ECONOMIC RESEARCH FORUM
منتدى البحوث الاقتصادية
2018

working paper series

TIME POVERTY IN EGYPT AND TUNISIA: IS THERE A GENDER GAP?

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Working Paper No. 1220

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September 2018

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[1] This study was funded by Economic Research Forum (grant number 2017-028). The authors declare that they have no conflict of interest.

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

Abstract

This paper investigates the gender differences in time poverty in two MENA countries, particularly Egypt and Tunisia, as well as examining its determinants across gender. To this end, we make use of data provided by the LMPS in Egypt (2012) and in Tunisia (2014) to estimate probit regressions to identify various determiners that explain time poverty. The empirical findings show that the probability of time poverty, in both countries, is lower for females compared to males. In addition, the determinants of time poverty (individual, household, and community variables) and their marginal effects differ across gender.

Keywords: Gender, time poverty, Egypt, Tunisia, probit, ELMPS, TLMPS
JEL classification: J01, J16, J22, J70

ملخص

تبحث هذه الورقة الاختلافات بين الجنسين من حيث الفقر فر الوقت في مصر وتونس ، وكذلك دراسة محددات الاختلافات بين الرجال والنساء. تم الاعتماد علي بيانات المسح التتبعي لسوق العمل في مصر (2012) وفي تونس (2014) لتحديد مختلف المحددات التي تفسر الفقر في الوقت بالنسبة للجنسين. تُظهر النتائج أن احتمالية الفقر في الوقت، في كلا البلدين ، أقل بالنسبة للإناث مقارنة بالذكور. بالإضافة إلى ذلك ، تختلف محددات الفقر في الوقت (الفردية والأسرية والمجتمعية) وآثارها الحدية بين الجنسين.

1. Introduction

Poverty has always been and still a common concern of social science. Alleviating poverty is a widespread goal that usually comes on the top of the policymakers' agendas in almost all nations. Income was and still used as the main indicator of poverty. Income poverty refers to the lack of income that enables individuals of obtaining the required resources to promote safety, health, development, leisure, self-actualization, and so on (Williams et al., 2016).

One of the most vital developments in the gender analysis of poverty is the inclusion of the time dimension to further comprehend poverty. This is because time, similar to income, is a basic resource necessary for escaping poverty and enhancing the individual's well-being (Williams et al., 2016). Recently time have been viewed by both researchers and policy makers as a significant determinant of individual wellbeing and productivity[1]. As time spent on leisure and rest was found to positively affect productivity (Saqib and Arif, 2012). However, individuals often have to make tradeoffs between work and leisure due to workloads and responsibilities. This trade off may result in individual being time poor.

The concept of ***time poverty*** identifies the poor individuals in terms of time, to be those who do not have enough time for leisure and rest, due to excessive workloads (Bardasi and Wodon, 2006; Arora, 2014). The inclusion of time dimension in poverty analysis makes it clear that income poverty and time poverty are interrelated, and hence, could negatively affect the welfare of the family members specially children and women (Bardasi and Wodon, 2010; Vickery, 1977; Zacharias et al., 2012). Recently, part of the economic literature tackling poverty has been devoted to examining the importance of time use in poverty analysis[2].

The literature emphasizes the gender dimension of time poverty. It is evident that time allocation between leisure and work differs between men and women. Generally, some activities specifically unpaid house and care work - nonproductive work - is seen as a more feminine job. Accordingly, those activities are done by women and they spend more time on them compared to men. This is confirmed by studies that showed that women face competing claims on their time resulting in allocating more of their time to productive and non-productive work - compared to men - leaving them with very little time for rest or leisure. Hence they are expected to be more time poor[3]. The situation is even worse in developing countries, especially in rural areas where time constraints on women are more severe, due to lack of basic infrastructure (Arora, 2014).

In this context, this research focuses on measuring and analyzing determinants of gender differences in time poverty in the labor market in both Egypt and Tunisia. Research on the gender inequalities in time poverty and its determinants has been very limited. Additionally, the relationships between individuals' time use and the conditions under which this might represent ***time poverty*** have not been fully studied in the literature. Moreover, most of the available studies have focused on developed countries; while studies tackling this issue in developing countries are very few. For the MENA region in particular this topic is totally

[1] Vickery (1977), Douthitt (1994), Ilahi and Nadeem (2000,2001), Bardasi and Wodon (2006), Ribeiro and Marinho (2012).
[2] Blackden and Bhaun (1999), Gelb (2001), Newman (2002), Apps (2004), Ribeiro and Marinho (2012).
[3] Tibaijuka (1984), Ngome (2003), Fafchamps et al. (2009), Sow (2010), Arora (2014).

missing in the available literature. This is mainly due to the limited availability of data on time use in the region (Ferrant, 2014).

Hence the current study tries to fill in these gaps by studying time poverty in two countries of the MENA region particularly Egypt and Tunisia. We start by measuring time poverty for both males and females in both Egypt and Tunisia and then analyzing its determinants across gender. To the best of our knowledge, this is the first study to measure time poverty and analyze the gender differences regarding this aspect in both Egypt and Tunisia. We make use of data provided by the LMPS in Egypt (2012) and in Tunisia (2014).

The paper is organized as follows. Section two provides a review of the literature tackling time poverty. Methodology adopted is described in section three. Section four presents the data and descriptive statistics. Section five presents the estimated resulted and interpretation. Finally, section six concludes.

2. Conceptual Background and Literature Review

Recently, a common concern within the literature of labor economics and poverty has been analyzing the significance of time use in economic analysis. Researchers believe that although income or consumption are still vital to people´s lives, they are unsatisfying and incomplete measures of individual well-being and quality of life (Sen, 1999; Vickery, 1977). Hence it should not be used solely as the most important measure of well being. Studies confirm that time as a resource is as important as income (Vickery, 1977; Douthitt, 1994; Damián, 2003; Ilahi, 2000 and 2001; Bardasi and Wodon, 2006). However, time as a resource differs from income or consumption where the more the better, while as for time it is a scarce resource hence the more the time allocated for work, paid or unpaid, the less the time available for leisure and less rest, and consequently higher time poverty. This matter is even more important for females who usually face conflicting claims on their time. In general, and especially in developing world, the time devoted by females to unpaid work such as housework, and care work is neglected resulting in underestimating female participation in work and hence their time poverty. This also indicate that the time available for females that could be allocated to paid work is reduced leading to income poverty as well (Ribeiro and Marinho, 2012). *The rest of this section present a overview of the literature tackling time poverty with a special interest in the gender differences*.

Conceptually, time poverty refers to the fact that given the limited time of 24 hours per day some individuals after accounting for the time spent working, in market or house work, do not have enough time for rest or leisure. In other words, time poverty means tradeoffs, as individuals who are very constrained for time are not able to assign enough time for vital activities, thus they are pushed to make difficult tradeoffs. (Bardasi and Wodon, 2006).

The concept of *time poverty* was first introduced by the influential study of Vickery (1977) on time poverty. It is considered as the first key step towards analytically illuminating the concept. Her analysis is based on the previously mentioned study by Becker (1965) who acknowledged time as a resource, that is used as an input in the production of household goods and services (Saqib and Arif, 2012). The key objective of the study was to define a bi-dimensional measure of well-being, that consider both income and the amount of time required to attain a minimum consumption level, hence, both income and time are required

(Ribeiro and Marinho, 2012). The author conceptualizes poverty in terms of both time and income. She argues that the minimum level of consumption needs both money and household production, where time is an input of the latter (Lawson, 2007). Hence, the official monetary poverty measures do not correctly measure household needs, since minimum consumption requires both income and unpaid work. Thus, the study focuses on time allocated to house work as much as time allocated to market work. Households would be considered poor based on a certain combination of time and money (Ribeiro and Marinho, 2012). The study defines a minimum amount of money and time input, M_0 and T_0, and if a household drops below these amounts, it is considered 'poor'.

According to feminist economics, distinguishing and accounting for house work makes it relevant for a gendered analysis of poverty. Nevertheless, using the 'household' as the unit of analysis constrains an analysis of differences in poverty by males and females, which is a shortcoming that has been overcome in the following research (Arora, 2014). Other than time use studies that discussed time costs and time pressure, the concept of time poverty was not explicitly adopted or expanded in the economic literature, until Douthitt (2000) updated her calculations of poverty rates using the American Time Use Survey of 1985 (Williams et al., 2016).

When measuring time poverty, researchers faces two main challenges, first a conceptual one related to the degree to which time can be considered independently of income. Second a measurement challenge, related to the choice of the method to measure the time poverty threshold (Williams et al., 2016). Concerning the first challenge, the extent to which time is considered independently of income, one can distinguish two approaches. First, studies that incorporated income and time poverty together and introduced a two-dimensional concept of income poverty corrected for time (Vickery, 1977; Bardasi and Wodon, 2010; Harvey and Mukhopadhyay, 2007). In this regards the Freely Disposable Time FDT (Hobbes et al., 2011) and Discretionary Time DT (Goodin et al., 2008, 2005) approaches are rather simpler; they are based on converting necessary monetary expenditures to time so that all needs can be expressed in terms of hours (Williams et al., 2016). Second a group of studies considered time poverty as an essential risk factor that should be treated independently of income poverty by treating time poverty separately and included income or income poverty as a covariate in studying the impacts of time poverty (Kalenkoski and Hamrick, 2013; Kalenkoski et al., 2011; Bittman, 2002; Spinney and Millward, 2010).

As for the second challenge, two measures can be recognized; the ***absolute poverty threshold*** and the ***relative poverty threshold***, both of which are common in the literature on monetary poverty (Saqib and Arif, 2012). Generally, measuring time poverty starts by grouping time into necessary time (e.g., paid work plus unpaid work, or necessary time plus contracted time plus committed time[1]) and discretionary or residual time (Williams et al., 2016). Once this is done, the resulting time sum of interest is compared to some threshold. The setup of the threshold defines which individuals or households are considered time poor, and which groups have higher time poverty rates than others (Williams et al., 2016). For the ***absolute***

[1] Necessary time compromise activities required to satisfy basic physiological needs, such as eating, sleeping, health, and hygiene, although many have discussed eating as being a leisure time activity, Contracted time are activities that generate income, finally committed time refers to "activities that must be performed given previous life choices" (Kalenkoski et al., 2011; Williams et al., 2016).

poverty measures, the choice of the threshold is a bit arbitrary. In the context of monetary poverty, the threshold is set up at a certain level of per adult calorie intake equivalent. Hence, this threshold is not built on economic or any other theory as it is built on an arbitrary consideration of "minimal" calorie requirements. Unfortunately, for time poverty this is even more critical as there is no agreement on the level of "minimum" time needed by an individual so as not to be time poor (Saqib and Arif, 2012). Given this shortcoming of this measure few studies on time poverty adopted such a measure (Vickery, 1977; Harvey and Mukhopadhyay, 2007).

The alternative approach is the ***relative poverty measures,*** which is adopted by the majority of studies on time poverty, as well as this proposed study. This approach uses a relative definition of time poverty instead of making a set of judgmental assumptions about hours needed to sustain minimum level of hygiene, sleep and household maintenance. This is based on using a measure of the central tendency (mean, median or mode) of time distribution or its multiple as a time poverty cut-off point. Another advantage of this method is that it is more appropriate when comparing poverty among countries as it does not require comparing the arbitrarily chosen absolute poverty thresholds for different countries and determining which is more appropriate for the country under analysis (Bittman, 2002; Spinney and Millward, 2010; Bardasi and Wodon, 2010; Burchardt, 2008; Goodin et al., 2008 and 2005; Kalenkoski et al., 2011; Kalenkoski and Hamrick, 2013).

Addressing and measuring time poverty directly for developing countries started only with Bardasi and Wodon (2006) that analyzed the differences in time poverty between males and females in Guinea, as well as its determinants. They developed a relative time poverty line and examined the determinants of time poverty. They reached a time poverty rate of 24.2% for females compared to 9.5% of males, applying a poverty line of 70.5 hours/week. Results showed that females are more likely to be time poor than males; this probability is even higher for women living in rural areas. Married females are more likely to be time poor than single or never married women. Increasing education is coupled with lower probabilities of being time poor. Other studies followed Bardasi and Wodon (2006) and applied same methodology for measuring time poverty and its determinants in other developing countries, mainly in Africa and Latin America.

Gammage (2010) computed time poverty and examined its determinants in Guatemala for both males and females. Using a time poverty line of 12 hours/day, time poverty rates for men were less than 15% compared to 33% for women. A common result is that in both rural and urban areas, women are more likely to be time poor compared to men

Similarly, Ribeiro and Marinho (2012) adopted relative measures and computed time poverty and examined its determinants by gender and adults and children in Brazil using Foster, Greer and Thorbecke (FGT). Their results confirmed the common conclusion of majority of studies; females (either children or adult) are the time-poorest individuals in urban or rural areas. Moreover, the high rate of time poverty among children (16.1%) is not far from that of adults (19.7%). Robles (2010) used the same methodology on data of Ethiopia, and confirmed that time poverty rate of females is higher than that of males, with the gap much larger in rural than in urban areas. In addition, females living in rural areas are more likely to be time poor

than women living in urban areas. In contrast, more men living in urban areas are time poor than men living in rural areas.

Arora (2014) computed the incidence of time poverty in rural Mozambique and examined its determinants by gender, using a probit model, and an absolute time poverty line (12 hours/day). The novelty of this study is in constructing a measure of work intensity using the time poverty gap and overlapping work hours between care work and paid or unpaid work to account for primary care work and simultaneous activities. This showed that women work more intensively than men. The main findings confirm that house and care work are females' responsibility, which they make with minimum help from males, which thus makes them more time poor compared to males. When accounting for simultaneous care work, women's time poverty increases. Moreover, examination of determinants of time poverty show that bargaining power as captured by assets and education do not essentially impact time poverty of females.

Likewise, Saqib and Arif (2012) used data for Pakistan to measure time poverty, and they examined its main determinants, including gender, occupational groups, industries, regions, and income levels. Their results confirmed the findings of previous studies. Females are found to be more time poor than men, whether they are employed or not. Workingwomen are more time poor as compared to not working women. This again confirms that women have to perform certain activities regardless of their employment status, hence making them more time poor. While accepting a job, women have to deal with a major tradeoff between time poverty and monetary poverty.

Some studies examined the effect of access to infrastructure on time poverty. A study by the Asian Development bank (2015) used a desk review of women's Time Poverty and Infrastructure in Asia and the Pacific. It concluded that basic infrastructure can influence the gender division of labor and time poverty specifically for women, through its significant role in reducing the time spent on housework and care work. It also showed that the effects of improved infrastructure on women's time poverty considerably differ according to types of infrastructure.

Finally, in a study on Lesotho, Lawson (2007) provided measures of time poverty for males and females. He also examined the main determinants of being time poor, with special emphasis on the role of key infrastructural elements on time poverty. Results showed that, in contrast with other studies, in the case of Lesotho, men are slightly more time poor than women however the differences are not big. The author explained this result by the large bias of farm work/livestock work towards men in Lesotho. In line with other studies, Lawson (2007) found that wealth increases time poverty for both men and women, improved infrastructure reduces time poverty, females' assets ownership and paid work, which is limited than for men, directly affect females' time poverty, especially female headed household. Whereas, only more educated females are more likely to be time poor. This result confirms that as females, become more educated they allocate more time to formal work, however house work is not proportionately reduced.

To sum up, a common conclusion of the studies tackling time poverty is that females are oftenly more time poor than males whether they are employed or not. This is due to the fact

that they have to accomplish certain activities that are considered women-specific irrespective of their employment status. Hence, this extra time burden plays a significant role in making them more time poor. The prevalence of time poverty is more critical in rural areas and among the individuals in poorer households. Moreover, time poverty of women in rural areas is even worse due to the tireless work of collection of water and firewood caused by lack of basic infrastructure and lack of access to modern time saving household equipments.

For the MENA region, to the best of our knowledge no study attempted to measure time poverty or examined its determinants in the MENA region context. Accordingly, measuring time poverty and analyzing its determinants and the gender disparities in this regard are rather missing in the empirical literature in the MENA region. This could be mainly due to a lack of micro data describing time allocation of both females and males among work and leisure (Bardasi and Woden, 2006).

Consequently, this study is an attempt to fill in this gap in the empirical literature for the MENA region by analyzing gender disparities and time poverty in Egypt and Tunisia, in addition to examining the determinants of time poverty in the two countries. An important contribution of the paper- not only for the MENA region but also for the international literature as well - is that our data enable us to account for primary care work and simultaneous activities, when analyzing time poverty and its determinants. One shortcoming of most of the previous literature on time poverty is the lack of data on adults' time allocated to care work. This leads to underestimation of results (Riberio and Mariho, 2012).

According to the previous literature review the links between individuals' time allocation and the concept of time poverty, could be summarizes through figure (1).

In light of this discussion of theoretical and empirical literature on time poverty, we propose the following hypotheses to be tested through our empirical model:

- ***H1: females are more likely to be time poor than males.***
- ***H2: Probability of time poverty is affected by education, employment status, marital status and access to basic infrastructure.***
    - H2.1: for females, the probability of time poverty is higher the higher the education level, for working women compared to not working women, for married females compared to single never married women and for women with no access to basic infrastructure as measure by access to sewerage facilities and piped water.
    - H2.2: These variables are irrelevant for males' time poverty.
- ***H3: incidence of time poverty is more acute among the individuals in poorer households measured by wealth and number of durables.***

3. Methodology

The paper examines gender inequalities in time poverty, in addition to investigating its main determinants across gender. This is done through relying on the data of household members aged 6 and older provided by the Labor Market Panel Surveys (LMPS) conducted by the ERF in Egypt (ELMPS2012) and Tunisia (TLMPS2014). In this paper, we adopt the extended

market definition for employment, since to calculate time poverty we need to know the amount of housework done by each individual. Housework include activities that are not paid, such as animal husbandry and processing of dairy products for household consumption, individuals practicing this housework are considered not employed under the market definition of labor force[1](Assaad and Krafft, 2013).

In this study, estimates of time spent on each type of work (market, household, caring) are measured in hours per week. The "total time available" for any individual is 168 hours per week (24 hours X 7 days), which s/he allocates between work (which includes market, household and caring work), leisure and tertiary activities. The "***time devoted to tertiary activities***" is the time required to maintain a person's biological functioning (time spent for nourishment, personal hygiene and rest) (Burda et al., 2013; Robles, 2010). The LMPS does not provide information on tertiary activities. Ting and Malhotra (2005) pointed that an adult individual needs to sleep on average 8 hours per day. Thus, time devoted to tertiary activities should exceed 8 hours per day to include other self-caring activities. Yet, following Medeiros et al. (2007) and Robles (2010), the time devoted to tertiary activities is set at 8 hours per day for all individuals (i.e. 56 hours per week) to account for severe workloads. In addition, the "***total time available for work***" is the difference between "***total time available***" and "***time devoted to tertiary activities***", which amounts to 112 hours per week (168 hours – 56 hours). This time is allocated between market, household and caring work, and leisure. According to Robles (2010), leisure is defined as all unnecessary activities that you cannot pay somebody else to do it for you. Time spent on leisure is calculated by subtracting "total work time", which includes all types of work (market, household and caring), from "***total time available for work***", thus leisure is treated as a residual. For individuals whose "***total work time***" (exceeds a certain threshold, this implies less time for them for leisure and rest, and therefore they are considered "***time poor***."

Hence, an individual is considered time-poor if his/her total work time per week (**t_i**), be it at primary work, secondary work or other work (remunerated by the formal sector or the informal one) or even housework, or caring work and the commuting time, is greater than a certain pre-determined poverty line (***t***).

Following literature (Bardasi and Wodon, 2006; Robles, 2010; Lawson, 2007; Ribeiro and Marinho, 2012), we employ two "relative" time poverty lines that are calculated accounting for all individuals in the sample population. The first is a lower threshold which is equal to 1.5 times the median number of total individual working hours. The second is a higher threshold which is equal to 2 times the median. The time poverty measurement is calculated by adapting the FGT (Foster, Greer and Thorbecke (1984) income or consumption poverty measurements to time poverty. Specifically, we calculate the first two poverty measures, as follows:

1) Headcount index of time poverty, or the "time poverty rate" (P_0): it represents the

[1] Assaad and Krafft (2013) differentiate between Market Labor Force that includes all individuals either performing economic activity for market exchange or those seeking such work, and the Extended Labor Force that includes individuals producing and processing primary products regardless it is for the market, for barter or for their own consumption, individual producing all other goods and services for the market and for households producing such goods and services for the market, the corresponding production for their own consumption.

proportion of the population who are time poor.

$$P_0 = N_p / N$$

Where N_p is the number of time-poor individuals, that is, the number of people in which $t_i > t$ and N is the size of the population older than 6 years old.

2) ***Time poverty hiatus, or "time poverty gap" (P_1)***: it represents the mean distance (or average deficit) separating the population from the time poverty line t, with those who are not time poor being given a distance of zero. It indicates the intensity of time poverty and it represents the time needed on average, expressed as a percentage of the time poverty line, for all time-poor individuals to escape time poverty.

$$P_1 = \frac{1}{N}\sum_{i=1}^{N_p}\left(\frac{t_i - t}{t}\right)$$

To analyze gender disparities in time poverty, these two measures are computed separately for men and women in order to make comparisons.

Afterwards, we adopt the methodology of Bardasi and Wodon (2006), Lawson (2007), and Arora (2014), where we estimate **probit** regressions to identify various determiners that explain time poverty. The marginal effects of these factors are also analyzed. The analysis is carried out at the individual level, that is, each individual is classified as time poor or not depending on his or her own individual total time worked. The dependent variable in this model (y_i) is a binary variable that takes the value of 1 if the individual is time poor and 0 if not. Two sets of regression are performed using both time poverty lines (the lower and the higher thresholds). The model takes the following form:

$$P_i = \Phi(x'\beta)$$

Where P_i is the probability that individual i is time poor, $\Phi(.)$ is the cumulative distribution function (cdf) of the standard normal distribution, x is a vector of the explanatory variables, and β is the vector of parameters to be estimated. These probit models are estimated using maximum likelihood estimation method. The log likelihood function will take the following form:

$$\ln L = l = \sum_{0}(1 - y_i)\, ln[1 - \Phi(x'\beta)] + \sum_{1} y_i\, ln\Phi(x'\beta)$$

We incorporate in our model a set of explanatory variables that are commonly used as determinants for time poverty in literature (Bardasi and Wodon, 2006; Lawson, 2007; Ribeiro and Marinho, 2012; Arora, 2014), and for which data is available. This set includes individual socio-economic characteristics, household characteristics and community level characteristics.

Individual characteristics include gender, which is the main regressor, age, age square, levels of education, dummies for marital and household head status. Ever married (widowed, divorced or married) is expected to have a higher probability of time poverty for both females and males. Household characteristics consist of variables reflecting household composition namely household size, the wealth quintile of the household, share of infants, share of children, share of senior people as well as share of adult females in the household. Rich

households are expected to have lower probability of time poverty compared to poor households. The share of adult females in the household is expected to decrease the probability of time poverty for females and increase it for males. Share of infants, children and the elders are expected to increase the probability of time poverty for both females and males. Furthermore, we incorporate in our models of time poverty variables capturing household standard of living and reflecting the access to basic infrastructure. These variables include house ownership, number of durables owned by household, connection to sewerage network and connection to public water networks. It is expected that the lack of access to basic infrastructure increases the probability of time poverty. Finally, we include region dummies as well as urbanization level, measured as the share of urban population from total population by governorate, and share of unemployed measured as the ratio of unemployed to the labor force by governorate. Descriptive statistics for all variables used in the model are reported in tables (A1) and (A2) in the appendix.

4. Data and Descriptive Statistics

The present research make use mainly of the ELMPS (2012) data carried out by the Economic Research Forum (ERF) in cooperation with Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS), in addition to the TLMPS (2014) carried out also by the Economic Research Forum (ERF) in cooperation with Tunisia's Statistical office. The LMPS is considered the first and most comprehensive source of publicly available micro data on the subject.

The LMPSs are wide-ranging, nationally representative surveys that contain novel information which makes it possible to study time use, time poverty and their determinants for both males and females. The surveys include a whole separate section on time use of females and males of the age 6 years and above. It distinguishes time spent not only in market and subsistence work but also domestic work and childcare. The data also covers topics needed in our analysis as individual demographic characteristics for each respondent like age, education, occupation, work status, spouse's education and a lot of information regarding parents' background, fertility, marriage costs etc. It also contains rich information at the household level like household composition, dwelling ownership and access to infrastructure.

For Egypt, our research focuses on 38,107 individuals, in 11,496 households, aged between 6 and 64 years old, with an average age of 29 years old, and 50.3% females. Around 56% of the sample is ever married, and 27% are heads of their households. For Tunisia, the sample consists of 12,879 individuals in 3,974 households, aged between 6 and 64 years old, with a higher average age than Egypt (32.6 years) and a relatively close female share to that in Egypt (53%). The ratio of ever married individuals is around 50% which is less than in Egypt, similarly the ratio of individuals who are heads of their household is 24.7% which is less than in Egypt.

Figure 2 shows that total hours of work in Egypt is higher than that in Tunisia. It also shows that in both countries females' total hours of work are less than that of males.

Table 1 displays time poverty measures for both countries by gender. In both countries males are more time poor than females whatever the poverty line used. Generally time poverty is

higher in Tunisia compared to Egypt. In Egypt 44.42, 28.95 and 36.63% of males, females and overall population respectively are poor compared to 53.13%, 32.5% and 42.02% in Tunisia. The poverty gap measure suggest similar results, In Egypt, 18.89% of the lower time poverty line (42) is needed for all time poor females to escape time poverty which is equal to 7.94 hours per week on average. While for males 23.46% of the lower time poverty line (42) is needed for all time poor males to escape time poverty, which is equal to 9.85 hours per week on average. In Tunisia 28.35% of the lower time poverty line (30) is needed for all time poor females to escape time poverty, which is equal to 8.51 hours per week on average. While for males 43.34% of the lower time poverty line (30) is needed for all time poor males to escape time poverty, which is equal to 13 hours per week on average [1].

Looking at time poverty for males and females by marital status (**figure 3**), in both countries the majority of time poor females and males are ever married. Moreover the share of ever married females from time poor females is higher than that for males in both countries. However the situation is more severe for Egyptian females as 92.16% of time poor Egyptian females are ever married compared to 74.45% of Tunisian time poor females and 77.67% of Egyptian time poor males. This may indicate a relatively stronger association between female time poverty in Egypt and marriage.

For time poverty by education status, **figure (4)** shows that the situation is relatively different in the two countries. In Egypt those with secondary education level comprise the highest share of time poor females and males followed by the illiterates then those with university and above for females, and by illiterates and those with basic education for males. In Tunisia, we notice differences not only compared to the Egyptian case but also between Tunisian males and females. For females, illiterates comprise the highest share of time poor females followed by those with basic education while for males those with basic education occupy the highest share followed by the literates. Hence this suggests that in Tunisia the secondary and above education levels are associated with lower time poverty for both males and females while in Egypt they are associated by higher time poverty.

Time poverty by household wealth quintiles is pretty similar between the two countries and between males and females **figure 5**. Males and females in the second, third and fourth wealth quintiles are occupy approximately even shares for both time poor males and time poor females with no remarkable differences between the two countries. While the situation is different for those in the first and the last quintiles. For Egypt, females in household in the first wealth quintile occupy the lowest share of time poor females while those in households in the fifth quintile occupy the highest share. In Tunisia we see the opposite females in household in the first wealth quintile comprise about 26.7% of time poor females. This may suggest a weak or no association between wealth and time poverty especially for the middle wealth quintiles.

Figure (6) suggests that time poverty of males and females in each country do not seem to be significantly different according to the region where they live. In Egypt females and males

[1] These figures are for the poverty measures calculated using the lower poverty line, same conclusions are reached when using the upper poverty line.

living in rural areas comprise the majority of the time poor males and females. While in Tunisia those living in North and Center East regions occupy the highest shares.

Finally, Figure (7) displays the mean of the share of adult females, adult males, infants and children in the household by gender and time poverty. The situation is very different between the two countries. In Egypt the mean of share of adult females is higher in the case of non-time poor females and time poor males. While in Tunisia it is higher for both non-time poor males and females. Suggesting a negative association with time poverty for Egyptian females and Tunisian females and males and a positive association with time poverty for Egyptian males. For the mean of the share of adult males in the household, it is higher for both time poor males and females in Egypt while the opposite is true in Tunisia. This may indicate a positive association with time poverty in Egypt and a negative relation in Tunisia. Exceptionally concerning the mean of the share of infants, the situation is similar in both countries and for both males and females. The figure suggests a positive relation between the share of infants in the household and time poverty. Finally for the share of children in the household, we can notice a negative association with time poverty for both males and females in Egypt and a positive association in Tunisia.

5. Empirical Results and Analysis

Table (A3) in the appendix shows the regression results of the probit models of time poverty (using the lower poverty line[1]), as well as marginal effects, for the whole sample (both females and males) in Egypt and Tunisia respectively. As it is shown from the table most of the regressors are statistically significant (mostly at 5% significance level). On average, the probability to be time poor is much higher in Tunisia (about 0.42) than in Egypt (about 0.26), as was confirmed by the raw data. The main regressor of interest is the ***female*** variable, which is found to be significant in the models of both countries. The results show that the probability of time poverty for females is lower by about 0.21 and 0.17 compared to males in Egypt and Tunisia respectively. This result goes along with the poverty measures calculated in the descriptive statistics section, which reveal that in both countries males are more time poor than females whatever the poverty line used. Nevertheless, this result differs from the hypothesis derived from the literature, which states that females are more likely to be time poor than males, since they spend more time at house and care work beside their market work. This result reached by the current study could be explained by the relatively very low females' labor force participation rates in the MENA countries, which reached 21.27% for the region and 24.12% for Egypt in 2014. Female labor force participation in MENA region is considered to be one of the lowest among the world. This may suggest that females in the region do not face the double burden of market work and house and care work contrary to other regions. Hence they face less time poverty compared to males.

As was confirmed by the raw data in the descriptive statistics section, the empirical results show that the effect of different individual and household characteristics on time poverty may vary by gender. Thus, we conducted separate models for the two subsamples (females and

[1] We only report here the empirical results of the models using lower poverty line, since no major differences are noticed in results when using the upper poverty line and for the sake of brevity. Tables (A5) and (A6) in the appendix show the regression results of the probit models of time poverty and their marginal effects using the upper poverty line, in both Egypt and Tunisia, for the whole sample and by gender respectively.

males), and marginal effects were estimated as well. Below, we present and compare the results of these models in both Egypt and Tunisia.

Table (A4) shows the results of the probit models and estimated marginal effects for time poverty (using the lower poverty line) in Egypt and Tunisia by gender. On average, the probability of time poverty for both sexes is higher in Tunisia than Egypt. Also, in both countries, the probability of being time poor, on average, is higher for males (about 0.35 in Egypt and 0.55 in Tunisia) than for females (about 0.18 in Egypt and 0.32 in Tunisia). These results were confirmed earlier by the descriptive statistics. Concerning ***individual characteristics***, the results show that – in Egypt and Tunisia - as age increases, the probability of being time poor increases, but with a decreasing rate for both females and males, but the effect is larger for males.

As for the educational level, in both countries, its impact on time poverty of females is relatively similar. In Egypt, females with secondary, post secondary, university and above educational levels have a higher probability of time poverty compared to illiterate females, while in Tunisia, females with basic, post secondary, university and above educational level have a higher probability of being time poor compared to illiterate ones. Though, the picture is different between the two countries for males. On one hand, in Egypt, males with any level of education have a lower probability of time poverty (except for post secondary educational level), compared to illiterate males. On the other hand, in Tunisia, the probability of being time poor for literate males and those with basic education is higher compared to illiterate ones, while males with university and above educational level have a lower probability compared to illiterate males. This result, concerning the lower probability of time poverty by males with university and above educational level in both countries, could be due to that men with university and above educational level may spend less time on market work, as their level of education could enable them to finish their work in less time compared to others . This leads to less total work time and more leisure time for males, and in turn being less time poor, compared to illiterates. As for the higher probability of time poverty of females, this could be explained by the higher labor force rates of participation for females with secondary and university and above levels of education compared to illiterates (Nazier and Ramadan, forthcoming) . In addition, these results go in line with the previously derived hypothesis that for females the probability of time poverty is higher the higher the education level. Yet, the results reveal that level of education has an effect on time poverty for males, unlike the hypothesis stating that this variable is irrelevant for males' time poverty.

Regarding the effect of marital status, in both countries, ever-married females and males have a higher probability of being time poor compared to unmarried counterparts, while this effect is insignificant for males in Tunisia. Again, these results match our derived hypothesis that the probability of time poverty is higher for married females compared to single never married women, while the marital status has no effect on males' time poverty, except that it has a significant effect on males' time poverty in Egypt.

Moreover, the results show that, in Egypt and Tunisia, male head of the household tends to have a higher probability of being time poor compared to other members of the household. However, only in Egypt, female head of the household tends to have a lower probability of

time poverty, compared to other household members, while this variable shows no significant effect for females in Tunisia.

Concerning ***household characteristics***, the results reveal that, the share of adult females in the household has no significant effect on males' time poverty in both countries. For females, the probability of time poverty decreases as the share of females in the household increases. This result for females could be explained by the possibility that house and caring tasks will be divided between more females, if the share of adult females in the household increases, and thus, the female could have more time for leisure and less total work time.

Furthermore, wealth quintiles have no significant impact on time poverty in Tunisia for both females and males. But, in Egypt, only females in the second wealth quintile and males in the third wealth quintile have a higher probability of time poverty compared to their counterparts in the first quintile. These results differ from our hypothesis that incidence of time poverty is more acute among the individuals in poorer households measured by wealth.

In addition, in both countries, household size is associated with higher probability of time poverty for males only, holding all other variables constant, since this variable has no significant effect on time poverty of females. This could be explained by the need of the male who is a member of a large household to spend more time on work, to be able to gain more earnings to satisfy his/her needs and maybe to spend on his family members as well.

Regarding the share of infants, children and seniors in the household, the empirical results show that these variables have no significant effect on males' time poverty in both countries, except for the share of children in Egypt, where the probability of time poverty for males decreases when the share of children in the household increases. As previously mentioned, this unexpected result could be interpreted by the possibility that in some cases, when the share of children in the household increases, males may use their children to gain more money through pushing them to work , and in turn they spend less time on work, and they become less time poor. As for females, in both countries, as expected, these variables have a positive significant effect on females' time poverty except for the share of children in Tunisia, which has no significant effect.

Concerning house ownership, in Egypt, the probability of time poverty for females living in old rented or condominium or grant houses is higher - on average – than that of females living in their owned houses. Compared to males living in their owned dwellings, males living in new rented houses have a higher probability of being time poor. This result is expected, since house ownership is included in these models to capture the household's standard of living. Thus, women living in old rented or condominium houses are believed to have lower standard of living compared to those living in their owned houses, hence they allocate more time for house and care work, leaving them more time poor. While for males, living in new rented houses, requires them to allocate more time to market work to finance the rent of their houses. In Tunisia, for both females and males, living as a tenant in public/private houses or in public property is associated with a higher probability of time poverty, compared to living in owned houses. Also, males living in free accommodation with family have a higher probability of being time poor, compared to males living in their owned houses.

As for the access to basic infrastructure resources, in Egypt and Tunisia, results show that both females and males have a lower probability of time poverty, if they are connected to any form of sewerage facility, compared to those non-connected to such facility. But this effect is more significant in Tunisia than in Egypt. Likewise, having a public water network in the housing unit is associated with lower probability of time poverty for females in both Egypt and Tunisia. Though, this variable has no significant effect on males' time poverty in Egypt, and it has a positive weak significant effect on males' time poverty in Tunisia. These results confirm our derived hypotheses that the probability of time poverty is higher for women with no access to basic infrastructure as measured by access to sewerage facilities and piped water, and that these variables are irrelevant for males' time poverty. In addition, as the number of durables owned by the household increases, the probability of being time poor declines for both females and males in Egypt, while it increases for only males in Tunisia. However, this effect in Tunisia for males is weak in significance and magnitude. Likewise, these results go in line with the hypothesis that probability of time poverty is higher among the individuals in poorer households measured by number of durables.

Concerning ***community variables***, the effect of regional dummies on time poverty is more significant in Tunisia than in Egypt, as was confirmed by the raw data in the descriptive statistics section. In Egypt, living in Lower areas (urban or rural) increases the probability of time poverty for females, compared to living in Greater Cairo, while regional dummies have no significant effect on males' time poverty. In addition, in Tunisia, the magnitude and significance of the regional dummies' effect differ between females and males. Females living in the Center East as well as South areas have a higher probability of time poverty compared to females living in the North. For males, living in the Center East or Center West is associated with lower probability of time poverty, while living in North West is associated with higher probability of being time poor, compared to males living in the North. This could be explained by the different traditions and norms among the geographical areas in the same country and the different social contexts among the different countries.

Finally, urbanization and unemployment seem to have no significant effect on time poverty for both females and males in Tunisia. However, in Egypt, for both females and males, the increase in the share of urban population is associated with higher probability of time poverty, while the increase in the share of unemployed individuals in the governorate is associated with lower probability of time poverty.

6. Conclusion

In the MENA region, women are often expected to have more workload at home as they are in most times, in these societies, the sole household member responsible for house and care work, despite their workload in the market. This result in a double work burden for women than men. Thus, women are expected to be more time poor than men, which adversely affect their capability to develop their abilities and skills. Hence, it is important to examine the gender gap between men and women concerning time poverty in addition to its determinants, to stand on the proper policies that should be formulated to change the existing work load patterns in order to improve women's well being.

This paper tries to achieve this objective.. It examined the gender differences in g time poverty in two MENA counties particularly Egypt and Tunisia. This is done by exploring the gender differences in time poverty for household members aged 6 and older in both Egypt and Tunisia, and then comparing the results.

For both countries the results show that the probability of time poverty for females is lower compared to males. With On average, the probability to be time poor is much higher in Tunisia (about 0.42) than in Egypt. Despite that this result differs from the hypothesis derived from the literature, which states that females are more likely to be time poor than males, since they spend more time at house and care work beside their market work. This result reached by the current study could be explained by the relatively very low females' labor force participation rates in the MENA countries. Female labor force participation in MENA region is considered to be one of the lowest among the world. This may suggest that females in the region do not face the double burden of market work and house and care work contrary to other regions. Hence they face less time poverty compared to males.

Findings show that probability of time poverty increases when someone is young and begins to decrease after certain adult age. In other words, the time poverty path throughout time has the shape of an inverted U shape.

The higher the level of education for females the higher the probability of time .Yet, the results reveal that level of education has an effect on time poverty for males, unlike the hypothesis stating that this variable is irrelevant for males' time poverty.

Regarding the effect of marital status, in both countries, ever-married females and males have a higher probability of being time poor compared to unmarried counterparts, while this effect is insignificant for males in Tunisia.

The results reveal that, the share of adult females in the household has no significant effect on males' time poverty in both countries. For females, the probability of time poverty decreases as the share of females in the household increases. This result for females could be explained by the possibility that house and caring tasks will be divided between more females, if the share of adult females in the household increases, and thus, the female could have more time for leisure and less total work time.

These findings again confirm our derived hypotheses that the probability of time poverty is higher for women with no access to basic infrastructure as measured by access to sewerage facilities and piped water, and that these variables are irrelevant for males' time poverty. Finally results regarding the impact of community level variables support the results we reached in the time allocation model.

In sum, this paper shows that 'gender' is the most important determinant of time poverty. These empirical results conform with the inflexibility of patriarchal norms in these societies and reinforce the role of norms in shaping gender roles and labor division inside the household. As the lower probability of time poverty for women reflects the very low labor force participation rates for women in the MENA region which is again explained by norms and traditions and the resulting barriers women face in the labor markets in the region. Accordingly, policies aiming at enhancing women status and empowerment should implement

programs to raise awareness of both men and women of women's equal rights and the critical role they can play in meeting basic needs of human survival and wellbeing.

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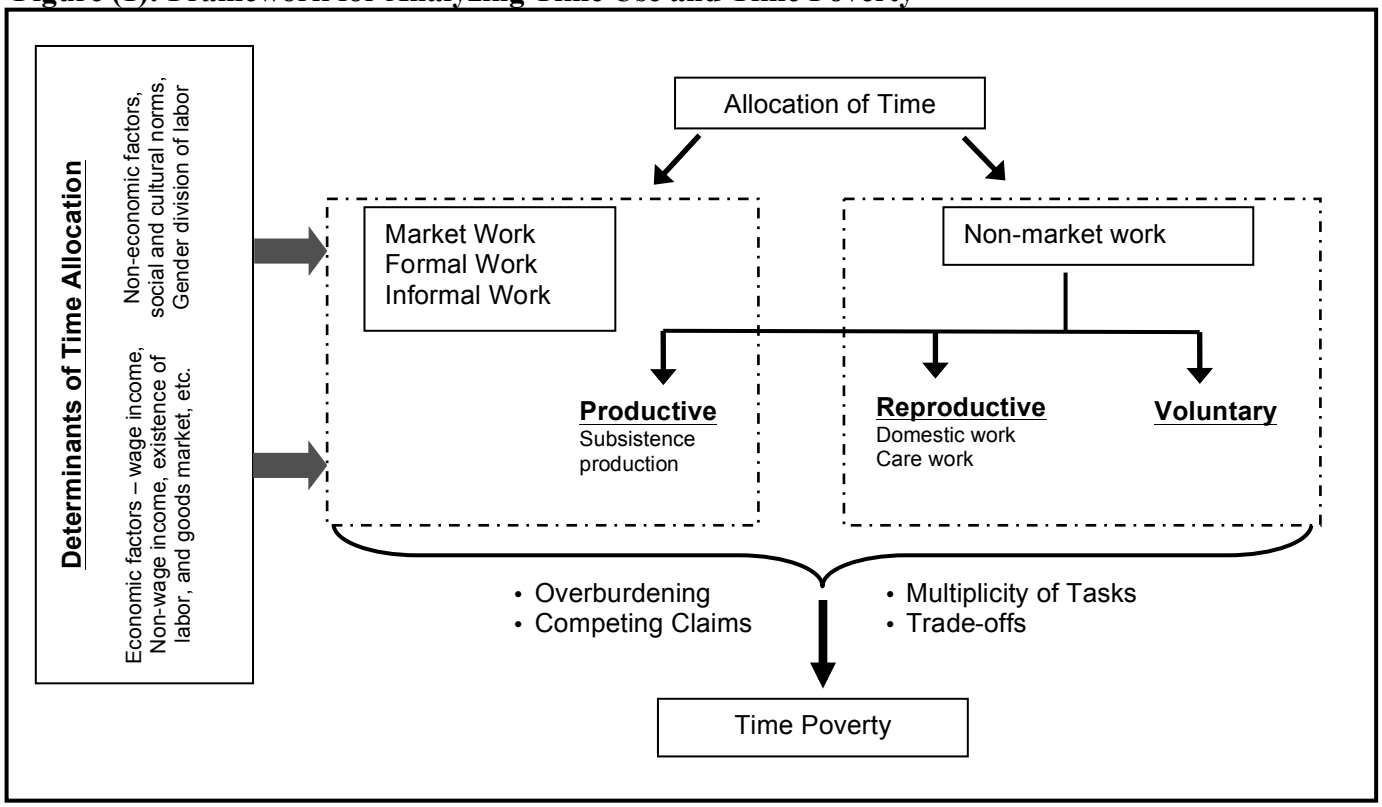
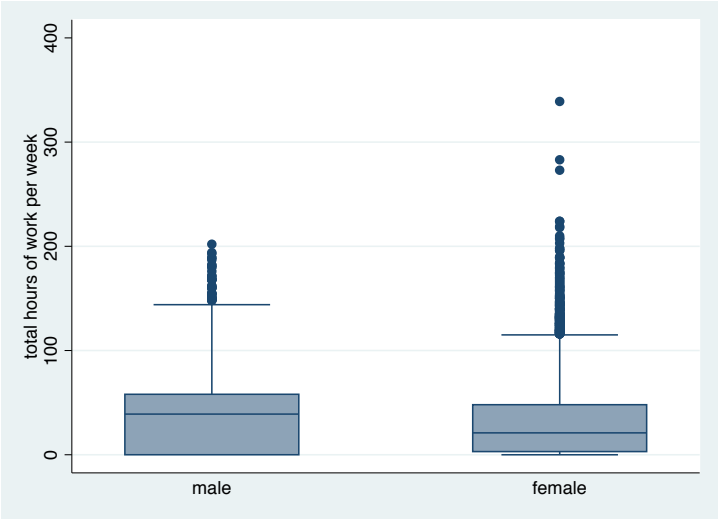
Figure (1): Framework for Analyzing Time Use and Time Poverty



Source: Blackden and Wodon (2006)

Figure 2: Total Hours of work by gender

Egypt



Tunisia

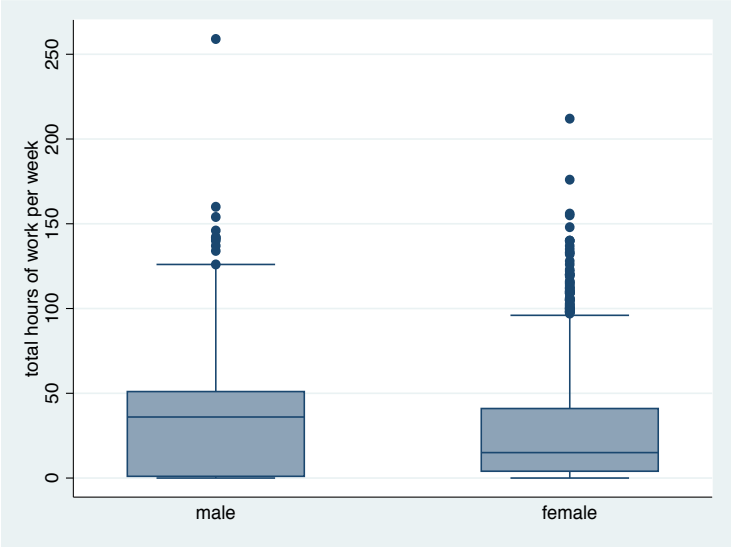


Figure 3: Time poor individuals by gender and marital status

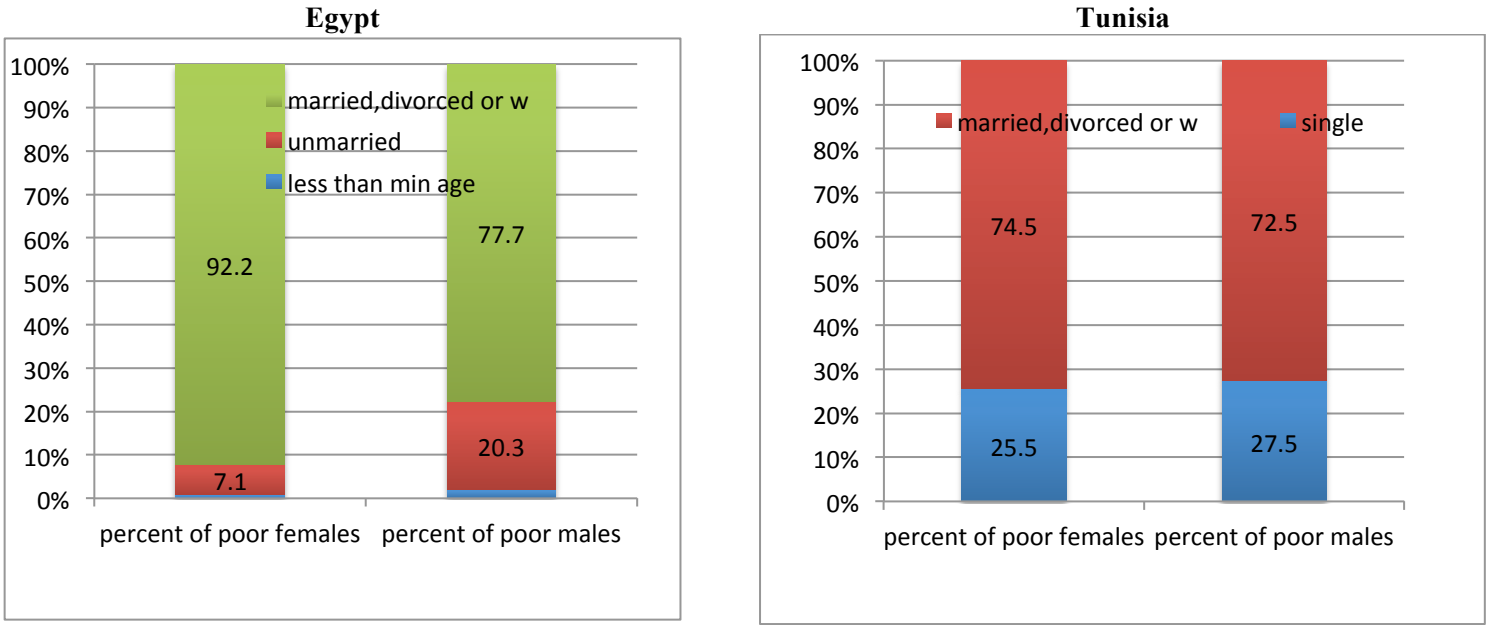


Figure 4: Time poor individuals by gender and education status

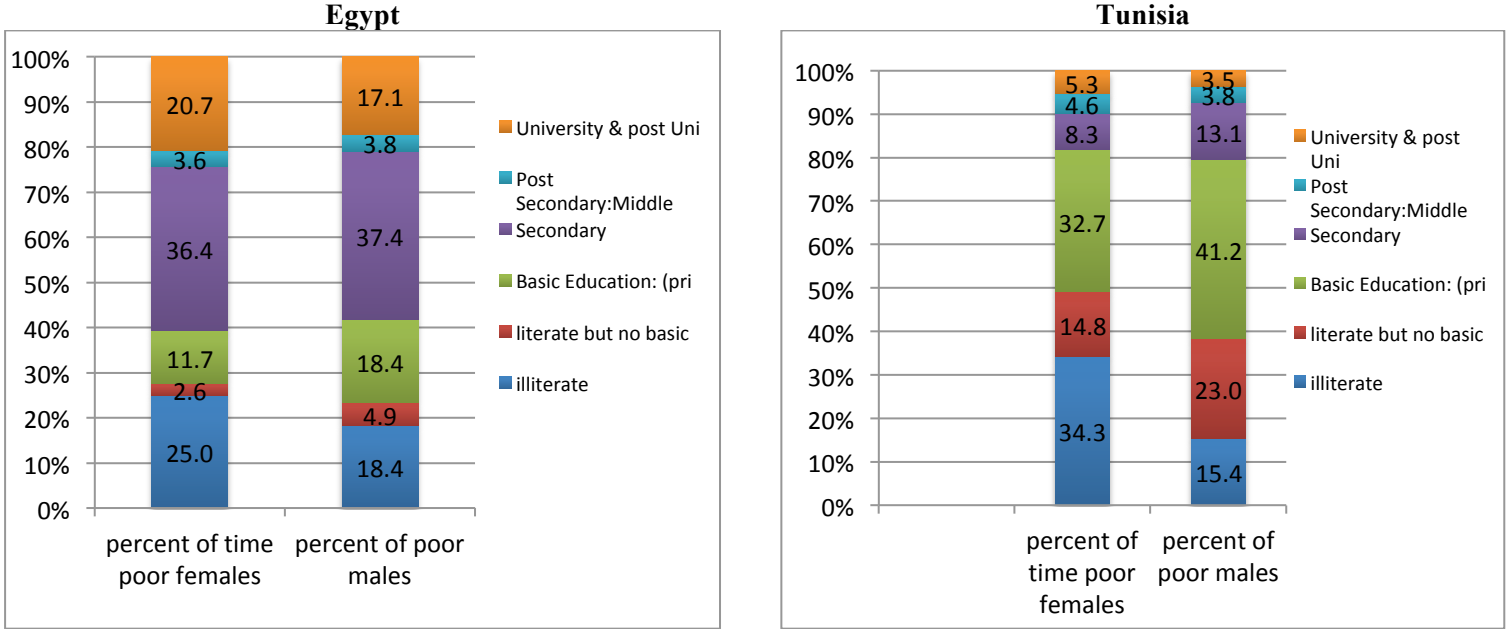
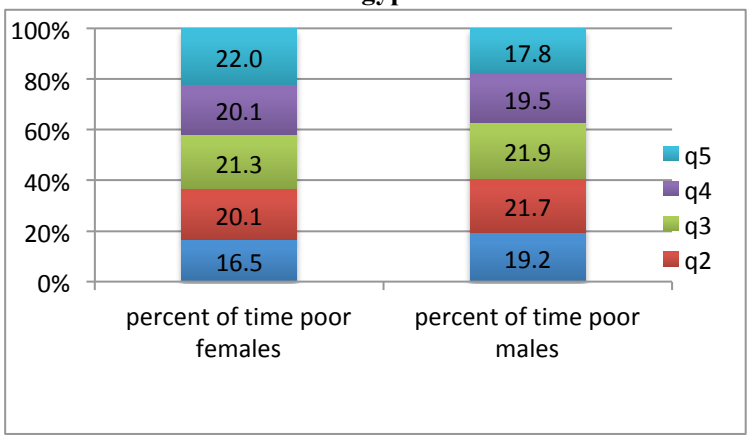


Figure 5: Time poor individuals by gender and wealth quintiles

Egypt



Tunisia

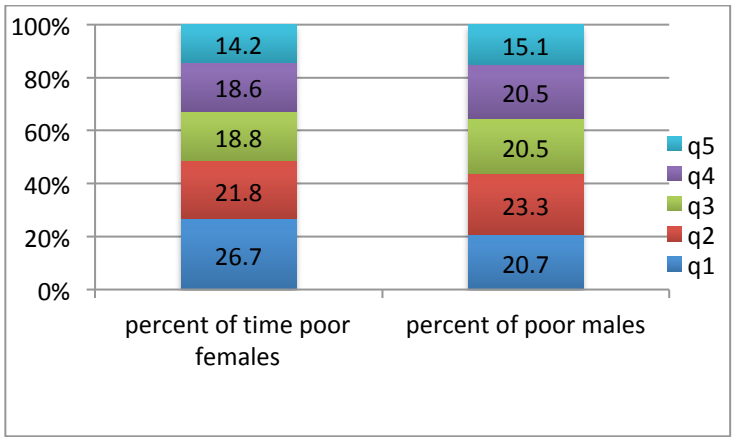
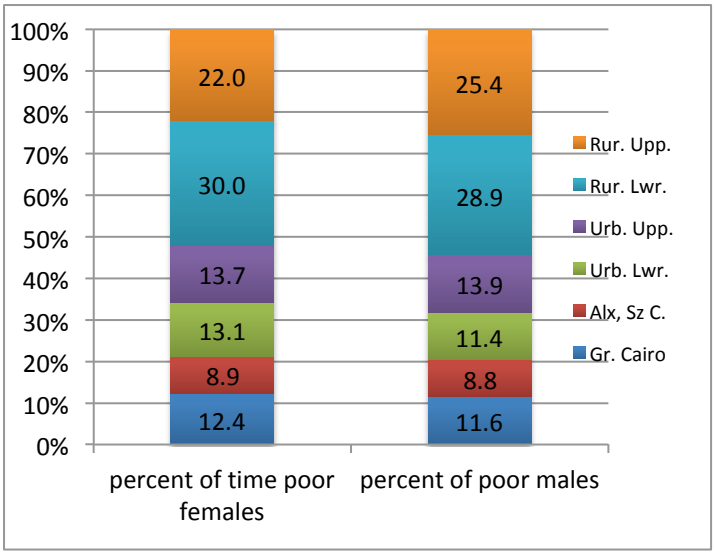


Figure 6: Time poor individuals by gender and regions

Egypt



Tunisia

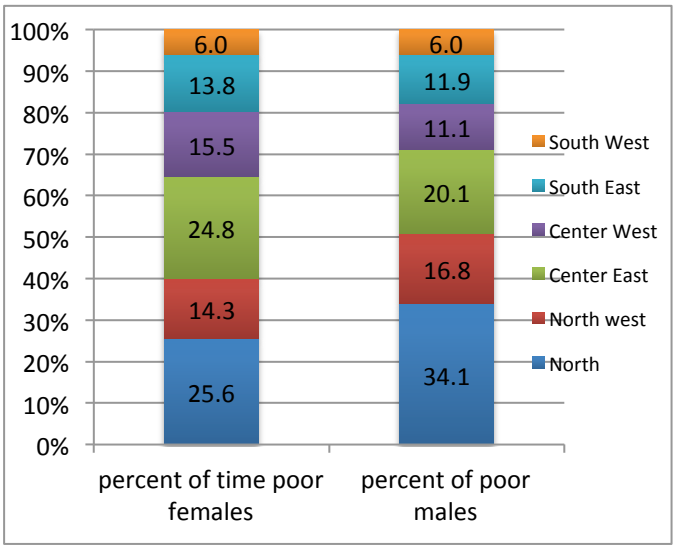
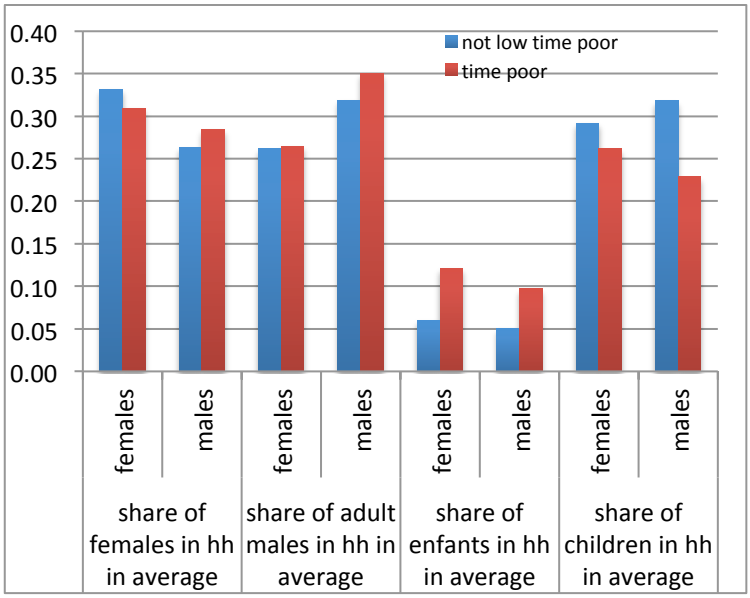


Figure 7: Mean of the share of adult females, adult males, infants and children in household by gender and time poverty

Egypt



Tunisia

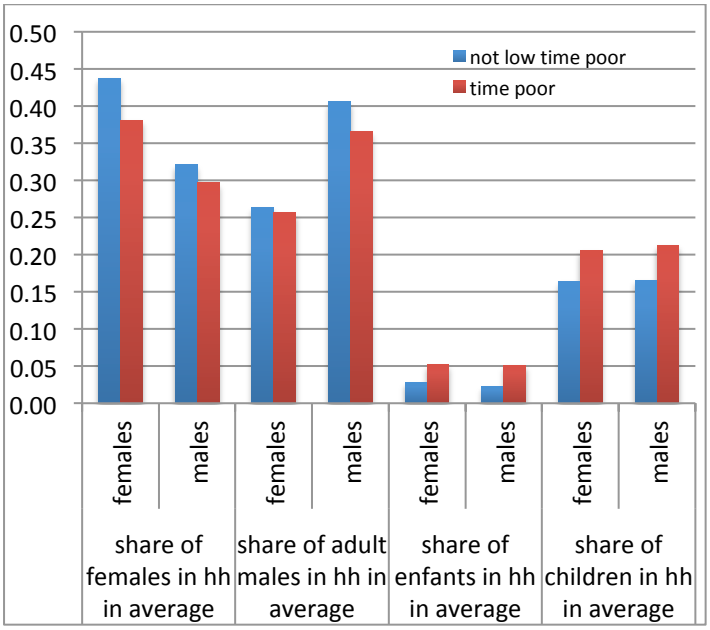


Table 1: Time poverty measures Egypt and Tunisia

	Egypt			Tunisia		
Time poverty line						
Lower	42			30		
Upper	56			40		
Time poverty rate %						
	Males	**Females**	**Aggregate**	**Males**	**Females**	**Aggregate**
Lower	44.42%	28.95%	36.63%	53.13%	32.50%	42.02%
Upper	25.92%	17.88%	21.87%	46.85%	25.37%	35.25%
Time poverty gap%						
Lower	23.46%	18.89%	21.16%	43.34%	28.35%	35.27%
Upper	8.53%	8.18%	8.36%	19.79%	13.90%	16.63%

Appendix

Table (A1): Egypt Summary Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Market work	38107	17.09662	24.74107	0	120
Care work	38107	4.463379	12.18344	0	189
House work	38107	9.573727	13.90776	0	270
I- Individual Characteristics					
Age	38107	28.59582	15.29133	6	64
Female	38107	0.5033458	0.4999954	0	1
Education level					
Illiterate	38071	0.1991279	0.3993497	0	1
Read and write (literate)	38071	0.1828689	0.386564	0	1
Basic Education	38071	0.2153345	0.4110596	0	1
Secondary	38071	0.2654251	0.4415651	0	1
Post Secondary	38071	0.0234562	0.1513492	0	1
University and above	38071	0.1137874	0.317557	0	1
Marital status					
Less than minimum age	38107	0.2722859	0.4451421	0	1
Unmarried	38107	0.1654289	0.3715721	0	1
Ever married	38107	0.5622851	0.4961119	0	1
Head	38107	0.2714724	0.444725	0	1
II- Household Characteristics					
Household size	38107	5.046317	2.167676	1	21
Share of females in household	38107	0.2989441	0.1533591	0	1
Share of infants in household	38107	0.0743929	0.1250586	0	0.75
Share of children in household	38107	0.2806811	0.2264874	0	1
Share of seniors in household	38107	0.0293563	0.0874124	0	0.6666667
House ownership					
Unfurnished (or rent old)	38107	0.1100848	0.3129995	0	1
Furnished (or new rent)	38107	0.0435091	0.2040027	0	1
Owned	38107	0.5744351	0.4944349	0	1
Condominium or grant	38107	0.271971	0.4449809	0	1
Number of persons per room	38107	1.479719	0.7543662	0.1666667	8
Connection to Sewerage					
Private toilet connected to sewerage network	38107	0.5907838	0.4916957	0	1
Shared toilet connected to sewerage network	38107	0.0173459	0.1305583	0	1
Others	38107	0.3918703	0.4881744	0	1
Public water network	38107	0.9352088	0.2461604	0	1
Number of durables	38107	6.117354	1.864831	0	14
III- Community Characteristics					
Regions Greater Cairo	38107	0.1100585	0.3129668	0	1
Alexandria and Suez canal	38107	0.0809563	0.2727715	0	1

Urban lower Egypt	38107	0.1108458	0.3139452	0	1
Urban upper Egypt	38107	0.1396331	0.3466106	0	1
Rural lower Egypt	38107	0.2810245	0.4495053	0	1
Rural upper Egypt	38107	0.2774818	0.4477621	0	1
Urbanization by governorate	38107	0.3785825	0.2710964	0.1484598	1
Share of unemployed by governorate	38107	0.0640698	0.0258974	0.0124068	0.1148066

Table (A2): Tunisia Summary Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Market work	12879	11.27207	20.29583	0	99
Care work	12879	1.640655	6.803312	0	198
House work	12879	7.315397	12.88875	0	114
I- Individual Characteristics					
Age	12879	32.56953	16.68822	6	64
Female	12697	0.5289438	0.4991812	0	1
Education Level					
Illiterate	11305	0.2631579	0.4403669	0	1
Read and write (literate)	11305	0.1898275	0.3921819	0	1
Basic Education	11305	0.3567448	0.4790598	0	1
Secondary	11305	0.1091552	0.3118477	0	1
Post secondary	11305	0.0374171	0.1897899	0	1
University and above	11305	0.0436975	0.2044302	0	1
Marital status					
Unmarried	12515	0.5012385	0.5000184	0	1
Ever married	12515	0.4987615	0.5000184	0	1
Head of Household	12861	0.2472592	0.4314354	0	1
II- Household Characteristics					
Household size	12879	4.656573	1.658208	1	10
Share of adult females in household	12879	0.3476682	0.1912393	0	1
Share of infants in household	12879	0.0360047	0.0946385	0	0.6666667
Share of children in household	12879	0.2349198	0.2367297	0	1l
Share of seniors in household	12879	0.0506217	0.1259729	0	0.6666667
House ownership					
Owned	12829	0.8981214	0.3025003	0	1
Tenant public/private/public property	12829	0.0643074	0.2453093	0	1
Owned by the employer	12829	0.0028061	0.0529007	0	1
Free accommodation with family	12829	0.034765	0.1831911	0	1
Number of persons per room	12614	1.614268	0.8915381	0.025	8
Connection to Sewerage					
Sewage system	11857	0.3766551	0.4845677	0	1
Covered septic tank	11857	0.5520789	0.4973014	0	1
Open drain and others	11857	0.0712659	0.2572794	0	1
Public water network	12821	0.736604	0.4404925	0	1
Number of durables	12879	5.217486	2.250913	0	13
III- Community Characteristics					
Regions					
North	12879	0.3132231	0.4638223	0	1
North West	12879	0.1441106	0.3512154	0	1
Center East	12879	0.2236198	0.4166863	0	1
Center West	12879	0.1620467	0.368508	0	1
South East	12879	0.1042006	0.3055325	0	1
South West	12879	0.0527991	0.2236409	0	1

Urbanization by governorate	12879	0.6158274	0.2058677	0.2614075	1
Share of unemployed by governorate	12879	0.1310331	0.0521881	0.0410013	0.2566992

Table (A3): Empirical Results of Probit models for *Time Poverty* (using *Lower Poverty Line*) in Egypt and Tunisia

	Egypt			Tunisia	
	(1)	(2)		(3)	(4)
VARIABLES	Time Poverty Lower Threshold	Marginal Effects	VARIABLES	Time Poverty Lower Threshold	Marginal Effects
I- Individual Characteristics			**I- Individual Characteristics**		
Age	0.154***	0.0499***	Age	0.163***	0.0637***
	(0.00479)	(0.00156)		(0.00807)	(0.00314)
Age^2	-0.00199***	-0.000647***	Age^2	-0.00201***	-0.000785***
	(5.93e-05)	(1.94e-05)		(9.67e-05)	(3.77e-05)
Female	-0.659***	-0.212***	Female	-0.434***	-0.169***
	(0.0250)	(0.00770)		(0.0489)	(0.0188)
Education level: Reference Category (illiterate)			**Education level: Reference Category (illiterate)**		
Read and write (literate)	-0.0261	-0.00842	Read and write (literate)	0.129**	0.0509**
	(0.0398)	(0.0128)		(0.0513)	(0.0203)
Basic Education	0.0344	0.0112	Basic Education	0.270***	0.106***
	(0.0271)	(0.00890)		(0.0487)	(0.0191)
Secondary	0.161***	0.0534***	Secondary	0.0376	0.0147
	(0.0246)	(0.00833)		(0.0628)	(0.0246)
Post secondary	0.225***	0.0778***	Post secondary	0.133	0.0525
	(0.0503)	(0.0183)		(0.0906)	(0.0360)
University and above	0.312***	0.108***	University and above	-0.206**	-0.0783**
	(0.0319)	(0.0117)		(0.0891)	(0.0328)
Marital status: Reference category (Unmarried)			**Marital status: Reference category (Unmarried)**		
Less than minimum age	-0.669***	-0.193***			
	(0.0518)	(0.0126)			
Ever married	0.473***	0.150***	Ever married	0.216***	0.0836***
	(0.0310)	(0.00950)		(0.0649)	(0.0249)
Head of Household	-0.0698**	-0.0224**	Head of Household	0.262***	0.103***
	(0.0286)	(0.00906)		(0.0582)	(0.0229)
II- Household Characteristics			**II- Household Characteristics**		
Share of adult females in household	-0.275***	-0.0893***	Share of adult females in household	-0.233**	-0.0911**
	(0.0690)	(0.0224)		(0.117)	(0.0456)
Wealth Quintiles: Reference Category (first quintile)			**Wealth Quintiles: Reference Category (first quintile)**		
Second Wealth Quintile	0.0603**	0.0198**	Second Wealth Quintile	-0.0319	-0.0124
	(0.0255)	(0.00846)		(0.0517)	(0.0201)

Third Wealth Quintile	0.0547**	0.0179*	Third Wealth Quintile	0.0296	0.0116
	(0.0278)	(0.00921)		(0.0671)	(0.0263)
Fourth Wealth Quintile	-0.0124	-0.00402	Fourth Wealth Quintile	0.0547	0.0214
	(0.0323)	(0.0104)		(0.0841)	(0.0330)
Fifth Wealth Quintile	0.0471	0.0154	Fifth Wealth Quintile	0.0354	0.0139
	(0.0429)	(0.0142)		(0.120)	(0.0472)
Household size	-0.00129	-0.000420	Household size	0.0100	0.00390
	(0.00453)	(0.00147)		(0.0112)	(0.00437)
Share of infants in household	0.964***	0.313***	Share of infants in household	0.461**	0.180**
	(0.0800)	(0.0260)		(0.196)	(0.0765)
Share of children in household	0.162***	0.0527***	Share of children in household	-0.101	-0.0396
	(0.0549)	(0.0178)		(0.109)	(0.0426)
Share of seniors in household	0.165*	0.0535*	Share of seniors in household	0.351**	0.137**
	(0.0911)	(0.0296)		(0.138)	(0.0538)
House Ownership: Reference category (owned)			**House Ownership: Reference category (owned)**		
Unfurnished (or rent old)	0.0544*	0.0179*	Tenant public/private/public property	0.240***	0.0949***
	(0.0282)	(0.00941)		(0.0711)	(0.0283)
Furnished (or new rent)	0.129***	0.0434***	Owned by employer	0.285	0.113
	(0.0390)	(0.0136)		(0.296)	(0.118)
Condominium or grant	0.0599***	0.0196***	Free accommodation with family	0.207**	0.0819**
	(0.0195)	(0.00644)		(0.0881)	(0.0351)
Sewerage Facility: Reference category (others)			**Sewerage Facility: Reference category (open drain and others)**		
Private toilet connected to a sewerage network	-0.0272	-0.00885	Sewage system	-0.487***	-0.185***
	(0.0219)	(0.00714)		(0.0739)	(0.0271)
Shared toilet connected to a sewerage network	-0.136**	-0.0423**	Covered septic tank	-0.257***	-0.100***
	(0.0621)	(0.0184)		(0.0668)	(0.0260)
Public water network	-0.0748**	-0.0248**	Public water network	-0.0137	-0.00535
	(0.0342)	(0.0116)		(0.0427)	(0.0167)
Number of durables	-0.0290***	-0.00943***	Number of durables	0.0381**	0.0149**
	(0.00772)	(0.00251)		(0.0178)	(0.00695)
III- Community Variables			**III- Community Variables**		
Regional Dummies: Reference Category (Greater Cairo)			**Regional Dummies: Reference Category (North)**		
Alexandria and Suez Canal	-0.0236	-0.00761	North West	0.146**	0.0574**
	(0.0351)	(0.0112)		(0.0738)	(0.0292)
Urban Lower Egypt	0.167***	0.0565***	Center East	0.0635	0.0249
	(0.0501)	(0.0175)		(0.0492)	(0.0193)

Urban Upper Egypt	-0.00249	-0.000807	Center West	-0.105	-0.0406
	(0.0492)	(0.0160)		(0.0888)	(0.0340)
Rural Lower Egypt	0.126***	0.0416***	South East	0.172***	0.0678***
	(0.0481)	(0.0161)		(0.0582)	(0.0231)
Rural Upper Egypt	-0.0927*	-0.0297*	South West	0.0876	0.0344
	(0.0510)	(0.0161)		(0.0750)	(0.0297)
Urbanization by governorate	0.331***	0.107***	Urbanization by governorate	-0.0775	-0.0302
	(0.0625)	(0.0203)		(0.141)	(0.0548)
Share of unemployed by governorate	-2.651***	-0.861***	Share of unemployed by governorate	0.160	0.0624
	(0.397)	(0.129)		(0.488)	(0.190)
Constant	-2.564***		Constant	-3.095***	
	(0.119)			(0.218)	
Observations	**38,071**		**Observations**	**7,313**	
Wald chi2	**8808.43**		**Wald chi2**	**1280.38**	
Prob > chi2	**0.0000**		**Prob > chi2**	**0.0000**	
Pseudo R2	**0.2976**		**Pseudo R2**	**0.1423**	
y = Pr(time poor)		**0.2606**	**y = Pr(time poor)**		**0.4169**

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, Maximum likelihood is used in estimation

Table (A4): Empirical Results of Probit models for *Time Poverty* (using *Lower Poverty Line*) by gender in Egypt and Tunisia

	Egypt					Tunisia			
	Females		Males			Females		Males	
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
VARIABLES	Time Poverty Lower Threshold	Marginal Effects	Time Poverty Lower Threshold	Marginal Effects	VARIABLES	Time Poverty Lower Threshold	Marginal Effects	Time Poverty Lower Threshold	Marginal Effects
I- Individual Characteristics					***I- Individual Characteristics***				
Age	0.134***	0.0355***	0.191***	0.0709***	Age	0.134***	0.0476***	0.204***	0.0810***
	(0.00704)	(0.00190)	(0.00718)	(0.00264)		(0.0109)	(0.00387)	(0.0128)	(0.00506)
Age^2	-0.00172***	-0.000454***	-0.00248***	-0.000918***	Age^2	-0.00160***	-0.000569***	-0.00258***	-0.00102***
	(8.95e-05)	(2.42e-05)	(8.66e-05)	(3.19e-05)		(0.000133)	(4.70e-05)	(0.000150)	(5.94e-05)
Education level: Reference Category (illiterate)					**Education level: Reference Category (illiterate)**				
Read and write (literate)	0.0379	0.0101	-0.140***	-0.0511***	Read and write (literate)	0.0800	0.0288	0.147*	0.0578*
	(0.0649)	(0.0175)	(0.0534)	(0.0191)		(0.0712)	(0.0260)	(0.0816)	(0.0318)
Basic Education	0.0439	0.0117	-0.0967**	-0.0355**	Basic Education	0.327***	0.119***	0.200**	0.0787**
	(0.0394)	(0.0106)	(0.0405)	(0.0147)		(0.0652)	(0.0242)	(0.0790)	(0.0310)
Secondary	0.308***	0.0869***	-0.0801**	-0.0295**	Secondary	0.124	0.0450	-0.0633	-0.0251
	(0.0349)	(0.0105)	(0.0374)	(0.0137)		(0.0913)	(0.0338)	(0.0942)	(0.0375)
Post secondary	0.366***	0.111***	-0.0232	-0.00856	Post secondary	0.299**	0.112**	-0.105	-0.0417
	(0.0731)	(0.0250)	(0.0715)	(0.0263)		(0.119)	(0.0464)	(0.142)	(0.0564)
University and above	0.665***	0.213***	-0.126***	-0.0457***	University and above	0.236**	0.0876**	-0.739***	-0.282***
	(0.0461)	(0.0171)	(0.0460)	(0.0164)		(0.115)	(0.0444)	(0.135)	(0.0459)
Marital status: Reference category (Unmarried)					**Marital status: Reference category (Unmarried)**				
Less than minimum age	-0.729***	-0.163***	-0.470***	-0.165***					
	(0.0926)	(0.0161)	(0.0652)	(0.0214)					
Ever married	0.402***	0.101***	0.341***	0.126***	Ever married	0.213**	0.0745***	0.120	0.0475
	(0.0458)	(0.0112)	(0.0561)	(0.0206)		(0.0834)	(0.0287)	(0.151)	(0.0599)
Head of Household	-0.157***	-0.0390***	0.141**	0.0522**	Head of Household	0.0860	0.0311	0.447***	0.176***
	(0.0439)	(0.0102)	(0.0565)	(0.0210)		(0.0913)	(0.0335)	(0.152)	(0.0590)
II- Household Characteristics					***II- Household Characteristics***				

Share of adult females in household	-0.324***	-0.0857***	-2.52e-05	-9.35e-06	Share of adult females in household	-0.330**	-0.117**	-0.183	-0.0725
	(0.108)	(0.0286)	(0.110)	(0.0407)		(0.167)	(0.0594)	(0.193)	(0.0765)
Wealth Quintiles: Reference Category (first quintile)					**Wealth Quintiles: Reference Category (first quintile)**				
Second Wealth Quintile	0.0769**	0.0207**	0.0543	0.0203	Second Wealth Quintile	-0.108	-0.0380	0.0692	0.0273
	(0.0372)	(0.0102)	(0.0359)	(0.0135)		(0.0691)	(0.0238)	(0.0789)	(0.0311)
Third Wealth Quintile	0.0489	0.0131	0.0660*	0.0247*	Third Wealth Quintile	-0.0537	-0.0189	0.134	0.0526
	(0.0406)	(0.0110)	(0.0389)	(0.0146)		(0.0913)	(0.0319)	(0.100)	(0.0392)
Fourth Wealth Quintile	-0.0443	-0.0115	0.0215	0.00799	Fourth Wealth Quintile	-0.0360	-0.0127	0.147	0.0578
	(0.0473)	(0.0122)	(0.0449)	(0.0168)		(0.115)	(0.0404)	(0.126)	(0.0489)
Fifth Wealth Quintile	0.0666	0.0179	0.0298	0.0111	Fifth Wealth Quintile	-0.0629	-0.0221	0.164	0.0644
	(0.0625)	(0.0171)	(0.0595)	(0.0222)		(0.165)	(0.0571)	(0.181)	(0.0700)
Household size	-0.00752	-0.00198	0.0150**	0.00556**	Household size	-0.00314	-0.00112	0.0311*	0.0123*
	(0.00663)	(0.00175)	(0.00686)	(0.00254)		(0.0154)	(0.00549)	(0.0177)	(0.00703)
Share of infants in household	1.684***	0.445***	0.0605	0.0224	Share of infants in household	0.581**	0.207**	0.0353	0.0140
	(0.110)	(0.0294)	(0.122)	(0.0451)		(0.256)	(0.0911)	(0.309)	(0.122)
Share of children in household	0.629***	0.166***	-0.287***	-0.106***	Share of children in household	-0.0473	-0.0168	-0.185	-0.0733
	(0.0800)	(0.0212)	(0.0807)	(0.0299)		(0.153)	(0.0542)	(0.168)	(0.0666)
Share of seniors in household	0.557***	0.147***	-0.0540	-0.0200	Share of seniors in household	0.290*	0.103*	0.225	0.0892
	(0.121)	(0.0319)	(0.146)	(0.0543)		(0.172)	(0.0610)	(0.251)	(0.0995)
House Ownership: Reference category (owned)					**House Ownership: Reference category (owned)**				
Unfurnished (or rent old)	0.126***	0.0347***	-0.0201	-0.00743	Tenant public/private/public property	0.171*	0.0629*	0.335***	0.128***
	(0.0403)	(0.0116)	(0.0400)	(0.0147)		(0.0969)	(0.0366)	(0.111)	(0.0407)
Furnished (or new rent)	0.0818	0.0223	0.162***	0.0616***	Owned by employer	0.495	0.190	0.129	0.0504
	(0.0563)	(0.0159)	(0.0558)	(0.0217)		(0.403)	(0.161)	(0.422)	(0.163)
Condominium or grant	0.0886***	0.0238***	0.0155	0.00577	Free accommodation with family	0.159	0.0584	0.285**	0.110**
	(0.0274)	(0.00749)	(0.0282)	(0.0105)		(0.119)	(0.0450)	(0.137)	(0.0507)
Sewerage Facility: Reference category (others)					**Sewerage Facility: Reference category (open drain and others)**				
Private toilet connected to a sewerage network	-0.000475	-0.000125	-0.0633**	-0.0235**	Sewage system	-0.519***	-0.177***	-0.481***	-0.190***
	(0.0316)	(0.00834)	(0.0309)	(0.0115)		(0.100)	(0.0322)	(0.109)	(0.0424)
Shared toilet connected to a sewerage network	-0.202**	-0.0485**	-0.102	-0.0370	Covered septic tank	-0.362***	-0.130***	-0.147	-0.0579

	(0.0921)	(0.0200)	(0.0868)	(0.0309)		(0.0898)	(0.0323)	(0.0990)	(0.0390)
Public water network	-0.188***	-0.0533***	0.0219	0.00810	Public water network	-0.104*	-0.0373*	0.122*	0.0486*
	(0.0491)	(0.0149)	(0.0481)	(0.0177)		(0.0567)	(0.0206)	(0.0651)	(0.0259)
Number of durables	-0.0259**	-0.00684**	-0.0274**	-0.0102**	Number of durables	0.0235	0.00835	0.0602**	0.0238**
	(0.0111)	(0.00294)	(0.0109)	(0.00404)		(0.0242)	(0.00861)	(0.0270)	(0.0107)
III- Community Variables					***III- Community Variables***				
Regional Dummies: Reference Category (Greater Cairo)					**Regional Dummies: Reference Category (North)**				
Alexandria and Suez Canal	-0.000606	-0.000160	-0.0451	-0.0166	North West	0.0402	0.0144	0.343***	0.132***
	(0.0509)	(0.0134)	(0.0491)	(0.0180)		(0.103)	(0.0372)	(0.112)	(0.0417)
Urban Lower Egypt	0.237***	0.0676***	0.109	0.0409	Center East	0.294***	0.108***	-0.199***	-0.0791***
	(0.0717)	(0.0220)	(0.0708)	(0.0270)		(0.0681)	(0.0256)	(0.0734)	(0.0292)
Urban Upper Egypt	0.00563	0.00149	-0.00418	-0.00155	Center West	0.0858	0.0309	-0.289**	-0.115**
	(0.0712)	(0.0189)	(0.0691)	(0.0256)		(0.121)	(0.0443)	(0.133)	(0.0525)
Rural Lower Egypt	0.179***	0.0491**	0.0883	0.0330	South East	0.328***	0.122***	-0.00872	-0.00345
	(0.0691)	(0.0195)	(0.0679)	(0.0255)		(0.0800)	(0.0308)	(0.0871)	(0.0345)
Rural Upper Egypt	-0.101	-0.0260	-0.0650	-0.0240	South West	0.243**	0.0904**	-0.0743	-0.0295
	(0.0737)	(0.0187)	(0.0720)	(0.0264)		(0.103)	(0.0396)	(0.113)	(0.0451)
Urbanization by governorate	0.282***	0.0746***	0.393***	0.146***	Urbanization by governorate	0.0316	0.0112	-0.192	-0.0760
	(0.0899)	(0.0238)	(0.0882)	(0.0327)		(0.194)	(0.0689)	(0.212)	(0.0841)
Share of unemployed by governorate	-2.889***	-0.763***	-2.654***	-0.985***	Share of unemployed by governorate	1.060	0.377	-1.184	-0.469
	(0.574)	(0.152)	(0.559)	(0.207)		(0.649)	(0.231)	(0.764)	(0.303)
Constant	-3.043***		-3.116***		Constant	-3.025***		-3.815***	
	(0.184)		(0.172)			(0.303)		(0.332)	
Observations	**19155**		**18916**		**Observations**	**3950**		**3363**	
Wald chi2	**3418.47**		**5491.11**		**Wald chi2**	**393.95**		**753.07**	
Prob > chi2	**0.0000**		**0.0000**		**Prob > chi2**	**0.0000**		**0.0000**	
Pseudo R2	**0.2671**		**0.3193**		**Pseudo R2**	**0.0802**		**0.1815**	
y = Pr(time poor)		**0 .1819**		**0.3515**	**y = Pr(time poor)**		**0.3153**		**0.5482**

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, Maximum likelihood is used in estimation

Table (A5): Empirical Results of Probit models for *Time Poverty* (using *Upper Poverty Line*) in Egypt and Tunisia

	Egypt			Tunisia	
	(1)	(2)		(3)	(4)
VARIABLES	Time Poverty Upper Threshold	Marginal Effects	VARIABLES	Time Poverty Upper Threshold	Marginal Effects
I- Individual Characteristics			***I- Individual Characteristics***		
Age	0.109***	0.0239***	Age	0.160***	0.0583***
	(0.00514)	(0.00115)		(0.00827)	(0.00301)
Age^2	-0.00141***	-0.000309***	Age^2	-0.00197***	-0.000722***
	(6.38e-05)	(1.43e-05)		(9.93e-05)	(3.61e-05)
Female	-0.407***	-0.0895***	Female	-0.486***	-0.178***
	(0.0262)	(0.00574)		(0.0500)	(0.0181)
Education level: Reference Category (illiterate)			**Education level: Reference Category (illiterate)**		
Read and write (literate)	-0.103**	-0.0218**	Read and write (literate)	0.113**	0.0418**
	(0.0435)	(0.00886)		(0.0521)	(0.0196)
Basic Education	0.00438	0.000960	Basic Education	0.290***	0.107***
	(0.0282)	(0.00619)		(0.0492)	(0.0184)
Secondary	0.0885***	0.0198***	Secondary	0.0507	0.0187
	(0.0254)	(0.00581)		(0.0642)	(0.0238)
Post secondary	0.0617	0.0139	Post secondary	0.0557	0.0206
	(0.0509)	(0.0119)		(0.0919)	(0.0343)
University and above	0.155***	0.0362***	University and above	-0.282***	-0.0968***
	(0.0322)	(0.00799)		(0.0928)	(0.0295)
Marital status: Reference category (Unmarried)			**Marital status: Reference category (Unmarried)**		
Less than minimum age	-0.680***	-0.126***			
	(0.0601)	(0.00871)			
Ever married	0.378***	0.0808***	Ever married	0.123*	0.0447*
	(0.0331)	(0.00693)		(0.0657)	(0.0237)
Head of Household	-0.0701**	-0.0151**	Head of Household	0.268***	0.0997***
	(0.0299)	(0.00630)		(0.0592)	(0.0223)
II- Household Characteristics			***II- Household Characteristics***		
Share of adult females in household	-0.369***	-0.0808***	Share of adult females in household	-0.126	-0.0459
	(0.0756)	(0.0166)		(0.120)	(0.0437)

Wealth Quintiles: Reference Category (first quintile)			**Wealth Quintiles: Reference Category (first quintile)**		
Second Wealth Quintile	0.0745***	0.0167***	Second Wealth Quintile	-0.00568	-0.00208
	(0.0267)	(0.00612)		(0.0532)	(0.0194)
Third Wealth Quintile	0.0566*	0.0126*	Third Wealth Quintile	0.0884	0.0327
	(0.0291)	(0.00660)		(0.0686)	(0.0256)
Fourth Wealth Quintile	0.00910	0.00200	Fourth Wealth Quintile	0.125	0.0465
	(0.0339)	(0.00746)		(0.0857)	(0.0322)
Fifth Wealth Quintile	0.0768*	0.0173*	Fifth Wealth Quintile	0.125	0.0465
	(0.0447)	(0.0103)		(0.124)	(0.0467)
Household size	-0.00444	-0.000971	Household size	0.00563	0.00206
	(0.00483)	(0.00106)		(0.0113)	(0.00413)
Share of infants in household	0.754***	0.165***	Share of infants in household	0.622***	0.227***
	(0.0807)	(0.0177)		(0.196)	(0.0717)
Share of children in household	0.140**	0.0306**	Share of children in household	-0.0135	-0.00493
	(0.0586)	(0.0128)		(0.111)	(0.0405)
Share of seniors in household	0.215**	0.0471**	Share of seniors in household	0.349**	0.127**
	(0.0963)	(0.0211)		(0.140)	(0.0512)
House Ownership: Reference category (owned)			**House Ownership: Reference category (owned)**		
Unfurnished (or rent old)	0.0682**	0.0154**	Tenant public/private/public property	0.208***	0.0786***
	(0.0294)	(0.00682)		(0.0714)	(0.0277)
Furnished (or new rent)	0.0847**	0.0193**	Owned by employer	0.0221	0.00813
	(0.0391)	(0.00929)		(0.282)	(0.104)
Condominium or grant	0.0290	0.00640	Free accommodation with family	0.104	0.0386
				(0.0893)	(0.0338)
Sewerage Facility: Reference category (others)			**Sewerage Facility: Reference category (open drain and others)**		
Private toilet connected to a sewerage network	-0.0194	-0.00426	Sewage system	-0.488***	-0.172***
	(0.0225)	(0.00495)		(0.0749)	(0.0252)
Shared toilet connected to a sewerage network	-0.159**	-0.0318***	Covered septic tank	-0.257***	-0.0946***
	(0.0668)	(0.0122)		(0.0681)	(0.0251)
Public water network	-0.0749**	-0.0170**	Public water network	-0.0158	-0.00580
	(0.0351)	(0.00826)		(0.0438)	(0.0160)
Number of durables	-0.0243***	-0.00532***	Number of durables	0.0293	0.0107
	(0.00802)	(0.00176)		(0.0182)	(0.00664)
III- Community Variables			***III- Community Variables***		
Regional Dummies: Reference Category (Greater Cairo)			**Regional Dummies: Reference Category (North)**		

Alexandria and Suez Canal	-0.0747**	-0.0158**	North West	0.198***	0.0744***
	(0.0368)	(0.00751)		(0.0750)	(0.0287)
Urban Lower Egypt	0.135**	0.0312**	Center East	0.0265	0.00973
	(0.0527)	(0.0129)		(0.0499)	(0.0184)
Urban Upper Egypt	0.000801	0.000176	Center West	-0.0218	-0.00793
	(0.0520)	(0.0114)		(0.0905)	(0.0329)
Rural Lower Egypt	0.154***	0.0350***	South East	0.0774	0.0286
	(0.0506)	(0.0119)		(0.0586)	(0.0219)
Rural Upper Egypt	-0.0961*	-0.0205*	South West	-0.0788	-0.0284
	(0.0537)	(0.0112)		(0.0767)	(0.0272)
Urbanization by governorate	0.284***	0.0621***	Urbanization by governorate	0.109	0.0398
	(0.0661)	(0.0145)		(0.142)	(0.0519)
Share of unemployed by governorate	-1.307***	-0.286***	Share of unemployed by governorate	-0.197	-0.0720
	(0.409)	(0.0895)		(0.494)	(0.181)
Constant	-2.410***		Constant	-3.227***	
	(0.127)			(0.223)	
Observations	**38071**		**Observations**	**7,313**	
Wald chi2	**5133.63**		**Wald chi2**	**1196.08**	
Prob > chi2	**0.0000**		**Prob > chi2**	**0.0000**	
Pseudo R2	**0.1908**		**Pseudo R2**	**0.1392**	
y = Pr(time poor)		**0.1366**	**y = Pr(time poor)**		**0.3381**

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, Maximum likelihood is used in estimation

Table (A6): Empirical Results of Probit models for *Time Poverty* (using *Upper Poverty Line*) by gender in Egypt and Tunisia

	Egypt					Tunisia			
	Females		Males			Females		Males	
VARIABLES	(1) Time Poverty Upper Threshold	(2) Marginal Effects	(3) Time Poverty Upper Threshold	(4) Marginal Effects	VARIABLES	(5) Time Poverty Upper Threshold	(6) Marginal Effects	(7) Time Poverty Upper Threshold	(8) Marginal Effects
I- Individual Characteristics					*I- Individual Characteristics*				
Age	0.114***	0.0192***	0.127***	0.0329***	Age	0.135***	0.0418***	0.191***	0.0760***
	(0.00797)	(0.00141)	(0.00737)	(0.00192)		(0.0114)	(0.00350)	(0.0128)	(0.00510)
Age^2	-0.00145***	-0.000245***	-0.00164***	-0.000426***	Age^2	-0.00161***	-0.000498***	-0.00244***	-0.000970***
	(0.000101)	(1.80e-05)	(8.94e-05)	(2.33e-05)		(0.000139)	(4.27e-05)	(0.000151)	(6.00e-05)
Education level: Reference Category (illiterate)					**Education level: Reference Category (illiterate)**				
Read and write (literate)	-0.0296	-0.00496	-0.226***	-0.0547***	Read and write (literate)	0.0835	0.0264	0.111	0.0441
	(0.0750)	(0.0124)	(0.0551)	(0.0125)		(0.0745)	(0.0240)	(0.0800)	(0.0319)
Basic Education	0.0418	0.00719	-0.117***	-0.0293***	Basic Education	0.346***	0.112***	0.234***	0.0932***
	(0.0433)	(0.00756)	(0.0390)	(0.00958)		(0.0669)	(0.0224)	(0.0774)	(0.0306)
Secondary	0.280***	0.0519***	-0.132***	-0.0332***	Secondary	0.0897	0.0285	-0.00409	-0.00163
	(0.0379)	(0.00772)	(0.0358)	(0.00881)		(0.0963)	(0.0313)	(0.0935)	(0.0372)
Post secondary	0.361***	0.0755***	-0.253***	-0.0581***	Post secondary	0.162	0.0526	-0.0919	-0.0364
	(0.0764)	(0.0192)	(0.0688)	(0.0139)		(0.126)	(0.0428)	(0.140)	(0.0551)
University and above	0.565***	0.125***	-0.257***	-0.0606***	University and above	0.177	0.0577	-0.794***	-0.283***
	(0.0485)	(0.0135)	(0.0446)	(0.00952)		(0.119)	(0.0408)	(0.140)	(0.0406)
Marital status: Reference category (Unmarried)					**Marital status: Reference category (Unmarried)**				
Less than minimum age	-0.599***	-0.0849***	-0.570***	-0.131***					
	(0.112)	(0.0122)	(0.0755)	(0.0147)					
Ever married	0.419***	0.0667***	0.226***	0.0586***	Ever married	0.0332	0.0102	0.211	0.0835
	(0.0534)	(0.00828)	(0.0562)	(0.0146)		(0.0858)	(0.0264)	(0.145)	(0.0572)
Head of Household	-0.00737	-0.00124	0.123**	0.0320**	Head of Household	0.0179	0.00559	0.375**	0.148***
	(0.0472)	(0.00794)	(0.0562)	(0.0147)		(0.0959)	(0.0300)	(0.147)	(0.0570)
II- Household Characteristics					*II- Household Characteristics*				

Share of adult females in household	-0.360***	-0.0611***	-0.130	-0.0337	Share of adult females in household	-0.167	-0.0516	-0.210	-0.0835
	(0.122)	(0.0206)	(0.116)	(0.0300)		(0.177)	(0.0548)	(0.192)	(0.0764)
Wealth Quintiles: Reference Category (first quintile)					**Wealth Quintiles: Reference Category (first quintile)**				
Second Wealth Quintile	0.0679*	0.0118	0.0864**	0.0229**	Second Wealth Quintile	-0.0727	-0.0222	0.0732	0.0292
	(0.0406)	(0.00725)	(0.0360)	(0.00976)		(0.0726)	(0.0219)	(0.0784)	(0.0312)
Third Wealth Quintile	-0.0144	-0.00243	0.117***	0.0313***	Third Wealth Quintile	-0.0331	-0.0102	0.215**	0.0856**
	(0.0444)	(0.00744)	(0.0393)	(0.0108)		(0.0960)	(0.0293)	(0.0996)	(0.0395)
Fourth Wealth Quintile	-0.0469	-0.00780	0.0492	0.0129	Fourth Wealth Quintile	-0.00302	-0.000936	0.243**	0.0967**
	(0.0510)	(0.00831)	(0.0459)	(0.0122)		(0.121)	(0.0373)	(0.124)	(0.0490)
Fifth Wealth Quintile	0.0539	0.00934	0.0766	0.0203	Fifth Wealth Quintile	-0.0220	-0.00679	0.286	0.113
	(0.0672)	(0.0119)	(0.0608)	(0.0164)		(0.174)	(0.0533)	(0.179)	(0.0705)
Household size	-0.00467	-0.000791	0.0114	0.00295	Household size	-0.0120	-0.00373	0.0286	0.0114
	(0.00734)	(0.00124)	(0.00700)	(0.00181)		(0.0159)	(0.00494)	(0.0177)	(0.00704)
Share of infants in household	1.503***	0.255***	0.0416	0.0108	Share of infants in household	0.968***	0.300***	-0.0605	-0.0241
	(0.116)	(0.0206)	(0.118)	(0.0305)		(0.263)	(0.0815)	(0.297)	(0.118)
Share of children in household	0.566***	0.0959***	-0.256***	-0.0663***	Share of children in household	0.139	0.0429	-0.225	-0.0895
	(0.0882)	(0.0151)	(0.0833)	(0.0216)		(0.160)	(0.0495)	(0.167)	(0.0664)
Share of seniors in household	0.735***	0.124***	0.0352	0.00911	Share of seniors in household	0.298*	0.0924*	0.137	0.0545
	(0.131)	(0.0224)	(0.152)	(0.0394)		(0.177)	(0.0548)	(0.249)	(0.0992)
House Ownership: Reference category (owned)					**House Ownership: Reference category (owned)**				
Unfurnished (or rent old)	0.176***	0.0325***	-0.0291	-0.00745	Tenant public/private/public property	0.200**	0.0655*	0.228**	0.0906**
	(0.0433)	(0.00869)	(0.0406)	(0.0103)		(0.0994)	(0.0344)	(0.107)	(0.0424)
Furnished (or new rent)	0.0106	0.00180	0.139***	0.0382**	Owned by employer	0.117	0.0377	-0.0873	-0.0346
	(0.0589)	(0.0101)	(0.0536)	(0.0155)		(0.399)	(0.133)	(0.366)	(0.144)
Condominium or grant	0.0342	0.00586	0.0210	0.00547	Free accommodation with family	0.0683	0.0216	0.146	0.0580
	(0.0298)	(0.00515)	(0.0278)	(0.00726)		(0.126)	(0.0406)	(0.131)	(0.0520)
Sewerage Facility: Reference category (others)					**Sewerage Facility: Reference category (open drain and others)**				
Private toilet connected to a sewerage network	0.00910	0.00154	-0.0509*	-0.0132*	Sewage system	-0.599***	-0.173***	-0.387***	-0.152***
	(0.0338)	(0.00571)	(0.0306)	(0.00799)		(0.102)	(0.0273)	(0.107)	(0.0415)
Shared toilet connected to a sewerage network	-0.178*	-0.0269**	-0.177*	-0.0421**	Covered septic tank	-0.416***	-0.131***	-0.0915	-0.0364

	(0.102)	(0.0137)	(0.0903)	(0.0197)		(0.0908)	(0.0289)	(0.0978)	(0.0389)
Public water network	-0.194***	-0.0365***	0.0138	0.00354	Public water network	-0.0934	-0.0294	0.0846	0.0336
	(0.0522)	(0.0109)	(0.0481)	(0.0123)		(0.0595)	(0.0189)	(0.0647)	(0.0257)
Number of durables	-0.0266**	-0.00450**	-0.0180	-0.00465	Number of durables	0.0223	0.00691	0.0421	0.0167
	(0.0118)	(0.00201)	(0.0111)	(0.00287)		(0.0254)	(0.00787)	(0.0265)	(0.0106)
III- Community Variables					***III- Community Variables***				
Regional Dummies: Reference Category (Greater Cairo)					**Regional Dummies: Reference Category (North)**				
Alexandria and Suez Canal	0.0283	0.00488	-0.165***	-0.0399***	North West	0.0951	0.0301	0.362***	0.143***
	(0.0551)	(0.00963)	(0.0503)	(0.0114)		(0.107)	(0.0345)	(0.110)	(0.0428)
Urban Lower Egypt	0.314***	0.0620***	-0.0141	-0.00363	Center East	0.217***	0.0698***	-0.169**	-0.0670**
	(0.0793)	(0.0180)	(0.0721)	(0.0185)		(0.0712)	(0.0237)	(0.0723)	(0.0284)
Urban Upper Egypt	0.154*	0.0280*	-0.125*	-0.0309*	Center West	0.207*	0.0671	-0.248*	-0.0973*
	(0.0786)	(0.0153)	(0.0709)	(0.0168)		(0.125)	(0.0424)	(0.132)	(0.0509)
Rural Lower Egypt	0.280***	0.0514***	0.0635	0.0167	South East	0.205**	0.0667**	-0.0546	-0.0217
	(0.0764)	(0.0152)	(0.0690)	(0.0183)		(0.0831)	(0.0283)	(0.0857)	(0.0340)
Rural Upper Egypt	0.00102	0.000173	-0.160**	-0.0400**	South West	0.0617	0.0195	-0.208*	-0.0819*
	(0.0816)	(0.0138)	(0.0729)	(0.0176)		(0.110)	(0.0352)	(0.110)	(0.0425)
Urbanization by governorate	0.347***	0.0588***	0.258***	0.0668***	Urbanization by governorate	0.144	0.0444	0.0864	0.0344
	(0.0992)	(0.0169)	(0.0906)	(0.0235)		(0.201)	(0.0623)	(0.208)	(0.0827)
Share of unemployed by governorate	-2.037***	-0.345***	-0.916	-0.237	Share of unemployed by governorate	0.417	0.129	-1.058	-0.421
	(0.611)	(0.104)	(0.559)	(0.145)		(0.667)	(0.206)	(0.751)	(0.299)
Constant	-3.275***		-2.579***		Constant	-3.171***		-3.883***	
	(0.205)		(0.176)			(0.314)		(0.334)	
Observations	**19155**		**18916**		**Observations**	**3,950**		**3,363**	
Wald chi2	**2164.9**		**2931.36**		**Wald chi2**	**327.93**		**678.13**	
Prob > chi2	**0.0000**		**0.0000**		**Prob > chi2**	**0.0000**		**0.0000**	
Pseudo R2	**0.2081**		**0.1861**		**Pseudo R2**	**0.0721**		**0.1615**	
y = Pr(time poor)		**0.0953**		**0 .1764**	**y = Pr(time poor)**		**0.2383**		**0.4728**

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, Maximum likelihood is used in estimation