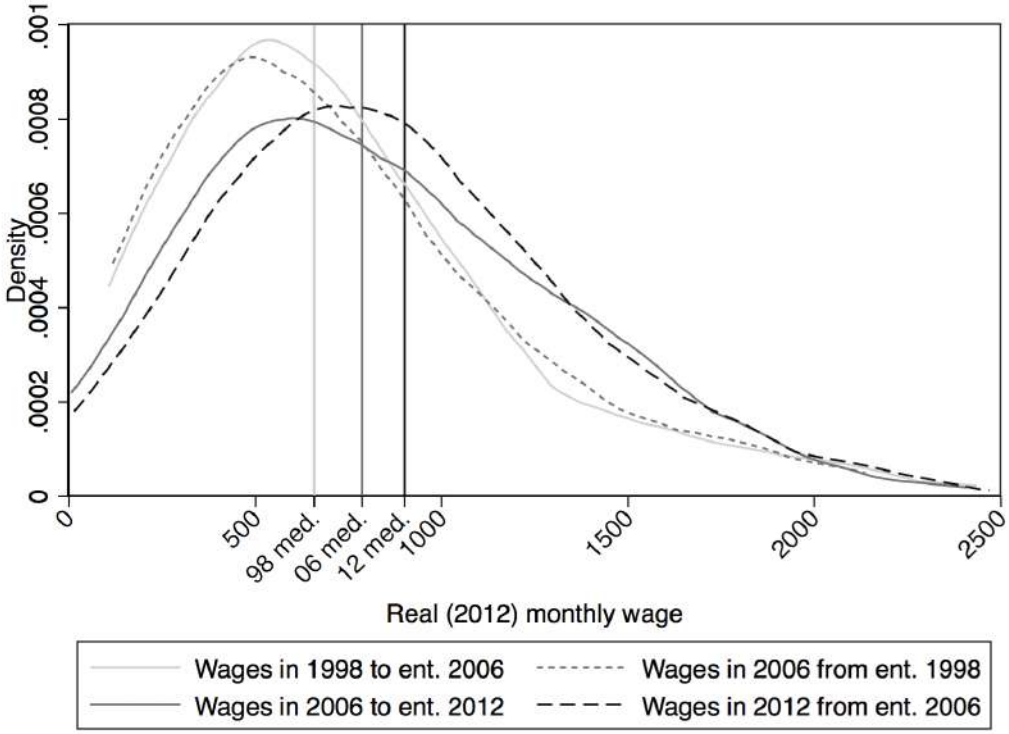
Source: Authors' calculations based on TLMPS 2014
Notes: Bars indicate 95% confidence intervals from predictions at each age, by education and employment status

Figure 24. Labor market status by wealth quintile and country (percentage), ages 15-64



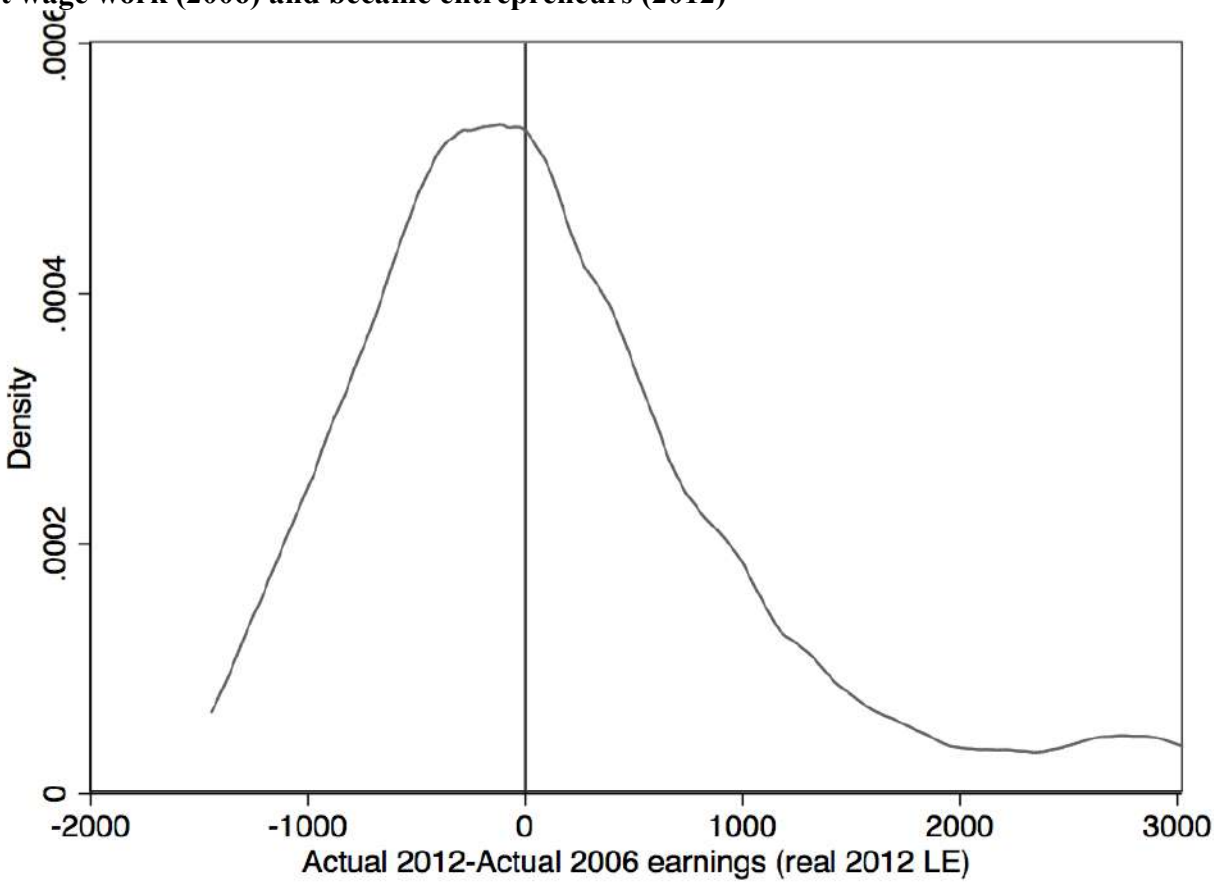
Notes: Bar labels under 5% suppressed.
Source: Authors' calculations based on ELMPS 2012, JLMPS 2016, and TLMPS 2014

Figure 25. Wages (real 2012 monthly wage in Egyptian pounds) for those who transitioned into and out of entrepreneurship (ent.) over time



Source: Authors' calculations based on ELMPS 1998, ELMPS 2006, ELMPS 2012

Figure 26. Changes in earnings (real 2012 monthly wage in Egyptian pounds) for those who left wage work (2006) and became entrepreneurs (2012)



Source: Authors' calculations based on ELMPS 2006, ELMPS 2012
Notes: Restricted to 5th-95th percentiles of changes for data visualization.

Table 1. Transitions between labor market statuses (percentage of 2006 status), 2006 to 2012, Ages 15-64 in 2012, Egypt

	2012 status						
2006 status	**Employer**	**Self-employed**	**Wage worker**	**Unemployed**	**OLF**	**N**	**Total**
Males							
Employers	45	20	29	1	5	100	978
Self-employed	18	31	43	2	6	100	1,169
Wage worker	5	6	79	2	7	100	4,323
Unemployed	3	12	73	8	4	100	292
OLF	4	9	52	9	27	100	1,753
Total	11	12	63	3	11	100	8,515
Females							
Employers	11	23	3	2	62	100	82
Self-employed	2	25	3	2	69	100	849
Wage worker	0	2	72	2	24	100	1,128
Unemployed	0	3	14	20	63	100	435
OLF	0	4	7	6	83	100	6,192
Total	1	6	15	6	73	100	8,686
ALL							
Employers	43	20	27	1	10	100	1,060
Self-employed	11	28	25	2	35	100	2,018
Wage worker	4	5	78	2	11	100	5,451
Unemployed	1	6	38	15	40	100	727
OLF	1	5	16	7	70	100	7,945
Total	6	9	38	5	42	100	17,201

Source: Authors calculations based on ELMPS 2006 and ELMPS 2012

Table 2. Transitions between labor market statuses (percentage of 2010 status), 2010 to 2016, Ages 15-64 in 2016, Jordan

	2016 status						
2010 status	**Employers**	**Self-employed**	**Wage worker**	**Unemployed**	**OLF**	**N**	**Total**
Males							
Employers	26	19	37	1	18	100	123
Self-employed	5	32	33	5	25	100	279
Wage worker	3	7	69	4	17	100	2,048
Unemployed	3	7	53	18	19	100	266
OLF	2	5	53	13	27	100	1,076
Total	4	9	60	7	21	100	3,792
Females							
Employers	-	-	-	-	-	100	9
Self-employed	0	3	7	2	88	100	40
Wage worker	0	1	58	4	37	100	459
Unemployed	0	2	25	28	45	100	160
OLF	0	1	8	7	84	100	3,138
Total	0	1	15	8	77	100	3,806
ALL							
Employers	24	18	35	0	23	100	132
Self-employed	5	29	31	5	31	100	319
Wage worker	3	6	67	4	21	100	2,507
Unemployed	2	5	43	21	29	100	426
OLF	1	2	20	9	69	100	4,214
Total	2	5	37	7	48	100	7,598

Notes: “- “ denotes sample size below 30.

Source: Authors calculations based on JLMPS 2010 and JLMPS 2016

Appendix

Regression Tables

Table 3. Multinomial logit models of labor market status (marginal effects), ages 15-64, Egypt

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
Reference probability:	0.076	0.147	0.686	0.016	0.075	0.084	0.112	0.712	0.072	0.020
Sex (male omit.)										
Female	-0.094***	-0.061***	-0.445***	0.032***	0.568***					
	(0.003)	(0.003)	(0.005)	(0.002)	(0.004)					
Age group (30-39 omit.)										
15-19	-0.051***	-0.032***	-0.195***	-0.029***	0.308***	-0.215***	0.016	-0.073*	-0.022***	0.294***
	(0.003)	(0.007)	(0.010)	(0.004)	(0.010)	(0.033)	(0.013)	(0.029)	(0.007)	(0.017)
20-29	-0.029***	-0.012*	-0.055***	0.008*	0.088***	-0.074***	-0.024**	-0.051***	-0.005	0.154***
	(0.004)	(0.005)	(0.007)	(0.004)	(0.006)	(0.008)	(0.009)	(0.015)	(0.004)	(0.017)
40-49	0.014***	0.005	0.023**	-0.030***	-0.012	0.008	-0.026**	-0.109***	-0.016*	0.143***
	(0.004)	(0.006)	(0.008)	(0.004)	(0.007)	(0.006)	(0.009)	(0.017)	(0.007)	(0.021)
50-59	0.013**	-0.011	0.005	-0.041***	0.034***	0.001	-0.074***	-0.203***	-0.028***	0.303***
	(0.005)	(0.006)	(0.008)	(0.003)	(0.008)	(0.007)	(0.010)	(0.016)	(0.008)	(0.019)
60-64	0.037***	-0.019*	-0.327***	-0.045***	0.354***	0.087***	0.004	-0.607***	-0.037*	0.552***
	(0.007)	(0.008)	(0.008)	(0.004)	(0.010)	(0.009)	(0.013)	(0.026)	(0.017)	(0.019)
Education (less than basic omit.)										
Basic	-0.027***	-0.024***	0.032***	0.001	0.019**	-0.039***	-0.013	-0.013	-0.022***	0.087***
	(0.004)	(0.005)	(0.007)	(0.002)	(0.007)	(0.007)	(0.007)	(0.012)	(0.006)	(0.008)
Secondary	-0.036***	-0.036***	0.107***	0.042***	-0.077***	-0.062***	-0.029***	0.038***	0.001	0.053***
	(0.004)	(0.005)	(0.006)	(0.003)	(0.006)	(0.006)	(0.007)	(0.011)	(0.005)	(0.008)
Higher Education	-0.036***	-0.050***	0.291***	0.071***	-0.276***	-0.064***	-0.058***	0.154***	0.017**	-0.048***
	(0.004)	(0.005)	(0.008)	(0.004)	(0.008)	(0.007)	(0.009)	(0.013)	(0.006)	(0.011)
Residence (urban omit.)										
Rural	0.007*	0.009*	-0.014*	-0.005*	0.004	0.013*	-0.013*	0.009	-0.014***	0.006
	(0.003)	(0.004)	(0.006)	(0.003)	(0.005)	(0.006)	(0.006)	(0.009)	(0.004)	(0.006)
Ever married (never omit.)										
Ever married	0.023***	-0.001	0.068***	-0.030***	-0.059***	0.047***	0.012	0.182***	-0.034***	-0.206***
	(0.004)	(0.005)	(0.007)	(0.003)	(0.007)	(0.010)	(0.008)	(0.013)	(0.004)	(0.011)
Father's education (less than basic omit.)										
Basic	0.011*	-0.009	-0.011	0.009*	-0.000	0.016	-0.007	-0.025*	0.011**	0.005

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
	(0.005)	(0.005)	(0.007)	(0.004)	(0.007)	(0.008)	(0.009)	(0.012)	(0.004)	(0.007)
Secondary	0.011	-0.023***	-0.060***	0.004	0.069***	0.027*	-0.014	-0.093***	0.016***	0.065***
	(0.007)	(0.007)	(0.009)	(0.004)	(0.008)	(0.012)	(0.012)	(0.016)	(0.005)	(0.009)
Higher Education	0.015	-0.026**	-0.039***	-0.006	0.056***	0.035*	-0.019	-0.095***	0.005	0.075***
	(0.009)	(0.009)	(0.011)	(0.004)	(0.010)	(0.014)	(0.016)	(0.020)	(0.005)	(0.011)
Mother's education (less than basic omit.)										
Basic	0.013*	-0.018*	-0.021*	-0.002	0.028***	0.021	-0.021	-0.038*	-0.004	0.042***
	(0.007)	(0.007)	(0.009)	(0.004)	(0.008)	(0.011)	(0.012)	(0.015)	(0.005)	(0.009)
Secondary	0.007	-0.013	-0.100***	-0.001	0.107***	0.015	0.022	-0.137***	0.009	0.091***
	(0.009)	(0.010)	(0.011)	(0.005)	(0.010)	(0.017)	(0.016)	(0.021)	(0.005)	(0.010)
Higher Education	-0.003	-0.042***	-0.078***	-0.008	0.131***	-0.020	-0.031	-0.062	0.006	0.107***
	(0.011)	(0.011)	(0.015)	(0.006)	(0.014)	(0.025)	(0.029)	(0.032)	(0.007)	(0.016)
Father's employment status (wage omit.)										
Employer	0.051***	0.040***	-0.066***	-0.014***	-0.011*	0.085***	0.062***	-0.106***	-0.015**	-0.026***
	(0.003)	(0.004)	(0.006)	(0.003)	(0.005)	(0.005)	(0.006)	(0.009)	(0.005)	(0.007)
Self-Employed	0.016***	0.047***	-0.062***	-0.007	0.006	0.037***	0.079***	-0.099***	-0.010	-0.006
	(0.004)	(0.005)	(0.007)	(0.004)	(0.007)	(0.007)	(0.007)	(0.011)	(0.005)	(0.008)
Not employed/missing	-0.004	-0.013	0.029*	0.013*	-0.025*	-0.010	-0.024	0.032	0.008	-0.006
	(0.007)	(0.008)	(0.013)	(0.006)	(0.012)	(0.021)	(0.017)	(0.022)	(0.005)	(0.011)
Mother's employment status (wage omit.)										
Employer or self-employed	-0.002	0.051***	-0.069***	-0.010	0.030*	-0.009	0.075***	-0.073**	-0.004	0.012
	(0.009)	(0.011)	(0.015)	(0.006)	(0.013)	(0.016)	(0.017)	(0.023)	(0.008)	(0.013)
Not employed/missing	-0.006	-0.007	-0.071***	-0.002	0.086***	-0.011	0.029	-0.038*	0.001	0.019
	(0.008)	(0.009)	(0.012)	(0.004)	(0.010)	(0.014)	(0.015)	(0.018)	(0.004)	(0.010)
Governorates included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	29662	29662	29662	29662	29662	14565	14565	14565	14565	14565

Notes: Standard errors in parentheses. *p<0.05; **p<0.01; ***p<0.001
Source: Authors' calculations based on ELMPS 2012

Table 4. Multinomial logit models of labor market status (marginal effects), ages 15-64, Jordan

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
Reference probability:	0.006	0.045	0.760	0.056	0.133	0.006	0.040	0.739	0.074	0.141
Sex (male omit.)										
Female	-0.030***	-0.058***	-0.387***	-0.019***	0.494***					
	(0.002)	(0.002)	(0.005)	(0.003)	(0.005)					
Age group (30-39 omit.)										
15-19	-0.013***	-0.020***	-0.330***	-0.014**	0.377***	-0.051*	-0.007	-0.396***	0.009	0.445***
	(0.002)	(0.005)	(0.010)	(0.005)	(0.011)	(0.021)	(0.016)	(0.025)	(0.010)	(0.018)
20-29	-0.006*	-0.006	-0.090***	0.040***	0.063***	-0.013	-0.011	-0.074***	0.032***	0.065***
	(0.003)	(0.004)	(0.009)	(0.005)	(0.009)	(0.007)	(0.008)	(0.014)	(0.008)	(0.014)
40-49	0.009**	-0.001	-0.068***	-0.015**	0.075***	0.013**	-0.009	-0.141***	-0.005	0.142***
	(0.003)	(0.004)	(0.009)	(0.005)	(0.009)	(0.005)	(0.006)	(0.014)	(0.010)	(0.015)
50-59	0.017***	-0.007	-0.223***	-0.014*	0.227***	0.024***	-0.010	-0.319***	0.006	0.298***
	(0.004)	(0.004)	(0.010)	(0.006)	(0.011)	(0.005)	(0.007)	(0.016)	(0.011)	(0.015)
60-64	0.011*	-0.010	-0.338***	-0.040***	0.377***	0.029***	0.004	-0.484***	-0.054	0.505***
	(0.006)	(0.006)	(0.011)	(0.005)	(0.013)	(0.007)	(0.012)	(0.032)	(0.029)	(0.025)
Education (less than basic omit.)										
Basic	0.000	0.001	0.052***	0.003	-0.056***	0.002	0.001	0.079***	-0.005	-0.076***
	(0.003)	(0.004)	(0.007)	(0.004)	(0.007)	(0.005)	(0.006)	(0.012)	(0.006)	(0.012)
Secondary	0.002	-0.013***	0.024**	-0.025***	0.013	0.005	-0.021**	0.035*	-0.067***	0.049***
	(0.003)	(0.004)	(0.008)	(0.004)	(0.008)	(0.005)	(0.008)	(0.014)	(0.010)	(0.013)
Higher Education	-0.005*	-0.019***	0.149***	0.058***	-0.182***	-0.009	-0.044***	0.097***	0.003	-0.047***
	(0.002)	(0.003)	(0.008)	(0.006)	(0.008)	(0.005)	(0.008)	(0.014)	(0.008)	(0.013)
Residence (urban omit.)										
Rural	-0.006*	-0.011**	-0.005	0.002	0.020*	-0.014	-0.026*	0.004	0.005	0.031*
	(0.003)	(0.004)	(0.009)	(0.005)	(0.009)	(0.008)	(0.011)	(0.016)	(0.008)	(0.014)
Ever married (never omit.)										
Ever married	0.011***	0.027***	0.020**	-0.045***	-0.013	0.027***	0.065***	0.107***	-0.055***	-0.144***
	(0.002)	(0.003)	(0.008)	(0.005)	(0.008)	(0.007)	(0.009)	(0.014)	(0.007)	(0.013)
Father's education (less than basic omit.)										
Basic	-0.005	0.002	-0.028***	0.001	0.029***	-0.010	0.009	-0.047***	0.006	0.042**
	(0.003)	(0.004)	(0.008)	(0.005)	(0.008)	(0.007)	(0.008)	(0.014)	(0.007)	(0.013)
Secondary	0.018***	0.004	-0.029**	0.004	0.003	0.027***	0.010	-0.028	0.004	-0.014
	(0.005)	(0.006)	(0.011)	(0.006)	(0.011)	(0.006)	(0.010)	(0.018)	(0.009)	(0.017)
Higher Education	0.010*	0.018*	-0.046***	-0.012*	0.030**	0.018*	0.030**	-0.088***	-0.008	0.049**

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
	(0.005)	(0.007)	(0.010)	(0.005)	(0.010)	(0.007)	(0.010)	(0.018)	(0.009)	(0.016)
Mother's education (less than basic omit.)										
Basic	-0.000	-0.016***	-0.012	0.012*	0.016	-0.001	-0.034***	-0.009	-0.006	0.050***
	(0.003)	(0.004)	(0.009)	(0.005)	(0.009)	(0.007)	(0.010)	(0.015)	(0.008)	(0.014)
Secondary	0.015**	-0.011*	-0.066***	0.019**	0.043***	0.021**	-0.018	-0.133***	0.022*	0.107***
	(0.006)	(0.005)	(0.011)	(0.007)	(0.012)	(0.006)	(0.012)	(0.020)	(0.009)	(0.018)
Higher Education	-0.008	-0.024***	-0.085***	-0.004	0.121***	-0.016	-0.053**	-0.090***	-0.006	0.166***
	(0.004)	(0.005)	(0.013)	(0.006)	(0.013)	(0.014)	(0.020)	(0.026)	(0.011)	(0.020)
Father's employment status (wage omit.)										
Employer	0.054***	0.022***	-0.078***	-0.036***	0.038**	0.050***	0.042***	-0.089***	-0.050**	0.046*
	(0.007)	(0.007)	(0.012)	(0.006)	(0.012)	(0.005)	(0.009)	(0.022)	(0.016)	(0.020)
Self-Employed	0.002	0.016***	-0.027**	-0.013*	0.022**	0.005	0.029***	-0.033*	-0.025**	0.025
	(0.003)	(0.004)	(0.008)	(0.005)	(0.008)	(0.005)	(0.007)	(0.014)	(0.008)	(0.013)
Not employed/missing	-0.001	0.001	-0.054***	-0.015***	0.069***	-0.002	0.005	-0.091***	-0.015**	0.102***
	(0.002)	(0.003)	(0.006)	(0.004)	(0.006)	(0.005)	(0.006)	(0.011)	(0.006)	(0.010)
Mother's employment status (wage omit.)										
Employer or self-employed	0.034*	-0.007	-0.099*	0.023	0.049	0.041*	-0.010	-0.082	-0.002	0.053
	(0.015)	(0.017)	(0.039)	(0.027)	(0.040)	(0.017)	(0.032)	(0.067)	(0.046)	(0.064)
Not employed/missing	0.004	-0.007	-0.071***	0.009	0.065***	0.007	-0.009	-0.089**	0.024	0.068**
	(0.006)	(0.011)	(0.017)	(0.007)	(0.015)	(0.013)	(0.018)	(0.027)	(0.014)	(0.024)
Governorates included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	19100	19100	19100	19100	19100	9538	9538	9538	9538	9538

Notes: Standard errors in parentheses. *p<0.05; **p<0.01; ***p<0.001
Source: Authors' calculations based on JLMPS 2016

Table 5. Multinomial logit models of labor market status (marginal effects), ages 15-64, Tunisia

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
Reference probability:	0.010	0.124	0.569	0.137	0.161	0.013	0.116	0.474	0.264	0.132
Sex (male omit.)										
Female	-0.040***	-0.111***	-0.326***	-0.016**	0.493***					
	(0.003)	(0.006)	(0.009)	(0.005)	(0.009)					
Age group (30-39 omit.)										
15-19	-0.029***	-0.062***	-0.300***	-0.028***	0.420***	-0.577	0.061	0.012	0.015	0.489
	(0.004)	(0.010)	(0.015)	(0.008)	(0.017)	(31.573)	(6.028)	(19.465)	(1.017)	(5.063)
20-29	-0.013*	-0.019	-0.122***	0.044***	0.109***	-0.032*	-0.017	-0.105***	0.032**	0.122***
	(0.006)	(0.010)	(0.015)	(0.009)	(0.015)	(0.014)	(0.019)	(0.024)	(0.010)	(0.021)
40-49	-0.006	0.005	0.033*	-0.044***	0.012	-0.014	-0.014	-0.011	-0.095***	0.134***
	(0.005)	(0.010)	(0.016)	(0.007)	(0.014)	(0.009)	(0.018)	(0.027)	(0.025)	(0.029)
50-59	0.001	0.011	-0.069***	-0.044***	0.101***	-0.004	-0.030	-0.181***	-0.088***	0.302***
	(0.006)	(0.011)	(0.017)	(0.007)	(0.016)	(0.009)	(0.018)	(0.028)	(0.025)	(0.028)
60-64	-0.012	0.003	-0.308***	-0.060***	0.377***	-0.002	0.054	-0.457***	-0.191	0.596***
	(0.007)	(0.015)	(0.017)	(0.006)	(0.021)	(0.015)	(0.030)	(0.069)	(0.109)	(0.048)
Education (less than basic omit.)										
Basic	0.010*	0.020*	0.042***	0.008	-0.080***	0.020*	0.020	-0.003	-0.010	-0.027
	(0.004)	(0.008)	(0.012)	(0.006)	(0.012)	(0.008)	(0.013)	(0.019)	(0.011)	(0.017)
Secondary	0.005	-0.041***	0.073***	0.019*	-0.057***	0.014	-0.083***	0.019	-0.011	0.060**
	(0.005)	(0.009)	(0.016)	(0.008)	(0.016)	(0.010)	(0.021)	(0.026)	(0.014)	(0.020)
Higher Education	-0.006	-0.067***	0.163***	0.081***	-0.171***	-0.017	-0.183***	0.062	0.014	0.124***
	(0.004)	(0.009)	(0.018)	(0.011)	(0.017)	(0.014)	(0.032)	(0.032)	(0.014)	(0.023)
Residence (urban omit.)										
Rural	-0.007	0.034***	-0.030**	-0.021***	0.024*	-0.014	0.026	0.020	-0.031**	-0.001
	(0.004)	(0.008)	(0.011)	(0.006)	(0.011)	(0.009)	(0.013)	(0.019)	(0.010)	(0.015)
Ever married (never omit.)										
Ever married	0.017***	0.010	0.008	-0.045***	0.010	0.040***	0.041*	0.171***	-0.063***	-0.189***
	(0.004)	(0.009)	(0.013)	(0.007)	(0.013)	(0.011)	(0.018)	(0.024)	(0.014)	(0.023)
Father's education (less than basic omit.)										
Basic	0.003	-0.017*	0.033**	-0.022***	0.003	0.004	-0.025	0.100***	-0.044***	-0.036*
	(0.004)	(0.008)	(0.012)	(0.006)	(0.011)	(0.008)	(0.016)	(0.019)	(0.011)	(0.016)
Secondary	0.016	0.016	-0.017	-0.013	-0.003	0.025	0.041	-0.032	-0.015	-0.018
	(0.009)	(0.020)	(0.022)	(0.011)	(0.022)	(0.013)	(0.033)	(0.039)	(0.018)	(0.028)
Higher Education	0.021	0.005	0.027	-0.040***	-0.013	-0.531	0.124	0.420	-0.065	0.052

	All					Men				
	Employer	Self-employed	Wage	Unemp.	OLF	Employer	Self-employed	Wage	Unemp.	OLF
	(0.027)	(0.039)	(0.039)	(0.009)	(0.034)	(61.427)	(11.728)	(37.870)	(1.978)	(9.851)
Mother's education (less than basic omit.)										
Basic	0.028**	-0.031**	-0.038*	-0.007	0.048**	0.038***	-0.079**	-0.015	0.010	0.046*
	(0.009)	(0.011)	(0.016)	(0.008)	(0.016)	(0.011)	(0.029)	(0.030)	(0.013)	(0.020)
Secondary	-0.013*	0.004	-0.046	-0.029**	0.085**	-0.037	0.006	-0.020	-0.014	0.066
	(0.006)	(0.028)	(0.029)	(0.011)	(0.030)	(0.030)	(0.048)	(0.055)	(0.024)	(0.037)
Higher Education	-0.021***	-0.036	-0.076	-0.042***	0.174***	-0.575	0.088	0.232	0.004	0.251
	(0.002)	(0.043)	(0.044)	(0.012)	(0.047)	(88.758)	(16.947)	(54.720)	(2.858)	(14.234)
Father's employment status (wage omit.)										
Employer	0.056***	0.079***	-0.135***	-0.024*	0.024	0.066***	0.157***	-0.184***	-0.093*	0.054
	(0.011)	(0.017)	(0.019)	(0.010)	(0.020)	(0.009)	(0.023)	(0.037)	(0.036)	(0.029)
Self-Employed	0.002	0.054***	-0.060***	-0.000	0.004	0.002	0.108***	-0.062**	-0.002	-0.046**
	(0.004)	(0.008)	(0.012)	(0.007)	(0.012)	(0.009)	(0.013)	(0.019)	(0.011)	(0.017)
Not employed/missing	-0.002	0.008	-0.068***	0.007	0.055***	-0.003	0.029	-0.095***	0.010	0.058***
	(0.005)	(0.009)	(0.014)	(0.007)	(0.013)	(0.013)	(0.018)	(0.023)	(0.010)	(0.016)
Mother's employment status (wage omit.)										
Employer or self-employed	0.006	0.014	0.013	-0.058***	0.026	0.001	-0.007	0.031	-0.064*	0.039
	(0.011)	(0.024)	(0.033)	(0.014)	(0.031)	(0.029)	(0.043)	(0.056)	(0.031)	(0.040)
Not employed/missing	0.009	-0.011	0.013	-0.018	0.007	0.010	-0.006	0.036	-0.028	-0.013
	(0.007)	(0.019)	(0.021)	(0.011)	(0.021)	(0.022)	(0.034)	(0.038)	(0.015)	(0.026)
Governorates included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	8002	8002	8002	8002	8002	3639	3639	3639	3639	3639

Notes: Standard errors in parentheses. *p<0.05; **p<0.01; ***p<0.001
Source: Authors' calculations based on TLMPS 2014