Working and Women's Empowerment in the Egyptian Household: The Type of Work and Location Matter

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Abstract

This paper explores the impact of women's work on empowerment in Egypt. Existing evidence suffers from several limitations, which I attempt to address. First, I develop an instrumental variable strategy to account for the endogeneity of work. Second, I allow for a heterogeneous impact of work, distinguishing between working in the public sector, outside work in the private sector and home-based work. Third, women's empowerment is directly measured as their participation in household decisions. Outside work has the greatest impact. Interestingly, home-based work enhances joint decision-making. Distinguishing between urban and rural residence reveals distinct patterns of impact on decision-making.

Keywords: Women's empowerment, Employment, Household decision-making
JEL: D13, J16, J21

1. Introduction

Women's empowerment has the potential to drive economic growth and development (Duflo, 2012). In addition to its intrinsic value, there is compelling evidence that women's increased ability to make choices can strengthen the capabilities of subsequent generations. As a result, promoting gender equality is high on the agendas of development programs such as Sustainable Development Goals (UN, 2015). Thus, recent studies have sought to provide policy guidance on the determinants of women's empowerment (for example, Anderson and Eswaran, 2009; Ashraf et al., 2010;

Chakrabarti and Biswas, 2012; De Brauw et al., 2013). Women's access to employment appears as an obvious and major source of empowerment (World Development Report, 2012). However, several studies revealed that the conditions women work under may jeopardise this relationship (Bulbul, 1999; Kantor, 2003; Anderson and Eswaran, 2009; Eswaran, Ramaswami and Wadhwa, 2013). Job opportunities and social norms affect women's involvement in the labour force (Eswaran, Ramaswami and Wadhwa, 2013). These constraints can mitigate the role of women's work as a source of power. To date, evidence on the links between women's work and their empowerment suffers from several limitations. These studies do not take into account jointly the heterogeneity of work occupations and the endogeneity of the decision to work. Moreover, they are often based on limited measures of women's power.

The aim of this paper is to study the impact of women's work on their empowerment. To do so, I address both the endogeneity and the heterogeneity of work occupations in an empirical investigation of the impact of women's economic activities on their participation in household decision-making in Egypt. Female labour force participation in Egypt is one of the lowest in the world (24% in 2012 according to ILO). As a result of the country's political and economic development, in addition to strong cultural barriers, the female labour market is highly segmented between the public sector, outside work in the private sector and home-based work[1]. Therefore, it provides a relevant setting for the investigation of the impacts of different economic activities.

I take as data source the 2006 and 2012 rounds of the Egypt Labour Market Panel Survey (ELMPS). This is a longitudinal nationally representative survey that includes a detailed module on employment, as well as self-reported measures of women's say in household decisions (ranging from economic, personal to child-related decisions). In addition to baseline probit regressions, I introduce instrumental variables in recursive bivariate probit regressions to address the endogeneity of the decision to work. These instruments serve as indicators of past local job opportunities, as I control for locality of residence and a time trend. I rely on the fact that changes in local job opportunities were greatly influenced by two exogenous demand shocks on the labour market, the suspension of an employment scheme program in the public sector and the demographic

transition. Summary statistics support the choice of separate analyses between employment in the public sector, outside work in the private sector and home-based work. To provide further insights on women's participation in decision-making, I consider sole and joint decision-making separately.

I find a strong causal impact of work on women's say in household decisions, and I document how this impact depends on type of occupation. Correcting for the endogeneity of the decision to work significantly affects the estimates. Notably, in contrast with previous findings in the literature, women's home-paid work increases joint decision-making on two important investment decisions: large purchases and children's schooling. My results also reveal heterogeneous effects of different types of work. Outside work, whether in the public or in the private sector, enhances a woman's autonomy in her personal sphere of decisions and in joint decision-making on the main economic issues. The impacts of public and private sector employment differ on child-related decisions, supporting the greater compatibility of public sector employment with family life. Home-based work has a weaker but significant impact on empowerment. In addition, I show that the impact of women's outside work differs between urban and rural areas, suggesting that prevailing social norms play an important role in determining the outcomes of the couple's negotiation.

My analysis contributes to a growing literature seeking to assess how women's employment affects household decision-making. Early studies find a positive association between women's work and different indicators of empowerment, but they do not consider different types of economic activity, nor address the endogeneity of the decision to work. The heterogeneity of work occupations, and its consequences, appears to have been overlooked in the literature. The studies exploring this issue tend to focus on particular settings, sectors of activity or work locations, and lack viable comparisons among groups. Bulbul (1999) interviews informal women workers in Cairo and finds that the proximity of husbands to their wife's work allows men to retain their primary role in decision-making. Kantor (2003) finds that home-based women garment producers in Ahmedabad in India are more likely to lose control over their income when their earnings are high, because of the easier monitoring and access to profits by other household members. Thus, women's income does not guarantee greater power. In another study (Kantor, 2009), she explores the impact of

six categories of work on women's participation in household financial decisions in Lucknow in India. She finds that none of these categories affect women's participation in decisions on large purchases and that only salaried work is positively associated with savings decisions. She argues that social norms limit women's work opportunities and their role in decision-making. These limitations and the low returns from their economic activity prevent women from overcoming these norms. In a broader context, Kabeer *et al.*(2013) distinguish between five types of employment in Egypt. They conclude that formal employment is more closely linked to women's empowerment indicators than other types of employment, followed by informal outside self-employment and by outside waged work. An important contribution of these studies is to point out that the impact of work on empowerment cannot be taken for granted. A lot depends on the location of the work (Bulbul, 1999; Kantor, 2003) and its form (Anderson and Eswaran, 2009). However, this literature relies on limited sample sizes and does not consider the potential two-way causality between women's work and empowerment. In this analysis, I show that addressing this two-way causality yields insights that contradict what is commonly reported. Here, it reveals that outside work in the private sector has a limited impact on women's empowerment, while home-based work may have more than expected.

Rammohan and Johar (2009) address the latter issue by using past labour force experience as an instrumental variable for women's work in their analysis of women's autonomy in Indonesia, but only consider one type of employment. One notable study addressing both challenges is that of Anderson and Eswaran (2009). They focus their analysis on a sample of rural women in Bangladesh working both on the labour market and as unpaid help on the family farm, and use agricultural and health shocks as instrumental variables for women's months worked and earned income. They find that only outside paid work increases women's involvement in decisions on household purchases. In this paper, I extend this analysis to a broader context considering women doing one job at a time, in occupations that differ in their conditions of access and their characteristics. I also consider a broader range of household decisions, which I argue better captures women's empowerment.

The remainder of the paper is organised as follows. Section 2 presents the conceptual frame-

work on which this analysis is based. Section 3 describes the Egyptian context and the dataset used in this study and provides descriptive statistics on the variables of interest. Section 4 presents my empirical strategy, followed in section 5 by a summary of the main results. The last section contains concluding remarks.

2. Conceptual framework

2.1. Theoretical background

The empirical analysis here is guided by considering the potential mechanisms through which a woman's economic activity may enhance her decision-making power. The theoretical literature reveals two basic mechanisms. First, access to earnings increases a woman's outside options (Browning, Chiappori and Weiss, 2014). Second, a woman's activity can modify her perceptions, and that of other household members, of her contribution and entitlements within the household (Sen, 1987). This second mechanism can result from a woman's exposure to the outside world and from household members' exposure to her abilities in areas other than domestic work. Spouses may have asymmetric information about each other's capacity to manage finances and planning for the long term. In such a setting, it might be a rational choice for a risk-adverse individual to remain the sole decision-maker, if he thinks he is the one most able to take this responsibility. Thus, any signalling of a household member's ability is expected to increase the chances of inclusion in household decisions. Overall, the impact will depend on the work's orientation (market or subsistence), its form (paid or unpaid) and its location (outside work or home-based) (Sen, 1987).

These mechanisms are in line with two types of bargaining models, a bargaining model under the threat of non-cooperation within the household (for example, Lundberg and Pollak, 1993; Anderson and Eswaran, 2009), and non-cooperative bargaining models (for example, Martìnez, 2013)[2]. Departing from the unitary model (Becker, 1973, 1981), these approaches allow each member of the couple to have a different weight in bargaining over household decisions. These weights will determine the final allocations. In the first type of models, these bargaining weights depend on the utility that will be received under non-cooperation within the marriage. Considering

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non-cooperation within the household as the relevant threat option is particularly attractive in cultural settings where spouses face unequal rights regarding divorce, or will not envisage it because of its low social acceptance and the risk of social exclusion it implies, still the case in Egypt[3]. The special feature of non-cooperative models is the absence of biding agreements between the couple such that household allocations may be Pareto inefficient. This is notably the case when there is information asymmetry between the couple (for example, Chen, 2006; Browning et al., 2014). Thus, such models are able to encompass differing degrees of knowledge about members' respective abilities, as may arise in the Egyptian context. Both types of models have been proven relevant in the context of developing countries (Anderson and Eswaran, 2009; Martínez, 2013).

2.2. Expected impacts of work heterogeneity

The prevailing gender system can impede a woman's access to some activities and work occupations. Social norms affect women's engagement in different types of work (Eswaran et al., 2013), and can also mitigate the way women's work impacts their empowerment (Bulbul, 1999; Kantor, 2009). This 'sequentially interlinked bargaining' (Argawal, 1997) calls for the consideration of the different types of economic activities, of how women have selected these activities and of the local environment to which they belong. Notably, different activities can be expected to have different impacts on household decision-making, with impacts also differing between urban and rural settings.

The public sector offers women employment opportunities that are socially valued. Participation in employment in the public sector should enhance women's involvement in the decision-making process by giving them an access to earnings and to a new social network. However, this impact could be limited if this type of work conforms to patriarchal norms[4].

Working in the private sector outside the home might affect women's empowerment in different ways, depending on the reasons that led them to this activity. Although it could be expected to enhance their decision-making power, the social stigma attached to working outside could mitigate this effect. Not working can actually enhance a woman's social status by signalling greater respectability. One of the main reasons is that the work environment, being dominated by men, is

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believed to threaten women's sexual fidelity (Eswaran et al., 2013). In response to these concerns, husbands could try to offset potential gains in their wives' bargaining power by further excluding them from decision-making.

Home-based work maintains a woman's respectability and has been described as 'appropriate' in focus group discussions in Kantor's study in India (2009). But this activity may be considered as part of a woman's domestic work and obligations, with the result that it may fail to challenge the balance of power between family members (Sen, 1987). Home-based work can facilitate monitoring and access to its profits by other family members. Anderson and Eswaran (2009) find that a woman's unpaid work on the household farm in rural Bangladesh does not affect her involvement in different purchase decisions. However, the highly localised nature of these studies makes it difficult to conclude on whether the impact of work goes beyond that of earnings. I consider that exposure to women's abilities, in a sphere different from that of domestic work, can impact their participation in joint decisions where such capacities are expected to matter.

3. Data and descriptive statistics

3.1. Background: The Egyptian female labour market

Some of the historical and institutional features of the Egyptian female labour market are relevant to this study and are presented in this section. Egyptian women face specific barriers to entry to the labour market. While the development of international trade has been a major source of female employment in several countries, Egypt has undergone a de-feminization of its work force. In a descriptive analysis based on two Egyptian nationally representative surveys of 1988 and 1998, Assaad (2002) argues that the role of oil exports and remittances in economic growth, because of their impact on the real exchange rate, led to a reduction of other traditional export sectors, and to the expansion of largely male-dominated non-traded good sectors.

An employment guarantee scheme for secondary school and university graduates in the early 1960s and its attractive employment conditions made the public sector the main employer of women. Its suspension in the 1990s has contributed to the steady rise of unemployment, with

women particularly hard hit[5]. Over the same period, the demographic transition has further tightened the labour market. Due to a decline in early childhood mortality in the 1980s, then followed by lower fertility rates, Egypt experienced a very fast increase in the proportion of young people. This generation entered the labour market in the late 1990s and the middle of the 2000s, creating new tensions in the labour market (Assaad and Krafft, 2013). The political instability that followed the January 2011 uprising and the 2008 economic crisis exacerbated these trends by slowing down economic growth. Women's options are further constrained by traditions that restrict their mobility and attach importance to their role in the domestic sphere (Mensch et al., 2003; Assaad and Arntz, 2005).

As a result, the female Egyptian labour market appears highly segmented. The public sector tends to be the only type of work socially accepted among the most educated women (Assaad and El-Hamidi, 2009), offering flexible enough working hours to allow women to combine work with family life. Public sector is thus compatible with traditions. The decline of the public sector led to queuing among women with higher education, who were prepared to exclude themselves from labour force participation rather than enter the private sector. Yet although involvement in the private sector may be perceived as socially degrading, it is virtually the only option for women with less than secondary education. Women can also turn to self-employment, or join the household enterprise if there is one. Both these activities can be carried out from home, which makes for greater acceptance among households whose women cannot access the public sector. The characteristics of work, the conditions of access and the social norms associated with these different occupations suggest strong segmentation, with limited mobility between the groups[6].

3.2. *The Egypt Labour Market Panel Survey*

This analysis is based on a longitudinal and nationally representative household survey, the Egypt Labour Market Panel Survey (ELMPS) administered by the Economic Research Forum[7] in cooperation with Egypt's Central Agency for Public Mobilization and Statistics. I will focus on the 2006 and 2012 rounds, covering respectively 5,851 and 12,060 households.

The database contains detailed information on individuals' employment, socio-economic char-

acteristics and women's status. The latter module provides direct evidence of women's bargaining power, asking women aged 15 and over about their participation in a variety of household decisions.

Because the sample of women in different categories of work is of limited size, the panel dimension of the database will not be used[8]. Nevertheless, I take advantage of the available rounds by using pooled cross-sections for 2006 and of 2012. The 1998 round is also used for the elaboration of suitable instrumental variables.

3.3. Measuring women's empowerment

My aim is to better understand what affects women's ability to influence a variety of household decisions. Early studies referred to indirect measures of women's empowerment, such as earnings or change in income (for example, Hoddinott and Haddad, 1995; Lundberg et al., 1997), relative education (for example, Thomas, 1994), or asset ownership (for example, Quisumbing and Maluccio, 2003; Allendorf, 2007). The inclusion of modules on women's status in several household surveys from the 1990s allowed researchers to move from proxy indicators to direct indicators of women's empowerment (for example, Anderson and Eswaran, 2009; Chakrabarti and Biswas, 2012; Debnath, 2015; see Malhotra and Schuler, 2005, for a discussion on these indicators). I refer to this literature in order to identify the main determinants of women's empowerment.

The ELMPS asks women who has the final say on a variety of household decisions, described in Table A1 of Appendix A. I choose to follow Anderson and Eswaran (2009) in separately analysing each decision. As in Rammohan and Johar (2009), I identify a first sphere of decisions related to economic issues, consisting of large purchases, daily purchases and the food that is cooked daily. These two latter decisions ensure the household's daily stability and their long-term incidence is low. Thus, they are traditionally in the hands of women. Conversely, large purchases involve an investment decision which, because of its potential incidence on the future of all household members, women tend to be excluded from. A second sphere of decisions on a woman's visits to family or friends, own health and own clothing are related to a woman's personal sphere. Finally, a third sphere of decisions is related to children: schooling, sending them to school on a daily basis, their

health and clothing[9]. Children's schooling and health represent investment in children's human capital, which has been presented as a potential insurance mechanism for old-age security (Duflo, 2003). Women tend to be excluded from the decision over children's schooling, while sending children to school on a daily basis tends to be part of the daily management of the household. The decision on children's clothing, like that on a woman's own clothing, is believed to be mostly determined by earnings.

An increase in the probability of a woman being involved in these decisions is interpreted as a greater ability to influence her own life and that of other household members. I distinguish between sole and joint decision-making and in contrast with the usual approaches, I exclude sole decision-makers from the second group[10]. Although a woman's empowerment tends to be defined by greater autonomy, this autonomy could also reflect greater neglect by her husband on household matters, as suggested in the study of Lépine and Strobl (2013) on Senegal. Sole decision-making in the personal sphere of decisions is arguably a more desirable situation. However, I choose to focus on joint decision-making on issues that have an incidence on other household members, such as economic and child-related decisions[11].

Because these measures of empowerment are based on women's self-reported perceptions, their ability to capture a real influence on household decisions and women's lives can be questioned. To prove the pertinence of these variables, I compare them with other potential measures of women's power available in the ELMPS in Appendix B. The results suggest a strong association between traditional measures of empowerment and my own, supporting the reliability of these indicators.

3.4. Economic participation of women

My main variable of interest is the participation of women in economic activity. I consider a woman to be working if she declared that she was involved in any employment during the three months preceding the date of the survey[12]. I therefore exclude subsistence work and domestic work from this definition, but include any market-oriented work in both the formal and informal sectors. To reduce discrepancies due to the labour force participation of older women, I limit my sample to women aged up to 65.

My final sample consists of 15,013 married women aged between 15 and 65 who answered at least the non-child-related questions in the decision-making module and for whom I have complete information on the variables of interest[13]. Among this sample, 23.81 per cent are working as defined above. To account for heterogeneity in occupations, I choose to distinguish between work in the public sector, outside work in the private sector and home-based work.

Descriptive statistics on my final sample, according to type of work, are presented in Table 1 and reveal clear disparities. These differences are particularly pronounced for education and household wealth characteristics. Women working in the public sector are predominantly from the two highest categories of education, while 74.81 per cent of women home-based workers have no education. The distribution of education levels among women engaged in outside work in the private sector is closer to that of non-working women. A similar pattern arises regarding household economic status. The distribution of spouses' levels of education reveals a high degree of matching in the marriage market.

Our sample of women further differ in their conditions of work, that are the work environment, number of hours, flexibility and remuneration (Assaad and El-Hamidi, 2009; Sayre and Hendy, 2013; own descriptive analysis). For instance, 71.09 per cent of the home-based workers are unpaid. All these differences can be expected to affect the way a woman's occupation impacts her involvement in household decision-making.

Figure 1 illustrates the distribution of women's answers to the decision-making module among the groups. For all decisions, women working in the public sector enjoy the highest proportion of joint decision-making. Women working in the private sector outside the home experience a higher proportion of sole decision-making, while home-based workers are the most excluded from any decision. Overall, these statistics suggest an empowering impact of outside employment. Still, socio-economic characteristics differ between these categories, and we need to control for the impact of these characteristics themselves before drawing any conclusions. This is the purpose of the next sections.

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4. Estimation strategy

4.1. Recursive bivariate probit model

I am interested in how participating in employment affects the probability of being involved in a variety of household decisions. However, the potential endogeneity of women's work to decision-making threatens the reliability of simple probit regressions. To address this concern, because of the binary nature of both my dependent and endogenous variables, I also adopt a recursive bivariate probit model (Maddala, 1983; Greene, 1998).

I assume the existence of a set of instrumental variables Z that is uncorrelated with the error term υ but correlated with the endogenous variables, women's types of work, once the exogenous variables have been controlled for.

The first equation of the system is an outcome equation, in which dependent variables DM_{jit} are defined in two ways. In a first series of regressions, they take the value one if a woman has the final say alone and zero otherwise. In a second series, they take the value one if a woman has the final say jointly with her husband and zero if she is excluded from decisions, excluding women who have the final say alone, to ensure that the reference category is meaningful. These probabilities for the decision under study j are characterised by a linear combination of a woman's type k of work (E); a vector of own characteristics (X); a vector of household's characteristics (H); and in order to capture specific local conditions and time trends, community fixed effects consisting of 22 governorate dummies and a control for the year of survey (C).

The second equation, the selection equation, describes the probability of a woman participating in one type of work, as opposed to not working, by a linear combination including the same covariates as in the outcome equation, in addition to one or several instrumental variables Z.

I estimate simultaneously by Full Information Maximum Likelihood the following system:

$$\begin{cases} DM^*_{jit} = \beta_1 + \beta_2 X_{it} + \beta_3 H_{it} + \beta_4 C_{it} + \beta_5 E_{ikt} + \mu_{it}, \ \ with \ DM_{jit} = 1 \ if \ DM^*_{jit} \geq 0 \ and \ = 0 \ otherwise \\ E^*_{ikt} = \alpha_1 + \alpha_2 X_{it} + \alpha_3 H_{it} + \alpha_4 C_{it} + \alpha_5 Z_{it} + \upsilon_{it}, \ \ with \ E_{ikt} = 1 \ if \ E^*_{ikt} \geq 0 \ and \ = 0 \ otherwise \end{cases}$$

$$(1)$$

where j indicates the decision, i the woman, k the type of work and t the survey round; β_1 and α_1 are constants, β_2, β_3, β_4, β_5, α_2, α_3, α_4 and α_5 are parameters to estimate and μ and υ the error terms.

I have $\mathbb{E}(\mu_{it})=\mathbb{E}(\upsilon_{it})=0$, $Var(\mu_{it})=Var(\upsilon_{it})=1$ and $Cov(\mu_{it}, \upsilon_{it})=\rho$, where ρ is the correlation between the two error terms, allowing for interdependence between the two equations.

Standard errors are clustered at household level in order to adjust for potential correlation within families and across time, and all regressions include sampling weights. A Wald test on the independence between the two equations, corresponding to ρ equal to zero, determines the choice of this model over two simple probit models (Greene, 1998). When it does not reject independence between the two equations, I rely on probit regressions of the outcome equation.

The high segmentation of the Egyptian female labour market, which manifests itself by wide disparities in initial personal characteristics and working environment, supports the need to run separate analyses. To do so, I split my group of workers into three categories: women working in the public sector, those in the private sector outside home, and home-based workers. Each of these categories is then compared to an identical group of non-working women in separate regressions excluding other workers.[14]

4.2. Selection of covariates

I selected the main covariates according to the empirical literature investigating the determinants of women's empowerment (for example, Anderson and Eswaran, 2009; Chakrabarti and Biswas, 2012; Debnath, 2015), choosing those that appeared to be the most relevant explanatory variables. The number of covariates included was limited, to reduce concerns on the endogeneity of the explanatory variables to the probability of participation in decision-making.

At individual level, I include a woman's age, its square and her education level. At household level, husbands' own characteristics affect their attitudes towards gender roles, and I therefore include the spouse's level of education. I take into account household socio-economic status, measured by a wealth index. I attempt to capture impact of the household structure by breaking it down by age and sex, into seven groups. I further control for co-residence with the mother-in-law,

expected to relegate daughters-in-law to a lower place in the family hierarchy (Agarwal, 1997; Debnath, 2015).

Finally, a third level of covariates characterises the environment in which the woman lives. How women are valued in the society they live in is crucial for self-worth perceptions and the acceptance of more autonomous behaviours. To capture this impact, I include a dummy differentiating between urban and rural residence and governorate fixed-effects. When exploring heterogeneous impacts of economic activities, I also allow this effect to differ between urban and rural settings by introducing an interaction between the residence dummy and the type of work. Because a pooled cross-section sample is used, I include a year fixed-effect to account for potential macroeconomic shocks and changes in social norms of household functioning and women's status between the two rounds of the survey.

4.3. Identification strategy

4.3.1. Exogeneity of the instruments

In order to address the issue of the employment decision's endogeneity to involvement in household decision-making, I apply a distinct exclusion restriction for each group of economic activity. The instruments are selected on the basis of the strength of their correlation with the endogenous variables and their arguable exogeneity to individual decision-making participation. They are lagged variables aggregated at the governorate level on labour market characteristics. In combination with governorate and year fixed-effects, variation in past local job opportunities is used as a source of identification.

As mentioned in Section 4, the evolution of labour market opportunities has been greatly shaped by the decline of employment in the public sector. This is illustrated by Figure 2 showing the proportion of women aged 25 and over working in the public sector by cohort at the time of the survey. After a marked rise in this proportion for the cohorts born after 1951, we observe a sharp decline for women born after 1965. The tightness of the labour market was reinforced by the demographic transition, generating major pressure in the late 1990s and the middle of the 2000s (Assaad and Krafft, 2013). These dates coincide with the years on which my instruments are

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based. Hence, the variation in labour market opportunities arise from these two exogenous shocks on labour demand, not being related to changes in social norms. Indeed, there is no evidence of a decline or a rise in the social stigma attached to different types of work that might have affected the evolution of the Egyptian labour market. Local views on women's work and changes over time in attitudes towards women should be captured by the governorates and year fixed-effects included in the regression.

A reverse relationship between changes in women's labour market opportunities and local social norms concerning women's empowerment would threaten the exogeneity of my instruments. When greater job opportunities are found to be a source of empowerment, this impact is long-term, affecting girls' human capital investment decisions (Farré and Vella, 2007; Jensen, 2012). Still, to address this threat, I introduce a proxy for local social norms as a robustness check. The same module of decision-making participation described in Section 3.3 was applied to unmarried women, with different answer categories.[15] This module was used to compute a proxy measure of local social norms. It consists of an average score for unmarried women's exclusion from household decisions at governorate level, separately for 2006 and 2012. The results of the recursive bivariate probit regressions with and without this variable are given in Tables A2 and A3 of Appendix A. This attempt to control for local changes in social norms does not alter results.

Another advantage of the use of governorate-level instruments is that it reduces possible concerns about recalling bias and reporting errors at individual level. The use of lags accounts for the fact that the decision to participate in economic activity was usually made prior to the survey year. Nevertheless, there is one limitation to this strategy that should be underlined. Following this method, I cannot recover an average treatment effect of labour market participation, but only its impact for individuals whose changes in participation have been affected by changes in the instrument. It could be that only those individuals who anticipate a gain in terms of decision-making participation are actually participating in employment when the labour market appears more favourable. This could lead to an overestimation of the average treatment effect. Therefore, the estimated impacts should be referred to as local average treatment effects (Imbens and Angrist,

1994).

4.3.2. Instrument for public sector employment

As an instrumental variable for the public sector, I use the urban unemployment rate of the governorate of residence from Egypt Human Development Reports (EHDR, 2003; EHDR, 2010). The 2001 rates are matched to the 2006 survey year and the 2007 rates to the 2012 survey year. Both male and female unemployment rates are included, but there is a disproportionate number of females among the unemployed (Assaad and Kraft, 2013). This is due to the limited opportunities offered to women on the labour market and to the fact that they are more ready to queue for the public sector than men. Thus, unemployment rates among young, educated women are particularly high. Moreover, 67.35 per cent of my final sample working in the public sector reside in urban areas. Higher unemployment rates are expected to discourage women from entering the labour market, and indicate a lower probability of finding a job in the public sector. Therefore, this instrument reflects the tightness of the local labour market and the limited opportunities in the public sector. The results of the first stage of my recursive bivariate regression indicate a negative correlation, as shown in Table 2.

The variation in local urban unemployment rates between 2001 and 2007 is presented in Figure 3, with a visible tendency to increase between the two periods. Luxor shows the highest increase in the urban unemployment rate. This is due to a slow-down of tourism-related activity, which constitutes the main source of income in this area, after the 1997 terrorist attacks and the concurrent onset of the Asian financial crisis. These shocks affected the male labour market as well, which could threaten the reliability of my instrument. However, the exclusion of the Luxor governorate from the regressions does not qualitatively change the results (not shown here).

4.3.3. Instrument for outside-home private sector employment

For the group of women working outside the home in the private sector, I selected the lagged proportion of working female adults who are waged workers, by governorate. These proportions are computed using the 1998 and 2006 waves of the ELMPS, adjusting for sample weights. The

variation in this instrument between 1998 and 2006 is illustrated in Figure 4. As indicated by Assaad and Krafft (2013), there was a change in the accountability of women's agricultural work between the 1998 and 2006 rounds of the ELMPS, contributing to these sharp decreases in the proportion of waged workers, in addition to the two exogenous shocks mentioned in Section 4.3.1. This is particularly salient in Asyout and Suhag, but their exclusion from the regressions does not qualitatively change the results (not shown here).

Comparing the evolution of the proportion of waged workers for men and women in Figure 4, we observe some correlation between the two but no consistent pattern that would suggest that these variations are only the result of local aggregated shocks affecting both genders' labour market. This reinforces my confidence in this instrumental strategy.

Waged work being mostly exercised outside the home, this instrument is believed to reflect outside labour market opportunities for women. This is confirmed by the positive correlation revealed by the first stage of the recursive bivariate regression, as shown in Table 2.

4.3.4. Instruments for home-based employment

Finally, to predict home-based work, I took the lagged proportion of working women among female adults by governorate, calculated using the 1998 and 2006 years of the ELMPS survey and accounting for sampling weights. This variable should indicate harder local competition on the female labour market, which might discourage a woman from seeking access to employment. It is negatively associated with the probability of working at home, as shown in Table 2. The variation in women's local employment rate is presented in Figure 5. As stated above, the evolution of this rate in more rural governorates is accentuated by measurement challenges in women's agricultural activities. This could lead to disproportionately more weight being given to more rural governorates. However, there is no reason to believe that this bias differed from one rural area to another, as it has been attributed to small phrasing changes in the 2006 questionnaire (for more information, see Assaad and Krafft, 2013). As a robustness check, I computed a separate instrument for urban and rural areas of each governorate. The results are robust to this alternative (not shown, but available upon request). As before, I compare this instrument with the local variation in men's

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employment rate, and find that the two are not consistently linked across governorates.

This instrument alone does not adequately differentiate between home-based work and other types of work. Thus, I also included another instrument reflecting a greater likelihood of belonging to a household enterprise.[16] This consists of a dummy indicating whether a woman's father-in-law was an employer or self-employed when her husband was fifteen years old. My choice is based on evidence of intergenerational transmission of entrepreneurship, especially for men, in the literature exploring determinants of entrepreneurship (Rijkers and Costa, 2012). Thus, this variable should be related to a higher probability of a man owning or participating in a household enterprise, increasing in turn the probability of a woman engaging in home-based work. This second instrument is positively correlated with the probability of home-based work in the first stage of the recursive bivariate regression, as shown in Table 2.

5. Results

The results of the separate regressions for the probability of a woman having the final say on household decisions according to her economic activity are listed in Panel 1 of Table 3, and those for the probability of joint decision-making in Panel 2 of the same table. For ease of reading, I only present the marginal effects of the relevant regression model, which is selected according to the results of the Wald tests, as explained in Section 4.[17]

5.1. The impact of employment in the public sector

My results support a significant impact of women's work in the public sector on household decision-making. This type of employment enhances a woman's autonomy in the personal decision-making sphere and in some child-related decisions. It also encourages joint decision-making on the household's economic matters and those regarding investment in their children's human capital.

As Table 3 shows, working in the public sector increases the likelihood of having the final say alone in decisions on own health by 4.8 per cent, on own clothing by 11.8 per cent, on children's schooling by 5.7 per cent and on children's clothing by 3.5 per cent. Its negative impact on

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daily purchase decision-making (-7.3%) suggests that working in the public sector rather than not working can challenge part of the traditional household model, which ascribes to women the management of daily expenditure for the household's needs. Instead, it fosters joint decision-making, increasing its likelihood by 11.3 per cent as shown in Panel 2 of Table 3. The same pattern arises for the group of home-based workers, for whom this effect is even stronger. Working at home decreases the likelihood of having the final say alone in decisions on daily purchases by 12.6 per cent, while it increases that of having joint final say on these decisions by 21.0 per cent.

Interestingly, both groups suffered from a positive selection bias, revealed by a positive and significant correlation between the unobservables of the outcome and selection equations (ρ in Table A2 of the Appendix A). As already mentioned in Section 2, both public sector and home-based work are socially accepted and allow women to reconcile their work with their family role. These results support the idea that women in these occupations are more likely to belong to more conservative households. Moreover, the positive association between working in the public sector and having the final say on children's schooling is further evidence of this conservative attitude. The decision to invest in children's human capital might be expected to involve both parents, but the mother's traditional responsibility for the children takes precedence here.

Finally, women working in the public sector have a lower probability of having the final say alone on decisions regarding children's health than non-working women. It may be that their reduced contact with their children as a result of this economic activity fosters the involvement of other household members in this decision. This is supported by the fact that the positive impact of working in the public sector is greater on joint children's health decision-making than on having the final say alone (not shown here). Looking at Panel 2 of Table 3, it is associated with a greater probability of having a joint final say on decisions regarding large purchases (8.7%), visiting relatives and friends (3.9%), children's schooling (11.0%), sending children to school on a daily basis (15.7%) and children's clothing (7.4%).

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5.2. The impact of outside work in the private sector

As with working in the public sector, employment in the private sector outside home is generally associated with greater decision-making power. It increases the probability of having the final say alone in the personal sphere of decisions, and in joint decision-making both on economic matters and on sending children to school on a daily basis. The impact is greater than that of working in the public sector: outside employment in the private sector increases the probability of having the final say alone in decisions on children's health by 7.4 per cent (Table 3). This could be the result of the greater mobility associated with this type of work, usually located farther away than employment in the public sector (Assaad and Arntz, 2005).

Nevertheless, we can see from Panel 2 of Table 3 that it is also associated with a lower probability of joint decision-making over children's schooling (-32.0%). Employment in the private sector outside the home is the activity least compatible with family life, due to a higher average working load, the location and the rigidity of working hours (Assaad and El-Hamidi, 2009; Sayre and Hendy, 2013). Greater absence from the home may be at the cost of being excluded from decisions on children's schooling. The recursive bivariate probit model failed to converge for decisions on cooking and on sending children to school for this group of workers. Thus, the results on these decisions are to be taken with some caution[18].

The correlation between the error terms of the selection and outcome equations for this decision, as well as for the decision on own clothing, is positive and significant (see Tables A2 and A3 in the Appendix 3). This reveals a positive selection bias for joint decision-making of women working outside home in the private sector. Although the social stigma associated with this type of activity may make women hesitant to engage in it, this work offers some of the same benefits as the public sector: access to earnings and exposure to the outside world. Their positive impact on economic and major personal decisions remains. However, working in the private sector outside the home excludes women from continuing joint decision-making on buying their own clothes and on their children's schooling.

5.3. The impact of home-based work

Home-based work does not increase the probability of having a final say in household decisions (Panel 1 of Table 3). On the contrary, it decreases the likelihood of deciding on own clothing by 10 per cent, and on sending children to school on a daily basis by 23.2 per cent. As with decisions on daily purchases, home-based workers suffer from a positive selection bias for these two decisions (see Tables A2 and A3 in Appendix 3). Moreover, the decision to send children to school is part of women's traditional role. Home-based work is also negatively associated with the decision to send children to the doctor (-3.5%), but this effect is only significant at the 90 per cent confidence level.

These results are not surprising in the light of these women's working conditions. While Sen emphasises the impact of "gainful outside work" through its access to income, the associated rights it ensures and exposure to the outside world (Sen, 1987), these women are denied such benefits because the vast majority of home-based workers are unpaid. However, the results on joint decision-making shown in Panel 2 of Table 3 do reveal some impact. When any endogeneity bias of the decision to engage in home-based work is removed the exercise of a home-based market-oriented activity increases joint decision-making on two major investment decisions, that are large purchases (by 22.8%) and children's schooling (by 31.8%). It also leads to increased participation in two decisions traditionally associated with women's role, that are daily purchases (by 21.0%) and cooking (by 15.2%). They may not be the ones collecting the money earned from their work, but women working at home are still contributing to the household's prosperity. It seems that, in the Egyptian context, this is being acknowledged to some extent.[19] My argument is that the exercise of such an activity, which steps outside the usual domestic work, reveals women's abilities in new spheres of competence. As a consequence, engaging in home-based work results in more inclusion of these women in the management of the household.

It can be seen from the statistical distribution of initial characteristics across different types of work in Table 1 that home-based women workers are poorer and less educated, and tend to live in extended families in rural areas. Although I control for these observables, it is likely that other unobservable characteristics affect these women and create a less favourable environment

for women's agency. This is confirmed by the significant positive correlations between several outcome and selection equations. As a result, not controlling for women's self selection for this economic activity results in an underestimation of the impact of home-based work. Still, a better understanding of the reasons why a woman engages in home-based work is needed to shed more light on these results. The impact of this work remains limited and it does not enhance a woman's autonomy.

5.4. Heterogeneous impacts by place of residence

Living in a rural area is negatively associated with women's empowerment. Differing social norms on gender roles between urban and rural settings could mitigate the way women's economic activity affects their participation in household decisions. I explore this hypothesis by introducing interactions between a woman's type of work and a dummy indicating whether she lives in an urban area. As before, both probit and recursive bivariate probit models are run, following the empirical strategy described in Section 4.[20] The results of the relevant model are given in Table 4 for sole decision-making and in Table 5 for joint decision-making .

The impact of home-based work on a woman's likelihood of having the final say alone or jointly in household decisions does not really differ between urban and rural settings. However, major differences arise when we look at the other types of work. Working in the private sector outside the home fails to empower women in their personal sphere of decisions in rural areas, with the exception of an increase in sole decision-making on clothing. However, rural women working in the public sector have a greater likelihood of having the final say in decisions on their own health.

The patterns of decision-making for women working in the public sector differ between women living in urban and in rural areas. Public sector work increases joint decision-making for women living in urban areas, while it tends to increase sole decision-making for those living in rural areas. This type of work challenges urban women's traditional responsibility for daily purchases and cooking, as reflected by a negative impact on the probability of having the final say alone in these decisions. In contrast, it does not significantly affect rural women's autonomy on daily purchases

and even increases their autonomy on cooking. In rural areas, women's autonomy is enhanced by their involvement in the public sector, which can reinforce their traditional role by allowing them to bear more household responsibilities. I cannot compare the gain in power between these two groups of women. Rather, it seems that for both urban and rural women, working in the public sector is an important source of decision-making power used differently by the two groups, in line with the gender lines prevailing in their place of residence. Thus, the impact of work on women's empowerment is limited by the fact that it may not be able to challenge the gender system. This will affect the way women use their increased leverage in the household.

6. Conclusion

The promotion of women's empowerment is at the center of a growing literature, encompassing the different social sciences. However, its determinants are still not fully understood. A woman's economic participation tends to be considered as the major source of empowerment, although convincing evidence supporting this assertion is relatively scarce. Access to employment makes a woman more likely to have control over resources that she earns, and affects both her family's and her own perceptions of her abilities in the non-domestic sphere. Yet, the conditions under which this work is exercised can affect the way it translates itself into a source of empowerment. The segmentation of the Egyptian female labour market provides an interesting setting to examine this question. This study aimed to shed more light on the relationship between type of work and type of empowerment by addressing major empirical challenges pointed out by the literature: the endogeneity of the decision to work and its heterogeneity.

In this paper, I focused on the heterogeneous impact of women's work on their participation in household decisions, distinguishing between public work, outside work in the private sector and home-based work. To do so, I ran both simple probit and recursive bivariate probit regressions, in which I instrumented the decision to work with lagged aggregated characteristics of the labour market. In line with the literature, I conclude that working outside the home has the greatest impact on women's empowerment. However, properly addressing endogeneity reveals that home-based

work encourages joint decision-making on major decisions. Several mechanisms are at play and due to data limitation, I cannot disentangle the effects of access to earnings from other potential factors. Nevertheless, the positive impact of home-based work on joint decision-making suggests that the effect of work is bigger than just remuneration. Distinguishing between urban and rural residence reveals distinct patterns of impact on decision-making, notably from engaging in public sector work. Public sector work enhances rural women's autonomy over a majority of decisions, while it only increases urban women's joint decision-making. This underlines the role that the local gender system might play in mitigating the way women's work affects their decision-making power.

With regard to the empowering potential of outside work in the private sector, public policies need to foster a work environment more favourable to women. It is important to address the social stigma associated with this kind of job, which represents an additional barrier to women's employment. If exposure to women's work is able to challenge preconceived ideas about their performance, as suggested by my results in the household context, improved awareness of women's capacities may be worth pursuing. A voucher system encouraging the hiring of women could put more employers in contact with women, possibly affecting how they view women's work, as in the New Opportunity for Women program in Jordan (WDR 2012). However, the acceptance of greater gender equality needs to be favoured, in order to avoid a repressive reaction from the society. Although a change in legislation is required so that domestic violence and sexual harassment can be seriously addressed by Egyptian law, empowering women will take more than legislation and regulation.

Table 1: Summary statistics on final sample of married women

VARIABLES	Not working		Public sector work		Private sector outside work		Home-based work		Total	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age (years)	32.60	(0.10)	37.78	(0.22)	36.06	(9.19)	36.12	(0.43)	33.63	(10.52)
Education (%):										
No education	35.61		1.49		35.99		74.81		36.02	
Less than inter.	14.85		1.31		9.48		9.54		14.26	
Inter. and above	39.17		50.75		33.84		14.79		36.76	
Uni. and above	10.36		46.46		20.69		0.86		12.96	
Spouse's education (%):										
No education	29.04		3.17		30.60		57.54		28.97	
Less than inter.	17.97		5.60		15.73		16.89		16.38	
Inter. and above	38.77		44.65		31.68		22.90		37.76	
Uni. and above	14.21		46.58		21.98		2.67		16.88	
Mother-in-law (%)	21.71		5.41		7.11		23.57		12.91	
Number of daughters	1.15	(0.01)	1.24	(0.03)	1.17	(0.05)	1.50	(0.04)	1.19	(1.05)
Number of sons	1.35	(0.01)	1.29	(0.03)	1.40	(0.05)	1.90	(0.04)	1.40	(1.06)
Mean age of children	7.98	(0.07)	9.88	(0.18)	9.48	(0.33)	10.68	(0.22)	8.55	(7.20)
Wealth index (%):										
Poorest quintile	17.41		2.18		17.24		40.27		17.69	
Second quintile	21.28		7.21		21.77		30.82		20.84	
Third quintile	22.94		13.99		18.32		18.13		21.53	
Fourth quintile	21.40		28.05		18.10		6.97		20.68	
Richest quintile	16.96		48.57		24.57		3.82		19.27	
Urban (%)	51.29		67.35		57.54		17.46		47.68	
Wage status (%):										
Waged worker	-		100		49.14		5.15		-	
Employer	-		-		7.76		3.15		-	
Self-employed	-		-		23.92		20.61		-	
Unpaid worker	-		-		19.18		71.09		-	
N	11,431		1,608		464		1,047		15,013	

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Note. A wealth index was compiled using Principal Components Analysis. Following Filmer and Pritchett (2001), it is based on asset ownership and housing characteristics, and characterises a household's economic status.

Table 2: First stages of the recursive bivariate probit regressions:
impact of the instruments on the probability of engaging in an economic activity (Coefficients)

Instruments	Works in the public sector	Works in the private sector outside home	Works at home
	(1)	(2)	(3)
Urban unemployment rate	-0.0241**		
	(0.0118)		
N	13,039		
Proportion of waged workers among working women		1.000***	
		(0.285)	
N		11,895	
Proportion of working women among women adults			-5.910***
			(0.556)
Father-in-law was employer or self-employed			0.379***
			(0.0495)
N			11,620

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Note. Robust standard errors clustered at the household level in parentheses. All regressions include individual and household characteristics as listed in Section 4, sampling weights, year and governorate fixed-effects.

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Relevant results of regressions of women's participation in household decisions (Marginal Effects)

Economic Activity	Economic sphere			Personal sphere			Children's sphere			
	Large Purchases (1)	Daily Purchases (2)	Cooking (3)	Visits (4)	Own Health (5)	Own Clothing (6)	Schooling (7)	Schooling Daily basis (8)	Health (9)	Clothing (10)
Panel 1:	Probability of having the final say alone									
A- Works in the public sector	0.008	-0.073*§	-0.007	0.004	0.048***	0.118***	0.057***	0.025	-0.036**	0.035**
	(0.009)	(0.041)	(0.018)	(0.014)	(0.017)	(0.018)	(0.021)	(0.025)	(0.017)	(0.018)
N	13,039	13,039	13,039	13,039	13,039	13,039	6,391	5,933	10,254	10,232
B- Outside work in private sector	0.017	0.027	0.024	0.044**	0.057**	0.500***§	0.038	0.038	0.074***	0.097***
	(0.013)	(0.024)	(0.025)	(0.022)	(0.023)	(0.082)	(0.029)	(0.033)	(0.027)	(0.026)
N	11,895	11,895	11,895	11,895	11,895	11,895	5,726	5,321	9,353	9,305
C- Works at home	0.010	-0.126**§	0.026	0.012	0.009	-0.010***§	0.018	-0.232***§	-0.035*	0.021
	(0.011)	(0.056)	(0.020)	(0.017)	(0.018)	(0.048)	(0.019)	(0.057)	(0.018)	(0.019)
N	11,620	11,620	11,620	11,620	11,620	11,620	5,734	5,329	9,161	9,138
Panel 2:	Probability of having the final say jointly									
A- Works in the public sector	0.087***	0.113***	0.025	0.039**	0.020	0.056***	0.110***	0.157***	0.031	0.074***
	(0.018)	(0.026)	(0.018)	(0.018)	(0.021)	(0.058)	(0.027)	(0.032)	(0.019)	(0.020)
N	12,154	6,400	5,779	10,871	10,261	5,007	3,871	5,329	7,897	5,007
B- Outside work in private sector	0.121***	0.158***	0.088**	0.066**‖	0.048*	-0.482***§	-0.320***§	0.106**‖	-0.002	0.055*
	(0.027)	(0.039)	(0.040)	(0.027)	(0.029)	(0.126)	(0.048)	(0.047)	(0.034)	(0.033)
N	11,058	5,812	5,256	9,869	9,361	8,267	4,481	3,452	7,126	7,331
C- Works at home	0.228***§	0.210***§	0.152**§	-0.009	-0.016	-0.016	0.318*** §	0.008	-0.028	0.006
	(0.051)	(0.054)	(0.063)	(0.022)	(0.021)	(0.023)	(0.074)	(0.033)	(0.024)	(0.024)
N	10,849	5,572	5,001	9,611	9,134	8,069	4,503	3,472	6,993	7,188

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Note. § Marginal effects of recursive bivariate probit regressions, in which engagement in an economic activity has been instrumented. ‖ The recursive bivariate probit model failed to converge, the result from the probit model is thus to be taken with caution. Robust standard errors clustered at the household level in parentheses. All regressions include individual and household characteristics as listed in Section 4, sampling weights, year and governorate fixed-effects. They all compare the group of workers of interest with non-working women, excluding other types of work. For Panel 1, the reference category corresponds to women who have no final say, or decide jointly with their husband, in the decision of interest. For Panel 2, the reference category corresponds to women who do not have the final say in the decision of interest and sole decision-makers are excluded. When relevant, my instruments are the lagged urban unemployment rate by governorate for regressions (A), the lagged proportion of waged workers among working women at the governorate level for regressions (B), the lagged proportion of working women among female adults at the governorate level and a dummy on the father-in-law's working status for regressions (C).
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Relevant results of regressions of the probability of a woman having the final say alone on household decisions, distinguishing between urban and rural areas (Marginal Effects)

Having the final say alone	Economic sphere			Personal sphere			Children's sphere			
	Large Purchases	Daily Purchases	Cooking	Visits	Own Health	Own Clothing	Schooling	Schooling Daily basis	Health	Clothing
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A- Works in the public sector:										
In urban areas	-0.014	-0.101**§	-0.040*	0.004	0.042**	0.129***	0.037	-0.010	-0.062***	0.023
	(0.009)	(0.041)	(0.022)	(0.017)	(0.021)	(0.022)	(0.027)	(0.033)	(0.020)	(0.023)
In rural areas	0.044**	-0.023§	0.044*	0.004	0.058**	0.103***	0.084***	0.072**	-0.001	0.050**
	(0.017)	(0.046)	(0.025)	(0.020)	(0.024)	(0.025)	(0.030)	(0.032)	(0.024)	(0.025)
N	13,039	13,039	13,039	13,039	13,039	13,039	6,391	5,933	10,254	10,232
B- Outside work in the private sector:										
In urban areas	0.013	0.051	0.013	0.056*	0.074**	0.501***§	0.081*	0.107**	0.057	0.122***
	(0.017)	(0.033)	(0.034)	(0.031)	(0.032)	(0.078)	(0.044)	(0.047)	(0.039)	(0.038)
In rural areas	0.022	0.0023	0.034	0.033	0.044	0.499***§	0.002	-0.018	0.089**	0.076**
	(0.018)	(0.035)	(0.035)	(0.031)	(0.032)	(0.090)	(0.037)	(0.044)	(0.037)	(0.035)
N	11,895	11,895	11,895	11,895	11,895	11,895	5,726	5,321	9,353	9,305
C- Works at home:										
In urban areas	0.021	-0.170**§	0.003	0.051	0.020	-0.148**§	0.050	-0.270***§	-0.064*	0.057
	(0.026)	(0.074)	(0.047)	(0.038)	(0.037)	(0.061)	(0.046)	(0.064)	(0.036)	(0.040)
In rural areas	0.004	-0.133**§	0.025	-0.003	0.010	-0.109**§	0.013	-0.241***§	-0.022	0.017
	(0.100)	(0.055)	(0.020)	(0.016)	(0.018)	(0.047)	(0.023)	(0.058)	(0.019)	(0.019)
N	11,620	11,620	11,620	11,620	11,620	11,620	5,734	5,329	9,161	9,138

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Note. § Marginal effects of recursive bivariate probit regressions, in which engagement in an economic activity has been instrumented. Robust standard errors clustered at the household level in parentheses. All regressions include interactions between the type of work and a dummy for urban residence. They also include individual and household characteristics as listed in Section 4, sampling weights, year and governorate fixed-effects. They all compare the group of workers of interest with non-working women, excluding other types of work. The reference category corresponds to women who have no final say, or decide jointly with their husband, in the decision of interest. When relevant, my instruments are the lagged urban unemployment rate by governorate for regressions (A), the lagged proportion of waged workers among working women at the governorate level for regressions (B), the lagged proportion of working women among female adults at the governorate level and a dummy on the father-in-law's working status for regressions (C). Each of them is interacted with the urban dummy.

Table 5: Relevant results of regressions of the probability of joint final say on household decisions, distinguishing between urban and rural areas (Marginal Effects)

	Economic sphere			Personal sphere			Children's sphere			
Having a joint final say	Large Purchases	Daily Purchases	Cooking	Visits	Own Health	Own Clothing	Schooling	Schooling Daily basis	Health	Clothing
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A- Works in the public sector:										
In urban areas	0.114***	0.150***	0.020	0.061***	0.042**	0.086***	0.143***	0.211***	0.062***	0.097***
	(0.022)	(0.031)	(0.030)	(0.021)	(0.021)	(0.023)	(0.033)	(0.037)	(0.021)	(0.023)
In rural areas	0.045*	0.048	0.034	0.007	-0.011	0.018	0.070*	0.082*	-0.009	0.044
	(0.026)	(0.039)	(0.038)	(0.027)	(0.029)	(0.034)	(0.041)	(0.048)	(0.031)	(0.031)
N	12,154	6,400	5,779	10,871	10,261	5,007	3,871	5,329	7,897	5,007
B- Outside work in the private sector:										
In urban areas	0.125***	0.132**	-0.010	0.084**	0.074**	-0.517***§	-0.372***§	-0.014	0.022	0.113***
	(0.037)	(0.055)	(0.056)	(0.034)	(0.034)	(0.127)	(0.019)	(0.064)	(0.041)	(0.042)
In rural areas	0.118***	0.178***	0.181***	0.050	0.027	-0.484***§	-0.312***§	0.179***	-0.023	0.009
	(0.039)	(0.054)	(0.051)	(0.042)	(0.044)	(0.123)	(0.055)	(0.063)	(0.052)	(0.025)
N	11,058	5,812	5,256	9,869	9,361	8,267	4,481	3,452	7,126	7,331
C- Works at home:										
In urban areas	0.173**§	0.175*§	-0.044	-0.028	-0.015	-0.032	0.393***§	-0.003	-0.0742	0.005
	(0.079)	(0.100)	(0.064)	(0.045)	(0.043)	(0.047)	(0.081)	(0.064)	(0.051)	(0.052)
In rural areas	0.225***§	0.205***§	0.038	-0.007	-0.004	-0.012	0.325***§	-0.006	-0.010	0.013
	(0.053)	(0.069)	(0.029)	(0.023)	(0.022)	(0.024)	(0.073)	(0.033)	(0.025)	(0.026)
N	10,849	5,572	5,001	9,611	9,134	8,069	4,503	3,472	6,993	7,188

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Note. § Marginal effects of recursive bivariate probit regressions, in which engagement in an economic activity has been instrumented. Robust standard errors clustered at the household level in parentheses. All regressions include interactions between the type of work and a dummy for urban residence. They also include individual and household characteristics as listed in Section 4, sampling weights, year and governorate fixed-effects. They all compare the group of workers of interest with non-working women, excluding other types of work. The reference category corresponds to women who do not have the final say in the decision of interest. When relevant, my instruments are the lagged urban unemployment rate by governorate for regressions (A), the lagged proportion of waged workers among working women at the governorate level for regressions (B), the lagged proportion of working women among female adults at the governorate level and a dummy on the father-in-law's working status for regressions (C). Each of them is interacted with the urban dummy.

(a) Economic decisions

(b) Personal decisions
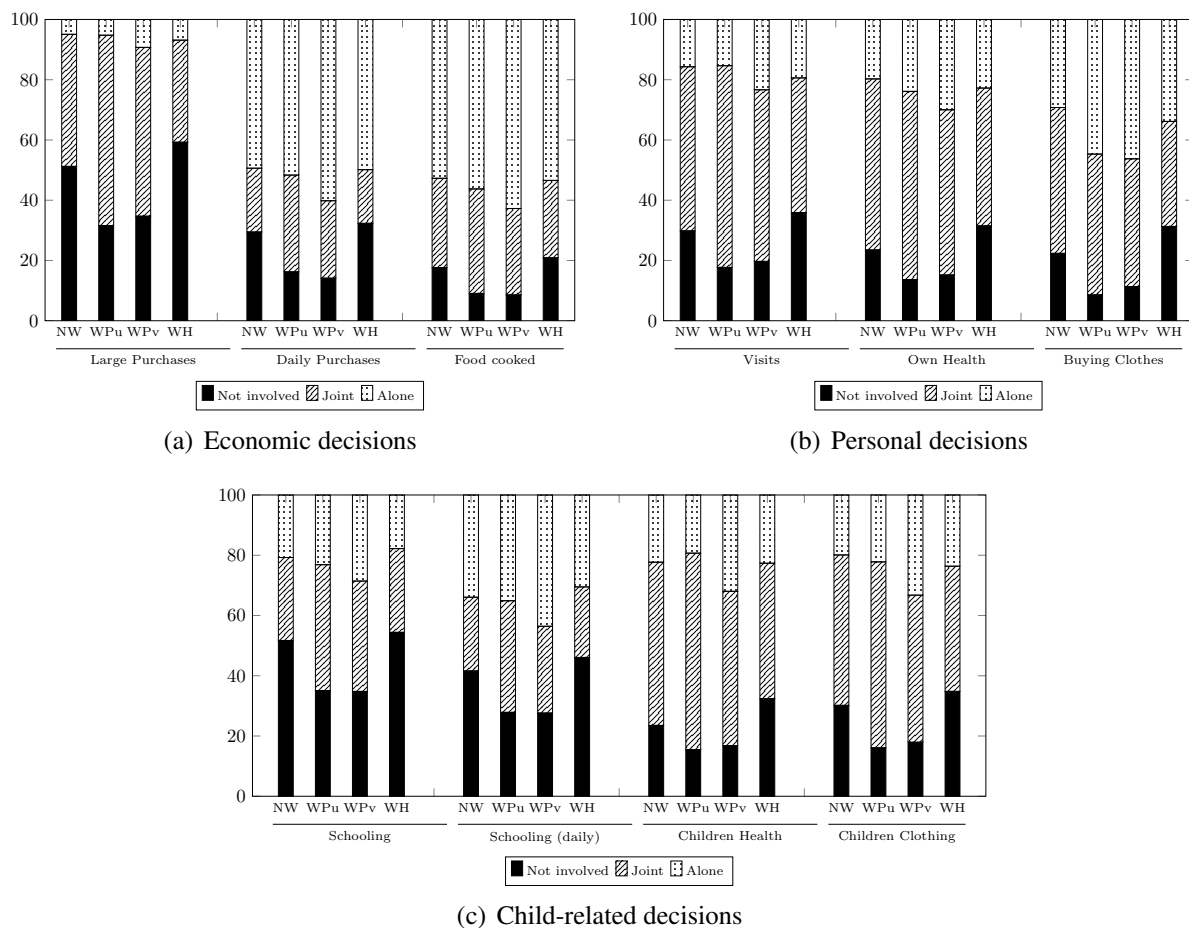

(c) Child-related decisions

Figure 1: Women's participation in decision-making by type of economic activity

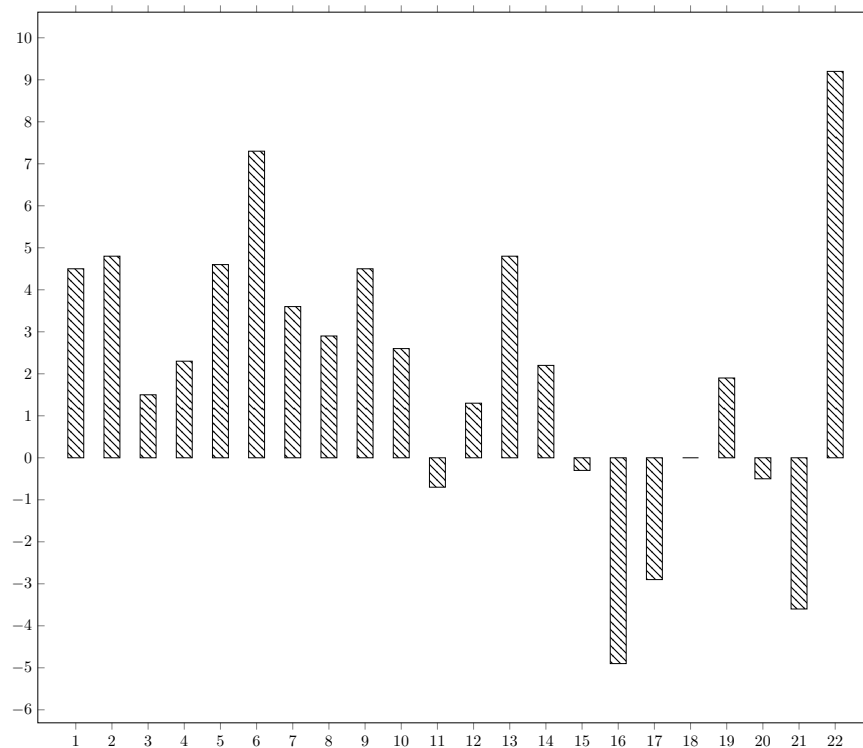Source. Author's calculations based on ELMPS-2006 and ELMPS-2012.

Note. NW= Not working; WPu= Working in the public sector; WPv= Working in the private sector outside home; WH= Working at home. For (a) et (b), the respective sample sizes are 11,431 women for non-workers, 1,608 for the public sector; 464 for outside work in the private sector and 1,047 home-based workers. For (c), it varies for each decision under study. Respectively, 5,453, 938, 273 and 691 for children's schooling; 5,065, 868, 256 and 642 for sending children to school; 8,986, 1,268, 367 and 872 for children's health; 8,927, 1,305, 378 and 890 for children's clothing.

Figure 2: Percentage of working women in the public sector by cohort
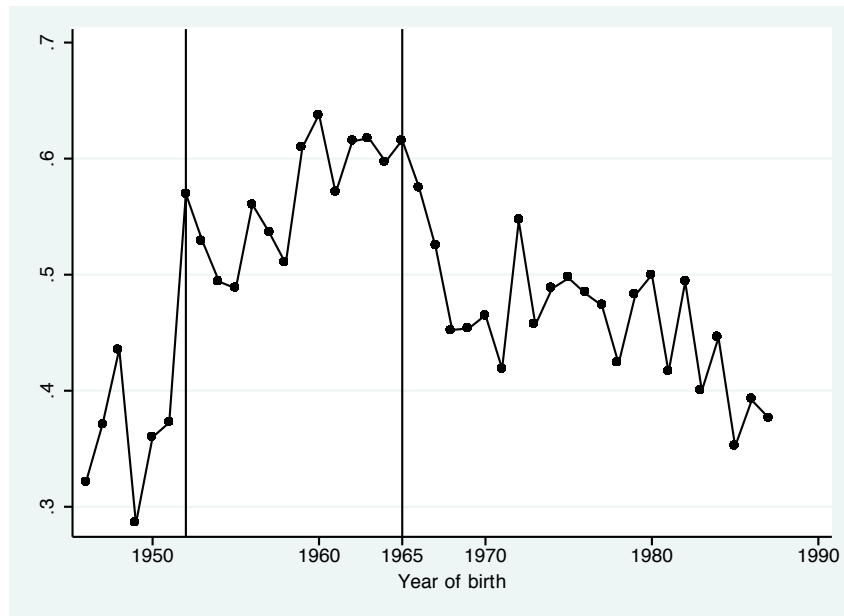
Source. Author's calculations based on 2006 and 2012 rounds of ELMPS
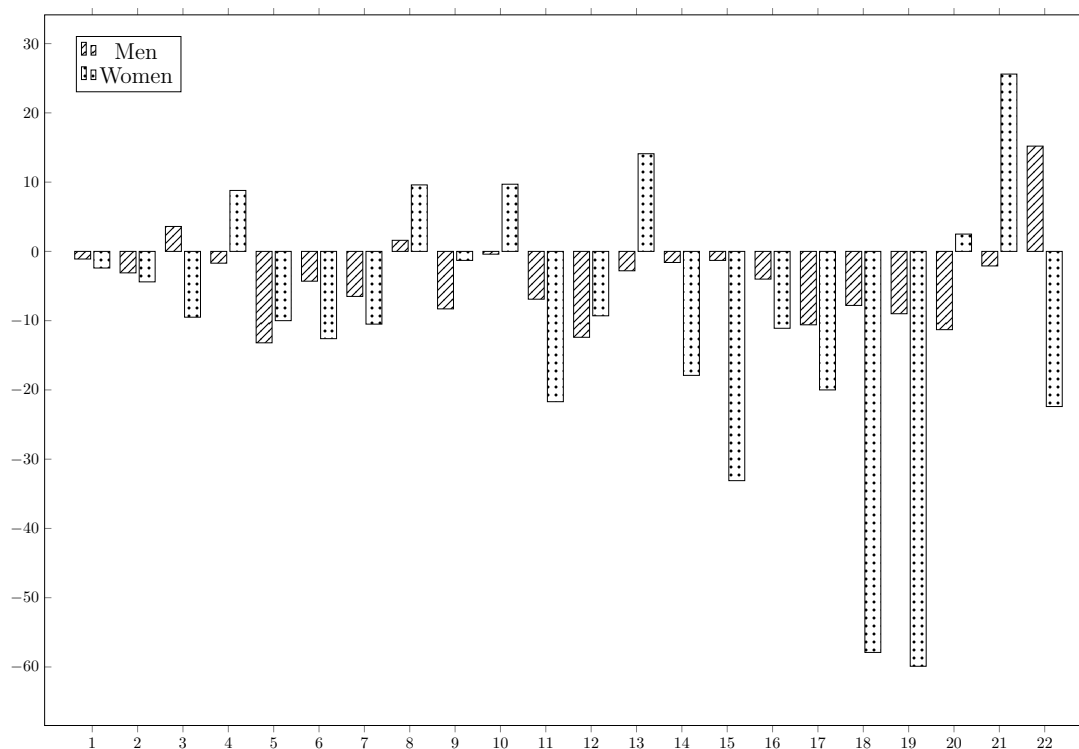
Figure 3: Percentage point change of urban unemployment rate by governorate, 2001-2007

Source. Author's calculations based on 2006 and 2012 rounds of ELMPS
Note: Horizontal axis corresponds to governorates, in the following order: Cairo, Alex.,
Port-Said, Suez, Damietta, Dakahlia, Sharkia, Kalyoubia, Kafr-El., Gharbia, Menoufia, Behera,
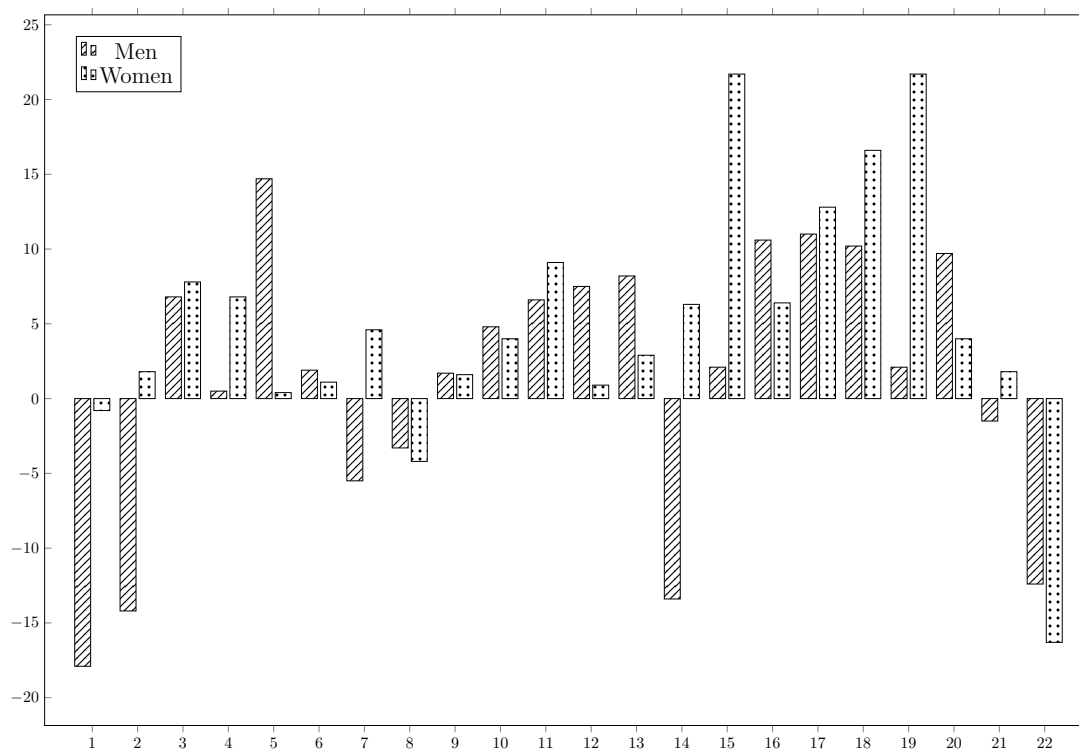Ismalia, Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, Luxor.

Figure 4: Percentage point change of proportion of waged workers among adult workers by governorate, 1998-2006

Note: Horizontal axis corresponds to governotates, in the following order: Cairo, Alex., Port-Said, Suez, Damietta, Dakahlia, Sharkia, Kalyoubia, Kafr-El., Gharbia, Menoufia, Behera, Ismalia, Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, Luxor.

Figure 5: Percentage point change of employment rate by governorate, 1998-2006

Note: Horizontal axis corresponds to governotates, in the following order: Cairo, Alex., Port-Said, Suez, Damietta, Dakahlia, Sharkia, Kalyoubia, Kafr-El., Gharbia, Menoufia, Behera, Ismalia, Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, Luxor.

APPENDIX A

Table A1: Decision-making module of ELMPS

Question: Who in your family usually has the final say on the following decisions ?
A) Making large household purchases
B) Making household purchases for daily needs
C) Own visits to family, friends or relatives
D) What food should be cooked for each day
E) Getting medical treatment or advice for yourself
F) Buying clothes for yourself
G) Taking child to the doctor
H) Dealing with children's school and teachers
I) Sending children to school on daily basis
J) Buying clothes and other needs for children
Answer: 1. Respondent alone
            2. Husband
            3. Respondent and husband jointly
            4. In-laws
            5. Respondent, husband and in-laws jointly
            6. Others
            7. Not applicable

Source. ELMPS-2012 Individual Questionnaire

Table A2: Bivariate probit regressions of the probability that a woman has the final say alone on household decisions (Marginal Effects)

Having the final say alone	Economic sphere			Personal sphere			Children's sphere			
	Large Purchases (1)	Daily Purchases (2)	Cooking (3)	Visits (4)	Own Health (5)	Own Clothing (6)	Schooling (7)	Schooling Daily basis (8)	Health (9)	Clothing (10)
Panel 1:	Baseline specifications									
A- Works in the	-0.022	-0.073*	-0.045	-0.025	0.037	0.180***	-0.029	-0.051	-0.067*	-0.020
public sector	(0.016)	(0.041)	(0.044)	(0.031)	(0.040)	(0.046)	(0.064)	(0.062)	(0.040)	(0.041)
ρ	0.189	0.183	0.070	0.080	0.023	-0.108	0.198	0.144	0.076	0.126
Wald Test, Ho: $\rho = 0$	3.067	6.353	0.895	0.950	0.0812	2.239	1.819	1.789	0.660	1.791
N	13,039	13,039	13,039	13,039	13,039	13,039	6,391	5,933	10,254	10,232
B- Outside work	0.145	0.034	-0.269	0.098	0.088	0.500***	0.255	0.349	0.436**	0.437**
in private sector	(0.169)	(0.191)	(0.255)	(0.248)	(0.326)	(0.0819)	(0.276)	(0.265)	(0.185)	(0.181)
ρ	-0.300	-0.011	0.398	-0.088	-0.043	-0.510	-0.321	-0.459	-0.478	-0.448
Wald Test, Ho: $\rho = 0$	1.086	0.0015	0.955	0.057	0.0085	9.894	0.664	0.832	2.687	2.785
N	11,895	11,895	11,895	11,895	11,895	11,895	5,726	5,321	9,353	9,305
C- Works at home	-0.006	-0.126**	-0.061	-0.023	-0.038	-0.100**	-0.002	-0.232***	-0.011	0.066
	(0.025)	(0.056)	(0.061)	(0.041)	(0.045)	(0.048)	(0.065)	(0.057)	(0.065)	(0.061)
ρ	0.085	0.239	0.146	0.086	0.102	0.191	0.044	0.429	-0.050	-0.086
Wald Test, Ho: $\rho = 0$	0.401	6.934	2.373	0.768	1.063	3.953	0.113	8.067	0.167	0.644
N	11,620	11,620	11,620	11,620	11,620	11,620	5,734	5,329	9,161	9,138
Panel 2:	With a control for local social norms									
A- Works in the	-0.021	-0.071*	-0.043	-0.024	0.039	0.180***	-0.027	-0.042	-0.064	-0.020
public sector	(0.016)	(0.041)	(0.044)	(0.031)	(0.040)	(0.046)	(0.064)	(0.061)	(0.040)	(0.042)
ρ	0.184	0.179	0.066	0.079	0.019	-0.108	0.193	0.131	0.068	0.126
Wald Test, Ho: $\rho = 0$	2.886	6.144	0.799	0.930	0.0568	2.267	1.740	1.539	0.541	1.777
N	13,039	13,039	13,039	13,039	13,039	13,039	6,391	5,933	10,254	10,232
B- Outside work	0.140	0.036	-0.273	0.096	0.091	0.499***	0.254	0.258	0.409**	0.446**
in private sector	(0.160)	(0.175)	(0.258)	(0.245)	(0.313)	(0.082)	(0.268)	(0.594)	(0.208)	(0.178)
ρ	-0.291	-0.013	0.405	-0.084	-0.048	-0.508	-0.320	-0.316	-0.444	-0.461
Wald Test, Ho: $\rho = 0$	1.108	0.003	0.944	0.052	0.012	9.781	0.700	0.112	2.024	2.957
N	11,895	11,895	11,895	11,895	11,895	11,895	5,726	5,321	9,353	9,305
C- Works at home	0.002	-0.118**	-0.061	-0.020	-0.039	-0.108**	0.003	-0.217***	-0.009	0.067
	(0.027)	(0.056)	(0.063)	(0.042)	(0.044)	(0.047)	(0.065)	(0.060)	(0.064)	(0.062)
ρ	0.043	0.231	0.149	0.080	0.110	0.209	0.034	0.400	-0.050	-0.087
Wald Test, Ho: $\rho = 0$	0.117	6.457	2.357	0.664	1.277	4.689	0.067	7.200	0.170	0.649
N	11,620	11,620	11,620	11,620	11,620	11,620	5,734	5,329	9,161	9,138

Source. Author's calculations based on ELMPS-06 and ELMPS-12

Robust standard errors clustered at the household level in parentheses. All regressions include individual and household characteristics as listed in Section 4, sampling weights, year and governorates fixed-effects. They all compare the group of workers of interest with non-working women, excluding other types of work. The reference category corresponds to women who have no final say or jointly with their husband in the decision of interest. For Panel 2, I introduced a proxy measure of local social norms that consists of an average score of unmarried women's exclusion from household decisions at the governorate level, separately for 2006 and 2012. My instruments are the lagged urban unemployment rate by governorate for regressions (A), the lagged proportion of waged workers among working women at the governorate level for regressions (B), the lagged proportion of working women among female adults at the governorate level and a dummy on the father-in-law's working status for regressions (C).

*** p<0.01, ** p<0.05, * p<0.1

Table A3: Bivariate probit regressions of the probability of joint final say on household decisions (Marginal Effects)

Having a joint final say	Economic sphere			Personal sphere			Children's sphere			
	Large Purchases (1)	Daily Purchases (2)	Cooking (3)	Visits (4)	Own Health (5)	Own Clothing (6)	Schooling (7)	Schooling Daily basis (8)	Health (9)	Clothing (10)
Panel 1:	Baseline specification									
A- Works in the	0.094**	0.111*	0.025	0.072	0.043	0.068	0.055	-0.090	-0.007	0.028
public sector	(0.0479)	(0.0651)	(0.071)	(0.045)	(0.046)	(0.058)	(0.103)	(0.123)	(0.062)	(0.067)
N	12,154	6,400	5,779	10,871	10,261	8,909	5,007	3,871	7,897	8,094
ρ	-0.016	0.005	0.001	-0.069	-0.051	-0.026	0.097	0.440	0.082	0.096
Wald Test, Ho: $\rho = 0$	0.041	0.002	1.92e-05	0.660	0.314	0.049	0.334	3.291	0.487	0.583
B- Outside work	0.032	0.426**	-‖	0.258	0.258***	-0.482***	-0.320***	-‖	-0.135	-0.110
in private sector	(0.404)	(0.172)	-	(0.221)	(0.064)	(0.126)	(0.048)	-	(0.466)	(0.353)
N	11,058	5,812	-	9,869	9,361	8,267	4,481	-	7,126	7,331
ρ	0.116	-0.443	-	-0.370	-0.510	0.175	0.811	-	0.682	0.218
Wald Test, Ho: $\rho = 0$	0.050	1.075	-	0.301	2.108	7.521	4.030	-	0.092	0.250
C- Works at home	0.228***	0.210***	0.152**	0.021	-0.016	0.037	0.318***	0.164*	0.021	0.032
	(0.051)	(0.068)	(0.063)	(0.063)	(0.060)	(0.063)	(0.074)	(0.098)	(0.063)	(0.067)
N	10,849	5,572	5,001	9,611	9,134	8,069	4,503	3,472	6,993	7,191
ρ	-0.348	-0.351	-0.262	-0.051	-0.001	-0.099	-0.506	-0.266	-0.089	-0.047
Wald Test, Ho: $\rho = 0$	14.750	9.182	3.726	0.257	0.001	0.817	13.970	3.019	0.704	0.193
Panel 2:	With a control for local social norms									
A- Works in the	0.093*	0.118*	0.029	0.074*	0.044	0.069	0.053	-0.091	-0.008	0.026
public sector	(0.048)	(0.065)	(0.072)	(0.044)	(0.046)	(0.058)	(0.102)	(0.122)	(0.063)	(0.068)
ρ	-0.014	-0.009	-0.009	-0.075	-0.054	-0.030	0.100	0.441	0.083	0.101
Wald Test, Ho: $\rho = 0$	0.029	0.006	0.004	0.808	0.348	0.063	0.354	3.377	0.491	0.639
N	12,154	6,400	5,779	10,871	10,261	8,909	5,007	3,871	7,897	8,094
B- Outside work	0.035	0.420**	-‖	0.252	0.257***	-0.464***	-0.122 *	-0.340***	-0.325**	-0.142
in the private sector	(0.390)	(0.183)	-	(0.189)	(0.063)	(0.138)	(0.032)	(0.045)	(0.499)	(0.354)
ρ	0.113	-0.431	-	-0.350	-0.505	0.659	0.836	0.815	0.159	0.257
Wald Test, Ho: $\rho = 0$	0.051	0.947		0.402	2.199	6.713	7.437	5.462	0.066	0.345
N	11,058	5,812	-	9,869	9,361	8,267	4,481	3,452	7,126	7,331
C- Works at home	0.233***	0.204***	0.151**	0.057	-0.003	0.049	0.319***	0.162	0.018	0.024
	(0.050)	(0.069)	(0.064)	(0.059)	(0.060)	(0.062)	(0.076)	(0.099)	(0.063)	(0.068)
ρ	-0.358	-0.343	-0.254	-0.104	-0.0151	-0.117	-0.509	-0.268	-0.080	-0.037
Wald Test, Ho: $\rho = 0$	15.40	8.715	3.402	1.044	0.022	1.090	13.23	3.015	0.551	0.117
N	10,849	5,572	5,001	9,611	9,134	8,069	4,503	3,472	6,993	7,191

Source. Author's calculations based on ELMPS-06 and ELMPS-12

‖ Because of the small size of the sample of workers in this sector who jointly decide on the decision of interest, the recursive bivariate probit model failed to converge. Robust standard errors clustered at the household level in parentheses. All regressions include individual and household characteristics as listed in Section 4, sampling weights, year and governorates fixed-effects. They all compare the group of workers of interest with non-working women, excluding other types of work. The reference category corresponds to women who have no final say in the decision of interest. For Panel 2, I introduced a proxy measure of local social norms that consists of an average score of unmarried women's exclusion from household decisions at the governorate level, separately for 2006 and 2012. My instruments are the lagged urban unemployment rate by governorate for regressions (A), the lagged proportion of waged workers among working women at the governorate level for regressions (B), the lagged proportion of working women among female adults at the governorate level and a dummy on the father-in-law's working status for regressions (C).

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX B

This appendix aims at providing stronger support for my indicators of women's empowerment, by comparing them with other potential measures of women's bargaining power. Several paper provide convincing pieces of evidence that a woman's greater participation in household decisions improves a variety of children's outcomes, such as schooling (Hou, 2011), health (Lépine and Strobl, 2013) and child labour (Reggio, 2010). However, results are not homogeneous and the subjectivity of these measures of power may introduce a context-dependent aspect that threatens their reliability.

For the following exercise, I compute scores on sole and joint decision-making for each sphere of decisions. These scores range from 0 to 3 for the economic and personal decisions, and from 0 to 4 for child-related decisions. A woman has a score of 0 if she does not have the final say in any of the decisions in the sphere of interest.

First, I explore the relationship between these scores and other self-reported indicators of power, that are having direct access to household money, being afraid of disagreeing with your husband or other males in your household and a score reflecting positive attitudes towards women ranging from 0 to 11. Details on these questions are available in Table B1. The two latter indicators are only available in the 2006 round of the ELMPS. Figure B1 illustrates the predicted probabilities of these indicators from the estimation of a fractional polynomial of scores of decision-making. We observe a positive association between a woman's scores in decision-making and the probability that she gets access to household money and that she holds more positive attitudes towards women's role, and a negative association with being afraid of disagreeing with her husband. These correlations suggest an absence of internal dissonance in women's answers. This figure shows a non-linear relationship between a woman's score in joint decision-making and her access to household money. However, the effect of scoring more than 2 is not significant in the economic and personal of decision spheres.

Finally, I compare these variables with the two traditional measures of women's power used in the literature, women's relative education (for example, Gitter and Barham, 2008) and women's

relative income (for example, Lancaster, Maitra and Ray, 2006). Figure B2 gives the predicted scores for decision-making from linear regressions of, respectively, a woman's relative education and a woman's relative income on these scores. More years of education or a higher wage relative to that of their husband is associated with higher scores in decision-making. However, a woman's relative education does not significantly affect her score for sole decision-making in economic decisions, and her relative wage is not significantly associated with her score for sole decision-making on child-related decisions. Nevertheless, these results suggest a strong association between traditional measures and my measure of power.

Table B1: Other potential indicators of women's power

Question 1: Do you have access to household money in your hand to use ? (Yes/No)
Question 2: Are you often or generally afraid of disagreeing with your husband or other males in your household ? (Yes/No)
Question 3: What do you think about the following statements:
A) A woman's place is not only in the household but she should be allowed to work.
B) If the wife has a job outside the house then the husband should help her with the children.
C) If the wife has a job outside the house then the husband should help her in household chores.
D) A thirty year old woman who has a good job but is not yet married is to be pitied.
E) Girls should go to school to prepare for jobs not just to make them good mothers and wives.
F) A woman who has a full-time job cannot be a good mother.
G) For a woman's financial autonomy, she must work and have earnings.
H) Having a full-time job always interferes with a woman's ability to maintain a good life with her husband.
I) Women should continue to occupy leadership positions in society.
J) Boys and girls should get the same amount of schooling.
K) Boys and girls should be treated equally.
Answer: 1. Strongly agree
        2. Agree
        3. Indifferent
        4. Disagree
        5. Strongly disagree

Source. ELMPS-2006 Individual Questionnaire
Note. To compute a score on attitudes towards gender role, I attribute 1 point each time a woman agrees or strongly agrees with one of the propositions (A), (B), (C), (E), (I), (J), (K) and each time she disagrees or strongly disagrees with one of the propositions (D), (F), (G), (H).
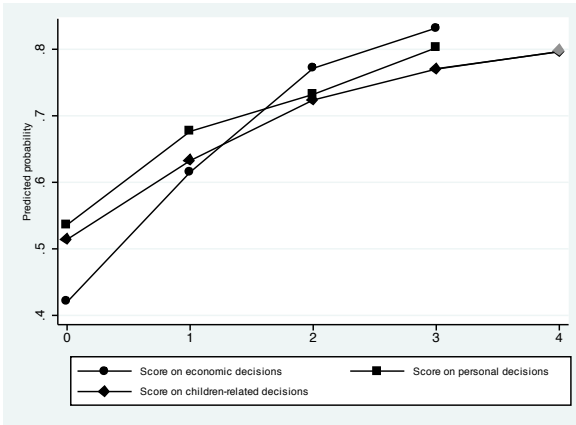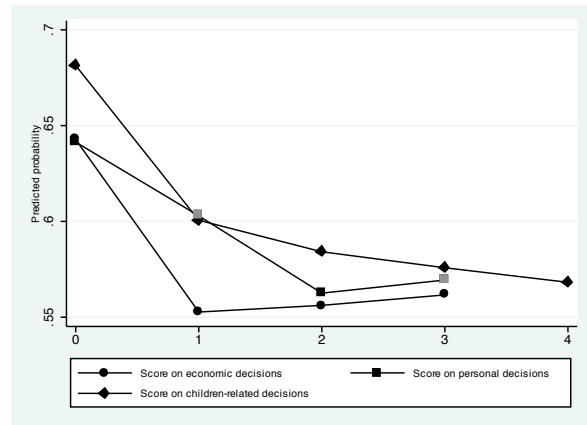
(d) Sole decision-making and access to household money
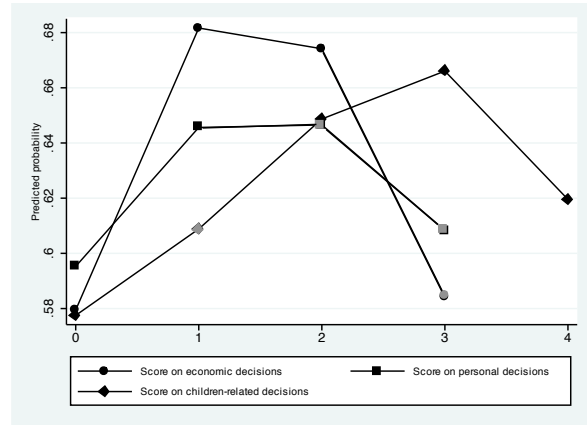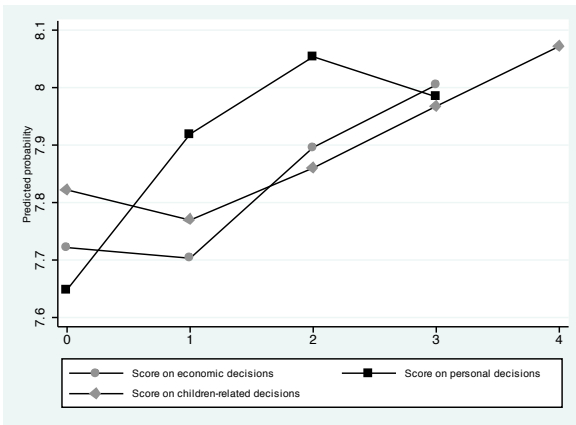

(e) Joint decision-making and access to household money
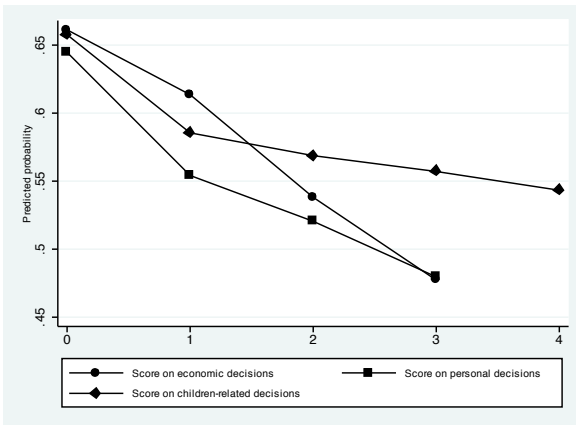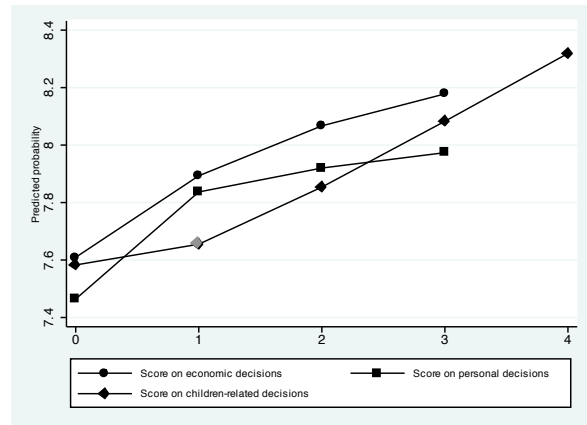

(f) Sole decision-making and being afraid of disagreement

(g) Joint decision-making and being afraid of disagreement

(h) Sole decision-making and positive attitudes towards women

(i) Joint decision-making and positive attitudes towards women

Figure B1: Predicted probability of other measures of empowerment by scores on decision-making

Source. Author's calculations based on 2006 and 2012 rounds of ELMPS

Note. Predicted probabilities obtained from estimations of a fractional polynomial. Gray markers indicate that the coefficient of a probit regression of the probability of interest on scores of decision-making is not significant at the 90% confidence level.
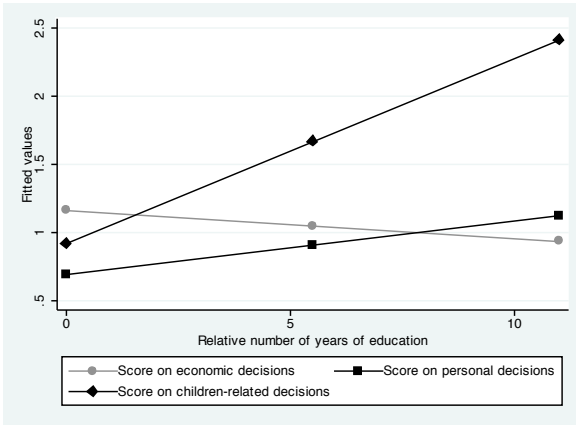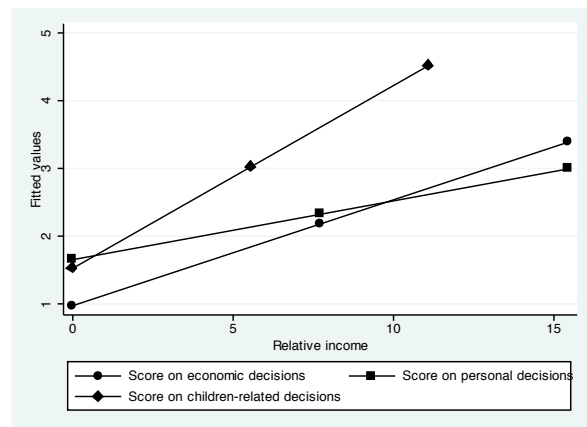
(j) Sole decision-making and relative education
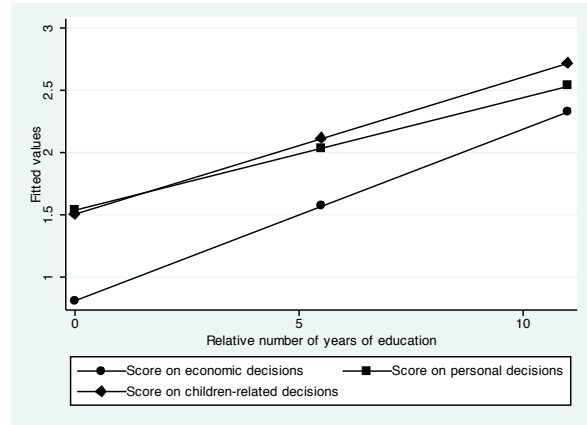
(k) Joint decision-making and relative education
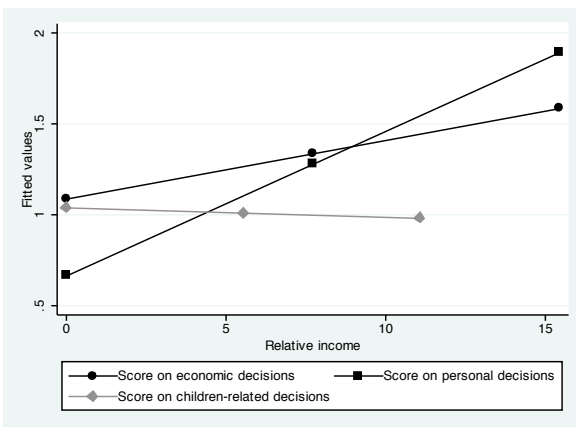
(l) Sole decision-making and relative income

(m) Joint decision-making and relative income

Figure B2: Fitted values of score on decision-making by scores on traditional measures of power

Source. Author's calculations based on 2006 and 2012 rounds of ELMPS

Note. Predicted probabilities obtained from linear regressions of score in decision-making on relative education or income. Gray lines indicate that the coefficient of this regression is not significant at the 90% confidence level.

40

Notes

[1] In 2012, 44 per cent of working women occupied a job in the public sector, 24 per cent were home-based workers and the remainder worked in the private sector outside the home (ELMPS, 2012).

[2] See Browning et al. (2014) for a comprehensive review of intra-household bargaining models.

[3] Although divorce laws were modified in 2004, improving women's situation, women are still at a disadvantage faced with divorce. The divorce rate was 2.2 per cent in 2012 (CAPMAS, 2013).

[4] This hypothesis is supported by the emergence of a new veiling movement, in the 1970s, originating in universities and among women working in the public sector (Carvalho, 2013). Carvalho argues that it allows these women to both commit to religious standards of behaviour and seize new economic opportunities.

[5] According to ILO (2014), the female unemployment rate is 27.1 per cent in 2012 while that of males is 7 per cent.

[6] A job history module in the ELMPS can be used to estimate change between sectors of activity and waged status: in my sample, less than 4 per cent of women currently working.

[7] OAMDI, 2013. Labour Market Panel Surveys (LMPS), http://www.erf.org.eg/cms.php?id=erfdataportal. Version 2.1 of Licensed Data Files; ELMPS 2012. Egypt: Economic Research Forum (ERF).
Data administrators elaborated appropriate sampling weights to ensure the representativeness of each round. More details are available in Assaad and Krafft (2013).

[8] Nearly 90 per cent of women followed during the two survey rounds were not working, both in 2006 and 2012. Transitions into and out of the labour force are disproportionately more frequent in the private sector. The main reason for dropping out of the labour force is the birth of a child. As a result, the resulting sample of monitored women whose labour force status changed is small and highly selected (Sayre and Hendy, 2013). Furthermore, there are only a few time-varying characteristics available in the survey that could explain variations in decision-making participation. Overall, a panel analysis on this sample is likely to suffer from several biases coming from a small and non-representative sample, omitted variables and unobserved time-varying heterogeneity. Hence, while the present analysis may suffer from an unobserved invariant individual heterogeneity bias, I argue that the empirical strategy used in this paper is more appropriate to answer this particular research question.

[9] The sample sizes vary for child-related decisions because they were only answered by women currently in that situation.

[10] The regressions on joint decision-making are run on a sample of women who are either not part of the decision-making, or participate jointly with their husband. The aim is to identify a meaningful comparison group. The inclusion of sole decision-makers in the comparison group does not challenge the conclusions of the analysis.

[11] This approach is further supported by the fact that, in Egyptian culture, negotiation and interdependence may be

more valued than autonomy and independence (Govindasamy and Malhotra, 1996).

[12] I also included women who declared that they took care of livestock or participated in an agricultural activity in the previous three months, for other purposes than household consumption, and referred to the household enterprise module to identify women involved in non-farm household enterprises.

[13] I excluded from the analysis polygamous households, only involving 88 women. I also removed nine households in which the husband was not currently living in the house. Their inclusion does not change the results.

[14] This strategy allows me to take into account both the heterogeneity of work categories and the endogeneity of the decision to work. However, this limitation of choices that I impose might bias the results. To address this concern, I compare the baseline results of the probit regressions on separate samples with those of a probit regression on the unified sample in which the categories of work appears as dummies. The results are very similar.

[15] These are 'Respondent alone', 'Father', 'Mother', 'Respondent and parents jointly', 'Father and mother jointly', 'Grandparents', 'Siblings', 'Children', 'Others', 'Not applicable'. Questions are detailed in Table A1 of Appendix A.

[16] The exclusion of this second instrument does not qualitatively change the results.

[17] These tests and other marginal effects of the recursive bivariate probit models are given in Tables A2 and A3 of the Appendix A.

[18] This is likely due to the limited size of the group of women workers in the private sector outside home. When I attempt to control for changes in local social norms, the model converges for the decision to send children to school and reveals a negative impact of working outside home (-34.0%). This supports my argument on the difficulty of combining outside work and family life.

[19] Another study finds similar tendencies. In the context of Turkey, agricultural home-based work is associated with a decrease in the sex ratio (Berik and Bilginsoy, 2000). The improvement in survival chances for girls found in this study suggests that this type of work effectively enhanced their perceived contribution to the household's prosperity.

[20] Following standard procedures, the instruments are also interacted with the urban dummy.

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