

IS WOMEN'S EMPOWERMENT A COMMUNITY AFFAIR? COMMUNITY LEVEL APPLICATION ON EGYPTIAN MARRIED WOMEN

HANAN NAZIER

*Faculty of Economics and Political Sciences, Cairo University,
Egypt*

| 19 |

RACHA RAMADAN

*Faculty of Economics and Political Sciences, Cairo University,
Egypt*

This paper examines the community-level determinants of women's empowerment in Egypt, while accounting for the individual and household level factors. The paper analyzes two dimensions of women's empowerment; the decision-making and the mobility dimensions using a Multiple Indicators Multiple Causes Models. Using the Population Census data of 2006 and the Demographic Health Survey of 2008 in addition to the Egypt Labor Market Panel Survey of 2012 (ELMPS 2012); we found that the determinants of decision-making and mobility dimensions of women's empowerment are quite different, confirming that "empowerment" is a multi-dimensional phenomenon. Moreover, our results show that social context and the characteristics of the governorate where women live play an important role in determining women's empowerment in Egypt after controlling for a variety of individual and household-level characteristics. These results highlight the importance of viewing women's empowerment, and hence development as social and normative transformations rather than as just resulting from shifts in individual conditions, attitudes and behaviors.

Key words: Women's empowerment, decision-making, mobility, social context, MIMIC, Egypt

INTRODUCTION



“Empowerment is the process by which those who have been denied the ability to make choice acquire such ability” (SIDA Studies- Discussion Women’s Empowerment). Empowerment as a concept is relevant to any disadvantaged or socially excluded groups, however, we focus on women due to the fact that women are a category of individuals that overlaps with virtually all other social groups. Additionally, women empowerment is the basis of intrahousehold relations and decision-making and is thus critical to many, if not most, development outcomes. Women empowerment is not only one of the Sustainable Development Goals, but it is a necessary condition for achieving other goals as eradicating poverty and ensuring food security. Women empowerment determines the extent to which children gain access to education and health care, whether they can acquire contraceptive information and have the freedom to act on their fertility preferences, among many other actions that are central to achieving desirable development outcomes (Dyson and Moore 1983; World Bank 2001; Mason and Smith 2003).

Theoretically it has been hypothesized that determinants of empowerment include individual level measures, which included control over material resources (such as land, livestock, and having labor earnings), human assets (such as education and health), socio-demographic characteristics (age, family size, family structure, etc.) and psychological characteristics (beliefs about self-efficacy). More recently there is an emerging interest in social context as a main factor affecting women empowerment. Women’s position and degree of empowerment are believed to be defined by gender roles and gender relations in society. Gender represents not just the biological sex of an individual, but also the ideological or normative systems that defines different roles, rights, and obligations that are attached by society to individuals born with male or female sex characteristics.

In this view, women are a “class” in the (two-class) gender stratification system, a system that is governed by shared norms and values (Smith 1989). These ideological systems set prescriptions about many fundamental principles of social life, which defines the social context, for example, how to organize families, how to allocate wealth among different groups or individuals, and how to



organize relations between males and females. In this view, the perceptions, tastes and choices of individual decision-makers are strongly influenced by the nature of the ideological or normative systems to which they belong (Mason and Smith 2003).

Hence, individual behavior is strongly influenced by norms and values at community level. This social context has important consequences for the actions of women and hence their empowerment. For example, individual mobility in a community where few women can leave the house freely has different implications than women's movement in a community where many women can move freely (Folaranmi 2013). Accordingly understanding the social context and focusing on the rights; obligations and resources granted to women versus men under different social contexts —not just the individual and household characteristics of women—is critical for analyzing women empowerment (Mason and Smith 2003).

As explained by Nazier and Ramadan (2018) women's empowerment is a dynamic process of different dimensions. These dimensions include economic, socio-cultural, familial/interpersonal, legal, political and psychological. There is nothing to guarantee that when women have high levels of empowerment in one dimension, they will also have high levels on other dimensions (Mason and Smith 2003). Dimensions including, but not limited to, freedom of movement, access to financial and non-financial resources, decision making autonomy, gender attitudes, freedom from fear and oppression, and equality in her relationship with her partner are arguably important and distinct aspects of a women's position in relation to men, other family members and other women within her household (Ghuman et al 2004). It is important to recognize this multidimensional aspect of women empowerment because it renders many generalizations, as it is impossible to understand and capture the influence of women's status through one single measure. This highlights the importance of studies distinguishing different dimensions of women's empowerment if we wish to understand possible causes of social or economic change (Mason and Smith 2003).

In Egypt, gender gap is almost closed and even reversed in primary education, however gender contributes to more than



20% to inequality of opportunity in secondary completion rate (UN-ESCWA and ERF, 2019). Additionally, the improvement of women's years of education was not translated into an increase in women's access to economic activities. According to Krafft and Kettle (2019); only 20 % of women with intermediate education level participated in the labor market in 2018. Women's employment rate decreased to 17% in 2018 compared to 72% for men. And women's unemployment rate is almost four times men's unemployment rate with 4.9% and 19.5% in 2018, respectively.

| 22 |

Equal access to education and economic opportunities, in addition to other social and cultural factors in such a patriarchal society as Egypt, are main drivers for women empowerment, which is in turn a necessary condition for development. However, evidence-based research tackling women empowerment in Egypt is scarce (Nazir and Ramadan, 2018).

A common shortcoming of most of the previous studies on women empowerment in Egypt is ignoring the social context and its effect on women empowerment (Durrant and Sathar 2000; Roushdy 2004). Another issue is that most of the studies tackled only one dimension of empowerment mainly economic empowerment. Hence, this research is an attempt to overcome these gaps. This is done by first illustrating the degree to which women's empowerment in Egypt differs by social context and the extent to which these contextual differences remain after we control for personal and household-level characteristics. Second, as social context may allocate power to women in some domains while denying them power in others and different aspects of women's empowerment do not always move together; we illustrate the multi-dimensional nature of women's empowerment by tackling two dimensions; decision-making power inside their households and freedom of movement outside the household. Third, we use the Multiple Index Multiple Causes (MIMIC) model that allows avoiding confusing causes and effects of empowerment. MIMIC model allows exploring the linkages between the direct measures of empowerment - known as indicators- and its different causes.

In this context, this paper studies the main socio-economic drivers at the individual, household and community level of



women empowerment in Egypt. More precisely, the paper analyzes the community characteristics and contextual variables that determine the empowerment of Egyptian women, in addition to individual and household characteristics, along two dimensions; decision-making and mobility. The analysis is conducted using data on individual and households' characteristics of women from the Egypt Labor Market Panel Survey (ELMPS) of 2012 and contextual variables from the Egyptian Population Census of 2006 and the Demographic and Health Survey of 2008.

The paper is organized as follows; the first section reviewed the related literature. Section 2 described the methodology. Section 3 presented the data used in the regression. The estimated results were presented in section 4 and finally section 5 concludes.

LITERATURE REVIEW

Most of the empirical analyses of the determinants of women's empowerment focused on the individual and household level. This concentration at the individual/household level could be due to the importance of the household to gender relations and hence empowerment. In addition, operationalizing different components of women's empowerment in a concrete manner is more feasible at the household level rather than at larger levels of aggregation (Malhotra et al. 2002). The majority of these studies used direct measures of empowerment to determine the impact of different individual and socio demographic variables, such as age, marital status, education, employment, asset ownership, ethnicity, position within the household and number of children, on different aspects of women's empowerment (Hashemi et al. 1996; Malhotra and Mather 1997; Mason 1998; Zaman 1999; Jejeebhoy 2000; Mason and Smith 2000; Jejeebhoy and Sathra 2001; Parveen and Leonhauser 2004; Kamal and Zunaid 2006; Gupta and Yesudian 2006; Allendorf 2007; Anderson and Eswaran 2009; Khan and Awan 2011; Vanghese 2011).

Only a few recent studies tried to take social context into consideration by combining community and individual level



variation in a single analysis. Indeed, these studies have found strong evidence of powerful effects of social context on women empowerment. However, the relative importance of each contextual factor differs for different dimensions of empowerment and social contexts (Samman and Santos 2009). Moreover, it has been shown that social context has indirect and direct effects on women's empowerment. Country and community of residence predict women's domestic empowerment better than their personal socioeconomic and demographic traits (Mason and Smith 2000).

Theoretically relevant social contexts can be distinguished on three levels. First, the nation-state which enforces the gender regimes embodied in legal systems, judicial precedent, religious discourse and public policy. Second, the local geographic community, which is the context where much of the day-to-day interpretation of social norms and informal sanctioning of those who violate them occurs. Third, communities of identity such as religious or ethnic communities (Mason and Smith 2003). Accordingly, social context as a determinant of women empowerment is analysed in the empirical literature on three levels; at the macro level by comparing different nations; at the community level inside a single country by analysing determinants of women's empowerment in different geographical areas and finally by analysing determinants of women's empowerment depending on the religious or ethnic group they belong to. Generally, there are two ways through which social context was operationalized; first by using dummy variables for the various geographic or identity group being investigated and second, by using community-level characteristics measured at the geographic level being analysed.

Mason and Smith (1999) use data for 56 communities in five Asian countries (Pakistan, India, Malaysia, Thailand and the Philippines) to measure the effect of social context proxied by dummies for religion and region on women's empowerment, controlling for women's individual and household characteristics, such as land assets, participation in waged work, wife's rank relative to husband. She operationalized women's empowerment as their say in household expenditure decision-making.



The results revealed that country and community of residence predict women's domestic empowerment better than their personal socioeconomic and demographic traits.¹ Mason and Smith (2003) try to answer two main questions: whether community or individual characteristics are better predictors of women's empowerment, and whether different dimensions of empowerment are similarly related to community or individual traits. They analyze four measures of married women's empowerment in the domestic sphere in 56 communities from the same five Asian countries as in the previous study (India, Malaysia, Pakistan, the Philippines, and Thailand) however using different proxies for social context. First, they examine variation in women's empowerment according to country and community dummies together with personal and household characteristics in multivariate models. Second, they capture context by five community-level measures computed as the mean of response to each of five gender-role attitude questions across women in each community. The analysis shows that, community is a far stronger predictor of women's empowerment than are individual traits. The relationship of both community and individual traits to different measures of empowerment varies, suggesting that empowerment is inherently a multi-dimensional phenomenon, with women relatively empowered in some spheres but not in others.

The studies by Jejeebhoy (2000) for Uttar Pradesh (UP) and Tamil Nadu India and Jejeebhoy and Sathar (2001) for the same two areas in India and Punjab Pakistan use dummy variables to account for social context, namely nationality, religion and region. They find that traditional sources of empowerment, namely, co-residence with mother in law, size of dowry, age, and number/gender of children, to be more important determinants of autonomy in Punjab and Uttar Pradesh than in Tamil Nadu. In Tamil Nadu, the only traditional factor that mattered was age. Education and work status predicted empowerment in all three sites but far more in Tamil Nadu than in UP and Punjab,

1 Similar results were reached in a previous study Mason (1998) for the same 5 countries.



where only secondary education mattered. For variables reflecting context only region was important; they consider region to proxy the cultural context, specifically prevailing social institutions that condition gender roles.

In Bangladesh, Parveen and Leonhäuser (2004) find that traditional socio-cultural norms have a strong negative effect on women's empowerment, while formal and non-formal education have strong positive effects, in addition to information and media exposure and mobility. Kishor and Gupta (2004) document women's empowerment as a whole and in each of 26 states in India. In general, they find that the average woman in India is disempowered absolutely as well as relatively to men, and that there has been little change in her empowerment over time. However, there is great variation in the level of women's empowerment across the different states and across indicators, confirming the importance of context and the multidimensional nature of women's empowerment.

Ghuman et al (2004) compared couple responses to survey items on the wife's autonomy in various domains using data from 23 communities in India, Pakistan, Malaysia, Philippines and Thailand. They showed that the level of women's autonomy depends on whether wives or husbands are respondents and that the response categories do not have the same cognitive or semantic meanings to men and women. Moreover, the disagreement between men and women varies across communities highlighting the role of social context.

As for the empirical literature, tackling determinants of women empowerment in Egypt, most of the existing studies focus on the individual-level measures as determinants of empowerment (Kishor 1995; Khatab and Sakr 2009; Abdel Mowla 2009; Nazier and Ramadan 2018). Kishor (1995) used the 1988 Egypt Demographic and Health Survey (EDHS) 1998 to examine the effect of several modernization, economic, and cultural factors on three different direct measures of empowerment. First, the customary autonomy index used to measure the extent to which women believe they should have a say in decision related to matters women traditionally would have control over – mainly family planning, children's education and marriage.



Second, the noncustomary autonomy index that measures the extent to which women believe they should have decision-making power in general, and in areas outside their traditional roles, such as visits to relatives and the household budget. Finally, the realized autonomy index measuring the extent to which women perceive that they have decision-making power and freedom of movement. The determinants of empowerment used by this study included household characteristics (region and socio-economic index), individual characteristics (age, education, exposure to media, migration history, and employment status), husband characteristics (education and occupation) and cultural variables (religion, marriage pattern, post marital residential arrangement and number of children by gender). Using ordered logit regression; the results showed that while most factors have a similar impact on the indices of customary autonomy and noncustomary autonomy, they do not always have the same impact on the realized autonomy index. Modernization efforts that affect women's individual characteristics, like women's own education, affected women mostly by altering their views about women's role in decision-making. While modernization efforts that affect the circumstances in which women live, such as the level of education of her husband, affect her realized level of autonomy most. The impact of employment on empowerment differed for each dimension. Realized autonomy is the only aspect that is significantly affected by women work, irrespective of whether they control their earnings or not and whether they earn cash or not for the work they do. The other two dimensions as measures of perceptions about women's roles is not affected by employment per se, but by access to, and control over, earnings derived from employment. Finally, only a few cultural variables affected any of the aspects of empowerment directly. Realized autonomy is lower among women who are Muslim, who live in large, households, who are remarried and who have greater number of children irrespective of the children's gender.

Khattab and Sakr (2009) use data from the Egypt Labor Market Survey of 2006 to investigate the determinants of women empowerment in Egypt. This study focused on the economic dimension of women's empowerment as measured indirectly by



female participation in the labor market. It utilized a comparative description approach to analyse the effect on women's economic empowerment of four different factors; women's point of view on participating in the labour market, social values (husband and wife view of whether women should be allowed to work), work conditions (stability, duration, right to occupy leadership position) and women's financial autonomy. The study found that higher unemployment rates, the longer duration of unemployment facing women, the lack of access to education, and social norms are the major factors that hamper economic empowerment of women in Egypt. Social norms were especially important and reflected in a separation and conflict between accepting women work while refusing their financial autonomy. Such result highlights the shortcomings of indirect measures like labour force participation as a true reflection of empowerment.

Similarly, Abdel Mowla (2009) uses the ELMPS 2006 to examine the effect of the level and type of education on women economic empowerment in Egypt. Women economic empowerment was proxied by two indirect measures: (1) economic participation; measured as female labour force participation, probability of exiting employment and the extent of job search behaviour; (2) economic opportunity; measured by wage work and escaping vulnerable employment, escaping low quality work and overcoming occupational segregation. It was found that education has a powerful impact on both measures of women's economic empowerment in Egypt. Women are found to benefit more than men from higher education in terms of improving their labour market outcomes.

Finally, Nazier and Ramadan (2018) study the different individual and socio-demographic characteristics that affect two dimensions of women empowerment in Egypt; namely decision-making and mobility. The findings are in line with the literature; age, education, employment, poverty status, number of children and having an adult son appear as significant determinants of empowerment. Women's empowerment is also significantly affected by the characteristics of the husbands and the fathers of the respondents. All of these determinants, except for own education, showed varying impact depending on the dimension of



empowerment studied. Regional and governorate dummy variables were found to be very significant in explaining Egyptian women empowerment.

Most of the previous studies on women empowerment in Egypt focus mainly on individual and socio-demographic characteristics ignoring the social context and its effect on women empowerment (Durrant and Sathar 2000; Roushdy 2004). Moreover, the few studies that have considered the social context, included only community dummies rather than attempt to determine what it is about these groupings that affect empowerment (Kishor 1995). Another issue is that most of the studies tackled only one dimension of empowerment mainly economic empowerment. Hence, this research is an attempt to overcome these gaps. We focused on the community-level determinants of married women's empowerment in Egyptian households to capture the effect of social context, in addition to individual and socio-demographic characteristics.

METHODOLOGY

The Multiple Index Multiple Causes (MIMIC) model, introduced by Goldeberger (1972), is used to measure the impact of individual, households and community characteristics on women's empowerment in Egypt. The advantage of using a MIMIC model is that in a situation where there is no directly observable measure of a given status such as empowerment here, it allows exploring the linkages between the indicators of this latent variable- empowerment- and its different causes (Rose and Speigel 2011; Huber 2013). As we are interested in two dimensions of empowerment; decision-making power and mobility, the MIMIC model will be estimated twice using two sets of empowerment indicators.

More precisely, the MIMIC model consists of estimating two sets of equations that are interdependent structural equations. First, the structural equations representing the latent variable, *empowerment*, as function of causal variables, say X_1, \dots, X_k , such as individual, households and community characteristics (Rahman et al 2004) as follows:



$$\text{empowerment}_i = f(X_{i1}, \dots, X_{ik}, \varepsilon_i) \quad (1)$$

As empowerment is a binary variable that takes value 1 a woman is considered empowered, 0 otherwise; the $f(\cdot)$ is a logit function and the stochastic error term follows logistic distribution. The causal variables (inputs) of empowerment, X 's, are the same for the decision-making power model and the mobility model. These inputs include woman's age in years (*age*) and its square (*age2*) to consider the non-linear effect of age. Other individual characteristics include her age at marriage, the difference between her age and her husband's age (*age gap*) and her education level. And to account for the effect of the woman's position in the household on her empowerment, the model includes variables indicating the status of the respondent if she is daughter in law or temporary head (if her husband is absent) or other status, compared to being the head's spouse. In addition to a variable capturing the fact that her daughter in law is living with her. Moreover, the model includes variables capturing the share of boys in her children if she has ones and the number of other adults present in her households.

The socio-economic status and background of both the respondent and her family is also expected to affect her empowerment. This is captured in our model by using woman's contribution to the costs associated with her marriage measured by her share and her family's share in the marriage costs (*share marriage cost*). Moreover, two dummy variables are introduced to capture her parents' education level; the first variable equals one if the parents have same level of education, while the second variable equals one if the mother have higher education level. Additionally, to consider the husband's role in women's empowerment, woman's husband education compared to her education and his employment status are included in the model.

The model includes as well dummy variables for income quintiles based on wealth score. This later takes into consideration the durable goods available to the household. The poorest quintiles are considered as the reference category. In addition to a dummy variable equals one if she was born in rural areas.



Finally, the social context is captured by different context variables reflecting education, employment and the development level of the governorate where the respondents live in addition to variables capturing women's self-esteem. The governorate education level is captured by the share of illiterate male among the governorate's adult males. The share of female wageworkers among all wageworkers at the governorate level is included in the model as a proxy for the employment status of other females within the governorate where the respondent lives. The governorate's development level is measured by the share of the population who have access to public sewerage network. While for women's self-esteem, it is captured through four variables. The first one reflected female's perception of violence, as measured by the share of female, at the governorate level, who accepted that a man beat his wife whatever the reason is. The second variable is the share of women, at the governorate level, thinking that Female Genital Mutilation (FGM) should continue. The third variable reflects the share of women at the governorate level who agrees that a working woman is not a good mother and finally those who agree that a woman should be financially autonomous.

The second sets of equations are the indicators equations representing the indicator variables reflecting empowerment as follows:

$$indicator_i = g_i(empowerment_i, \mu_i) \quad (2)$$

Two sets of empowerment indicators are used to reflect our two dimensions of empowerment. The first set of indicators concerns women decision-making power within her household; such as who takes the decision related to large purchase, food and her health. The second one tackles women's ability to visit sites such as the local market, health center or fields outside the village without obtaining permission from other family members². Hence, $g_i(\cdot)$ function is ordered logit function as the indicators for the decision-making power dimension and for the mobility dimension

2 More details about the decision-making and mobility indicators are available in Appendix 1.



take ordered values ranging from 4 to 1; where 4 means taking the decision alone and 1 means not participating in any decision. And the stochastic error term follow logistic distribution.

DATA

32 | First, the data for the individual and household characteristics used in this paper is drawn from the Egyptian labor Market Panel Survey (ELMPS) for 2012. The ELMPS is carried out by the Economic Research Forum (ERF) in cooperation with Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS) since 1998. The ELMPS (2012) is the third round of this periodic longitudinal survey that tracks the labor market and the demographic characteristics of households and individuals interviewed in 2006, both individuals included in the ELMS (1998) and individuals added in 2006, as well as a refresher sample of 2,000 new households to ensure that the data continues to be nationally representative, a total sample of 12,060 households and 49,186 individuals. The ELMPS is considered a wide-ranging, nationally representative panel survey that covers topics such as parental background, education, housing, access to services, residential mobility, migration and remittances, time use, marriage patterns and costs, fertility, women's decision making and empowerment, job dynamics, savings and borrowing behavior, the operation of household enterprises and farms, besides the usual focus on employment, unemployment and earnings in typical labor force surveys.

Our research focuses on 8858 married women, in 8568 households, aged between 15 and 49 years old, with an average age of 31 years old. Concerning the distribution of the sample over the six Egyptian regions; 16.77% of the sample lives in Great Cairo, Alexandria and Suez Canal, 10.99%, 13.50%, 30.45% and 28.29% lives in Urban lower, Urban Upper, Rural Lower and Rural Upper Egypt respectively. Finally, 58.94% of the sample lives in the rural areas. Regarding community variables, which are the main interest of this paper, starting with education at the governorate level, Port Said governorate had the lowest share of illiterate men (13% in average), while Beni-Suef



had the highest share of illiterate men (47%) same as Fayoum and Menia (Appendix 2)

Employment at the community level was measured by the average shares of female waged workers, among all waged workers at the governorate level. This variable varies among the different governorates. The highest share is reached in Cairo and Port Said with 27% of all waged workers being female while Qena witnesses the lowest share of 9% (Appendix 2).

Access to sanitation facilities is considered an important measure for development level. In Egypt, only 39% of households have access to public sewerage network (Appendix 2). This low average share of access to public sewerage network hides significant variations among the different governorates. For some poor governorates such as, Menia, Assiut and Qena, this share is lower than 15% of the households. While this share exceeds the 80% for the metropolitan governorates (Cairo, Alexandria, Port Said and Suez)

Second, variables reflecting women's self-esteem are drawn from the 2008 Egypt Demographic and Health Survey (EDHS)³ and ELMPS 2006. The 2008 EDHS is a nationally representative sample of 16 527 ever-married women aged 15-49. It was undertaken to provide estimates for key population indicators including fertility, contraceptive use, infant and child mortality, immunization levels, maternal and child health, and nutrition. Moreover, it covered other health topics such as knowledge and awareness of avian influenza, HIV/AIDS and hepatitis C; previous history of hypertension, cardiovascular illness diabetes and liver disease; attitudes and behavior with respect to female circumcision; health care cost and health insurance coverage (El Zanaty and Way, 2009).

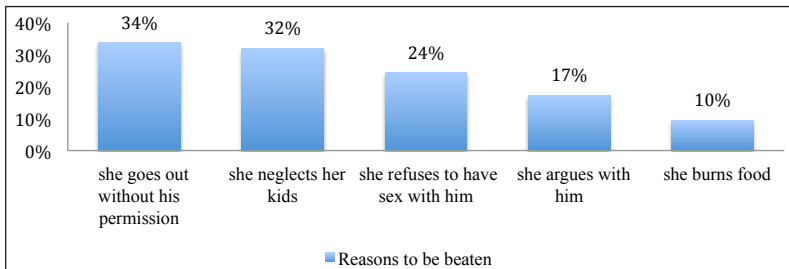
Several variables measuring gender role and women self-esteem are used in this study. First, a variable reflecting women's

3 The EDHS was conducted on behalf of the Ministry of Health by El-Zanaty and Associates. It is the ninth in a series of Demographic and Health Surveys conducted in Egypt as a part of the worldwide MEASURE DHS project, which is funded by the United States Agency for International Development (USAID).



attitudes towards domestic violence; the average share of females, who think that women should be beaten by their husbands for any of a range of specified reasons. Women were asked about if they think that a man should beat his wife for any of the following reasons: if she went outside without his permission, neglected her kids, argued with him, refused to have sex with him, or burned food. Figure 1 shows the average share of females, who think that husbands should beat women for each of these reasons. Going out without his permission, came as first reason with 34% of women thinking that a woman should be beaten for this. Neglecting her kids came at the second level with 32% while only 10% think that a woman should be beaten if she burned food. On average, 42% of women think that a man should beat his wife whatever the reason is.

Figure 1: *The average share of women who think that women should be beaten by their husbands for different reasons*



Source: *Computed by the authors from EDHS (2008)*

Second a variable measuring women attitudes towards Female Genital Cutting, traditionally known as “circumcision”. *Circumcision* is considered a fundamental violation of women and girls’ rights (WHO, 2008). Surprisingly, among our sample, an average of 52% and 71% of women in Egypt thought that this practice should continue, in urban and rural areas, respectively. This average rate is 63% all over Egypt. This share reached its maximum of 82% in Aswan as compared to a minimum of 28% in Port Said.

Finally, the share of women agreeing that a workingwoman is not a good mother and share of women agreeing that a woman



should be financially autonomous are used to reflect attitudes towards working women and women's financial independence. Data revealed that the share of women agreeing that a working-woman is not a good mother is less than 10% in all Egyptian Governorates except in Menufia, Suhag and Luxor. Moreover, less than 30% of women in all governorates agree that a woman should be financially autonomous (Appendix 2).

EMPIRICAL RESULTS

| 35 |

Replacing equation (1) in (2) result in the reduced form of our MIMIC model that was estimated twice for the decision-making power and for the mobility dimensions. Both models were estimated first using only the individual and households' characteristics. Secondly, they were estimated using regional dummies in addition to the individual and households' characteristics as regressors. The inclusion of regional dummy variables allows to consider the impact of living in any region in Egypt compared to living in Great Cairo. And a third version of the two models were estimated using governorate dummies instead of the region ones, in addition to the characteristics of the respondents and their households. The governorate dummies take into consideration if it is urban or rural areas. This later accounts for the variation in decision-making power and mobility due to observed and unobserved community characteristics at the governorate urban/rural level⁴.

The likelihood ratio test⁵ is used to compare between the models. The results of the test show that the two first models are nested in the third one. Hence, the governorate, where the respondent lives, is a significant determinant that explains important part of the variation of women's empowerment⁶.

4 The Estimated parameters of the first three models, for decision-making power and mobility are available upon request.

5 The output of the Likelihood Ratio test is presented in Appendix 3.

6 The three last models with region dummies, governorates urban/rural dummies and community variables are estimated without clustering to be able to use the likelihood ratio test.



Table 1: *Likelihood Values*

Likelihood Value	(1)	(2)	(3)	(4)
DI	-42569.21	-42418.21	-41864.70	-42245.50
MI	-40509.22	-40440.95	-40123.51	-40339.85

Source: *Computed by the authors based on regression results.*

The third model with governorate rural/urban dummies allows answering our question of interest. The results confirm the important effect of communities, where women live, on both dimensions of empowerment. Most of the governorate urban\ rural dummies had a significant impact on empowerment. The results show that the governorate that had the largest negative effect on both dimensions of empowerment is rural Sohag compared to Great Cairo. While living in urban Beni-Suef had the greater positive effect on the decision-making power of women living there compared to women living in Great Cairo. For mobility; living in urban Dakahlia had the largest positive effect compared to Great Cairo.

Finally, the decision-making power model and the mobility model were estimated using community characteristics, in addition to the individual and household’s characteristics. This allows tackling the effect of specific characteristics, such as education level, employment and development of the governorates on the respondents’ empowerment. According to the decision-making power model, our latent variable *empowerment* had significant ($p < 0.01$) factor loadings on all five decision-making power indicators, which was equal to or exceeding 1.377. Similarly, empowerment had significant factor loadings equal to or exceeding 1.969 on all four mobility indicators (Appendix 4).



Results of the last version of the two models in which we are interested are displayed in Table 2.⁷ Two main conclusions could be driven. First, the significance of our community characteristics varied according to the dimension tackled; decision making power or mobility. Second, the magnitude of the effect of the community level variables -especially those that are significant- is much more important than the effect of the individual and the household level variables.

Hence, to answer our research question; community characteristics and social context play a significant role in empowering Egyptian women. Women living in governorates with higher share of female wageworker among all wageworkers are more likely to be empowered in both the decision-making and mobility models. Surprisingly, average educational level at the governorate where the respondents live, as measured by the share of illiterate males among males 18 years and above, had a positive but insignificant impact on both empowerment dimensions. This may suggest that education in Egypt does not have a significant impact on raising awareness levels and radical changes in family values.

Results showed that female's perception of unequal gender roles is another determinant of her empowerment however again empowerment dimension mattered. Acceptance of violence had a significant negative impact on empowerment. Results showed that women living in governorates with higher share of women approving violence are less likely to be empowered. Likewise, as the share of women who (strongly) agree that a woman with full time job cannot be a good mother at the governorate level increases, women are less likely to be empowered; for both dimensions. While the share of women who (strongly) agree that a woman should be financially autonomous had a positive but insignificant impact on the likelihood of being empowered. Finally, the share of women who believe that FGM should continue had a positive and significant impact on

7 These estimated results are based on MIMIC model with robust standard errors where clusters are considered.



empowerment in the mobility model only. This is a surprising result that would require more investigation in future research.

For the individual characteristics; it was evident that age has a non-linear impact on Egyptian female's empowerment when measured by the decision-making power dimension. While her mobility continuously increases with age, this is expected as our sample includes only women with maximum age of 49 and hence the probability of experiencing health problems that would reduce their mobility abilities is very limited. The results revealed that age at marriage had no significant effect on Egyptian female's empowerment; both her decision-making power as well as her mobility. Similarly, all education levels were found to have no significant effect on our two dimensions of empowerment with the exception of the post-secondary level that had a negative impact on women mobility only. This is another surprising result as we would expect that when women have higher education level compared of being illiterate, they would have higher freedom of mobility.

Interestingly, for the household wealth status, when the social context is taken into consideration, household wealth categories had no significant impact on any of the empowerment dimension with the exception of the fifth quintile that had a negative impact on women's mobility as compared to women in the first wealth quintile. This could be due to the nature of the mobility questions in use, as these questions may not be of relevance to women in the top wealth quintiles. This was also the case for the effect of the region of birth; accounting for the social context the region of birth turned into insignificant.

A woman's position in the household had somehow different effects on our two dimensions of empowerment. Being a daughter or a daughter in law versus a spouse decreased empowerment in the decision-making context and had no significant impact on empowerment in the mobility model. While being a temporary head, as compared to a spouse, increased empowerment for both dimensions.

The share of sons among her children had no significant impact on mother's empowerment no matter the dimension tackled. While having children of any gender increased



empowerment in the decision-making context and decreased it in the mobility model. This result confirms the idea that women's domestic responsibilities and child care commitment may affect negatively women ability to go out of the house and hence their mobility as well as her labor force participation. It was also found that the increase in the numbers of adults living in the same household affects empowerment negatively in both dimensions.

Women's economic status and background as measured by her contribution and the contribution of her family in marriage cost had a positive impact on her empowerment only in the case of decision-making. A one-unit increase in that share increases the odds of empowerment by a factor of 0.208. Surprisingly respondent's parents' education had no effect on her empowerment. While father's employment status was found to be an important determinate of his daughter's empowerment in both dimensions. A woman whose father has any of the job categories- with the exception of private regular wageworker that had a positive but insignificant impact- is less empowered as compared to a woman whose father is a wageworker in the public sector.

Finally, the age gap between the respondent and her husband decreased empowerment. Husband employment status was found to have a more pronounced significant impact in the case of decision-making although still most categories had no significant effect. A woman whose husband is a formal wageworker in the private sector or outside the labor force or manpower has greater empowerment as compared to a woman's whose husband is a wageworker in the public sector.

Table 2: Estimated Parameters for MIMIC Model for Decision and Mobility with Community Variables



VARIABLES	Decision Making	Mobility
Age	0.000295*** (9.00e-05)	0.000170** (7.79e-05)
Age square	-2.56e-06* (1.35e-06)	-8.03e-07 (1.23e-06)
Age at first marriage	-7.73e-05 (0.000117)	-1.42e-05 (0.000109)
Age at first marriage square	8.43e-07 (2.50e-06)	-1.26e-06 (2.25e-06)
Age gap between her and her husband	-5.07e-05*** (1.31e-05)	-4.44e-05*** (1.19e-05)
Her education status (Reference: Illiterate)		
Literate but no basic education	-0.0656 (0.0503)	0.0302 (0.0427)
Basic Education: (prim and prep)	-0.0236 (0.0295)	0.00641 (0.0189)
Secondary	0.00569 (0.0261)	0.00227 (0.0213)
Post Secondary: Middle Institute	-0.0470 (0.0420)	-0.0691** (0.0320)
University & post University	-0.00930 (0.0332)	-0.0156 (0.0397)
Her status in the household (Reference: Spouse)		
Daughter/ Daughter in law	-0.139*** (0.0366)	0.0146 (0.0410)
Temporary head	0.334*** (0.0792)	0.310*** (0.0525)
Others	-0.00919 (0.0948)	0.0359 (0.0929)
Her daughter in law living with her	-0.0257 (0.0726)	-0.0359 (0.0641)
Share of boys in her children	0.0143 (0.0207)	0.0272 (0.0224)



Do you have children?	0.0336** (0.0171)	-0.246*** (0.0386)
Number of adults within the household	-0.0300*** (0.0110)	-0.0126** (0.00586)
Share marriage cost	0.208*** (0.0611)	0.0778 (0.0565)
Father Employment status (Reference: Public Wage Worker)		
Private regular wage worker	0.0136 (0.0247)	0.0210 (0.0235)
Private irregular wage worker	-0.107*** (0.0282)	-0.0580** (0.0245)
Employer	-0.0552*** (0.0198)	-0.0296* (0.0169)
Self employed and unpaid family worker or for others	-0.0335 (0.0305)	-0.0281 (0.0208)
No job	-0.230*** (0.0635)	-0.242** (0.0981)
Parents Education (Reference: Mother's education lower than her father's education)		
They both have same level of education	0.000366 (0.0212)	0.00620 (0.0160)
Mother's education is higher	0.0345 (0.0490)	0.00474 (0.0341)
Household's Wealth (Reference: First Quintile)		
Quintiles of household wealth = 2	0.0255 (0.0237)	-0.0204 (0.0204)
Quintiles of household wealth = 3	0.0333 (0.0233)	0.00585 (0.0210)
Quintiles of household wealth = 4	0.0314 (0.0293)	-0.0292 (0.0250)
Quintiles of household wealth = 5	0.0360 (0.0293)	-0.0682** (0.0328)
Her husband education with respect to hers (Reference: he has lower education level)		



They have same education	-0.0362*	-0.0121
	(0.0211)	(0.0164)
He has higher education level	-0.0271	-0.0372*
	(0.0216)	(0.0202)
Husband 's employment status (Reference: Wage Worker in government or public sector)		
Formal wage worker in formal private sector	0.109***	0.0419*
	(0.0325)	(0.0248)
Informal wage worker in private sector	0.000358	0.0269
	(0.0200)	(0.0187)
Employer	-0.0138	-0.00687
	(0.0247)	(0.0208)
Self employed	-0.0340	-0.0200
	(0.0357)	(0.0167)
Unpaid family worker	-0.0904	0.102
	(0.0585)	(0.0692)
Unemployed	-0.0388	-0.00630
	(0.0583)	(0.0491)
Outside labor force	0.0927**	-0.00942
	(0.0468)	(0.0392)
Outside manpower	0.127**	0.0978*
	(0.0553)	(0.0590)
Born in rural areas	0.0212	0.0362
	(0.0511)	(0.0362)
Community Characteristics		
Share of illiterate male among males of 18 years and plus at the governorate level	0.0446	0.0545
	(0.0495)	(0.0393)
Share of female wage workers among all wage workers at the governorate level	0.0941**	0.0888***
	(0.0411)	(0.0306)
Share of households with access to sewerage system at the governorate level	0.0183	0.0262
	(0.0457)	(0.0385)
Ratio of women agreeing that an employed woman is not a good mother	-0.0953*	-0.0607*



	(0.0508)	(0.0314)
Ratio of women agreeing that a woman should be financially autonomous	0.00985 (0.0414)	0.0131 (0.0246)
Ratio of women agreeing that a man can beat his wife for any reason	-0.123*** (0.0416)	-0.0477** (0.0227)
Ratio of women agreeing that FGM should continue	0.0438 (0.0406)	0.0919*** (0.0202)
Observations	8,796	8,796

Robust standard errors in parentheses

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

CONCLUDING REMARKS

The present paper focuses on the social context as a main determinant of women empowerment in Egypt. It analyzed the impact of social context in addition to individual, socio demographic characteristics, on two dimensions of Egyptian women's empowerment; decision-making power and mobility. In line with the literature most of our determinants had different impact on women's empowerment based on which dimension is under investigation. The impact of community and individual characteristics on empowerment vary depending on the dimension investigated, confirming that empowerment is a multi-dimensional phenomenon, with women relatively empowered in some aspects but not in others.

Our results show that local context plays an important role in determining Egyptian female's empowerment, in addition to the traditional individual and socio demographics characteristics. Although some of our community level variables were statistically insignificant⁸, including them in the analysis managed to explain 6.9 and 4.4 percentage points of the variation in decision making power and mobility, respectively due to observed

8 Performing a joint significance test to these variables proved that they are jointly significant.



and unobserved community characteristics at the governorate urban/rural level.

It is evident that the most important community level characteristics that determine Egyptian women empowerment are the shares of employed women at the governorate where she lives and women self-esteem as reflected in higher share of women rejecting violence. While, the level of education of the community was not found to be significant.

| 44 |

Accordingly, and in line with the theoretical approach used in this study, which consider gender relations as greatly affected by community norms and values, our results showed that social context is a strong predictor of women's empowerment. This highlights the importance of viewing women empowerment and hence development as social and normative transformations rather than just a shift in individual actions.

Finally, these results have important implications for policies targeting Egyptian women empowerment. First, policies must pay more attention to changing the gender stratification system and its normative foundations at the local level. Second, the results also suggest that policies to enhance females' education and provide greater employment opportunities may definitely contribute to women's empowerment at least in some respects.

REFERENCES

- Abdel Mowla, S. 2009. Education and Economic Empowerment of women in Egypt. American University in Cairo- Social Research Center'. Accessed on 9 January 2020, http://www1.aucegypt.edu/src/wsite1/Pdfs/rewebsite_cida/Somaya_2.pdf.
- Agarwala, R. and Lynch, S. M. 2006. 'Refining the Measurement of Women's Autonomy: An International Application of a Multi-dimensional Construct'. *Social Forces*, 84 (4): 2077-2098.
- Allendorf, K. 2007. 'Do Women's Land Rights Promote Empowerment and Child Health in Nepal?' *World Development*, 35 (11):1975-1988.
- Anderson S. and Eswaran M. 2009. 'What determines female autonomy? Evidence from Bangladesh'. *Journal of Development Economics*, 90 (2): 179-191.
- Balk, D. 1994. 'Individual and Community Aspects of Women's Status and Fertility in Rural Bangladesh'. *Population Studies*, 48 (1): 21-45



- Central Agency for Public Mobilization and Statistics (CAPMAS). Poverty indicators according to the Egyptian Integrated Household Survey, 2010/2011.
- Chaudhary, A. R., Chani, M. I. and Pervaiz, Z. 2012. An Analysis of Different Approaches to Women Empowerment: A Case Study of Pakistan. Accessed on 15 December 2019, <https://mpr.ub.uni-muenchen.de/37784/>.
- Duflo, E. 2003. 'Grandmothers and granddaughters: Old age pension and intra-household allocation in South Africa'. *World Bank Economic Review*, 17 (1): 1-25.
- Dyson, T. and Moore, M. 1983. 'On Kinship Structure, Female Autonomy, and Demographic Behavior in India'. *Population and Development Review*, 9 (1): 35-60.
- El Laithy, H. 2001. 'The Gender Dimensions of Poverty in Egypt'. Accessed on 10 December 2019, <https://www.eldis.org/document/A29471>.
- El-Zanaty, F. and Way, A. 2009. 'Egypt Demographic and Health Survey 2008'. Cairo: Ministry of Health, El-Zanaty and Associates, and Macro International.
- England, P. 2000. 'Conceptualizing women 's empowerment in countries of the north'. In *Women empowerment and demographic processes*, edited by H.B. Presser and G. Sen. New York: Oxford University Press.
- Folaranmi, O. 2013. 'Women Empowerment as a Determinant of Investments in Children in Selected Rural Communities in Nigeria'. *African Research Review*, 7 (4):138-161.
- Gage, A. J. 1995. 'Women's Socioeconomic Position and Contraceptive Behavior in Togo'. *Studies in Family Planning*, 26 (5): 264-277.
- Ghuman S., Lee H. and Smith H. 2004. 'Measurement of Women's Autonomy According to Women and Their Husbands: Results from Five Asian Countries'. *Social Science Research*, 35 (1): 1-28.
- Goetz, A. M. and Gupta R. S. 1996. 'Who Takes the Credit? Gender, Power and Control over Loan Use in Rural Credit Programs in Bangladesh'. *World Development*, 24(1): 45-63.
- Govindasamy, P. and Malhotra, A. 1996. 'Women's Position and Family Planning in Egypt'. *Studies in Family Planning*, 27 (6): 328-340.
- Gupta, K. and Yesudian, P. 2006. 'Evidence of Women's Empowerment in India: A Study of Socio-spatial Disparities'. *Geojournal*, 65 (4): 365-380.
- Haddad, L. and Hoddinott, J.1994. 'Women's income and boy-girl anthropometric status in the Cote d'Ivoire'. *World Development*, 22 (4): 543-553.



- Hashemi, S. M., Schuler, S.R. and Riley, A. P.1996. 'Rural Credit Programs and Women's Empowerment in Bangladesh'. *World Development*, 24(4): 635-653.
- Hoddinott, J. and Haddad, L. 1995. 'Does Female Income Share Influence Household Expenditures? Evidence from Cote d'Ivoire'. *Oxford Bulletin of Economics and Statistics*, 57 (1): 77-96.
- Huber, C. 2013. 'Generalized Structural Equation Modeling Using Stata'. Italian Stata Users Group Meeting. Data Analysis and Statistical Software.
- Ibrahim S. and Alkire, S. 2007. 'Agency and Empowerment: A Proposal for Internationally Comparable Indicators'. *Oxford Development Studies*, 35 (4): 379-403.
- Jejeebhoy, S. and Sathar, Z. 2001. 'Women's Autonomy in India and Pakistan: The Influence of Religion and Region'. *Population and Development Review*, 27 (4): 687-712.
- Jejeebhoy, S. J. 1991. 'Women's Status and Fertility: Successive Cross-sectional Evidence from Tamil Nadu, India 1970-1980'. *Studies in Family Planning*, 22 (4): 217-230.
- Jejeebhoy, S.J. 2000. 'Women's autonomy in rural India: Its dimensions, determinants and the influence of context'. In *Women Empowerment and Demographic Processes: Beyond Cairo*, edited by H. Presser and G. Sen. New York: Oxford University Press.
- Kabeer N. 1999. 'Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment'. *Development and Change*, 30 (3): 435-464.
- Kabeer, N. 2001a. Reflections on the Measurement of Women's Empowerment. Stockholm: Novum Grafiska.
- Kabeer, N. 2001b. 'Conflicts over Credit: Re-Evaluating the Empowerment Potential of Loans to Women in Rural Bangladesh'. *World Development*, 29 (1): 63-84.
- Kamal, N. and Zunaid, K.M. 2006. Education and Women Empowerment in Bangladesh. Accessed on 13 January 2020, <https://www.semanticscholar.org/paper/Education-and-Women-s-Empowerment-in-Bangladesh-Kamal-Zunaid/12fd490c6e08086043eea2242de9ab56fbdeb61a>.
- Khan, S.U. and Awan, R. 2011. 'Contextual Assessment of Women Empowerment and its determinants: Evidence from Pakistan'. Accessed on 10 January 2020, <https://mpr.aub.uni-muenchen.de/30820/>.
- Khattab, A. and Sakr, H. 2009. Women's Economic Empowerment in Egypt: Challenges and Opportunities. Accessed on 25 November



- 2019, http://www1.aucegypt.edu/src/wsite1/Pdfs/rewebsite_cida/HALAno1.pdf.
- Kishor, S. 1993. 'May God Give Sons to All': Gender and Child Mortality in India'. *American Sociological Review*, 58 (3): 247-265.
- Kishor, S. 1995. *Autonomy and Egyptian Women: Findings from the 1988 Egypt Demographic and Health Survey*. Accessed on 3 December 2019, <https://dhsprogram.com/publications/publication-op2-occasional-papers.cfm>.
- Kishor, S. 2000a. Empowerment of Women in Egypt and Links to the Survival and Health of Their Infants. In *Women Empowerment and Demographic Processes: Moving Beyond Cairo*, edited by H. Presser and G. Sen. New York: Oxford University Press.
- Kishor, S. 2000b 'Women's Contraceptive Use in Egypt: What Do Direct Measures of Empowerment Tell Us?' Paper prepared for presentation at the annual meeting of the Population Association of America, March 23-25, Los Angeles, Calif.
- Kishor, S. and Subaiya, L. 2008. Understanding Women's Empowerment: A Comparative Analysis of Demographic and Health Surveys (DHS) Data. Accessed on 14 January 2020, <https://dhsprogram.com/publications/publication-cr20-comparative-reports.cfm>.
- Krafft, C. and Assaad, R. 2014. Why the Unemployment Rate is a misleading Indicator of Labor Market Health in Egypt. Accessed on 10 January 2020, <https://erf.org.eg/publications/why-the-unemployment-rate-is-a-misleading-indicator-of-labor-market-health-in-egypt/>.
- Krafft, C. and Kettle, E. 2019. The Future of Labor Supply and Demographics in Egypt: Impending Challenges and Untapped Potential. Accessed on 10 January 2020, <https://erf.org.eg/publications/the-future-of-labor-supply-and-demographics-in-egypt-impending-challenges-and-untapped-potential/>.
- Kritz, M. M. and Makinwa-Adebusoye, P. 1999. 'Determinants of Women's Decision-Making Authority in Nigeria: The Ethnic Dimension'. *Sociological Forum*, 14 (3): 399-424.
- Kritz, M. M., Makinwa-Adebusoye, P. and Gurak, D. T. 2000. 'The Role of Gender Context in Shaping Reproductive Behavior in Nigeria.' In *Women Empowerment and Demographic Processes: Moving Beyond Cairo*, edited by H. Presser and G. Sen. New York: Oxford University Press.
- Malhotra, A. and Matherl, M. 1997. 'Do Schooling and Work Empower Women in Developing Countries? Gender and Domestic Decisions in Sri Lanka'. *Sociological Forum*, 12 (4): 599-630.



- Malhotra, A., Schuler, S.R. and Boender, C. 2002. Measuring Women Empowerment as a variable in International Development. Accessed on 5 January 2020, <https://www.semanticscholar.org/paper/Measuring-Women'-s-Empowerment-as-a-Variable-in-Malhotra/326b504f1c6dbf711891118ef7d0eeac9494342c>.
- Mason, K. 1997. How Family Position Influences Married Women's Autonomy and Power in Five Asian Countries. Honolulu, Hawaii: East-West Center.
- Mason, K. 1998. Wives Economic Decision-making Power in the Family: Five Asian Countries. In *Changing Family in Comparative Perspective: Asia and the United States*, edited by K. Oppenheim Mason. Honolulu: East-West Center.
- Mason, K. and Smith H. 1999. Female Autonomy and Fertility in Five Asian Countries. Paper presented at the Annual Meetings of the Population Association of America, New York, March 25-27.



APPENDIX

Appendix 1: *The Decision and Mobility Indicators*

For the decision-making power inside the household, five indicators (D_i) are used. Each respondent was asked the following questions:

1. Who take the decision for making large household purchases?
2. Who take the decision for making household purchases for daily needs?
3. Who take the decision concerning what food should be cooked each day?
4. Who take the decision concerning getting medical treatment or advice for yourself?
5. Who take the decision concerning buying clothes for yourself?

| 49 |

Answers of these questions take the following values:

- $D_i=5$: *Not Applicable*.
- $D_i=4$: if the respondent takes the decision alone.
- $D_i=3$: if the respondent takes the decision with her husband.
- $D_i=2$: if the respondent takes the decision with her husband and her in laws.
- $D_i=1$: if the respondent does not participate in the decision at all.

For mobility, women were asked if they need no permission ($M_i=4$), have to just inform them ($M_i=3$), need permission ($M_i=i$) or cannot go alone ($M_i=1$) or not applicable ($M_i=5$) when going to:

1. Local market
2. Local health center.
3. Health center for the children.
4. Friends or relative houses.



Appendix 2: Average Values of Community Level Variables at the Governorates Level (%)

Governorates	Share of illiterate male	Share of female wage worker among all wage workers	Share of households with access to sewerage	Share of women thinking that FGM should continue	Share of those thinking working women are not good mother	Share of those agreeing that a woman should be financially autonomous
Cairo	24	26	94	44	5	24
Alex.	28	20	82	44	7	26
Port-Said	23	26	86	28	2	23
Suez	24	20	89	72	4	17
Damietta	45	15	54	37	1	14
Dakahlia	39	15	71	76	3	18
Sharkia	40	15	34	77	4	18
Kalyoubia	35	14	46	65	2	19
Kafr-Elsheikh	44	14	23	68	7	29
Gharbia	34	17	38	63	7	22
Menoufia	32	20	34	74	15	19
Behera	44	12	35	39	3	22
Ismailia	34	17	41	67	3	19
Giza	37	17	50	69	5	17
Beni-Suef	47	23	15	71	3	11
Fayoum	47	12	38	68	4	15
Menia	47	16	14	54	3	15
Asyout	43	15	12	57	7	25
Suhag	46	12	15	70	10	17
Qena	38	9	10	75	6	15
Aswan	28	17	36	82	7	19
Luxur	33	18	30	79	10	26
Egypt	27	16	39	63	5	19

Source: Computed by authors from Census (2006)-IPUMS, EDHS (2008) and ELMPS (2006)



Appendix 3: Output of the Likelihood Ratio Test

Assumptions	LR chi2	Prob > chi2
Mobility Models		
The Mobility model with only individual variables (Mobility Model -1) is nested in the Mobility Model with region dummies (Mobility Model-2)	136.54	0.0000
The Mobility model with individual and region dummies variables (Mobility Model -2) is nested in the Mobility Model with governorate dummies (Mobility Model-3)	634.88	0.000
The Mobility model with individual and dummies variables (Mobility Model -2) is nested in the Mobility Model with community Characteristics (Mobility Model-3)	432.68	0.000
Decision Model		
The Decision-making model with only individual variables (Decision Model -1) is nested in the Decision-making Model with region dummies (Decision Model-2)	302.00	0.000
The Decision-making model with individual and region dummies variables (Decision Model -2) is nested in the Decision-making Model with governorate dummies (Decision Model-3)	1107.03	0.000
The Decision-making model with individual and dummies variables (Decision Model -3) is nested in the Decision-making Model with community Characteristics (Decision Model-4)	761.61	0.000



Appendix 4: Estimated Impact of Empowerment on the Different Indicators for Decision Making Power and Mobility (MIMIC)

		Decision Making Power			
Who take the decisions for:	large household purchases?	Household purchases for everyday?	what food should be cooked daily	getting medical treatment for yourself	getting clothes for yourself?
Empowerment	1 (0)	2.594*** (0.242)	2.201*** (0.311)	1.377*** (0.135)	1.439*** (0.130)
Mobility					
Freedom to	go to Local market	go to Health center	take children to health Center	to visit relatives and friends	
Empowerment	1 (0)	3.262*** (0.286)	1.855*** (0.176)	1.969*** (0.132)	

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

