

ECONOMIC
RESEARCH
FORUM



منتدى
البحوث
الاقتصادية

Working Paper Series



IS THE EGYPTIAN ECONOMY CREATING
GOOD JOBS? JOB CREATION AND ECONOMIC
VULNERABILITY FROM 1998 TO 2018

Ragui Assaad, Abdelaziz AlSharawy
and Colette Salemi

Working Paper No. 1354

IS THE EGYPTIAN ECONOMY CREATING GOOD JOBS? JOB CREATION AND ECONOMIC VULNERABILITY FROM 1998 TO 2018

Ragui Assaad¹, Abdelaziz AlSharawy², and Colette Salemi³

Working Paper No. 1354

October 2019

The authors acknowledge the general support of the World Bank, the International Labour Organization, Agence Française de Développement, UN Women, and the Arab Fund for Economic and Social Development for the Egypt Labor Market Panel Survey 2018, on which this paper is based.

Send correspondence to:

Ragui Assaad

University of Minnesota

assaad@umn.edu

¹ Professor, The Humphrey School of Public Affairs, University of Minnesota.

² PhD Student, Department of Economics, Virginia Tech

³ PhD Student, Department of Applied Economics, University of Minnesota

First published in 2019 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Copyright © The Economic Research Forum, 2019

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without permission in writing from the publisher.

The findings, interpretations and conclusions expressed in this publication are entirely those of the author(s) and should not be attributed to the Economic Research Forum, members of its Board of Trustees, or its donors.

Abstract

In terms of overall growth rates, the Egyptian economy has rebounded from the slowdown it experienced as a result of the global financial crisis, the 2011 revolution and the revolution's aftermath. The question we explore in this paper is whether the recovery in growth rates has been accompanied by an improvement in the quantity, and especially the quality, of employment in Egypt. We examine how overall employment and job creation have evolved and then delve into the composition of employment in terms of sector, formality, industry structure, location in and out of establishments and establishment size. We also examine other aspects of job quality such as skill requirements, regularity, access to paid leaves, health insurance, hours of work, and exposure to workplace hazards and injuries, and we relate these aspects to the type of work that people are engaged in. As a measure of subjective job quality, we examine workers' satisfaction with various aspects of their jobs and how it changed over time. We also trace the evolution of underemployment in the economy in the form of involuntary part-time work and educational over-qualification.

Keywords: Employment; job creation; job quality; labor market; Egypt.

JEL Classifications: J21, J62.

1. Introduction

The Egyptian economy is emerging from a period of crisis and economic instability that began with the global financial crisis of 2008-9 and was greatly exacerbated by the January 25th, 2011 revolution and its aftermath. After several years of emergency measures, the Egyptian government adopted an IMF-sponsored multi-year stabilization program in late 2016, which is still ongoing. The program was successful in curbing large balance of payments and fiscal deficits and restoring economic growth. The impact of the crisis and the subsequent stabilization program on both the quantity and quality of employment in the Egyptian economy has not yet been ascertained.

The 2018 wave of the Egypt Labor Market Panel Survey (ELMPS) offers a valuable opportunity to examine changes in employment that correspond to these recent economic developments. Building on the 2012 wave, which took place during the depths of the post-revolution crisis, the 2018 wave allows us to ascertain whether there was substantial recovery in the employment situation both in terms of quantity and quality of jobs.

One of the primary ways in which the post-revolution crisis affected the Egyptian labor market was to exacerbate the precariousness of employment, especially among informal workers in the private sector (Krafft & Assaad, 2014). Although there were some increases in open unemployment, the major effects of the crisis were seen in the increase of irregularity in employment and in the rates of involuntary part-time work among informally employed workers (Assaad & Krafft, 2015).⁴

In addition to these cyclical factors, there have been long-run structural factors affecting the Egyptian economy, including the gradual decline of employment in agriculture, the ongoing process of de-industrialization, the boom in the high-end real estate and construction sectors, and the downsizing of government and public enterprise employment. These trends have been ongoing since the early 1980s and have had profound effects on the labor market.

Accordingly, our objective in this chapter is to determine the quantity and quality of the jobs being created in the Egyptian economy over the twenty-year period from 1998 to 2018. In terms of quality, we examine formality, regularity, access to benefits, hours of work, and measures of job satisfaction on the part of job holders. We also examine the degree of underemployment in terms of both involuntary part-time work and in terms of the match between qualifications and the skills requirements of one's job.

⁴ Open unemployment is defined as not working a single hour during the reference week, desiring to work and being available for it whereas involuntary part-time work (or visible underemployment) is defined as working fewer than 35 hours per week because of not finding work for the remainder of the time.

Our findings indicate that the economic recovery of the 2010s has essentially been a jobless recovery. Although employment to population ratios (EPRs) were pro-cyclical in the past with some lag, in this recovery, EPRs have continued to fall, suggesting that employment is not keeping up with population growth despite the recovery in GDP growth rates. This relatively negative picture on the growth of overall employment is counteracted by the fact that a smaller proportion of informal workers describe their work as irregular and a smaller proportion of workers are in involuntary part-time employment.

With regard to the evolution of the quality of employment over time, we find that, with the continued contraction of the public sector and the slow growth of formal private wage employment, the informalization of employment is continuing apace. Informal wage employment, in particular, has continued to increase as a share of total employment, going from 24% in 2006 to 31% in 2012 to 39% in 2018. Informal wage employment outside of a fixed establishment - which as we will show, is one of the most vulnerable forms of employment in Egypt - has nearly doubled its share in overall employment from 12 % in 2006 to 23% in 2018, a reflection of the rapid growth of the construction and transport sectors in the Egyptian economy. Although informal wage work outside of establishments is more likely to be irregular than other forms of employment, the extent of irregularity within it has declined since 2012, leading to an overall decline in employment irregularity. Nonetheless, the high and growing percentage of workers undertaking informal wage work outside of establishments underscores the vulnerability of these workers to future economic downturns. Workers employed within private establishments are increasingly more likely to be in small, as opposed to micro establishments. This should bode well for job quality as small establishments are more likely than micro establishments to provide formal jobs and more likely to provide for paid and sick leaves and health insurance. However, the positive development in terms of the distribution of employment by establishment size has been counteracted by the increased informalization of employment within small, and even medium and large establishments, resulting in higher rates of informality overall.

Our findings on the decline of formality in the Egyptian labor market has important distributional implications. Poor workers (as measured by the lowest quintile of an asset index) never had much access to formal employment, and that access continues to decline marginally. On the other hand, workers in the top quintile continue to have good access to formal jobs as they increasingly transition to formal private sector jobs as public sector employment contracts. It is workers in the middle of the wealth distribution whose access to formal employment is substantially reduced as the increase in formal private employment fails to compensate for the decline in public employment. With non-wage employment also declining for these groups, they are becoming increasingly reliant on informal wage employment, and in particular on this kind of employment outside fixed establishments, which we have identified as the most vulnerable form of employment in

Egypt. This finding is in line with other writings that have documented the hollowing of the middle class in Egypt as public sector employment declines (Assaad, Krafft, Roemer, & Salehi-Isfahani, 2018; Devarajan & Ianchovichina, 2018; Diwan, 2013).

Women in Egypt are much less likely than men to engage in informal wage employment outside establishments due to the widespread perception that such employment exposes them to unacceptable risks of harassment and insecurity. They responded to the decline in public sector employment and the anemic growth of formal private employment in part by staying out of the workforce as documented in Kraftt, Assaad, & Keo (2019), and in part increasing their participation in both informal wage and non-wage work inside establishments. Poor women in particular have seen large declines in the share of employment in non-wage work outside establishments, most of which is home-based work, and increasing shares of non-wage work in establishments and informal wage work.

Besides suffering from high levels of employment irregularity, informal wage and non-wage workers outside fixed establishments have the highest levels of workplace hazards, relatively high rates of workplace injuries, and together with other informal workers, high degrees of overqualification for their jobs.

Finally, in analyzing the results on levels of overall job satisfaction and satisfaction with different aspects of jobs, we find it remarkable how well levels of satisfaction reflect actual job conditions. As expected, the lowest levels of job satisfaction were expressed by informal wage workers outside establishments, followed by their counterparts employed inside establishments. Non-wage workers generally had higher levels of job satisfaction and formally employed wage workers had the highest levels. But we also found that levels of job satisfaction rose the most between 2012 and 2018 for the workers who were least satisfied in 2012, suggesting that differences in favor of formally employed workers were even larger in 2012. The greater improvement in satisfaction among the most vulnerable workers is ostensibly a reflection of the improved job security they have experienced as the economy recovered.

2. Employment and GDP Growth

An examination of the relationship between aggregate employment and GDP growth in Egypt reveals that employment is quite responsive to growth, but with a one to two-year lag. As shown in Figure 1, GDP growth in Egypt has varied substantially over time since the early 2000s. After a period of sharp deceleration in the early 2000s, GDP growth recovered gradually in the mid 2000s to reach 7% per annum (p.a.) in 2007-08. It decelerated again during, and shortly after, the Global Financial Crisis in 2009 and 2010 before virtually collapsing after the outbreak of the January 25th 2011 revolution, when it fell to 1.8% p.a.: a rate substantially lower than the average rate of population growth in the 2006-2017 period (2.5% p.a.) (CAPMAS, 2019). GDP growth recovered starting in

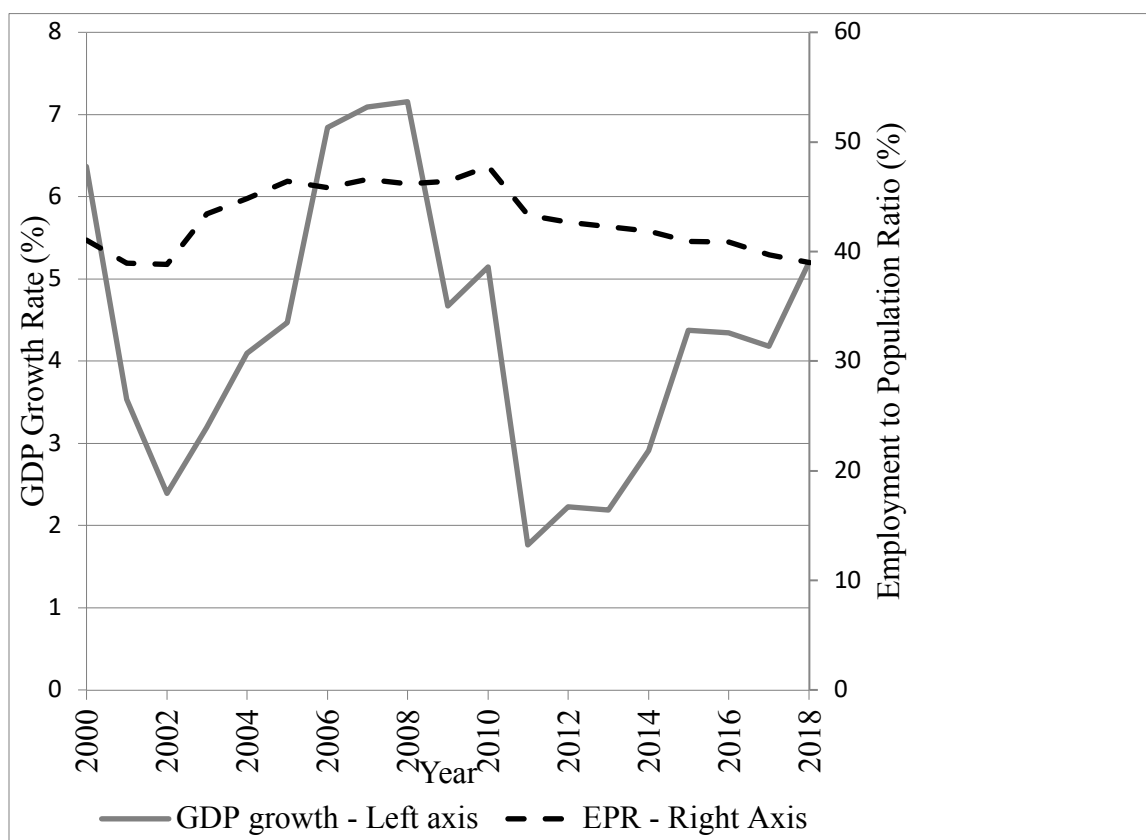
2014 to reach 5.2% p.a. in 2018 and is expected to reach 5.5% p.a. in 2019 (IMF 2019). As shown in Figure 1, employment rates, as measured by the employment to population ratio (EPR) for the population 15+, responded positively to growth in the mid 2000s, but with a lag. In conjunction with the acceleration of growth in this period, the EPR rose substantially from 39% in 2002 to 46% in 2008. It continued to rise to about 48% by 2010 despite the deceleration in growth in 2009. However, the EPR fell to 43% in 2011. And, this downward trend in the EPR has persisted ever since despite the resumption of GDP growth in 2014. Most notably, the recent acceleration of growth from 2017 to 2018 was not accompanied by a reversal in the decline of the EPR. By 2018, the EPR had declined to 39%, the level it was at in 2001 and 2002, when GDP growth was at its lowest levels.⁵ Thus, the most recent recovery in GDP growth has not (yet) generated the sort of employment growth that raises the EPR as recoveries had done in the past.

Using data on aggregate employment and GDP from 2000 to 2017 and a simple ordinary least squares regression methodology, we estimate an employment elasticity with respect to GDP in Egypt of 0.9, which is quite high by international standards, but in line with previous estimates for the Middle East region.⁶ Kapsos (2006) provides estimates for the elasticity of total employment with respect to GDP for a wide range of countries and world regions. According to these estimates, the average elasticity for the world in the 1999-2003 period was 0.3, but the average for the Middle East was 0.91, for North Africa 0.51, for Sub-Saharan Africa 0.53, and for Southeast Asia 0.82. These estimates and the data shown in Figure 1 suggest that employment at the extensive margin (i.e., as measured by the number of people employed for at least one hour in the reference week) does respond strongly to economic growth, albeit with some delay. At a later stage, we will also examine the intensive margin of employment, as measured by the number of hours of work per week and the extent of visible underemployment as measured by involuntary part-time work. However, the recent apparent de-linking between economic growth and employment growth that we observe since 2014 in Egypt is somewhat concerning.

⁵ The ELMPS estimates employment rates for the population 15-64 to have declined from 47% in 2012 to 44% in 2018, essentially following the same trend as the Labor Force Survey (See Chapter 1) (ADD ACTUAL REF)

⁶ Using data from the World Bank World Development Indicators for GDP and the Labor Force Survey for employment, we regressed the natural log of employment on the national log of GDP from 2000 to 2017 using OLS. We obtained a coefficient of 0.896 with a standard error of 0.191. The R^2 for the regression was 0.58.

Figure 1. Annual GDP Growth Rate and Employment-to-Population Ratio (EPR). Population Aged 15+



Source: GDP Growth Rates are from World Bank World Development Indicators except for 2018, which is from the Central Bank of Egypt (2019). Employment-to-Population Ratios are from CAPMAS, Labor Force Survey, various years.

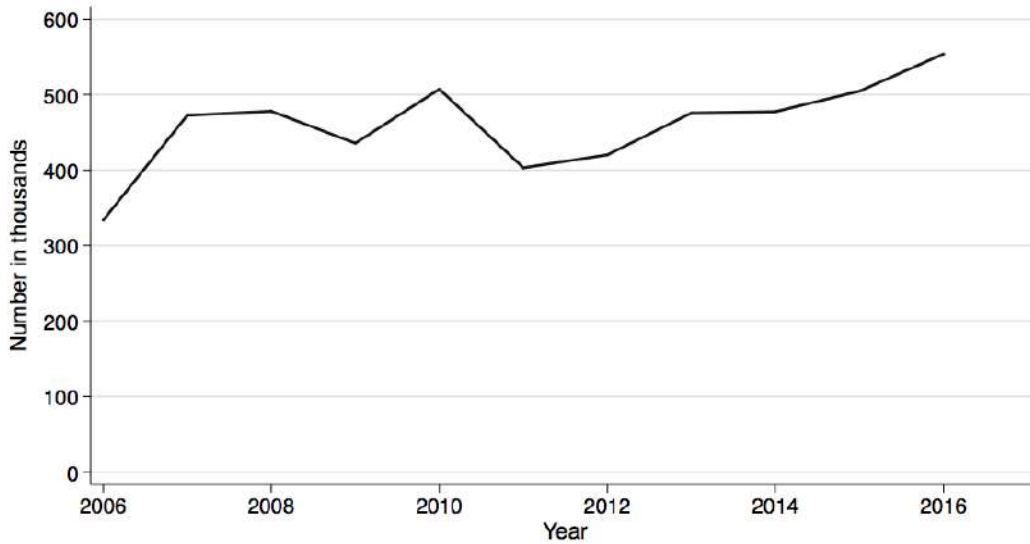
3. Employment Growth

According to the Labor Force Survey (LFS), aggregate employment (age 15+) increased from 23.6 million in 2012 to 26.0 million in 2017, an average increase of 480 thousand jobs per year and a relative rate of increase of 1.9% p.a. (CAPMAS 2019). Figure 2, which is based on the retrospective data from ELMPS 2018, also shows an average rate of net job creation of around 500 thousand jobs per year since 2012. It also demonstrates a decline in net employment growth from about 500 to 400 thousand jobs per year from 2010-2011 as a result of the economic crisis that followed the January 25th revolution, along with a steady recovery since then to return to a pace of about 550 thousand jobs per year by 2016.

Figure 3 shows gross job entry and exit rates and net job creation rates from 1998 to 2017. The trend in both job entry and exit rates had been rising somewhat from 2011 to 2015, leading to an essentially flat net job creation rate of just over 2%. There appears to be a decline in the net job creation rate in 2017, but it is important to note that year-to-year

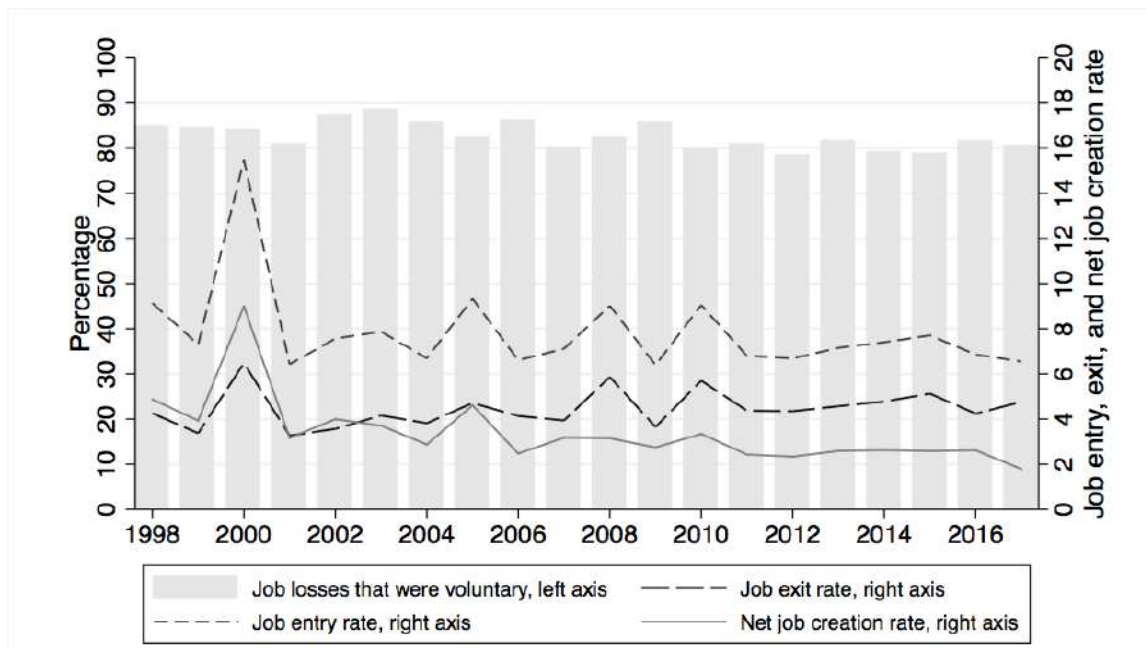
fluctuations may not be reliable given the nature of the retrospective data. Figure 3 also shows the proportion of job separations that are voluntary, i.e, that result from quits rather than layoffs or firings. This proportion seems to be fairly constant at about 80% since 2010, down from an average of about 85% in the 2000s.

Figure 2. Net job creation by year, number (thousands), 2006-2017



Source: Authors' calculations from retrospective data in ELMPS 2018.

Figure 3. Job separation rate (percentage of jobs) and percentage of job separations that were voluntary by year, 1998-2017, ages 15+ in a given year



Source: Authors' calculations from retrospective data in ELMPS 2018.

4. The Changing Composition of Employment

In this section, we start by examining the structure of employment over time along a typology that we create from various job characteristics, namely the sector of ownership, formality, work inside or outside fixed establishments and employment status: we refer to this job taxonomy as the type of employment. We then move to analyze employment by industry to examine the evolving structure of the economy over time.

ELMPS measures employment according to two definitions, namely the market and extended definitions, and for two reference periods, a short period of one week prior to the interview and a long one of 3-months prior to the interview. The market definition corresponds to the definition of employment recommended by the 19th International Conference of Labor Statisticians (ICLS), which restricts the definition of employment to work for pay or profit. The extended definition covers employment based on the market definition and additionally includes subsistence work, or work for the purpose of producing or processing primary commodities even if these activities are exclusively for the purpose of the household's own consumption. In Egypt, the use of the extended vs. the market definition typically makes little difference for males but has a large effect on female employment rates due to widespread involvement of women in animal husbandry and related activities for auto-consumption. In what follows we use the market definition of employment unless otherwise stated. We also use employment in the short-reference period of one week, which is referred to as "current" employment, as opposed to "usual" employment when the longer reference period is used.⁷

4.1. Structure of Employment by Sector of Ownership, Formality, Work in/out of Establishments and Employment Status

For the purposes of analysis, we combine sector of ownership, formality, work in/out of fixed establishments and employment status into a single variable that we call employment type. The taxonomy we create consists of six mutually exclusive categories as follows:

- (i) Public sector employment, which includes government and public enterprise employment. The category is almost entirely made up of formal wage work, so we do not break it down further along formality and employment status.
- (ii) Formal private wage work, which requires that a worker be hired for wage or salary in the private sector and benefit from either a legal contract (of either definite or indefinite duration) or social insurance coverage. This category consists

⁷ The ELMPS collects detailed information on job characteristics for the longest duration main job in the three months reference period. However, this essentially corresponds to the main job in the one-week reference period as only 3% of employed individuals had changed their main jobs between the 3-months and one-week reference periods.

almost entirely of workers working within fixed establishments, so it is mostly made up of individuals working inside fixed establishments, so we do not break it down further along this dimension.

- (iii) Informal private wage work inside fixed establishments, which requires that workers be hired for salary or wage by a private sector employer without the benefit of either a legal contract or social insurance and be working inside a fixed establishment entirely dedicated to an economic activity, such as a shop, office building, factory, or workshop.
- (iv) Informal private wage workers outside fixed establishments, which requires that workers be hired as salary or wage workers by a private sector employer without the benefit of either a legal contract nor social insurance and be working outside a fixed establishment, such as a private home, a field, a construction site or on a moving vehicle.
- (v) Non-wage work inside establishments, which includes employers, self-employed individuals and unpaid family workers working inside fixed establishments
- (vi) Non-wage work outside establishments, which includes employers, self-employed individuals and unpaid family workers working outside fixed establishments.

Figure 4 shows the structure of employment by type for men and women of working age in Egypt according to the market and extended definitions of employment. As expected, there is little difference in the composition of employment according to the two definitions for men, but there is a substantial difference for women. We will begin by discussing the changing structure of overall employment according to the market definition, which closely reflects the structure of employment for men, since they constitute nearly 80% of such employment. We will then discuss the evolution of the structure of employment for women, making the distinction between the market and extended definition of employment.

Starting with an analysis of the structure of employment according to the market definition, we note that the share of the public sector in overall employment resumed its decreasing trend after stalling from 2006 to 2012, reaching 26% in 2018. The share of formal private wage employment increased marginally from 11% in 2012 to 12% in 2018, continuing the slowly rising trend since 1998. The slight increase in this category's share is not nearly enough to counteract the long-term decline in the public sector share. As a result, the share of formal wage employment in the economy continued its long-run declining trend from 47% in 1998 to 41% in 2012 to 38% in 2018, confirming the long-term structural trend of informalization of the Egyptian labor market as the public sector contracts. Even within private sector wage work, the share of formal jobs has declined from 27% in 2006 to 23% in 2018 as informal jobs in the private sector grew more rapidly than formal jobs

The share of private informal wage employment within establishments increased somewhat more rapidly in the 2012 to 2018 period, going from 13% to 16%, compared to the 2006-12 period, where it only increased from 12% to 13%. Similarly, the share of private informal employment outside establishments increased from 18% to 23%, to continue on its steeply increasing trend since 2006. The sharp increase in private informal employment outside establishments is most likely a reflection of the rapid growth of the construction and transport industries in recent years, an issue that we return to below. Private informal employment as a whole increased its share from 24% in both 1998 and 2006 to 31% in 2012 to 39% in 2018, a 63% relative increase in 12 years.

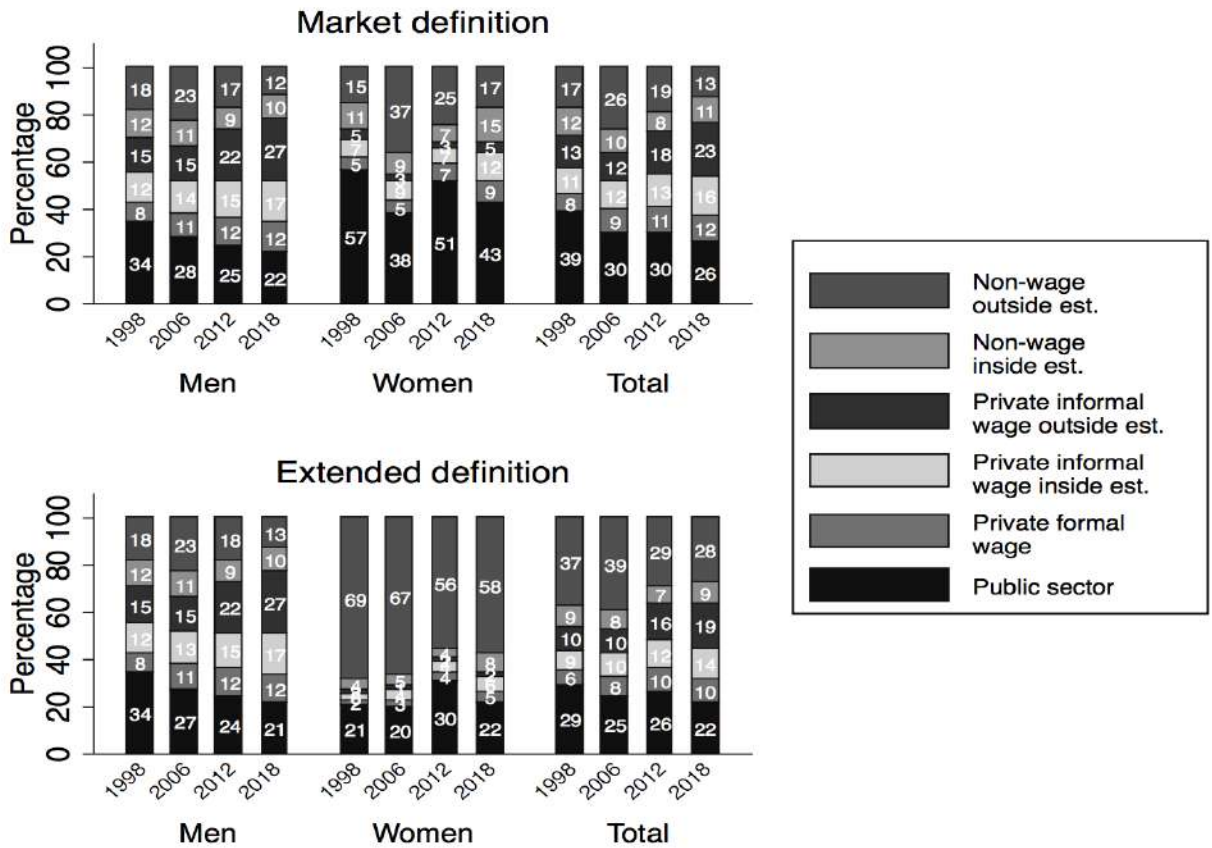
Similar to informal private wage work, we sub-divide non-wage work into inside and outside establishments. The share of employment in non-wage work inside establishments first declined from 12% in 1998 to 8% in 2012 and then increased to 11% in 2018. In contrast, the share of non-wage work outside establishment, much of it being presumably in agriculture, declined steeply from 26% in 2006 to 19% in 2012 then to 13% in 2018.

Women in market work are concentrated in public sector employment, but their share in such employment fell appreciably from 51% in 2012 to 43% in 2018. The proportion of women in formal private wage work increased from 7% to 9%, but, again, not enough to counteract the fall in public sector employment. Instead, the share of informal private sector wage employment for women increased substantially from 10% to 17%, with most of the increase attributed to within establishments. Female non-wage employment inside establishments more than doubled its share from 2012 to 2018, going from 7% to 15%, while female non-wage employment outside establishments saw a substantial decline. As a result, the overall proportion of non-wage workers among employed women remained stable at 32%.

The picture for women looks quite different when we consider the extended employment definition. In this case, non-wage work outside establishments makes up a considerably larger fraction of employment since all subsistence workers are classified in this category. After declining from 67% in 2006 to 56% in 2012, the share of female non-wage workers outside establishments went back up to 58% in 2018. Together with the 8% of female workers who are non-wage workers inside establishments, nearly two-thirds of female workers, who are working according to the extended definition of employment, are non-wage workers in 2018.⁸ From this point onward, we restrict our attention to the market definition of employment that is work for the purpose of pay or profit.

⁸ See Keo, Krafft, & Fedi (2019) for a more detailed discussion of women's involvement in subsistence work in Egypt.

Figure 4. The structure of employment by type and sex, employed individuals (market and extended definition) aged 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

In Figure 5 and Figure 6, we examine the structure of employment by type as a function of household wealth to assess how employment structure has changed by socio-economic status.⁹ As shown in Figure 5, the prevalence of public sector work among employed men increases steadily with wealth. Although this prevalence declined over time in all wealth quintiles, with the decline being largest in the second and third wealth quintiles and smallest in the top quintile. While the prevalence of public sector work fell by 44% and 48% in the second and third quintiles, respectively, from 1998 to 2018, it fell by only 26% in the top quintile. Thus, the persistent decline in

⁹Wealth quintiles are based on a wealth index estimated by factor analysis using information about household ownership of durable goods and housing conditions. The construction of the index uses a methodology proposed by Filmer & Pritchett (2001) and Montgomery, Gragnolati, Burke, & Paredes, (2000). We also examine employment status as a function of the individual’s own educational attainment as another measure of socio-economic status. The patterns are quite similar as those by wealth, so we relegate these figures to an appendix. See Appendix Figure 1 and Appendix Figure 2.

public sector employment has had a greater impact on the lower and middle classes compared to the upper income groups.

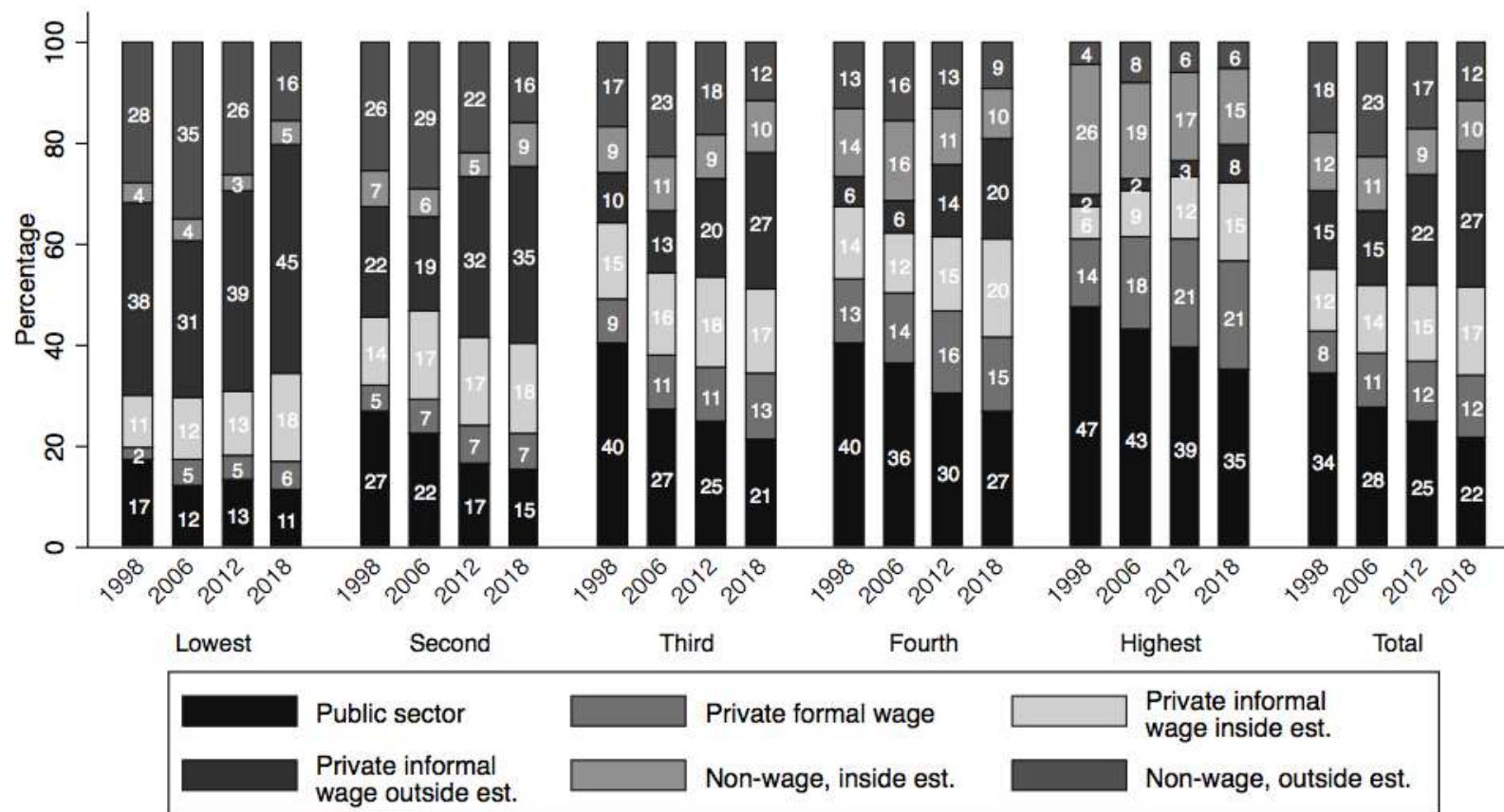
There is an even greater gradient by wealth in the share of private formal wage employment, which goes from only 6% for the poorest group in 2018 to 21% for the wealthiest. Again, the gradient has increased over time, suggesting that access to private formal wage employment has become increasingly limited to individuals from wealthier backgrounds over time; a notable and somewhat alarming finding.

Adding up public sector employment and private formal wage employment, we can trace how access to formal wage employment changed from 1998 to 2018 by wealth status. Although access to formal wage employment declined for all wealth groups, it declined the least for the richest (by only 8% in relative terms) and the most for the second and third wealth quintiles (by 31% for both). The poorest, which had very limited access to formality to start with, saw an 11% decline in access to formal jobs over the twenty-year period.

Figure 6 shows that the wealth gradient is even steeper in terms of access to public sector employment and formality in general in the case of women. In 2018, the prevalence of public sector employment among employed women increased from 12% for those in the lowest quintile to 68% of those in the highest one, a factor of 5.7. Again, it is women in the middle of the wealth distribution (third quintile) that had the greatest decline in access to public sector work from 1998 to 2018. They experienced a relative decline of 36% compared to 18% for the richest group.

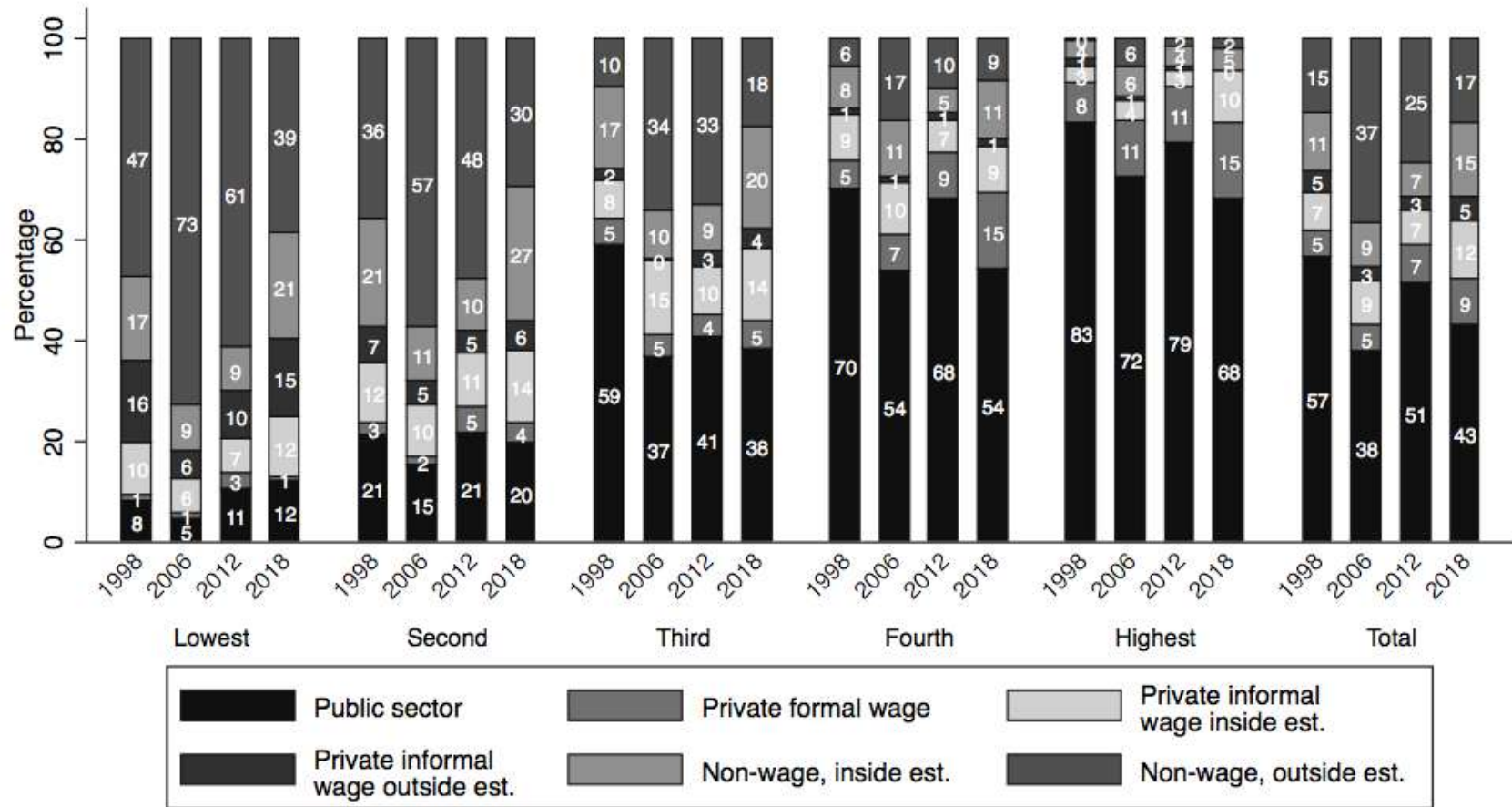
At only 1%, access to formal private sector wage work is almost non-existent for the poorest employed women. It increases to 15% for the richest two quintiles. Overall, only 13% of the poorest employed women were in formal wage employment while as many as 83% of the richest were in that category, suggesting that access to formality is even more predicated on socio-economic status for women than it is for men.

Figure 5. The structure of employment by type and wealth quintile, employed men (market definition) aged 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

Figure 6. The structure of employment by type and wealth quintile, employed women (market definition) aged 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

Interestingly, access to formal employment declined the most for women in the middle wealth quintile, which saw their share of formal employment go down by a relative rate of 31%, compared to only 10% for the richest.

Men at all wealth levels saw an increase in the share of private informal wage employment in establishments. Overall, the share of such employment increased from 12% in 1998 to 17% in 2018 (Figure 5). The share of this kind of employment was fairly constant at 17-20% of overall employment for different wealth quintiles of men, except for the highest where it fell to 15%. In contrast, informal employment outside fixed establishments, one of the more precarious forms of employment, was much more strongly predicated on wealth. It made up 45% of the employment of the poorest men; a proportion that falls steadily by wealth quintile reaching only 8% for the richest. Again, men in the middle of the wealth distribution saw the largest increases in the proportion of this type of employment, an indication of an increase in employment precarity for the middle class in Egypt.

The pattern of informal wage employment among women is less regular. The poorest women tend to be concentrated in non-wage employment rather than wage work. Women in the second and third quintiles had a higher share of informal wage work both inside and outside establishments and women in the top two quintiles were more likely to be employed in formal public or private wage work. In general, women appear to try to avoid informal wage work outside establishments due to its potential exposure to harassment and reputational risks, but the share of such work among the poorest women had increased substantially from 6% in 2006 to 10% in 2012 then further to 15% in 2018 (Figure 6).¹⁰ Overall, this kind of work constituted only 5% of women's employment in 2018, compared to 27% for men.

As we have noted above, the prevalence of non-wage work, especially that occurring outside establishments, has substantially declined in recent years for men. Figure 5 shows that the decline was most substantial among the poorest men, who are strongly concentrated outside establishments. The proportion of non-wage work outside establishments went down from 35% of employment in 2006 to 16% for the poorest men, probably a reflection of declining access to land in the agricultural sector. The decline in non-wage work was more modest for men in the third, fourth and fifth quintiles, as these men were more likely to be non-wage workers within establishments.

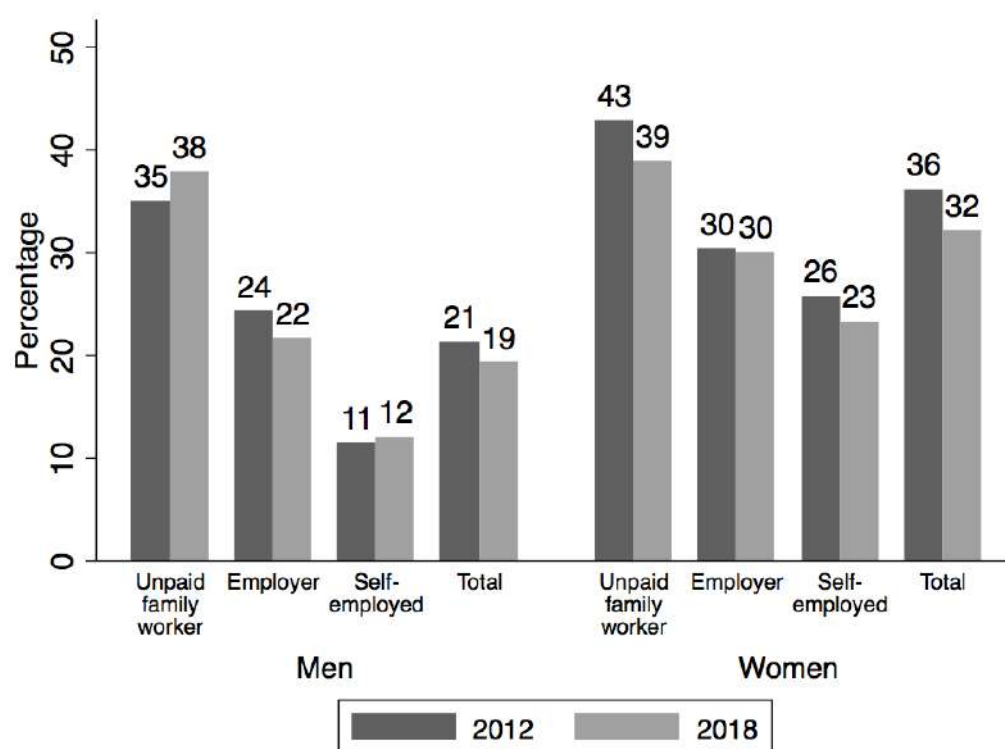
¹⁰ Domestic work for hire falls in this category of work, but it is clear that because of the stigma attached to such work, it is severely under-reported in surveys. Anecdotal evidence indicates that many women who work as domestic workers do not even tell their neighbors or their non-immediate family members that they are doing this kind of work.

Poor women are highly dependent on non-wage work for employment. Among employed women, 60% were in non-wage employment in 2018, down from 70% in 2012 and 81% in 2006 (Figure 6). As in the case for poor men, non-wage employment among poor women was highly concentrated outside fixed establishments in 2018, but, again like their male counterparts, this share has declined substantially since 2006. In contrast, the share of females employed as non-wage workers within establishments increased substantially from 9% in 2012 to 21% in 2018.

The proportion of employed women in non-wage work declines strongly with wealth, especially after the second wealth quintile. By the fifth wealth quintile, the proportion of women in non-wage work is down to 7%. Thus, socioeconomic status strongly shapes what kind of work women are willing to engage in. Women in the upper socioeconomic statuses are highly concentrated in public sector work and to a lesser extent private formal wage work, whereas women in the lower socio-economic strata are highly concentrated in non-wage work. This stark segmentation of employment by social class would be further exacerbated if the extended definition of employment was used and thus by including subsistence work. Since it is mostly women from the lower social strata that engage in subsistence work, mostly as unpaid family workers, it would make the pattern of employment across social class even more prominent.

Part of the attraction of non-wage employment for women of low socio-economic status over, for instance, irregular employment (which is prevalent among men of similar background) is the ability to conduct such employment from home. Figure 7 shows the prevalence of working from home for non-wage workers by type for both males and females. While the vast majority of men engaged in non-wage employment work outside home, a substantial proportion of women who are non-wage workers work from home, but this proportion appears to have declined from 39% in 2012 to 28% in 2018. The proportion working from home is highest for female self-employed and lowest for employers, but even among employers, about a fifth work from home.

Figure 7. Incidence of working at home by job type and sex, employed individuals (market definition) in non-wage employment, individuals aged 15-64, 2012, 2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

4.2. The Structure of Employment by Industry

We analyze in this section the changing structure of employment in Egypt by industry across four waves of the ELMPS. To reduce the number of industry sectors and avoid too many very small categories, we lump together some of the one-digit level industry sectors into larger categories. The final ten categories we use are: A: Agriculture, Forestry and Fishing, BCDE: Mining, Manufacturing and Utilities, F: Construction, G: Wholesale and Retail Trade, H: Transportation and Storage, I: Accommodation and Food Service, JKLMN: Professional, Information, Financial, Real Estate, Administrative and Support Services, P: Education, Q: Health and Social Work, ORSTU: Other Services, which includes public administration, arts and entertainment, other service activities, activities of households as employers and activities of extra-territorial organizations.

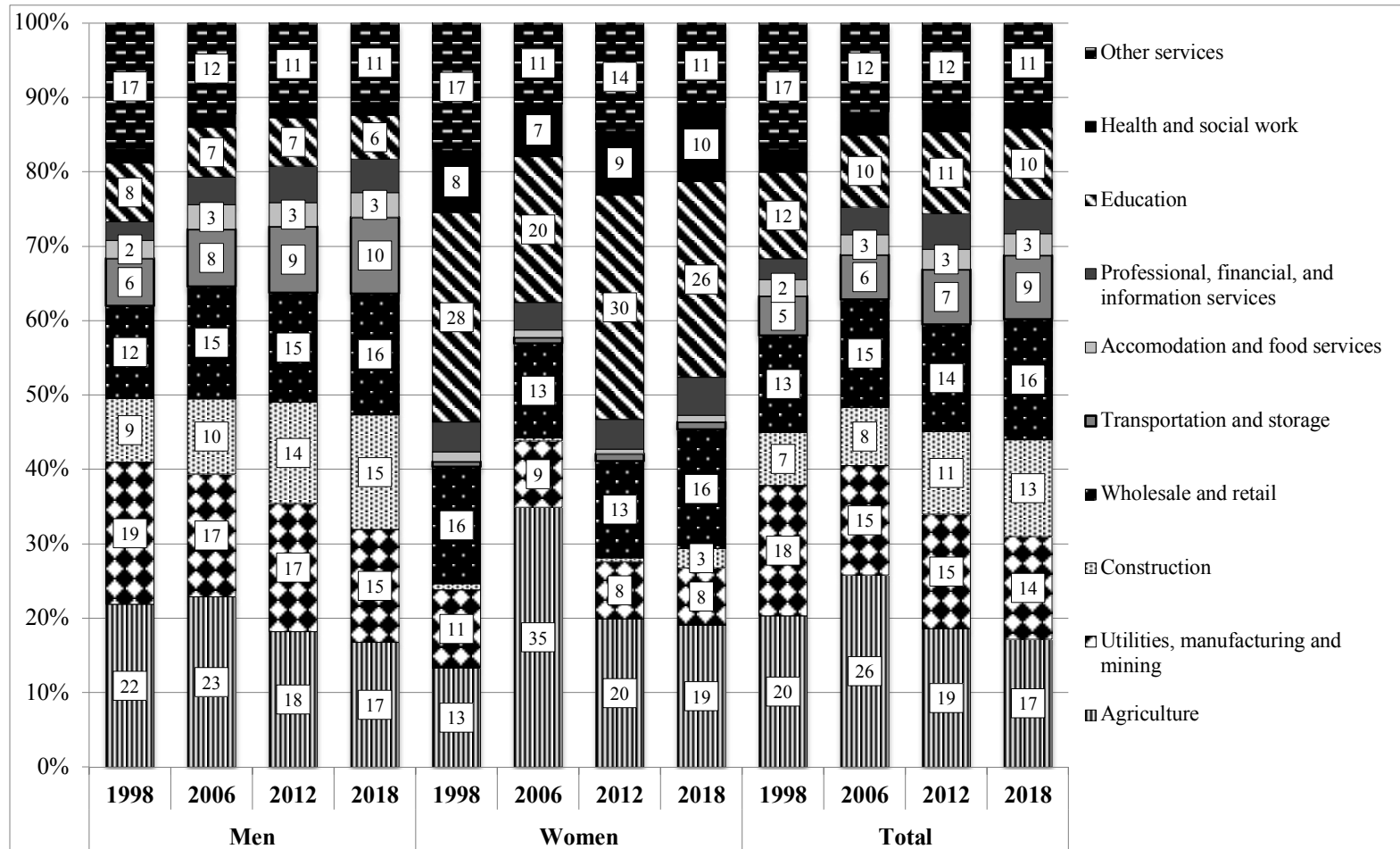
The results of the ELMPS confirm that over the past twenty years, the Egyptian economy has experienced a structural transformation from tradable sectors like agriculture and manufacturing to non-tradeable sectors, such as construction, trade and distribution. As we saw earlier, it has also experienced a transformation away from the public sector toward a more private-sector-oriented economy, which is reflected here in the decline of the employment shares of the education, health and social work and other services

categories. As shown in Figure 8, the share of agriculture in overall employment fell from 20% in 1998 to 17% in 2018.¹¹ The share of mining, manufacturing and utilities fell from 18% in 1998 to 14% in 2018, indicating substantial de-industrialization.¹² In contrast, the share of the construction sector in total employment had increased from 7% in 1998 to 13% in 2018. The fact that employment in construction alone is now almost as large as mining, manufacturing and utilities combined attests to the importance of the real estate boom as one of the main drivers of the Egyptian economy in recent years. The other sectors that have experienced substantial growth in employment since 1998 are those related to trade and distribution. Wholesale and retail trade increased its share from 13% in 1998 to 16% in 2018, transport and storage's share grew from 5% to 9% and accommodation and food service's share had a relative more modest growth from 2% to 3% in the same period. The construction, trade and distribution sectors combined had increased their shares substantially from 28% to 40% in the twenty-year period, a 46% relative increase. The employment share of professional, financial, business, and information services had also increased, but from a very low base. Their share increased from 2.8% in 1998 to 4.5% in 2018. Finally, the share of social, public and other services had declined from 32% to 24%, reflecting the retrenchment of public sector employment.

¹¹ The jump in agricultural employment in 2006 is due to a large increase in female employment in agriculture in that year, which is probably a measurement artifact.

¹² Recent analyses of employment within private establishment has come to similar conclusions about the extent of de-industrialization in Egypt since 1996 and the decline in the role of manufacturing in job creation (Assaad, Krafft, & Yassin, 2018); Assaad, Krafft, Rahman and Selwaness, 2019).

Figure 8. Structure of employment by activity and sex, Employed Individuals aged 15-64, 1998-2018 (market definition)



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

5. Is the Economy Producing Good Jobs?

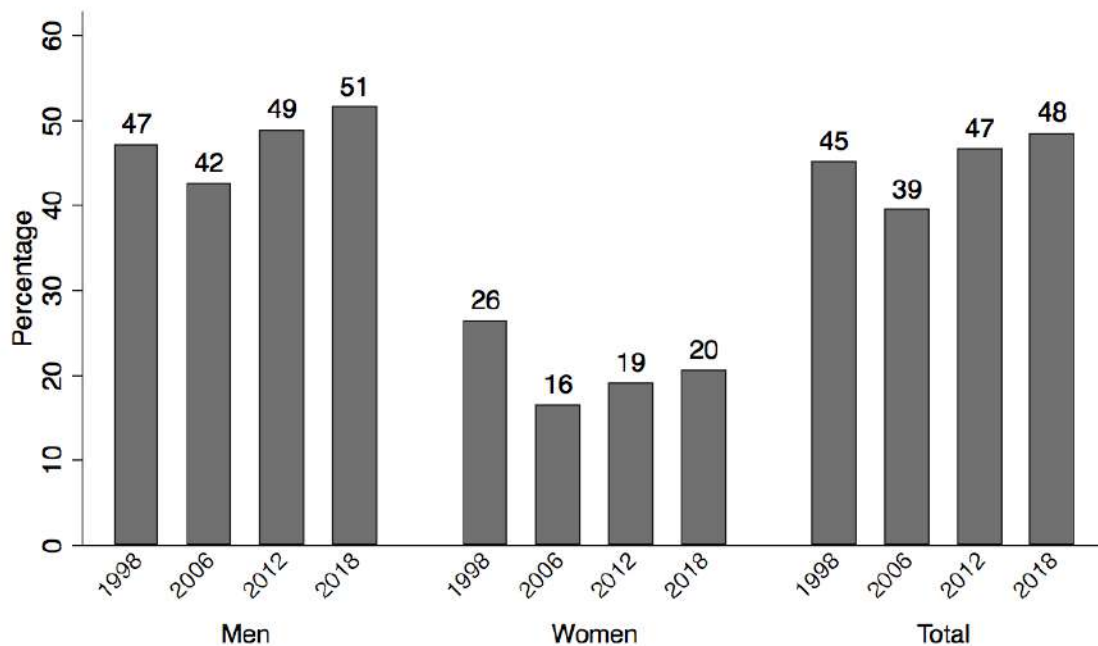
To assess the evolution of job quality in the Egyptian economy, we examine several aspects of job quality. Some of these aspects are rather broad and apply to all types of jobs, like hours of work and involuntary part-time work. Other aspects, such as formality, regularity, and employment benefits, are primarily relevant for private wage workers. While we have already discussed the evolution of formality and work in and out of establishments in previous sections, we will now examine these aspects in more detail, as well as some other job characteristics such as regularity of employment, access to paid and sick leaves, health insurance receipt, hours of work, involuntary part-time work, exposure to work place hazards, and work injuries. We follow this by a discussion of self-reported measures of job satisfaction for different kinds of workers over time.

5.1. Work In and Out of Establishments, Establishment Size, Formality, Regularity, Employment Benefits in Private Wage Employment

As we pointed out above, work outside fixed establishments, which occurs in fields, streets, homes, construction sites or moving vehicles, is almost always informal and strongly associated with poverty. In the coming sections, we will also show that such work is associated with a high degree of employment irregularity, poor working conditions and substantial involuntary part-time work.

As shown in Figure 9, the share of private wage employment outside fixed establishments is on a slight upward trend, going from 45% in 1998 to 48% in 2018. This increase is related to the expansion of the construction and the transportation and storage industries over the past two decades. Although the relative share of agriculture - where jobs are, for the most part outside fixed establishments - is contracting, this contraction is more than made up by the expansion of construction and transportation, leading to the slightly increasing share of employment outside establishments. In Figure 9, we see that men were much more likely to work outside of establishments, and the trend among men drives the overall trend. As mentioned above, women in Egypt try to avoid such work due to its high level of exposure to possible harassment or the perception of such exposure.

Figure 9. Percent working outside of a fixed establishment by sex. Private wage employment, ages 15-64, 1998-2018

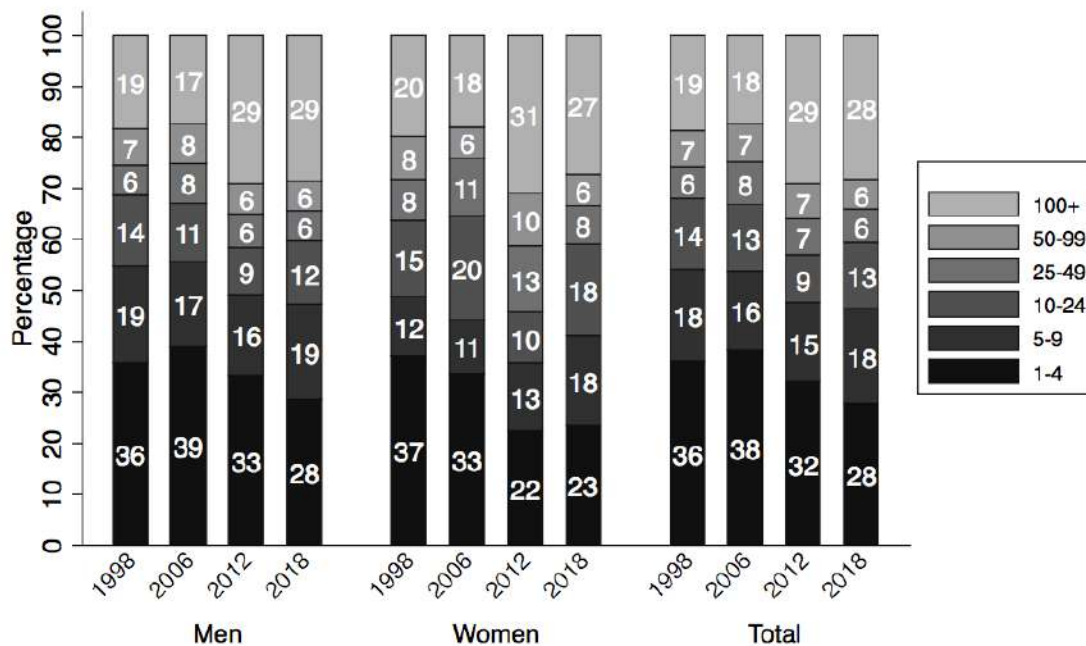


Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

Within establishments, the share of employment in micro establishments (1-4 workers) had been falling steadily since 2006 and that of small establishments (5-9 and 10-24 workers) had been rising, especially from 2012 to 2018, as shown in Figure 10. The share of wage employment within private establishments in medium establishments (25-49 and 50-99 workers) actually had declined slightly from 2012 to 2018. The share of large establishments had increased substantially from 2006 to 2012, but then stabilized at around 27-28%.

These results are in partial concordance with a recent study that analyzed establishment census data from 1996, 2006 and 2017. According to the findings of Assaad, Krafft, Rahman and Selwaness (2019), the share of micro and large establishments increased from 1996 to 2006 but shrank from 2006 to 2017 as small and medium establishments both increased their share substantially. The increasing share of small and medium firms in recent years has been termed by the authors of this study “the re-emergence of the missing middle” in the Egyptian economy. We can confirm this important emerging pattern using ELMPS data, at least with respect to the decline in the contribution of micro establishments and the increase in the contribution of small establishments.

Figure 10. Distribution of Employment by Establishment Size and Sex. Private Wage Employment in Fixed Establishments, Ages 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

These changes in the distribution of employment by establishment size can have important implications for the quality of jobs in the economy, since job quality is often a function of the size (and formality) of the establishment in which the job is located. Figure 11 displays the distribution of private wage jobs by regularity and formality both for work outside establishments and by establishment size for work within establishments over time. Overall, the proportion of irregular jobs had declined substantially from 40% in 2012 to 30% in 2018, after having risen from 2006 to 2012. The regularity of employment is strongly affected by macroeconomic cycles and the decline in irregularity in the recent period is a sign of economic recovery. Since the jobs that are most vulnerable to employment irregularity are informal jobs, the decline in irregularity is compensated by an increase in informal but regular jobs from 36% in 2012 to 48% in 2018. The proportion of formal jobs within private wage employment, which are almost always regular, had actually declined from 25% in 2012 to 21% in 2018, continuing an informalization trend that started in 2006.

It is clear from Figure 11 that irregularity is common in jobs outside establishments and to a much lesser extent in micro and small firms. Thus, the declining incidence of irregularity is the result of its decline for those working outside fixed establishments, whose jobs are almost all informal but can oscillate between irregularity and regularity

depending on the state of the economy. There was also a noticeable drop in irregularity among those working in micro establishments. The declining incidence of irregularity is good news since irregularity is one of the most obvious manifestations of vulnerability in the Egyptian labor market. However, as the proportion of workers working outside fixed establishments has continued to increase, these workers continue to be vulnerable to irregularity of employment with any economic slowdown. We return to other indicators of vulnerability among irregularly employed workers below.

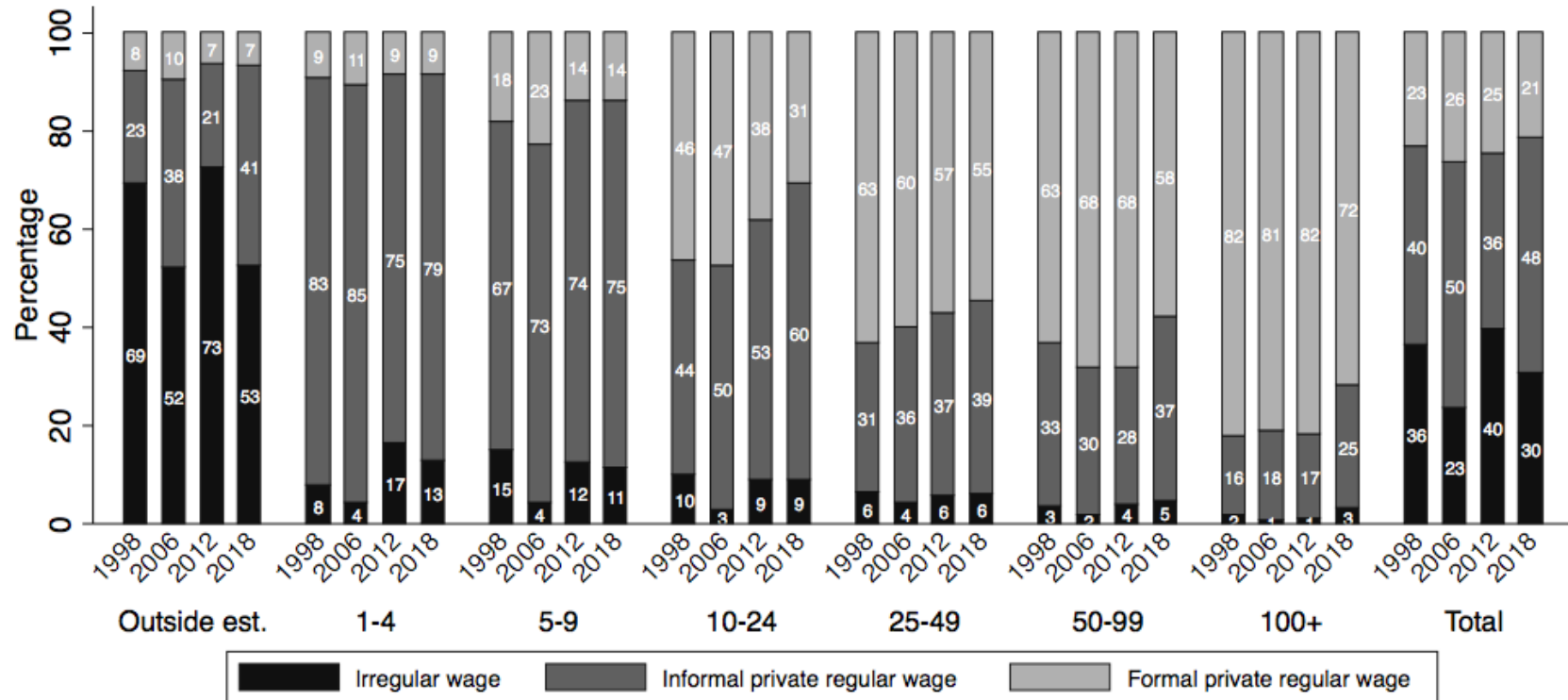
The shift of private sector employment within establishment away from micro establishments and toward small establishments portends well for potential improvements in job quality. As shown in Figure 11, small establishments tend to have a higher share of formal jobs than micro establishments. However, at least among establishment of 10-24 workers, this share had dropped substantially from 2012 to 2018. Similar drops in the share of formal jobs can be seen for medium and large establishments, account for the overall drop in formality. This suggests that the heightened informalization of the labor market can be reversed if authorities can simply maintain a constant level of employment formality among small, medium and large establishments, most of which are presumably formal. The gradual shift of private wage employment over time to the middle of the firm size distribution would then result in increased formalization. However, inconsistent application of labor and social insurance laws in recent years has actually resulted in falling rates of formalization of employment among presumably formal firms.

We next examine the quality of private sector jobs in terms of the availability of paid and sick leave benefits. As shown in Figure 12, the vast majority of private sector wage workers (82%) do not get either paid or sick leave, but the proportion that does get such leaves had increased from 2006 to 2012 before declining slightly from 2012 to 2018. As expected, the proportion of workers getting paid or sick leaves among those working outside fixed establishments and those in micro establishments is negligible and then it tends to increase steadily with establishment size's category. A notable finding, however, is that the proportion getting paid or sick leave had declined appreciably among workers in establishments of 50-99 and 100+ workers from 2012 to 2018, a reflection of the greater informality in these categories as discussed above. This explains the stability of the overall proportion of workers getting paid and obtaining sick leaves despite the shift in the distribution of workers toward more mid-sized establishments.

Another job characteristic that we examine is the likelihood of receiving job-related health insurance coverage. As shown in Figure 13, the proportion of private sector wage workers receiving health insurance coverage had increased from 2006 to 2012 from 9% to 14%, but then had stabilized at this level from 2012 to 2018. Again, health insurance coverage is almost negligible among those working outside establishments and in micro

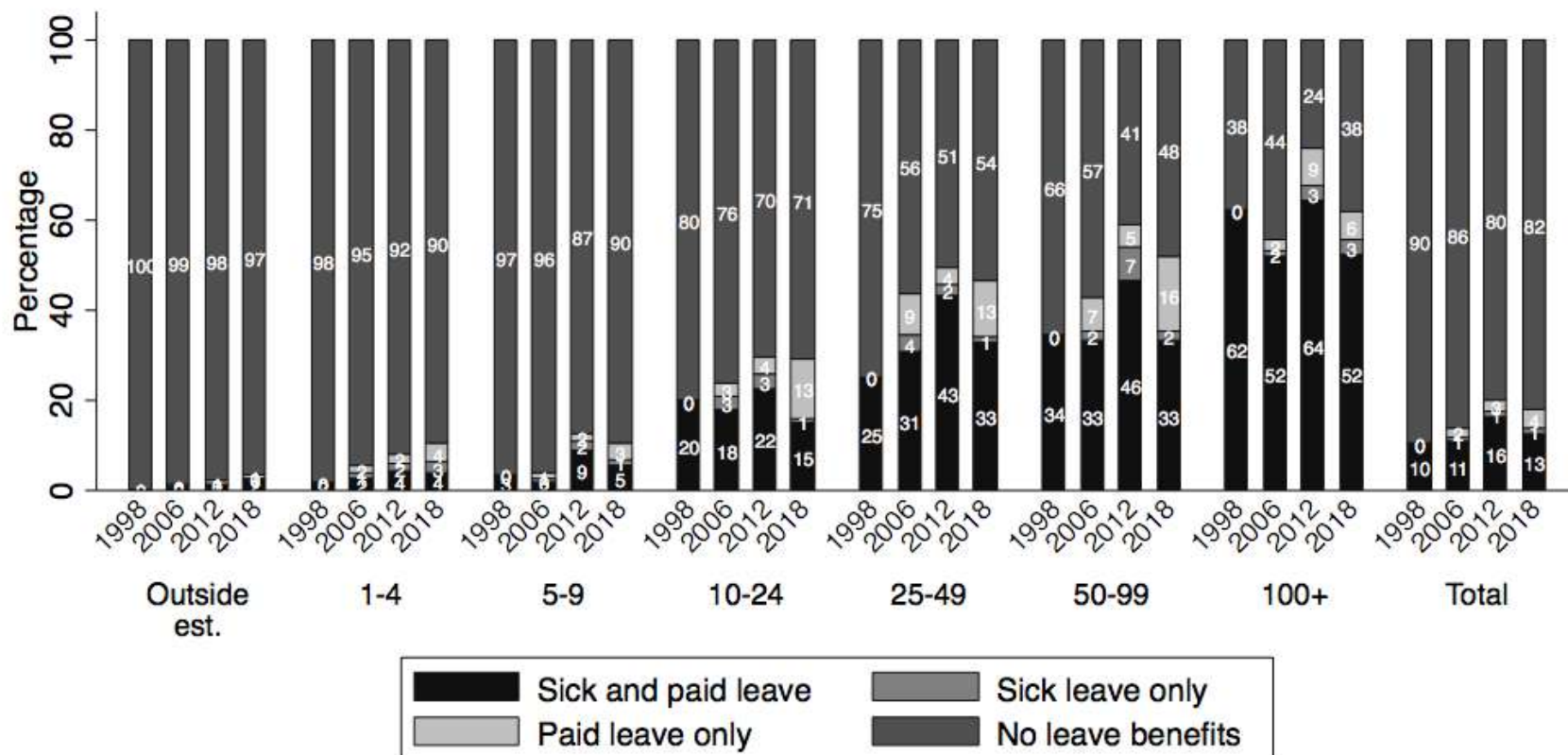
establishments. It had steadily increased among workers in small establishments of 5-9 workers but had declined since 2006 among those in establishments of 10-24 workers. The pattern is more mixed among workers in larger establishments. There had been a large increase in the share getting health insurance in establishments of 50-99 and 100+ workers from 2006 to 2012, but this trend had stalled, if not reversed from 2012 to 2018. Thus, the overall stall in the proportion of workers getting health insurance is due primarily to the stall in these larger establishments as well as in the 10-24 worker category.

Figure 11. Formality and regularity status by firm size, Egyptians with private wage employment (market definition) aged 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

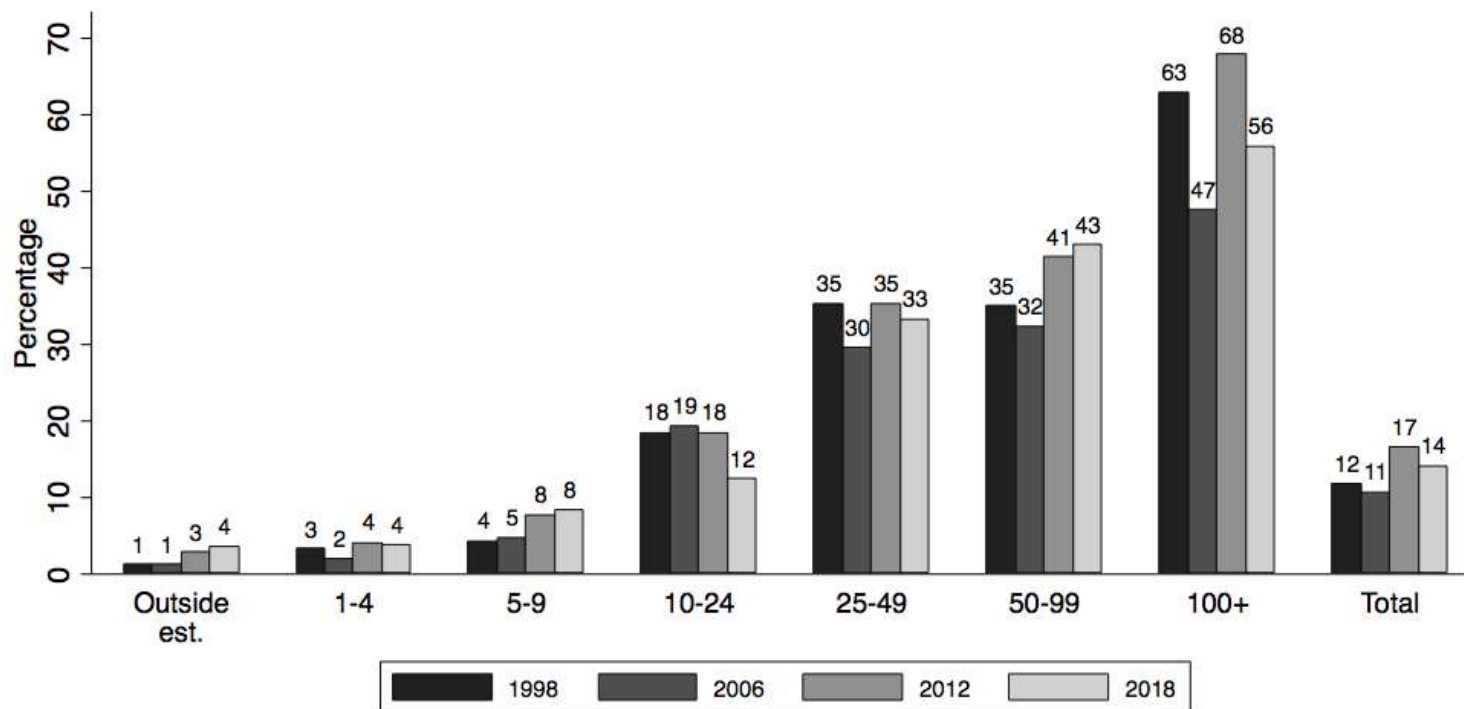
Figure 12. Leave benefits by firm size, Egyptians with private wage employment (market definition) aged 15-64, 1998-2018



Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

Note: In 1998, the question about leaves did not allow us to distinguish the type of leave obtained.

Figure 13. Incidence of medical insurance by firm size, Egyptians with private wage employment (market definition) aged 15-64, 1998-2018



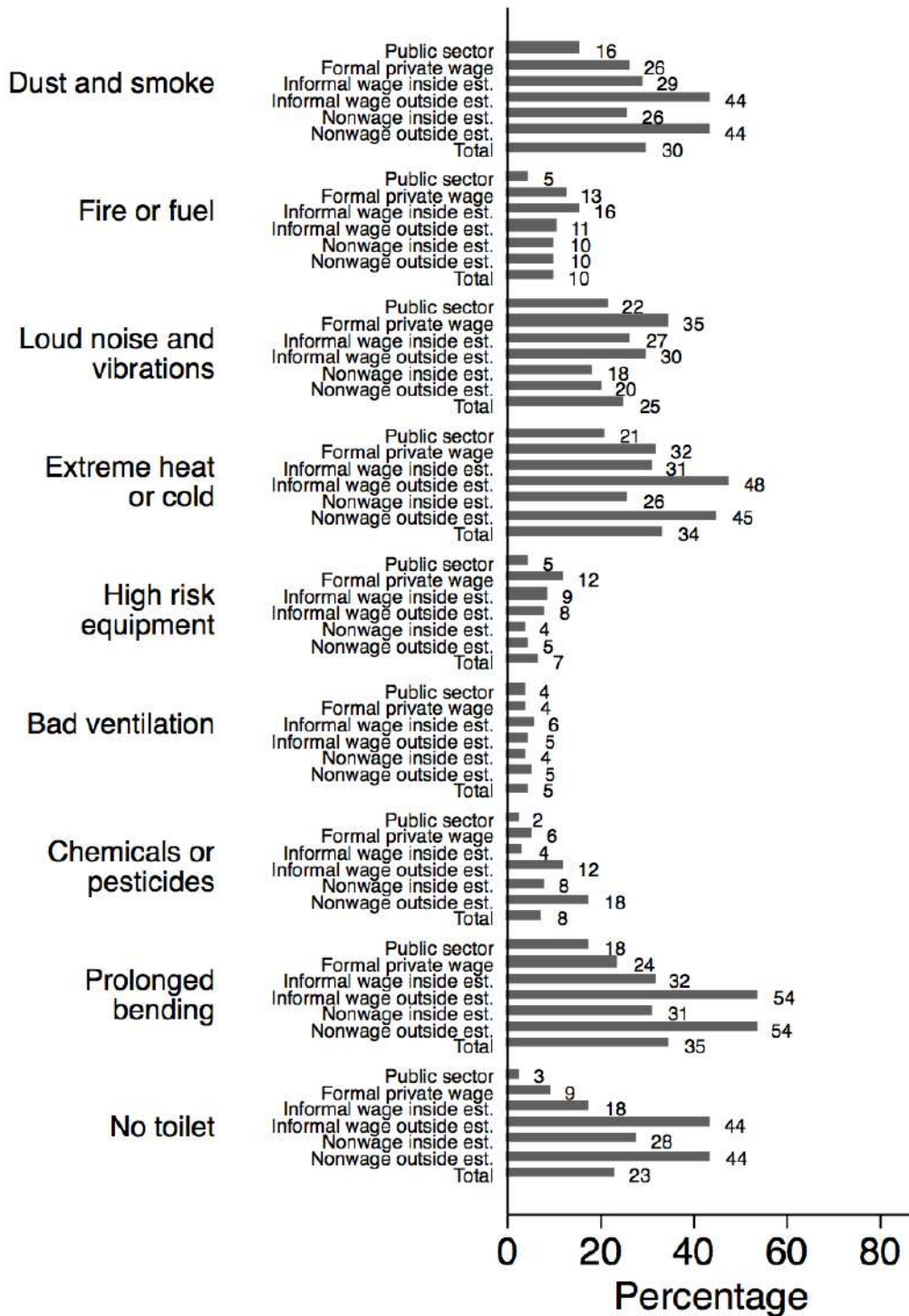
Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

5.2. Exposure to Occupational Hazards and Work Injuries

We move next to exposure to workplace hazards and workplace injuries among private sector wage workers. Again, we disaggregate by formality and work in/out of establishments. The questions about workplace hazards and workplace injuries were added to the ELMPS in the 2018 round and therefore exposure cannot be compared over time. The set of workplace hazards that was asked about comes from the ILO definition of hazardous work used in the measurement of child labor. These questions were then adapted to measure work hazards for all workers.

As shown in Figure 14, the most common workplace hazards in Egypt are extreme heat or cold, dust or smoke, loud noises and vibrations, prolonged bending and the lack of toilet facilities. For all of these hazards (except for noise and vibrations), workers outside establishments, whether wage or non-wage workers, are the most exposed. The only one among these more common hazards which formal wage workers report some regular exposure to is loud noises and vibration. Formal wage workers are also more likely to be exposed to less common hazards, such as exposure to high-risk equipment and to fire or fuel. Informal wage workers in establishments also have relatively high exposure to dust and smoke, fire or fuel, loud noises and vibrations, and prolonged bending.

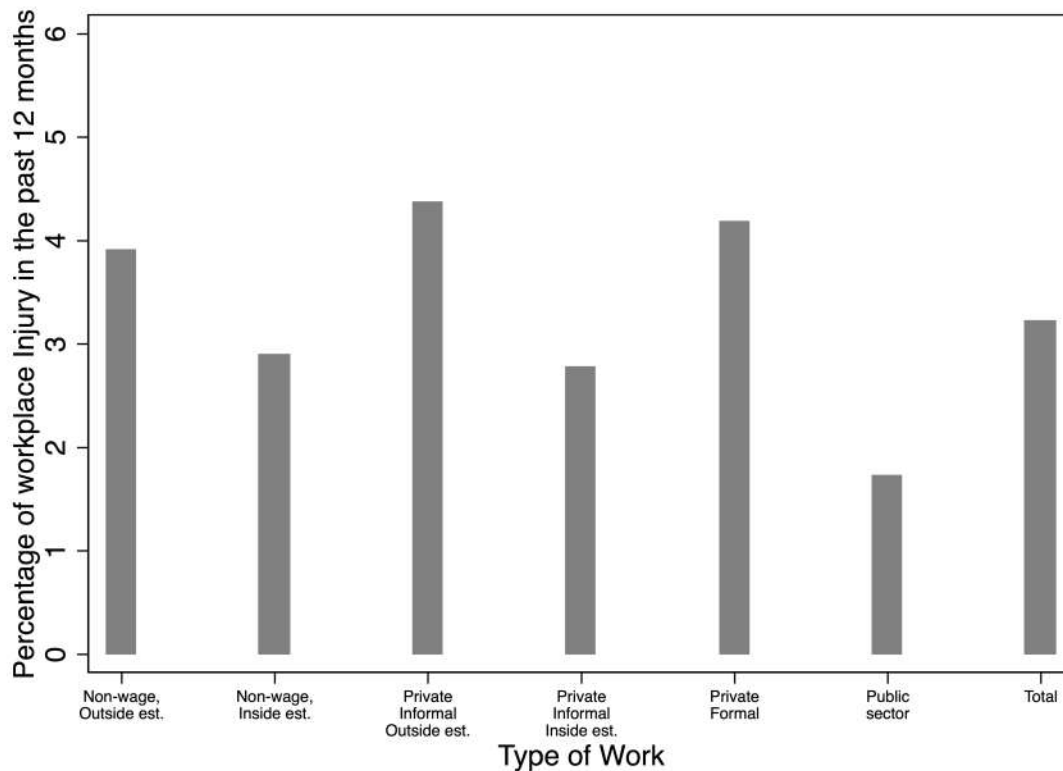
Figure 14. Exposure to occupational hazards by formality and regularity status,



Source: Authors; calculations based on data from ELMPS 2018.

The ELMPS 2018 also measured the extent to which workers were exposed to a workplace-related injury over the previous twelve months. However, the ELMPS questionnaire included questions about workplace injuries for the first time in 2018, and therefore it is not possible to conduct comparisons over time. As shown in Figure 15, about 3 percent of all workers had been exposed to some kind of workplace injury in the past year. Again, as expected, the highest rates of injury were among private informal workers outside establishments with a rate of about 4.5%. Surprisingly, the next highest group were formal private workers, followed by non-wage workers outside establishments. Public sector workers were, by far, the least likely group to be exposed to workplace injuries.

Figure 15. Exposure to workplace injury by type of work, employed individuals aged 15-64, 2018 (ELMPS)

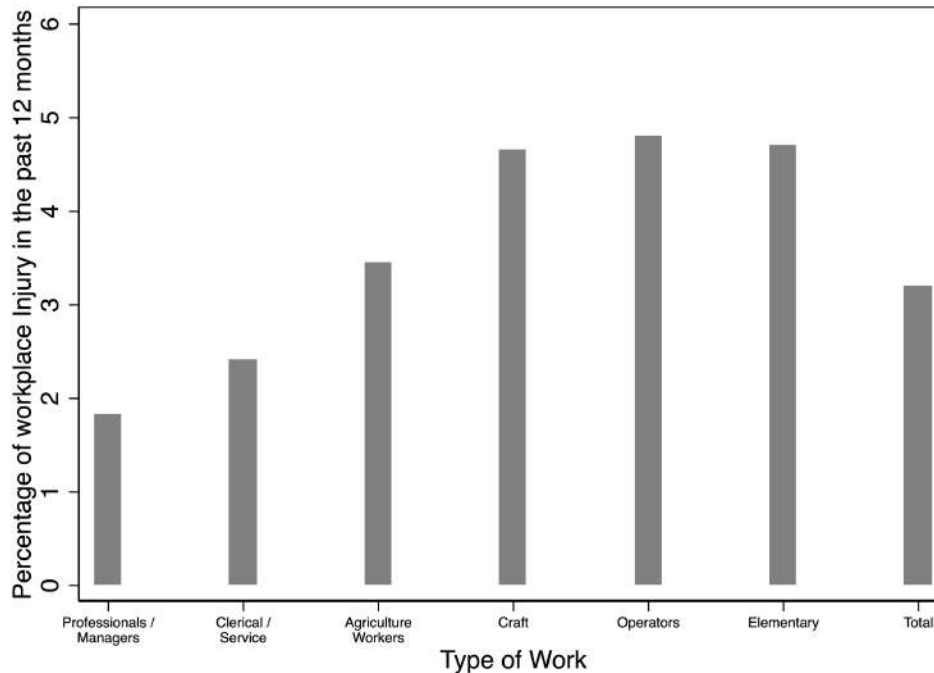


Source: Authors; calculations based on data from ELMPS 2018.

In Figure 16, we examine the rate of workplace injury by occupation. It is not surprising that the highest rates of work-related industries were for blue collar occupations such as craft work, operators and elementary occupations. An examination of the rate of work-related injuries by economic activity

(not shown here) reveals that the highest injury rates are in manufacturing, followed by construction and then transportation.

Figure 16. Exposure to workplace injury by occupation, employed aged 15-64, 2018 (ELMPS 2018)



5.3. Weekly Hours of Work and Involuntary Part-Time Work

A shorter work week (in terms of hours of work) would typically be considered a sign of better employment conditions, as long as the low number of hours is not due to an inability to find sufficient work, as in, the case for involuntary part-time workers. We therefore examine the trend in weekly hours of work by work type before moving to an examination of the extent of involuntary part-time work as a measure of underemployment. As we will see below, involuntary part-time work is primarily an issue for wage and non-wage workers who are working outside of fixed establishments.

As seen in Figure 17 overall, the average number of hours per week have been on a general declining trend since 2006, averaging a reasonable 46 hours per week in 2018. As expected, the longest work hours reported are that of private sector informal wage workers inside establishments. However, these workers had experienced steady reductions in their weekly work hours from 59 hours per week in 1998 to 54 hours per week in 2018. Their formal counterparts had slightly shorter work weeks of 52 hours and had also experienced a reduction, at least since 2006. As is well-known, public sector

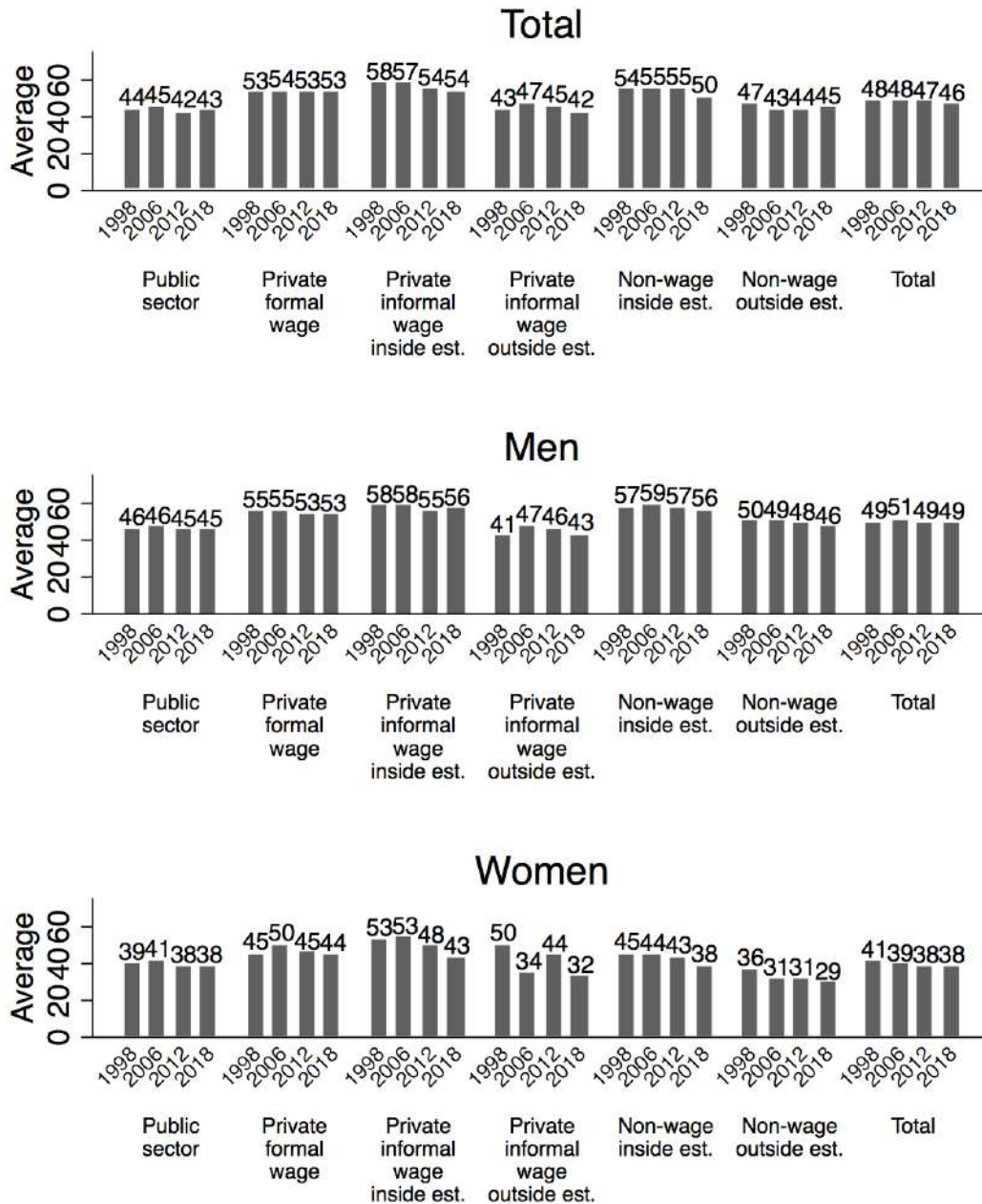
workers have much shorter hours and these hours have gotten even shorter as the public sector work week decreased from six to five days per week in 2006.¹³

Non-wage workers inside establishments reported working as many hours as formal private wage workers. Those working outside fixed establishments typically work fewer hours whether they are wage or non-wage workers. But, as stated above, this may be due to their inability to find enough employment when their work is intermittent. We get back to the issue of involuntary part-time work below.

Women typically work shorter hours than men in all types of employment. Whereas men worked on average 48 hours per week in 2018, women worked only 38 hours per week. The largest gender gaps exist for private sector workers within establishments. Women working as private wage workers in private informal establishments work 13 fewer hours per week than their male counterparts, whereas those working as non-wage workers in establishments work 18 fewer hours per week. The smallest gender difference in work hours is that of public sector workers, where women work 7 fewer hours per week than their male counterparts.

¹³ See <https://www.amcham.org.eg/publications/business-monthly/issues/74/February-2006/597/govt-revises-work-week> [last accessed Sept. 11, 2019]

Figure 17. Average hours per week by type of work, ages 15-64, 1998-2018 (ELMPS)



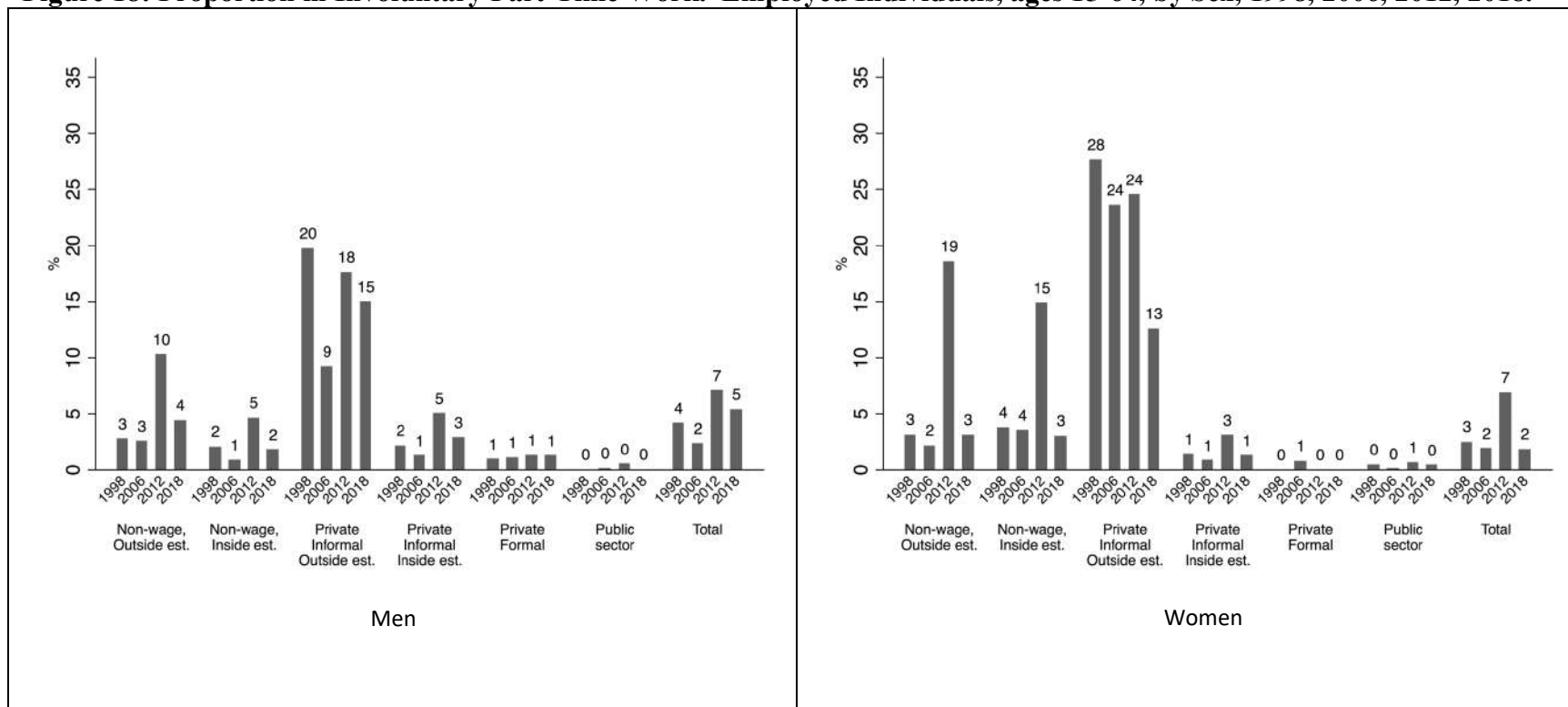
Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

We next examine the extent of underemployment as indicated by the proportion of workers in involuntary part-time work, defined as being employed less than 35 hours per week while desiring to work more hours. Since the overall pattern strongly resembles the pattern for men, we will start by discussing the male pattern and then move to that of

women. As shown in Figure 18, involuntary part-time employment is substantial only among private informal workers outside fixed establishments: they made up about 27% of all male workers in 2018 (see Figure 4). It is prevalent to a lesser extent among non-wage workers and informal workers working in fixed establishments. In fact, for the last three categories of workers, it had spiked in 2012, a time of substantial economic slowdown, and then returned to its previously low levels in 2018. A positive indicator of more plentiful employment opportunities for informal workers outside establishments had been the decline in involuntary part-time work from 18% in 2012 to 15% 2018, an indication of a pickup in economic activity. Overall it had declined from 7% to 5% of male workers over the same period.

For women, involuntary part time work is concentrated among the same group – private informal workers outside establishments—but there are a lot fewer of these workers in the female labor force, only 5% in 2018 (Figure 4). As shown in Figure 18, this category of female workers experienced high rates of involuntary part-time work in previous waves of the survey, even higher than their male counterparts. Yet, these rates dropped substantially in 2018. As a result, overall rates of involuntary part-time work among female workers dropped from 7% in 2012 to just 2% in 2018.

Figure 18: Proportion in Involuntary Part-Time Work. Employed Individuals, ages 15-64, by Sex, 1998, 2006, 2012, 2018.



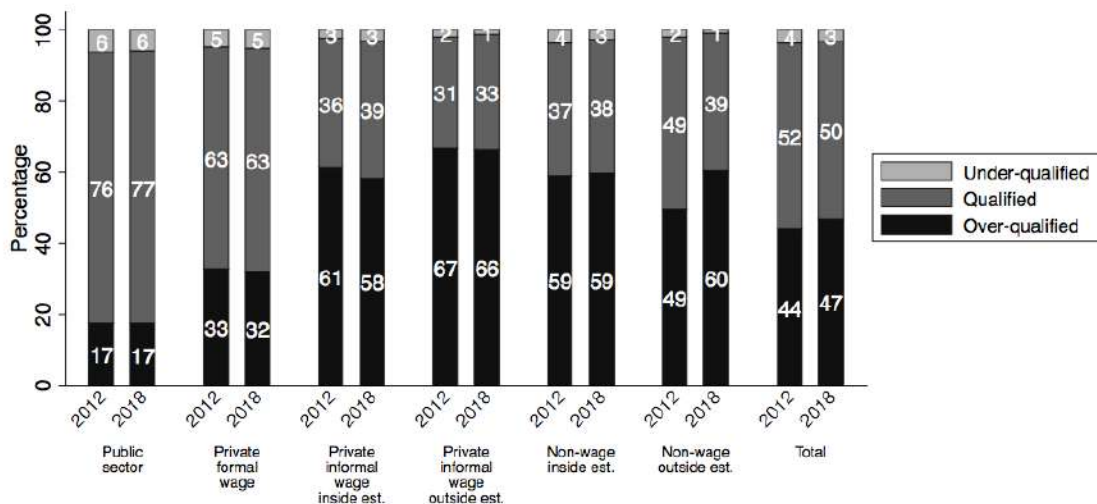
Source: Authors; calculations based on data from ELMPS 1998, 2006, 2012 and 2018.

Note: Involuntary part-time work is defined as the proportion of workers working less than 35 hours per week involuntarily among all workers in the relevant category.

Another measure of underemployment is the degree to which one’s job matches one’s educational attainment. Respondents in the 2012 and 2018 waves were asked about the educational level required by their job, which we compared with their own educational requirements to determine whether they were under-qualified, just qualified or over-qualified for their job. As shown in

Figure 19, very few people report being underqualified for their job across all job types. However, the proportion who report being overqualified is substantial and varies a great deal by job type. Overall, the proportion that report being overqualified for their jobs increased from 44% in 2012 to 47% in 2018. The proportion is relatively low in formal employment, especially in the public sector, but rises dramatically for different forms of wage and non-wage informal employment. The extent of over-qualification is highest among private informal wage workers outside establishments and only slightly lower among informal wage and nonwage workers in fixed establishments. The only group among which the overqualified proportion has increased is that of non-wage workers outside establishments, who constitute only 13% of workers as shown in Figure 4. Thus the rising overall share of overqualified workers is due to the changing composition of employment toward informal wage employment, both inside and outside establishments, which has high shares of overqualified workers.

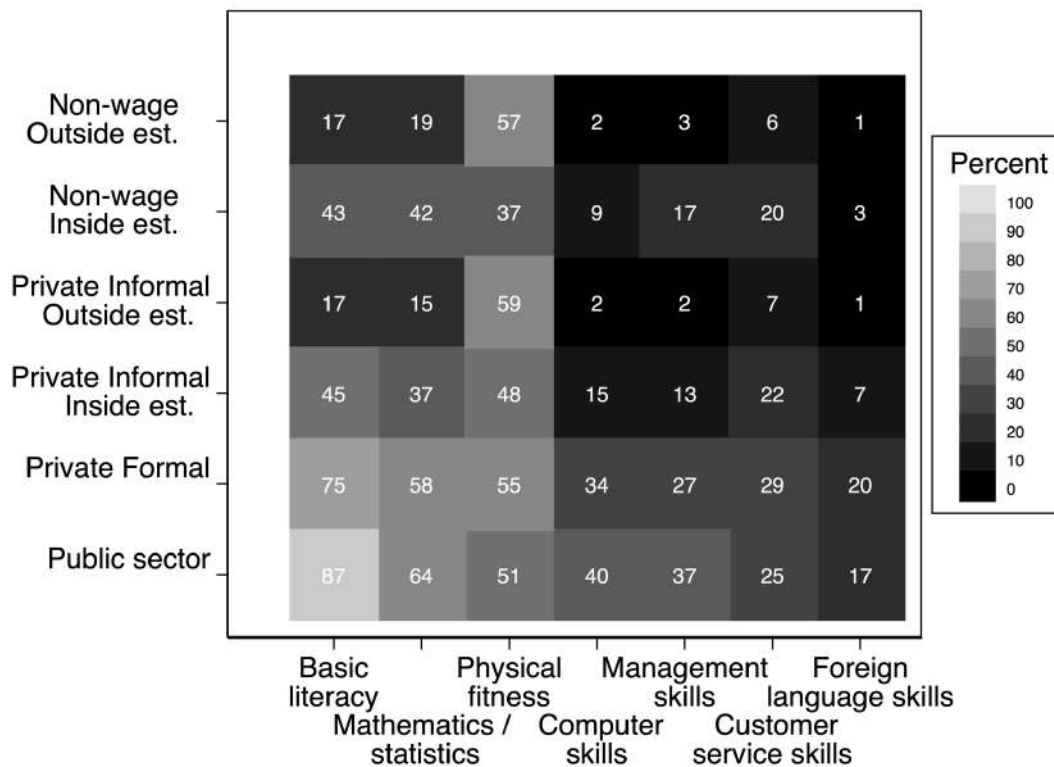
Figure 19. Match of job education requirements to educational attainment by formality and regularity status, Egyptians with private wage employment, ages 15-64, 2012, 2018



In the 2018 wave of the ELMPS, workers were also asked about the type of skill that their job requires, with skills classified as basic literacy, mathematics/statistics, physical fitness, computer skills, management skills, customer service skills and foreign language

skills. Figure 20 represents a heat map that indicates the proportion who reported the need for each of these skills in the job by job type. A lighter color indicates a higher proportion of jobs requiring that particular skill. It is clear from the overall shading patterns that the highest skill requirements are for formal private and public sector jobs, with an emphasis on literacy and numeracy skills. These jobs also have the highest requirements for customer service and foreign language skills. The lowest skill requirements, at least among the skills listed, are reported by workers who work outside fixed establishments, both as wage and nonwage workers. Last, the extent to which physical fitness is required is more or less uniform across all job types.

Figure 20. Skill requirements by formality and regularity status, Employed (market definition) aged 15-64, 2018



5.4. Employment Satisfaction by Employment Type and Education over Time

In this section, we examine levels of satisfaction with various aspects of one’s job for workers in different types of employment and by education and how these satisfaction levels changed over time for the same worker from 2012 to 2018. Starting with the 2012 wave, the ELMPS began assessing job satisfaction using a 5-point Likert scale, with 1 being the least satisfied and 5 the most satisfied. For our analysis, we collapse this Likert scale into two categories: “satisfied” workers who reported a 4 or higher on the scale (meaning they are at least “rather satisfied” or “very satisfied”); and “not satisfied”

workers who reported a score of 3 or less (which includes workers who are “neither satisfied nor dissatisfied”, workers who are “rather dissatisfied” and workers who are “very dissatisfied”). The questions on job satisfaction cover overall job satisfaction and satisfaction with aspects such as job security, earnings, type of work, work hours, work schedule, working conditions, distance to job and match between work and qualifications. We present the percentage of workers who were “satisfied” using a heat map with darker colors indicating a lower proportion of satisfied workers.

Along with the share of satisfied workers in 2018, we evaluate the change in the share of satisfied workers from 2012 to 2018 using panel data that follows individual workers over time. We estimate this change by subtracting the percent of satisfied workers in 2012 from the percent of satisfied workers in 2018. Consequently, a negative number indicates that satisfaction has fallen since 2012, while a positive estimate suggests an increase in the share of those satisfied. Since we are following the same workers over time, we use the status of the worker in 2012 to classify workers. Hence, for statuses that can change over time, such as job type, the interpretation of the statistic is the change in satisfaction among people who held that job status in 2012.

As shown in Figure 21, private informal wage workers working outside fixed establishment tend to be the least satisfied with their jobs, and, in particular, with their job security and earnings. The second least satisfied group of workers is the informal wage workers inside establishments, and, again, job security and earnings emerge as the two aspects they are least satisfied about. It is clear that public sector workers are the most satisfied with their employment conditions, with 97% percent expressing overall satisfaction and 90% or more satisfied with all job aspects (with the exception of earnings). However, even for earnings, the proportion satisfied among public sector workers (76%) is higher than for any other category of workers, including private formal workers (72%). The second highest proportion of satisfied workers is among private formal workers, 90% of whom are satisfied with their jobs. Again, earnings is the aspect they are least satisfied with, followed by distance to work and job security. Non-wage workers occupy an intermediate position in terms of job satisfaction between formally employed workers in the public and private sectors, on one side, and informally employed wage workers on the other. Non-wage workers inside a fixed establishment actually report overall satisfaction levels that are comparable to private formal wage workers. As in the case of private informal wage workers, those non-wage workers outside of an establishment report a lower job satisfaction than those inside a fixed establishment. It is actually quite striking how subjective assessments of employment conditions correspond to our objective assessments of these conditions, with informal and non-wage workers working outside establishments having the worst work conditions and public sector workers and employers having the best work conditions.

Figure 21. Job satisfaction by job type, employed individuals (market definition) aged 15-64, 2018

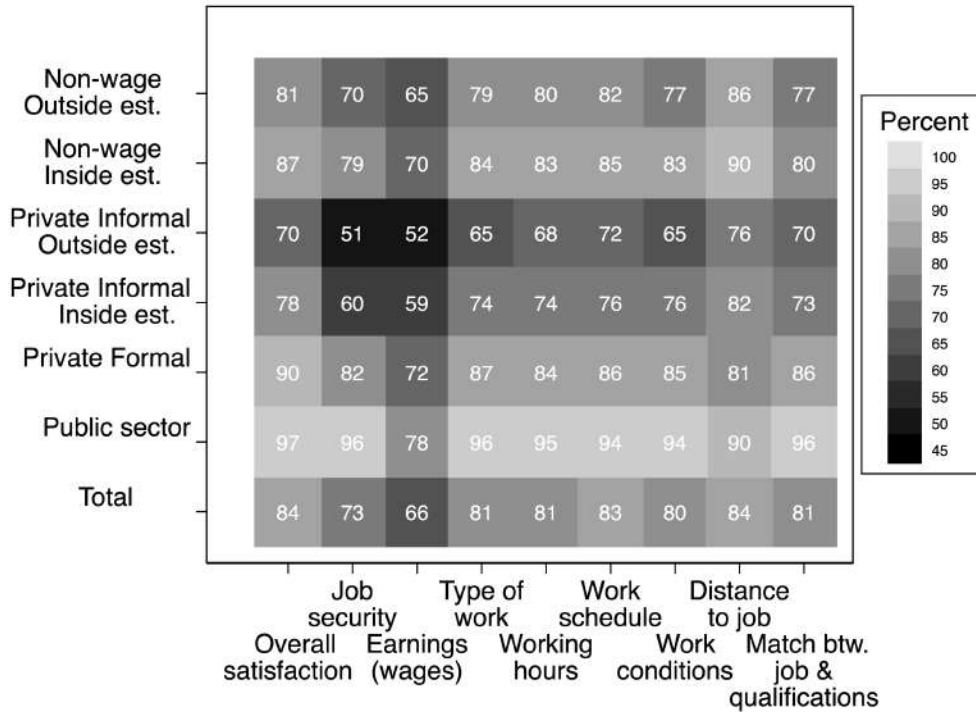


Figure 22 examines change in the level of satisfaction between 2012 and 2018 by job type. On average, workers are more satisfied with their jobs in 2018 than they were in 2012. The proportion satisfied with their job overall rose by 14 percentage points (p.p) from 2012 to 2018 for the average worker. The increase in overall satisfaction was largest (30 p.p.) among the least satisfied category, informal wage workers working outside fixed establishments. We observe similar increases (22 p.p.) for their counterparts working inside fixed establishment. Although these informal wage workers continue to have the lowest satisfaction levels in 2018, they experienced by far the largest improvements between 2012 and 2018. Among the various job aspects, the increase in satisfaction level for these workers was highest for job security both for those working inside and outside establishments. It was also quite high for work hours and work schedule for those working outside establishments. We note that this increase in satisfaction levels correspond to the sharp reduction in the irregularity of employment from 2012 to 2018, which we observed earlier among this category of workers (See Figure 11). This suggests that the economic recovery and the greater regularity of employment it brings for this vulnerable group of workers results in a substantive improvement in these workers wellbeing.

The percentage of workers satisfied with their jobs increased the least among public sector workers, who were already quite satisfied to start with, and among non-wage workers working inside and outside establishments. In fact, it is among this group that we observe the only declines in satisfaction levels in specific aspects of jobs, such as job security, earnings, and distance to work.

Figure 22. Change in job satisfaction by job type, employed individuals (market definition) aged 15-64, 2012 to 2018

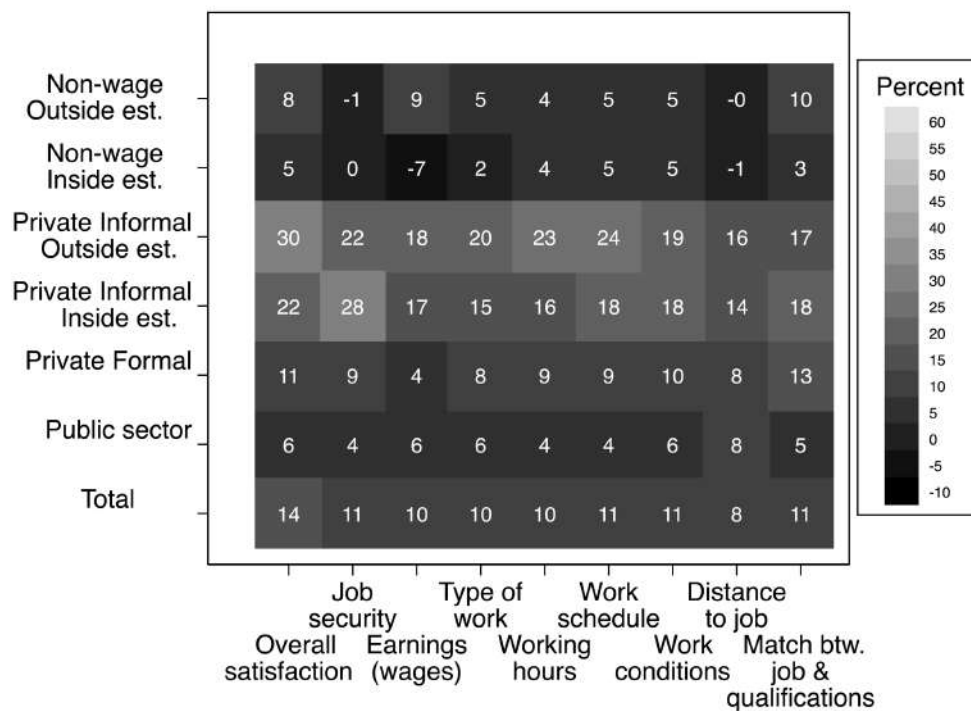
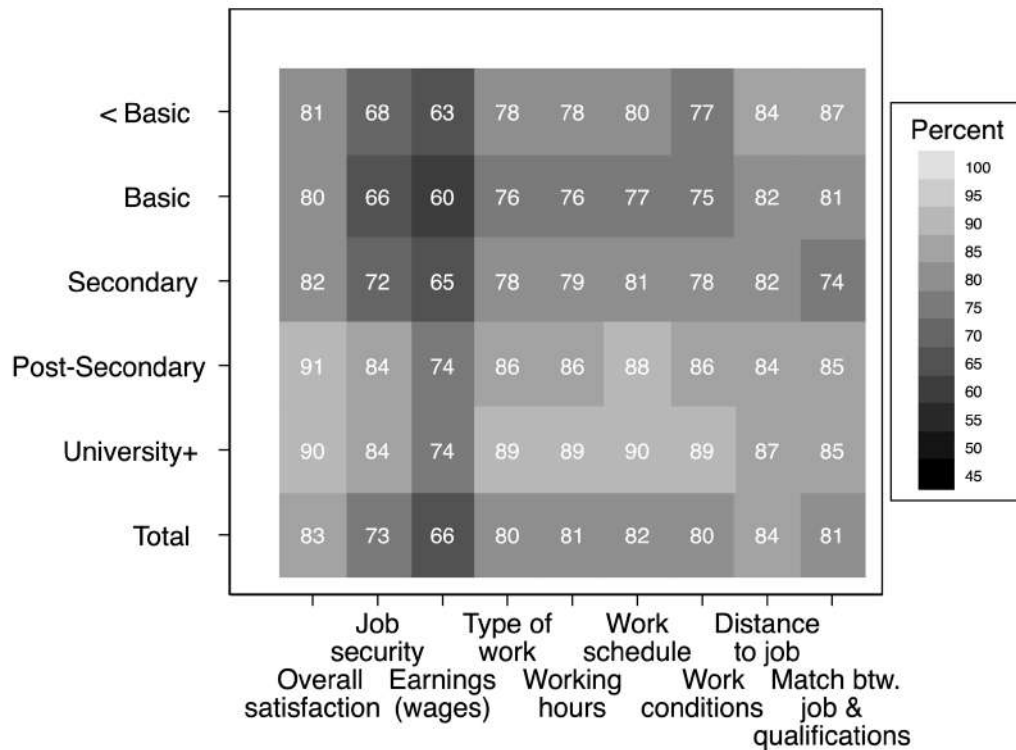


Figure 23 shows the levels of job satisfaction by the education level of the jobholder. The general trend is rising satisfaction levels with increasing levels of education, with a particularly large jump in the proportion satisfied as we go from secondary to post-secondary education. Nevertheless, the proportion satisfied among workers with basic education is slightly less than it is for those with less than basic education and the proportion satisfied among university graduates is slightly less than those with post-secondary (two-year) degrees. Satisfaction with almost every aspect of employment appears to decline between those with less than basic to those with basic education. This is probably due to the fact that although expectations rise with education, job characteristics do not improve all that much just with the acquisition of basic education. Satisfaction with all job aspects increases as we move from basic to post-secondary education, some quite substantially, as in the case of job security and earnings. But the

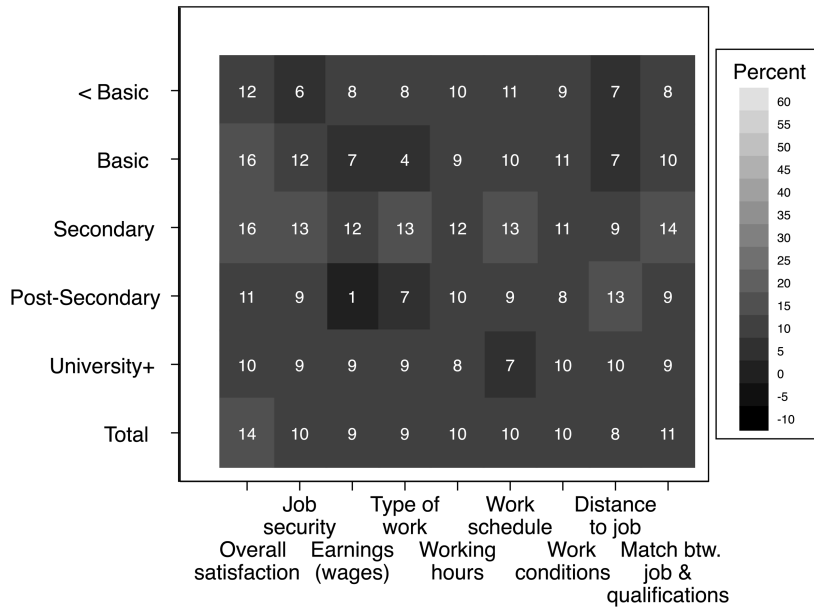
increases in satisfaction stall between post-secondary and university, particularly with regard to job security, earnings and match between jobs and qualifications. Again, this appears to be an instance where expectations are rising faster than actual improvements in employment conditions.

Figure 23. Job satisfaction by job type, employed individuals (market definition) aged 15-64, 2018



With regards to changing levels of satisfaction by educational attainment (Figure 24), there was somewhat greater improvement in the levels of satisfaction between 2012 and 2018 among those with basic and secondary education than among those at other educational levels. This was particularly true with respect to improvements in satisfaction with job security. In fact, secondary school graduates in particular saw higher improvements in satisfaction than other education groups with all aspects of their jobs with the possible exception of distance to work.

Figure 24. Change in job satisfaction by education, employed individuals (market definition) aged 15-64, 2012 to 2018



We examine next satisfaction and changes in satisfaction over time by occupation in Figure 25 and Figure 26, respectively. It appears that overall satisfaction follows the skill hierarchy, with professionals and managers being the most satisfied and workers in elementary occupations being the least satisfied. Operators tend to have higher satisfaction rates than either craft or agricultural workers. This overall pattern holds for satisfaction with job security, earnings, type of work and match between qualifications and job. There are slight deviations from this pattern for working hours, work schedule, work conditions and distance to job. These patterns, once again, suggest that people’s subjective assessments of their jobs correspond fairly closely to their objective employment conditions.

Turning to Figure 26, we find that crafts workers in 2012 exhibited the largest increase in satisfaction, with a 17 pp jump in the share of being satisfied with their working hours and schedule, and a 15 pp increase in contentment with job security and work conditions. Skilled manual workers in 2012 exhibited a 15 pp increase in their satisfaction with wages and earnings. Clerical and service workers from 2012 also exhibited a sizable increase (15pp) in their satisfaction with job security. Meanwhile, the satisfaction levels among professionals and managers in 2012 had remained rather stable over time, exhibiting small increases between 2012 and 2018.

Figure 25. Job satisfaction by occupation, employed individuals (market definition) aged 15-64, 2018

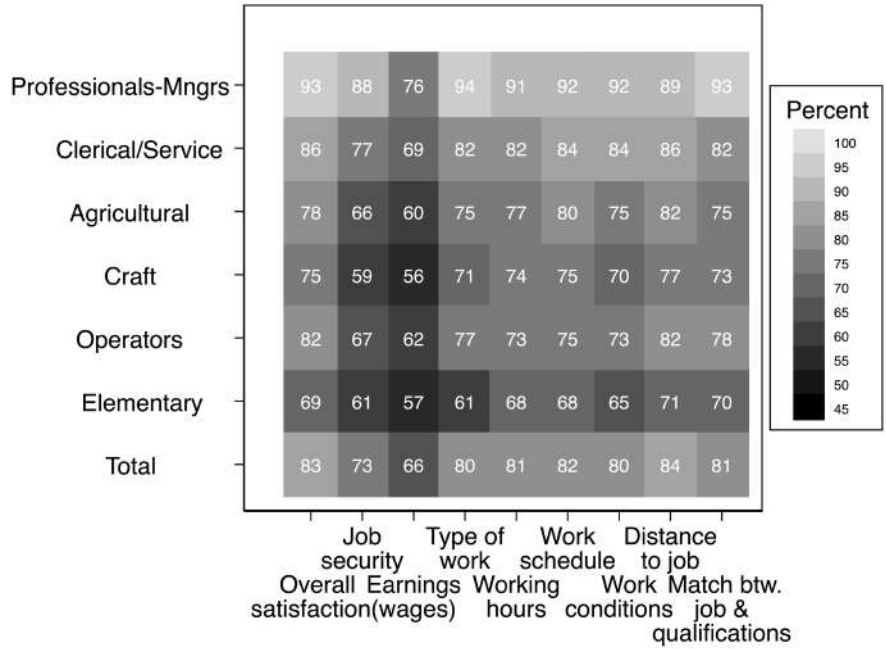
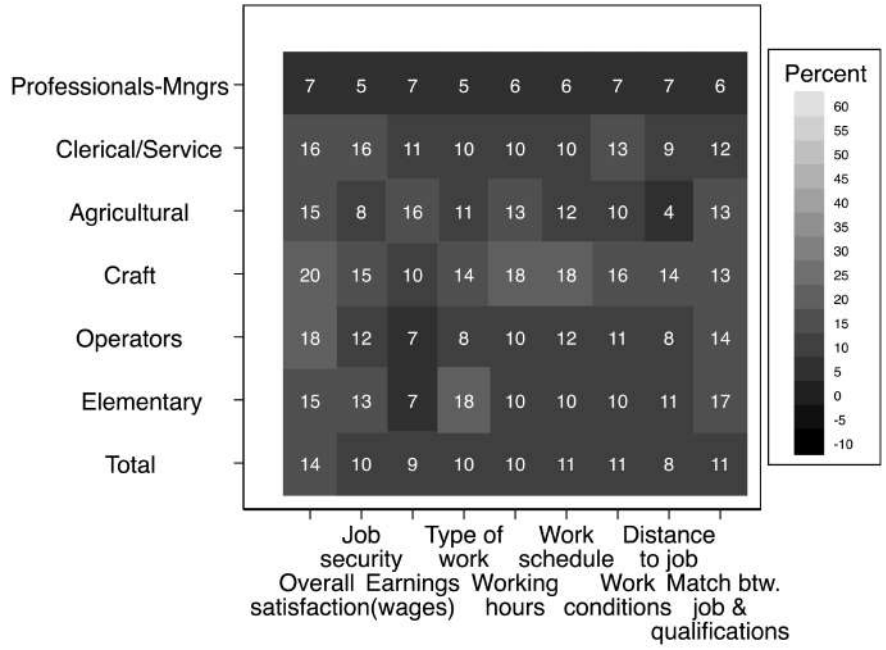
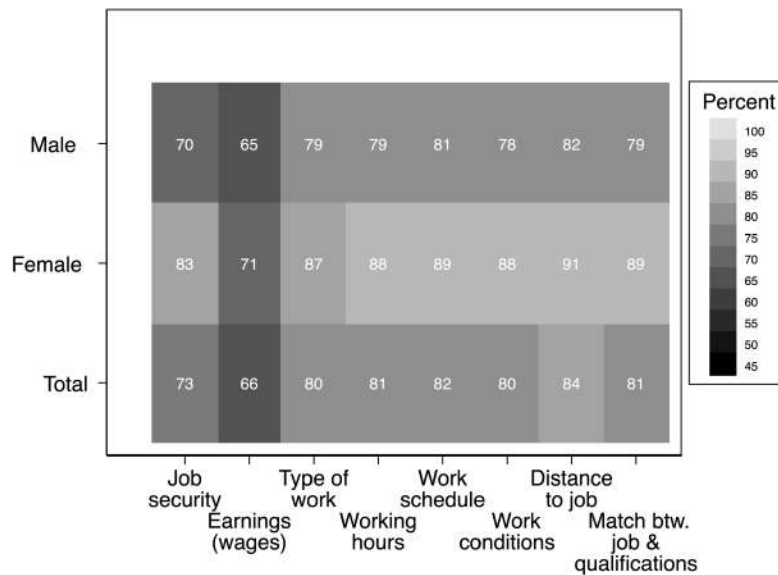


Figure 26. Change in job satisfaction by occupation, employed individuals (market definition) aged 15-64, 2012 to 2018



Finally, we look at job satisfaction broken down by gender as shown in Figure 27.¹⁴ Across all satisfaction categories, our evidence suggests that women are more satisfied than men. This result is unsurprising, as women in Egypt are more likely to choose unemployment or non-participation over an undesirable job as compared to their male counterparts. Moreover, a large share of Egyptian women works in the public sector, where satisfaction rates tend to be higher (Figure 21).

Figure 27. Job satisfaction by sex, employed individuals (market definition) aged 15-64, 2018



6. Conclusion

Our study has examined the pattern of employment growth in Egypt since 1998 and the degree to which the Egyptian economy is generating good jobs. With regard to aggregate employment growth, our findings indicate that employment-to-population ratios have traditionally responded positively to economic growth, albeit with a certain lag. However, this does not seem to be the case in the most recent recovery. GDP growth rates have been increasing steadily since their low in 2011 to reach 5.2% p.a. by 2018, but employment-to-population ratios have continued to decline since 2010. The absolute number of jobs created has increased somewhat since 2011, but at a slower rate than the working age population.

¹⁴ We omit the heat map of change in reported job satisfaction by sex because of a lack of variation in the results. All changes were between 6 and 14 percentage points, with changes among women smaller (6-9 pp) than among men (8-14 pp). This figure is not shown.

In terms of composition, the contribution of the public sector, broadly defined, to employment has continued to decline. Concurrently, the share of the formal private sector has increased marginally, but not sufficiently to make up for the decline in the public sector, leading to an informalization of overall employment. Within informal employment, the share of informal wage employment has been increasing substantially at the expense of non-wage employment. Non-wage employment outside fixed establishments has dropped substantially since 2006, a reflection of the declining share of agriculture in total employment. The most rapidly growing employment category has been informal wage employment outside fixed establishments, a reflection of the rapid growth of the construction and transportation industries.

Besides the decline in the share of agriculture and the increase in the share of construction and transportation in overall employment, there was also an increasing share of trade and distribution and a falling share of mining, manufacturing and utilities. This trend reflects a continuing structural shift, at least in terms of employment, toward non-tradeable sectors. The share of professional, financial, business and information services has also increased, although it still constitutes a fairly small share of overall employment. The retreat of the public sector has resulted in a falling share of education, health and other services.

The decline in the share of formal employment (in both its public and private forms) has had important distributional consequences. The poorest group of workers had limited access to formal employment to start with and was therefore only marginally affected by its decline. The richest group made up for falling public sector employment with greater access to private formal employment. It was therefore the middle class (as identified by the middle three quintiles of a wealth index) that saw the greatest decline in access to formal employment, and thus experienced increased employment vulnerability. This confirms the potential hollowing out of the middle class in Egypt since the late 1980s, an issue that has been discussed in connection with the root causes of the 2011 uprisings (Assaad, Krafft, Roemer, & Salehi-Isfahani, 2018; Devarajan & Ianchovichina, 2018; Diwan, 2013).

The informalization of employment and the growing share of it that is located outside fixed establishments is associated with a deterioration in overall job quality. Informal wage workers outside fixed establishments have higher levels of employment irregularity, higher rates of involuntary part-time employment, higher exposure to workplace hazards and rates of injury, and virtually no access to paid leaves and health insurance. It is true that the irregularity of employment among these workers has declined since 2012 as economic conditions improved, but they remain highly vulnerable to any economic downturn. While informal workers inside establishments have somewhat better level of job security and somewhat safer conditions at work, they suffer from long work

weeks, high levels of overqualification and equally low access to paid leaves and health insurance.

A striking result of this study is how subjective assessments of job quality correspond closely to the objective job quality measures that we examined. The workers who are least satisfied with their jobs are the informal wage workers outside establishments, followed by their counterparts in establishments. Nonwage workers inside and outside establishments occupy an intermediate position, and the most satisfied workers are formally employed workers in the public sector, followed by their counterparts in the private sector. Despite the conventional wisdom that the most educated workers are the least satisfied with their jobs, we find that job satisfaction rises steadily with education, as post-secondary and university graduates express the highest levels of job satisfaction.

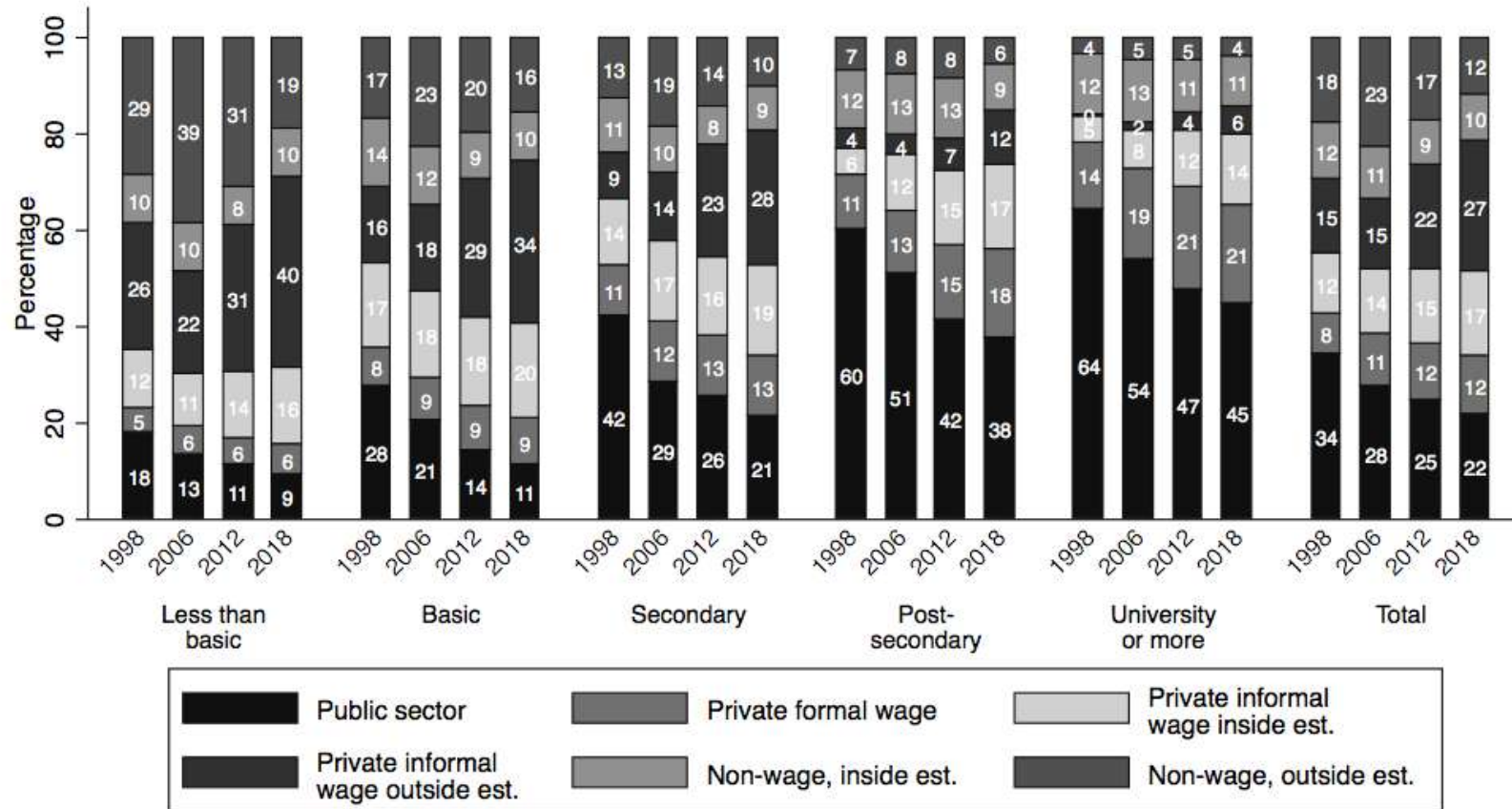
Finally, we find that the overall levels of job satisfaction have increased from 2012 to 2018, reflecting the improvement in economic conditions. This increase was greatest among workers with the lowest levels of job satisfaction, suggesting a narrowing of the differences in satisfaction levels. This is not entirely surprising since the least satisfied in both years were justifiably the informal wage workers outside establishments who experienced the greatest improvements in employment regularity from 2012 to 2018.

References

- Assaad, R., & Krafft, C. (2015). The Structure and Evolution of Employment in Egypt: 1998-2012. In R. Assaad & C. Krafft (Eds.), *The Egyptian Labor Market in an Era of Revolution* (pp. 27–51). Oxford, UK: Oxford University Press.
- Assaad, R., Krafft, C., Roemer, J., & Salehi-Isfahani, D. (2018). Inequality of Opportunity in Wages and Consumption in Egypt. *Review of Income and Wealth*, 64(S1), S26–S54.
- Assaad, R., Krafft, C., & Yassin, S. (2018). *Job Creation or Labor Absorption? An Analysis of Private Sector Employment Growth by Industry in Egypt*.
- CAPMAS. (2019). *Egypt in Figures 2019*. Cairo, Egypt: CAPMAS.
- Devarajan, S., & Ianchovichina, E. (2018). A Broken Social Contract, Not High Inequality, Led to the Arab Spring. *Review of Income and Wealth*, 64(s1), S5–S25.
- Diwan, I. (2013). Understanding Revolution in the Middle East: The Central Role of the Middle Class. *Middle East Development Journal*, 5(1), 1–30.
- Filmer, D., & Pritchett, L. (2001). Estimating Wealth Effects Without Expenditure Data--Or Tears: An Application to Educational Enrollments in States of India. *Demography*, 38(1), 115–132.
- Keo, C., Krafft, C., & Fedi, L. (2019). *Rural Women in Egypt: Opportunities and Vulnerabilities*. Cairo, Egypt.
- Krafft, C., & Assaad, R. (2014). Why the Unemployment Rate Is a Misleading Indicator of Labor Market Health in Egypt. Cairo, Egypt: Economic Research Forum.
- Krafft, C., Assaad, R., & Keo, C. (2019). *The Evolution of Labor Supply in Egypt from 1988-2018: A Gendered Analysis*. Cairo, Egypt.
- Montgomery, M. R., Gragnolati, M., Burke, K. a, & Paredes, E. (2000). Measuring Living Standards with Proxy Variables. *Demography*, 37(2), 155–74.

Appendix

Appendix Figure 1. The structure of employment by type and education, employed men (market definition) aged 15-64, 1998-2018



Appendix Figure 2. The structure of employment by type and education, employed women (market definition) aged 15-64, 1998-2018

