

LABOR FORCE PARTICIPATION OF WOMEN IN TURKEY:

A MICROECONOMETRIC ANALYSIS

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LABOR FORCE PARTICIPATION OF WOMEN IN TURKEY:  
A MICROECONOMETRIC ANALYSIS

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## Thesis Abstract

Nazlı Aktakke, “Labor Force Participation of Women in Turkey:

A Microeconometric Analysis”

This thesis tries to shed light on the determinants of labor force participation of married women in urban Turkey. Thesis has two main focus points; first is to find out the possible determinants of participation of women in formal work as well as different informal work states. Second focus point is to find out the effect of husband’s public health insurance coverage for women as a possible determinant of labor force participation. Binary logit models and multinomial logit models are employed as econometric tools. The results of the binary models show that effect of variables change between different income levels, especially the effect of education and number of pre-school children. In addition, results regarding the multinomial models show that the effect of determinants of labor force participation change between work states supporting the multi work state framework. While higher education levels increase formal work participation, increase in number of pre-school children drive women into informal work states as well as non-participation. Regarding husband’s health insurance coverage, in the binary models the effect is negative for general labor force participation while in the multinomial models the effect is positive for formal work and negative for informal work states. Further investigation with the inclusion of interaction terms show that the explanation for this result may be linked with the social status effect of the husband generating a negative impact for informal work while the positive impact regarding the formal work may be associated with the fact that people in similar status or occupation levels marry each other. Negative status effect of the husband for informal work states seems to be released in the case of low education of the husband or absence of wealth.

## Tez Özeti

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Bu tez Türkiye’de kentlerde yaşayan evli kadınların iş gücüne katılımına ışık tutmaya çalışmaktadır. Tezin iki odak noktası bulunmaktadır; birincisi kadınların kayıtlı ve aynı zamanda kayıt dışı işlere katılımını belirleyen faktörleri bulmaya çalışmaktır. İkincisi ise eşten gelen sağlık sigortasının kadının iş gücüne katılımı konusundaki olası etkisine bakmaktır. Ekonometrik araçlar olarak ikili ve çoklu logit modelleri kullanılmıştır. İkili modeller göstermektedir ki işgücünü etkileyen faktörler gelir seviyeleri arasında değişiklik göstermektedir. Özellikle eğitimin ve okul öncesi çocukların etkisi alt ve üst gelir seviyeleri için farklıdır. Ek olarak çoklu logitin sonuçları birden çok işe katılım durumu olduğunu desteklemektedir. Yüksek eğitim seviyeleri kayıtlı işlere katılımı artırırken, okul öncesi çocuk sayısındaki artış ise kadınları iş gücüne katılmamaya ve bazı kayıt dışı işlere itebilmektedir.

Eşin sağlık sigortasının etkisiyle ilgili olarak, ikili modeller bu faktörün iş gücüne katılımına negatif bir etkisi olduğunu bulurken, çoklu modelde kayıtlı işlere pozitif etkisi, kayıt dışı işlere ise negatif etkisi olduğu saptanmıştır. Etkileşim değişkenlerinin eklenmesiyle yapılan araştırma ise negatif etkiye eşin sosyal statüsünün, pozitif etkiye ise benzer insanların birbiriyle evlenmesi durumunun yol açıyor olabileceğini göstermiştir. Kayıt dışı işlere katılımda, eşin sosyal statüsünün negatif etkisi kocanın ya da kadının az eğitilmiş olması ya da ailenin bir evi olmaması gibi durumlarda ortadan kalkıyor gibi görünmektedir.

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## CONTENTS

CHAPTER 1: INTRODUCTION .....	1
CHAPTER 2: LITERATURE REVIEW .....	5
Empirical Studies about Labor Force Participation of Women .....	5
About Informality .....	6
Empirical Studies about Turkey .....	10
Effect of Health Insurance .....	13
CHAPTER 3: THEORETICAL BACKGROUND.....	15
Critiques to the New Household Economics.....	18
CHAPTER 4: TRENDS IN LABOR FORCE PARTICIPATION OF WOMEN IN TURKEY .....	22
Trends in Urban Regions.....	25
Reasons for Non-Participation in Urban Regions.....	29
CHAPTER 5: DATA .....	32
Definitions of Work States .....	33
Definitions of Variables .....	36
Descriptive Statistics .....	38
CHAPTER 6: METHODOLOGY .....	42
Discussion of Explanatory Variables .....	46
CHAPTER 7: RESULTS .....	51
Results of the Binary Model.....	51
Results of the Multinomial Model.....	55
Comparison of Formal Work with Informal Work States .....	65
Results When Interaction Terms are Added .....	70
CHAPTER 8: CONCLUSION.....	85
APPENDICES .....	92
REFERENCES.....	130

## CHAPTER 1

### INTRODUCTION

Labor force participation of women has been an important topic for the economics scholars since the increasing participation rates from 1950s and on. The scholars tried to understand the participation behaviour of women and tried to shed light on the reasons behind those increasing rates. Labor force participation of women has been an important topic for Turkey as well, but in a rather different perspective. The issue for Turkey instead had been the low participation rates of women and the reasons behind the decline in the general participation as well as the stagnant rates in the urban participation rates of women in contrast to the trend in the world. On the other hand like in many developing countries there is a significant informal sector in Turkey. Informal sector stands as a significant alternative to formal work especially for the low-skilled individuals. But informal sector has many disadvantages. People working in informal sector are often in vulnerable employment without social protection. Especially the informal jobs that people work in because of necessity are precarious. Regarding these issues, in the thesis, a microeconomic analysis will be done in order to see the determinants of formal and informal labor force participation for women in Turkey.

The explanation for the general decline in the participation rates for women is the migration from rural to urban. Jobs created in the urban areas are not enough to meet the high demand. On the other hand it is very interesting that the rates remain very stagnant around %20s through years for urban areas. Although there had been changes in the society like the increasing education levels for women and decreasing

fertility rates, labor force participation of women has increased only slightly in the recent years in urban areas. The most recent participation rate for the year 2009 for women in urban is %22.3 whereas it was %18 in 1988.

In Turkey, labor force participation of women is not only into formal jobs but also into informal jobs. According to HLFS of 2009, %35 of the employed women in urban areas are working in informal sector. World Bank statistics show that %49 of the women among the employed (rural and urban) work in vulnerable jobs in Turkey. This is very high compared to many other regions like Latin America with the ratio of %31 or Euro area with the ratio of %9. These point out to the fact that informal sector is significant in Turkey for women. When we compare the women's informality levels with men's, in urban areas we see that women are overrepresented in informal sector, the informality rate for men is %30 for 2009 and it was always lower compared to women's informality throughout years.

Although there is a tendency to see the informal sector as a solid group, many studies and reports on the subject show that it is not so. The informal sector is not a homogenous group composed of same kinds of jobs. There are different job types in the informal sector as well. These differ from each other by their type of regularity; or type of payment. Some are even without pay like in the case of family workers. Since the group of informal workers is not homogenous, it is better to divide the informal group into sub categories in order to better understand the participation outcomes of women. We have used four different work states in this regard which are informal wage workers, casual informal wage workers, self-employed and family workers using the information presented in the data.



An important and additional focal point of our study will be the effect of health insurance coverage obtained through husband. Studies show that the odds are lower for women to participate in the labor force and especially in formal jobs if they are covered by their husbands for health insurance. In Turkey if a man has premium based public health insurance, then his dependents can also be covered by the insurance. Hence for these women there is health coverage even if they are unemployed or employed in the informal sector. Although this might create a negative effect as shown for countries like US and Taiwan, we also suspect that premium based public health insurance can proxy husband's social status and hence might lead women in and out of labor force for that reason. For example informal work may not be desirable for the women married with men with public health insurance since informal work would be a lower status level for women which is not "appropriate" compared to husband's status in the society.

Hence our study will be an examination of labor force participation of women by incorporating different branches of informal sector and focusing into a possible determinant of labor force participation, husband's health insurance coverage. Hence the objectives of our study are as follows:

- To find out the degree and significance of the factors that determine women's labor force participation for formal work and different informal work states.
- To discover the effect of husband's premium based public health insurance on labor force participation decisions of women and to analyze this effect.

Although informal sector is significant for Turkey, it has rarely been studied. Tansel(2000), Baslevent and Tunali(2002) and Kizilirmak(2005) incorporated informal sector somehow in their studies of labor force participation of women. A

recent paper by Dayioglu and Ercan(2009) also try to shed light on labor market dynamics by taking into account the informal sector but without using econometric methods. On the other hand, husband's public health insurance's effect had never been studied in Turkish literature as far as we are aware of.

We will use Household Budget Survey for the year 2003 for the empirical analysis. In the Household Budget Survey, there is a wide range of information on household and individual level including household expenditure and income, individual wages, health insurance status and registration to social security if the individual is working. Multinomial logit models to analyze the factors determining labor force participation of women to different work states are used for our analysis.

Next chapter gives a summary of the related literature and the following chapter shows the theoretical background behind the empirical analysis. The fourth chapter provides the trends in labor force participation and informal employment for Turkey over years and also presents a comparison with other world regions. Chapter five presents the data, summary statistics and discussion of the relevant determinants as well as work states associated with the analysis. The sixth chapter shows the empirical methodology of the study which is followed by a discussion of the potential effects of the variables for different work states. The seventh chapter presents the results and the last chapter concludes.

## CHAPTER 2

### LITERATURE REVIEW

#### Empirical Studies about Labor Force Participation of Women

In the empirical studies women's participation decision is usually investigated in micro level using a range of variables. In line with the theoretical background these variables include human capital variables affecting actual wage of an individual and household variables affecting reservation wage of an individual. Some studies add demand side variables as well, like unemployment rate in a region or regional dummies to represent regional differences in the demand side.

Initial studies on women's labor force participation like Heckman (1974) or Gronau (1973), used a binary choice participation model. Hill (1983) on the other hand discusses that these binary choice models may not be useful enough if there is significant informal labor force in a country.

The studies about labor force participation of women differ from each other by their empirical methodologies and how they treat participation choice. The empirical methodologies employ either binary choice models like in the initial literature or multinomial choice models like Hill (1983) proposed. Khandker (1987) and Soopramien and Johnes (2001) investigate the labor force participation of women using nested logit models. With this method they treat labor force participation decision as a multi-layer process. In their models there is more than one decision to make. For example in Khandker (1987), women first make a labor force participation decision and then a sector decision regarding outside work or work in

the family establishment. On the other hand there are various studies which use multinomial logit models for the participation choice. Hill (1983), Hill (1989), Gindling (1991) Tiefenthaler (1994), Ogawa et al. (1996), De Hoyos (2006) are examples of these studies using multinomial logit regarding participation choice.

The studies which use multinomial models take informal sector employment as a distinct alternative to working formal and so they are not treating participation choice as a dichotomous model. Furthermore, multinomial logit models take non-participation, formal sector participation and informal sector participation as distinct alternatives without order or similarity in between, hence no nesting structure is possible like in the nested logit models. They support this conception with statistical tests as well.

Although studies about labor force participation usually incorporate informal sector, it is not a rule in the literature. There are studies looking at the participation choice in a more general perspective without differentiating between formal and informal. Cerrutti(2000) is an example investigating the labor force participation choice with a binary probit model. On the other hand choice between formal and informal is also investigated in a binary framework. For example Funkhouser(1996) used binary probit models for the sector choice for different countries in South America. Most of the empirical analyses in Turkey uses binary models as well for the female LFP choice except Tansel(2001), Baslevent et al.(2002) and Kizilirmak(2005) which incorporate informal sector in their studies.

#### About Informality

Informal sector is the part of the economy in which workers or firms function without registering and without paying taxes. Although informal sector exists in

advanced countries as well, it is mostly associated with developing countries. Informal sector is composed of precarious and low-paid jobs along with more entrepreneurial jobs which have higher returns. On the other hand in the developing countries, large share of the informal sector consist of the precarious and low-quality jobs. (Castells and Portes, 1989)

Informal work always persisted in normal economies and was thought to disappear as the economy grows. Castells and Portes (1989) show that while this may be the case for advanced countries, disappearance of informal economy is absolutely not the case for developing countries. They compare Latin American countries development period with US's and see that while there is large decrease for proportion of informal workers in total employed for US during this period, the decrease is quite negligible for Latin American countries comparatively.

The informalization process has largely flourished especially in the developing countries, following the structural adjustment policies and trade liberalization in the era of neoliberal changes of 1970s (Carr and Chen, 2001, Standing, 1999, Castells and Portes, 1989). Beneria et al. (2000) state that technological advancements which resulted in transportation and communications revolution had also been important in shifting production to low-cost environments like China from inside the national boundaries. In order to minimize costs, firms began to choose places to invest where the labor costs are lower. This shift to developing countries in production resulted in increasing numbers of new job opportunities for women but this doesn't directly mean an improvement for women's situation. For example Seguino(2000) argues that the wage inequality between genders in East Asia had been an important driver for the economic growth of the region. Low wages of women in the region along with their acceptance of their low

status lead firms to take advantage of this. Firms preferred these places with wage inequality where norms imposed on women also prevented them from upheaving to low wages.

Standing (1999) also states that the trend toward low-cost labor is an important factor stimulating the growth of female work force especially in developing countries. In order to lower the labor costs, more casual labor with less job security and nearly no job benefits began to take place the regular wage earner with job security who works in one firm all his life. Standing argues that the former type had been associated with a feminine work state while the latter is masculine. But along with the economic changes of the century, all types of work began to become more feminine. Wood (1991) shows that a rising proportion of female workers have been employed in the South where there is rising exports to the North. So not only the type of work changes but also the proportion of females in these types of work. Beneria (2001) states that there is now a preference of female labor force in export-led industries as the cheapest labor force available. Needless to say many of these jobs are informal in order to be low cost.

There are lots of studies on the informal sector especially on the Latin American case. There are two distinct branches in those views. One branch sees informal sector as a disadvantaged sector where people are forced to work. On the other hand second branch suggests that informal sector is the entrepreneurial sector of the developing countries and people may actually be choosing this sector because of the flexibility it offers (Maloney, 2004, Kucera et al., 2008).

Following this view, a report prepared for UNIFEM (Chen et al. (2005)) classifies informal working women into groups; women working informally by choice, by

necessity and by tradition. Women working informally by choice are usually the employers or some self-employed who want to avoid taxes or other regulatory burdens. They can also be the women who find informal jobs more flexible and thus somehow more compatible with housework or childcare duties. On the other hand a significant proportion of women work in the informal sector by necessity. Those women usually cannot find formal jobs because of low human capital and since they live in low-income households they need to generate additional income. Patriarchal norms and cultural barriers are also effective for the women working informally by necessity.

Kucera et al. (2008) state that low access to education and lack of information networks is one of the reasons for informality of women. In many countries women do not have the same opportunities as men to get higher education which is a vital factor in getting formal jobs. Informal institutions acting as norms and traditions are also significant factors which push women into informality. These restrict women's access to information networks as well. Leach (1996) adds that solely education cannot be solution to improve women's financial situation. The scope of education and training activities for women should be improved in order to improve women's status in the society. For example women attending vocational schools are usually following traditional female subjects like home-economics with low returns compared to the male counterparts from a vocational school.

Kabeer and Mahmud (2004) and Beneria (2001) point out that women in these kinds of jobs are living in poverty. Kabeer and Mahmud (2004) focus on the informal garment factories in Bangladesh. They found that those factories hire poor women who have small children since they will accept the lowest wages. This creates a kind of vicious cycle at the point of low-paid informal jobs for women

workers. There is both supply and demand at this lowest point of the labor market and no incentive to make the conditions of these women better. Not only poverty but also limited voice in the household and restricted work force participation is a problem for women. Kantor (2009) finds out that in Lucknow, India women's work place choice is limited by social norms and this results in mostly subcontracting jobs and home-based work.

#### Empirical Studies about Turkey

LFP of women is studied by many scholars from Turkey as well. Among the labor force participation studies for Turkey, the investigation of structural adjustment programs' effects constitutes a large part. Since these policies usually result in an increase in LFP of women in the world, so called the "feminization" of the labor force, they are predicted to have a similar effect for Turkey as well. Cagatay and Berik (1991) use macro-level data and find no evidence for the feminization of the labor force due to export-led growth policies. On the other hand Baslevant and Onaran (2004) try to investigate the same effect using a combination of micro and macro data and use binary probit models. They do not find strong evidence in favour of the export-led policies' positive effect on female LFP. Ozler (2000) uses plant level data and finds that job creation rate is higher for female workers but job reallocation rate is also higher for them. This supports the feminization of labor force view, which leads to the presence of more volatile jobs for women workers. Hence we may say that there are contradicting results on the effect of export-led growth policies for female LF in Turkey.

There are also micro level studies on the factors affecting labor force participation decision of women. Dayioglu and Kasnakoglu (1997), Dayioglu (2000) and Tunali (1997) all use binary models to determine these factors. They find that



level of education is the most important factor affecting participation of women. Whereas this strong link is weaker for male participation rates as stated by Dayioglu and Kasnakoglu (1997). Husband's education level is thought to be equally important in determining women's participation possibly because the higher the education level of the husband the lower the cultural barriers for women's participation. But Tunali (1997) cannot find a significant link between these two except for university graduate husband.

Among these studies; Ozar and Senesen (1998) looks at the factors affecting the non-participation status of women. They found that low income groups are less willing to be non-participants. Baslevant and Onaran (2003) investigate the added and discouraged worker effects for women in Turkey, and they find an added worker effect on the condition of husband's unemployment. İlkaracan (2007) also focuses on the general participation choice and uses a binary model. Different from other studies, she looks whether the presence of non-participant woman in the household affects labor force participation of women positively and she finds that the effect is positive. This shows that care work is an important burden for women, she adds that university graduate women not only participate in labor force because they will otherwise incur high opportunity costs but also because they reach the financial level to pay for child care services.

Tansel (2001) and Kizilirmak (2005) incorporate the presence of informal sector in their studies and try to find not only the factors affecting participation but also the factors affecting participation in different sectors.

The common point in these studies is that they all find higher education to be significant in increasing labor force participation and on the contrary presence of

children decreasing it. Different than the previous studies, İlkaracan (2007) criticizes the strong emphasis on education's role for participation of women and points to the fact that a similar relation is not observed in men's labor force participation.

Cinar (1994) and Dedeoglu (2004) specifically focus on groups of informal sector workers. They both find strong emphasis of cultural factors affecting women's working from home or in garment ateliers. They are either restricted by their husbands to work in these kinds of jobs or cannot find formal jobs available to themselves. Furthermore there is a tendency to see these kinds of works like home based work or work in the family garment atelier not as a real "work", but as an extension of the housework.

Recently there have been studies by State Planning Organization (DPT) and World Bank on women's participation rates in Turkey. Dayioglu and Kirdar (2009) investigated the low participation rates looking at both macro and micro level data. They point out that not only low-skilled women but also high skilled women in urban regions have stagnant or declining labor force participation rates. They were unable to explain the case for high-skilled women. But for low-skilled women they state that real wages are very low compared to reservation wages. A recent report from DPT&World Bank (2009) also emphasize that despite increasing education levels and decreasing fertility rates, it is interesting that LFP rates of women is still stagnant. They come up with some policy recommendations such as better childcare services, better education as well as targeted incentives for firms to employ first-time job-searchers.

## Effect of Health Insurance

This topic is studied by various authors in recent years. Buchmueller and Valletta (1998), Wellington and Cobb-Clark (2000) took husband's health insurance as exogenous and found that it affects labor force participation of women negatively if they are covered by their spouses' insurance. On the other hand Royalty and Abraham (2006) treat this variable as endogenous and use paid sick-leaves as an instrument. They also find negative effects of husband's insurance on wives' labor force participation. Chou and Staiger (2001) investigate this effect for Taiwan by looking at the effect of a policy change in insurance coverage. They also find that after the policy which increases the number of women who are covered by their husband's insurance, labor force participation of women decreased.

There are no studies about the effect of spousal coverage on labor force participation of women in Turkey. One recent study by Angel-Urdinola et. al. (2009) investigate the effect of green card on informality. The authors expected the effect of green card to be negative for formal working, since green card is an external benefit obtained without working. But they find no evidence in this regard because of the low wage gaps between formal and informal sectors. So the benefit of green card is found to be not enough to fill this gap. Some of the empirical studies such as Tunali (1997), Ozar and Senesen (1998) and İlkkaracan (2007) have used husband's education variables in order to determine cultural barriers for women's entry. Husband's unemployment status has also been used in Baslevent and Onaran (2003) and Kizilirmak (2005) in order to learn about added or discouraged worker effect for women in Turkey. Gunduz-Hosgor and Smits(2008) additionally looked at husband's occupation levels' effect on woman's different occupational levels. But presence of

husband's public health insurance which enables coverage to dependents hasn't been used as an explanatory variable in any of the studies.

Although we expect to capture the effect of husband's premium based public health insurance as an external benefit that may drive women out of the labor force, the variable might as well capture the "status" effect of the husband. In Turkey, premium based public health insurance is associated with formal jobs and better social status. It has been suggested by Oppenheimer (1977) and further discussed by Smits et al. (1996) that when woman works in a job with lower status than man, the expected behaviour will be to quit the job for the woman since she will drop the level of family status in the society. So Oppenheimer sees family as a unit with a social status and each member contributes to this social status with their occupations. Therefore the status of man, if it is higher than the woman's, may drive woman out of the labor force. Smits et al. (1996) find evidence in this respect for a group of EU countries.

## CHAPTER 3

### THEORETICAL BACKGROUND

Until the beginning of the 1960s labor force participation was mostly viewed from man's perspective in economics. Labor force participation was assumed to be a choice between spending labor time at the market to earn money or spending time for leisure. This simplistic view ignored time spent at home by most of the women as unpaid work. But after the consistent rise in female participation rates especially in the United States, a different approach for labor force participation or allocation of time has come from the economics scholars (Beneria, 1995). In order to understand the economics of the household, the market perspective has been incorporated to the household. In this neoclassical approach household is taken as an indivisible unit maximizing its well-being. And the members of the household decide on what to do with their time while trying to maximize the household utility. The pioneers of this approach are Becker (1965) and Mincer (1962). This new approach handling household from a neoclassical market perspective is later called "New Household Economics".

Beginning with the work of these authors, women's role in the household and in the market began to be investigated with a different approach than simplistic labor-leisure choice model. Because of the roles that society gives to women traditionally, women have different responsibilities at home which are time-consuming activities. Since these activities are un-paid they haven't been seen as market work. So these activities like child-care or housework are categorized neither as labor nor as leisure in the earlier economics literature. But in order to understand

the labor force participation decisions of women, these activities are included in the theoretical framework.

One of the main assumptions of Becker's works was the harmonious decision making within the household. There are no conflicts on the time allocation choices of men and women. And they decide on their roles in the household by comparing what they are better at, market work or house work.

Another important aspect of the household utility approach is its handling of the comparative advantages of individuals in the household. The neoclassical framework gives men and women differing comparative advantages such that men are better at market work while women are better at house work. There is a specialization in each work area based on a gender perspective. Since women are specialized in house work and thus have a comparative advantage, they are doing the housework, such as child care etc. All these responsibilities where women have a comparative advantage result in a higher reservation wage compared to men. With such a high reservation wage the woman won't work unless she gets a higher value for her market time.

According to this perception, women's rising labor force participation rates can be explained by either rising actual wages or falling reservation wages. The general increase in labor force participation of women in the world is attributed to the rising education levels which increase the value of market time, while availability of market substitutes for home-work and falling fertility rates together decrease the value of non-market time (Blau et al., 1998).

There are two conflicting effects for the woman's participation choice. Those are income effect and the substitution effect. Mincer (1962) pointed out to the effect

of husband's income to wives' labor force participation decision. Heckman (1974) uses asset income as well. Income effect increases the reservation wage of an individual. So a woman with more income is expected to increase her non-market time activities and buy more leisure. Income effect is predicted to decrease the market time but not the un-paid work activities at home. This is generally coming from the assumption that market does not offer good enough substitutes for home-goods. This may as well explain married women's relatively low rates of participation (Blau et al., 1998). Since husband's earnings are available married women may choose not to work.

On the other hand there are factors increasing the value of woman's market time. Those are human capital variables such as education and experience. When an individual gets higher education, the prospects of getting a high wage at the market increase increasing the opportunity cost of non-market time (Blau et al., 1998). This is so called the "substitution effect" and a higher wage at the market is expected to increase the time an individual offers to the market.

While the women's participation rates were increasing in 1960s in the US, the wages were increasing for both men and women. On this occasion it may be argued that substitution effect was bigger than the income effect.

As an addition to this framework, Cogan (1981) introduced fixed time and money costs at the point of entry to labor market. Time allocated to travel to work can be a time cost, whereas clothing expenses for work is a monetary cost. When a multi-sector approach to labor force participation is undertaken, Cogan's entry-cost model is meaningful in the sense that different sectors do not only differ in wages but also in fixed costs an individual faces upon entry. Tiefenthaler (1994) analyzes the

effect of these costs on the sectoral participation choice. It is generally shown that informal sector jobs have lower fixed costs since they require lower clothing or travel costs. Hence informal sector may be associated with lower reservation wages. Edwards and Field-Hendrey (2002) uses this framework for home-based work and on-site work comparison.

Wife's individual utility function solely has also been used in the theoretical framework, rather than the household utility function. But again women's role in the household is assumed to be in the traditional sense acting as a reservation wage and husband's income or any other unearned income is included as exogenous variables representing the income effect. Connely (1992) is an example using this framework to make an empirical analysis on women's labor force participation.

#### Critiques to the New Household Economics

Critiques of the "New Household Economics" theoretical framework come firstly from the feminist economists. The over-simplified choice-based framework taking the traditional roles of breadwinner male and caregiver female as taken is found to be unrealistic and not appropriate for decision-making or policy-generating purposes.

Firstly the advantages of specialization in the household are questioned. The neoclassical theory assumes that when wife and husband each specialize in the activity which they have comparative advantage at, the utility of the household will be maximized. But specializing in the housework introduces many disadvantages and risks for the women. Since housework is most intense in the early-life cycle period because of the presence of small children, any skill which the woman can use in the market will depreciate and at the time when man reaches the highest earnings in his life, the woman will have both low-intensity housework and nearly no job prospects



for the future. Therefore as is stated by Blau et al. (1998), the homemaker's bargaining power diminishes over time. Furthermore the opportunity cost of not working is affecting not only current but also future decisions. So there is a cost coming from future job losses because of diminishing skills over time. This introduces a risk since the marriages do not necessarily last forever. Ferber and Birnbaum (1977) state that taking this risk is irrational for the individual but traditions are more powerful than the individual's rationality. Bergman (1981) further defines the occupation of being a housewife representing a very high-risk profile. She points out to various facts on this regard, which are actually pointing to the risk of divorce in general. So a housewife can stay with nothing on hand in the case of a termination of the marriage. She explains high number of housewives as the effect of the tradition which she expects to diminish over time.

Beneria (1995) also criticizes the model on the point that it takes the roles as given. Actually this does not have to be the optimal allocation. So feminist economists see comparative advantage and specialization aspects of the theory as the acceptance of status-quo rather than a product of rationality.

Another important critique is the circular reasoning about the housework activities of women. It is questioned whether women specialize in housework because they are better at it or they are better at it because they specialize in it. Actually women are possibly better at housework, if they are, because they do it under the traditional division of labor (Blau et al., 1998).

Secondly, a harmonious household in which all individuals have similar preferences constituting an indivisible unit is criticized. It doesn't seem quite possible to have individuals all sharing the same utility functions. Besides the

decision-maker in the neoclassical models is the head of the household who makes the higher contribution to the family. His preference function is the so called household utility function (Becker, 1974). Therefore an assumption of a benevolent household head lies beneath the household utility function. This assumption is quite problematic since it lacks to understand the intra-household power relations and conflicts and assumes the head is benevolent which does not have to be the case. Furthermore Ferber and Birnbaum (1977) suggest that a person's status in the family is related to his/her contributions to household income. So it is possible to change the power structure at home if the wife is also a wage earner.

Lastly the choice theoretic framework is under criticism. That is mostly associated with the patriarchal gender roles in the developing countries and usually not a general concern for advanced countries. The issue is that, women in some cultures may be prohibited from working. So being a housewife may not be a choice at all but a status imposed by the traditions. In this case it wouldn't be appropriate to talk about utility maximization behaviour at all.

Feminist economists used different approaches to tackle the problems arising with the neoclassical framework. They suggested different models and frameworks like Ferber and Birnbaum (1977), including Marxian-feminist literature and institutional economics. But these approaches are not easily adaptable to empirical work. They were left out of the mainstream economics.

There is also a household bargaining model using game theory framework, introduced by Amartya Sen (1990) which attempts to capture the within household power conflicts.

Although household utility maximizing framework is adaptable to empirical work, it has been ignored by many of the empirical studies in the literature as well. In these studies rather than using a simultaneous decision making on participation and hours to supply to the market, individual utility functions for wife and husband are used separately. Variables such as spouse's income or household income are taken as exogenous. But like Connely (1992) states individual utility models are in line with household utility framework. Most empirical studies use individual utility functions because there aren't enough data for testing simultaneous decision making (Wellington et al., 2000). It should also be noted that empirical support for the household utility approach is scarce. (Schultz, 1990).

Following most of the other empirical studies I will also use an individual utility model taking spouse characteristics and household variables as exogenous. We will also try to capture cultural barriers imposed on women by adding variables like husband's education.

## CHAPTER 4

### TRENDS IN LABOR FORCE PARTICIPATION OF WOMEN IN TURKEY

Female labor force participation rate is quite low in Turkey compared to male labor force participation rate as well as female LFP in other countries. There may be many reasons behind this gap including economic and cultural factors. Lower education levels of women compared to men, traditional caregiver roles, patriarchal norms or religion, scarcity of decent employment alternatives are among those reasons.

Moreover, female labor force participation rate is declining in Turkey since the 1950s but studies show that urbanization trend and declining agricultural employment are behind this trend (DPT&World Bank (2009)). It is actually important to note that both male and female participation rates are on a decline which can be seen in Figure 1, because of the urbanization effect. Furthermore increasing participation trend in education by attending higher than primary school has also been effective in lowering these rates.

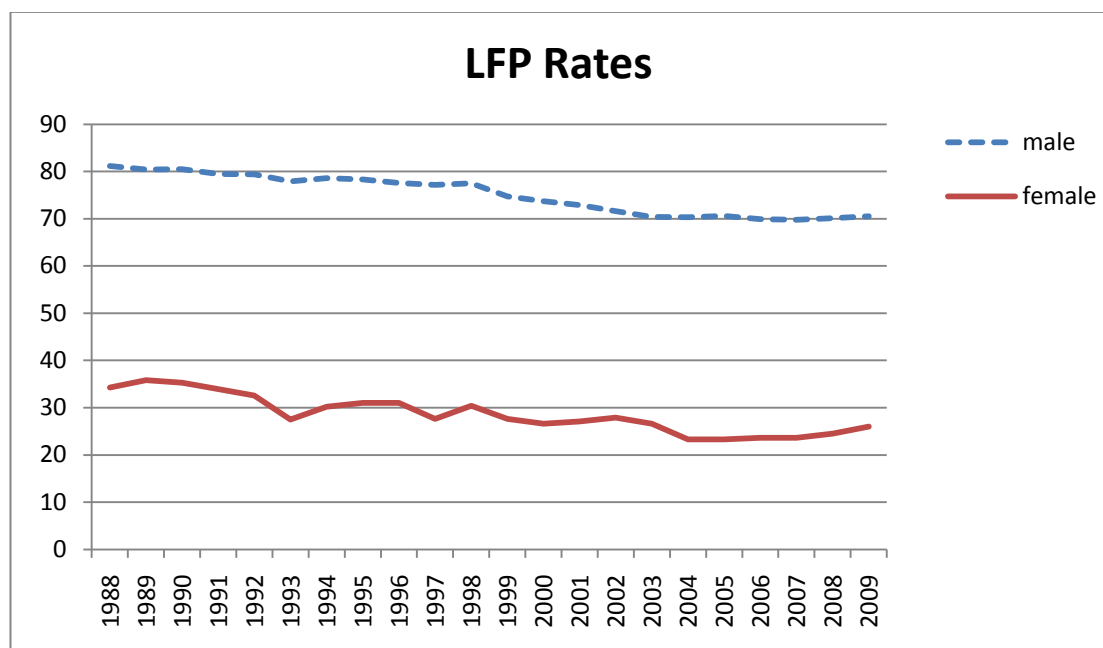


Figure 1. Labor force participaiton rates between years 1988-2009 in Turkey

When we compare the female LFPRs in Turkey with other countries as shown in Figure 2, we see that Turkey's participation rates are very low compared to EU and OECD countries whereas it is similar to MENA countries. The similarity between MENA countries and Turkey shows that patriarchal norms and religion may be effective in Turkey. Other developing countries from Latin America and Caribbean, where patriarchal norms are not as strong as MENA or Turkey and the religion is different, show significantly higher participation patterns for females.

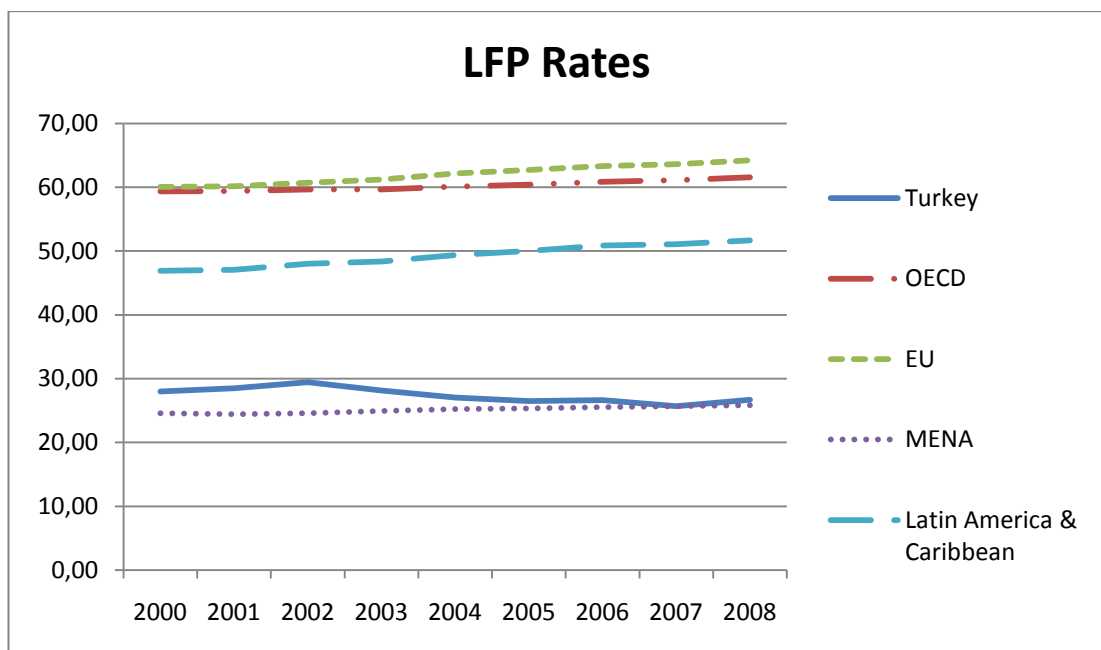


Figure 2. Comparison of female labor force participation rates of Turkey between years 2000-2008 with different regions

A significant proportion of employed males and females are in informal jobs. Especially females are overrepresented in the informal sector at a rate of about 60% of employed women. When we look at the general trend through time as shown in Figure 3, we can see that proportion of informal employment in total employed men and women is on a decline. This is again in correlation with declining agricultural employment since a high portion of informal workers are working in agriculture.

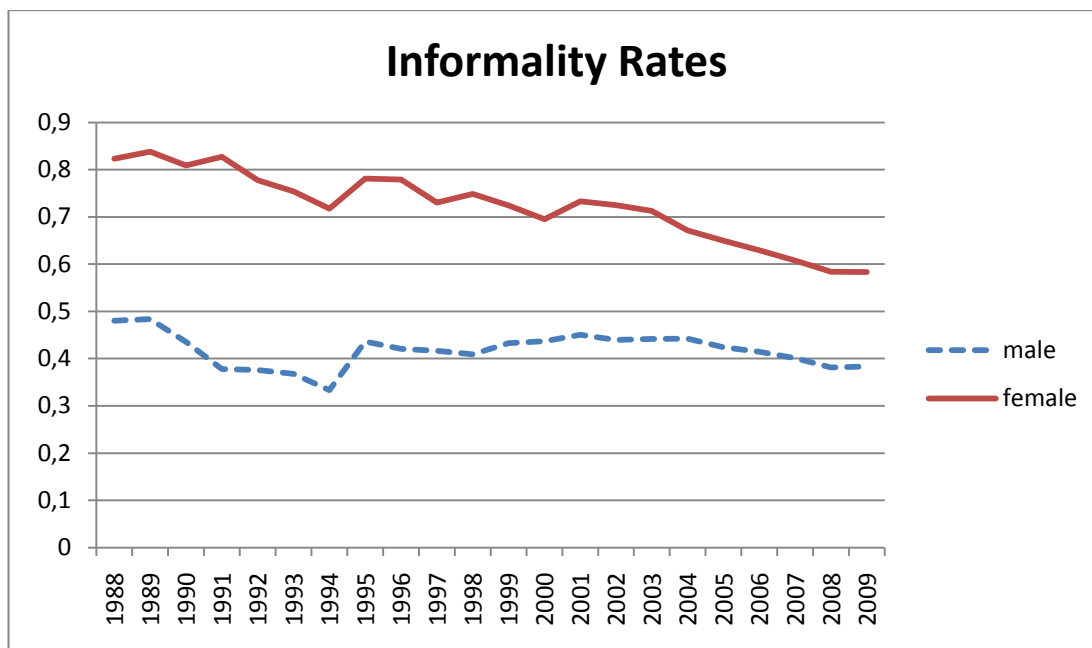


Figure 3. Rate of informal workers in total employed between 1988-2009 in Turkey

Informal jobs are often vulnerable and precarious although there is a great heterogeneity in the type of informal jobs. World Bank defines vulnerable jobs as follows:

“The share of vulnerable employment in total employment captures the proportion of workers who are less likely to have access to social security, income protection, and effective coverage under labor legislation—and are thus more likely to lack critical elements of decent work. Such elements include mechanisms for dialogue that could improve their working conditions or ensure rights at work.”

World Development Indicators by World Bank shows the proportion of women and men in vulnerable jobs in total employed. Vulnerable jobs capture unpaid family work and own-account workers without social security and retirement prospects. So World Bank’s statistics do not account for waged informal workers, but they are still informative in comparison with other countries. Figure 4 shows a

comparison of Turkey with other regions. The ratio of vulnerable jobs in total (urban and rural) in Turkey for the year 2008, is quite high compared to other regions in the world. And again there is a similarity between MENA and Turkey in this regard.

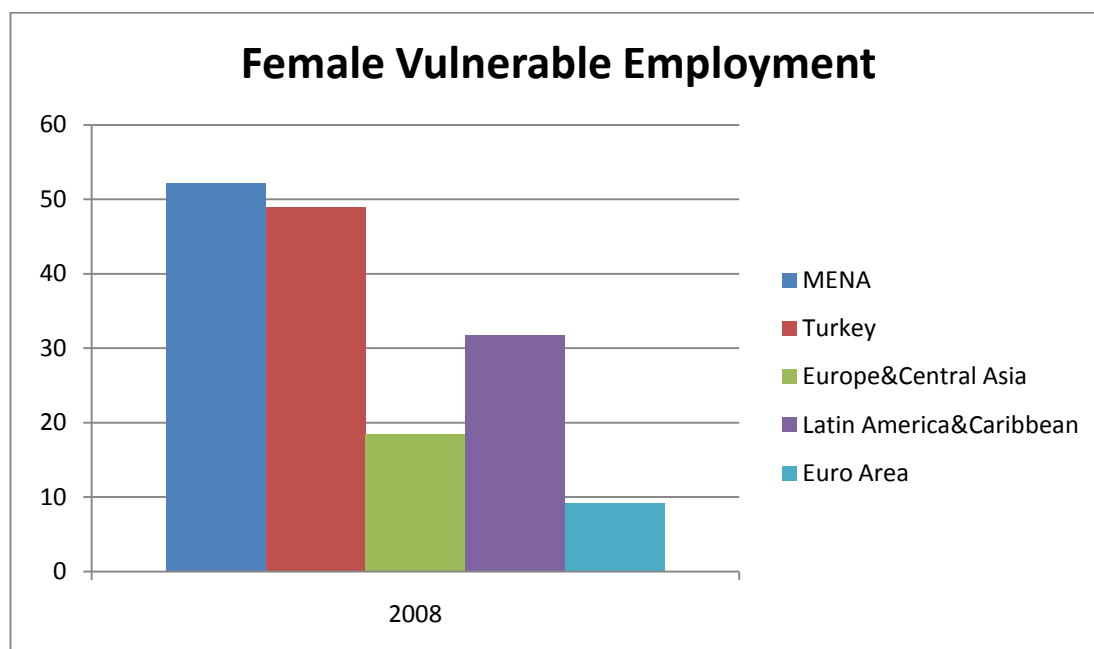


Figure 4. Rate of vulnerable employment in total employed for different regions in 2008

#### Trends in Urban Regions

While the general trend in LFP is decreasing for women in Turkey, it is quite steady over the years in the urban as shown in Figure 5. This is mostly because low educated women do not or cannot participate in labor force. The formal jobs available to low educated women are quite low and informal jobs are not very desirable. Informal jobs are mostly chosen because of necessity.

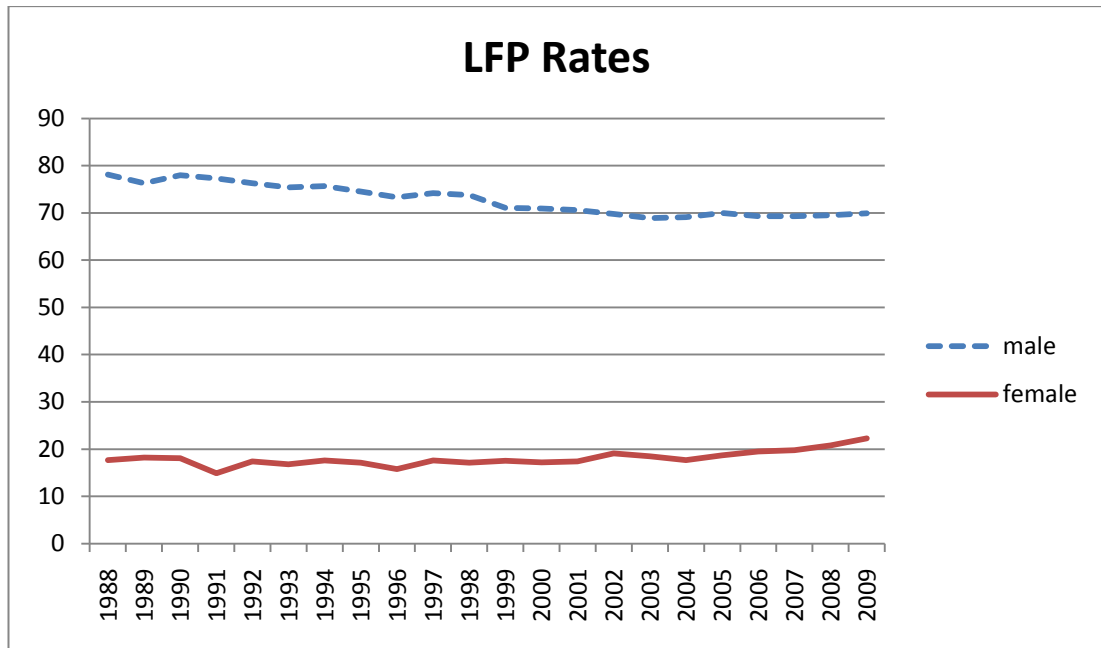


Figure 5. Female and male labor force participation rates in urban regions of Turkey

Analysis based on education level reveals that the gap between male and female participation levels is the narrowest for university graduates. Although this points to the fact that education is important in overcoming low labor force participation rates, other facts which are equally notable arise from these graphs. As other scholars like İlkkaracan(2007) have pointed out before, labor force participation gaps for lower education levels are quite high between female and male. Therefore concluding that low educated women are not in labor force because they are low educated brings the question that then why men are not in the same position. Therefore there should be other factors effective in low participation rates of low educated women.

Labor force participation rates of women by their educational levels show a declining pattern for high school and university graduates whereas it is quite stable and very low for lower education levels.



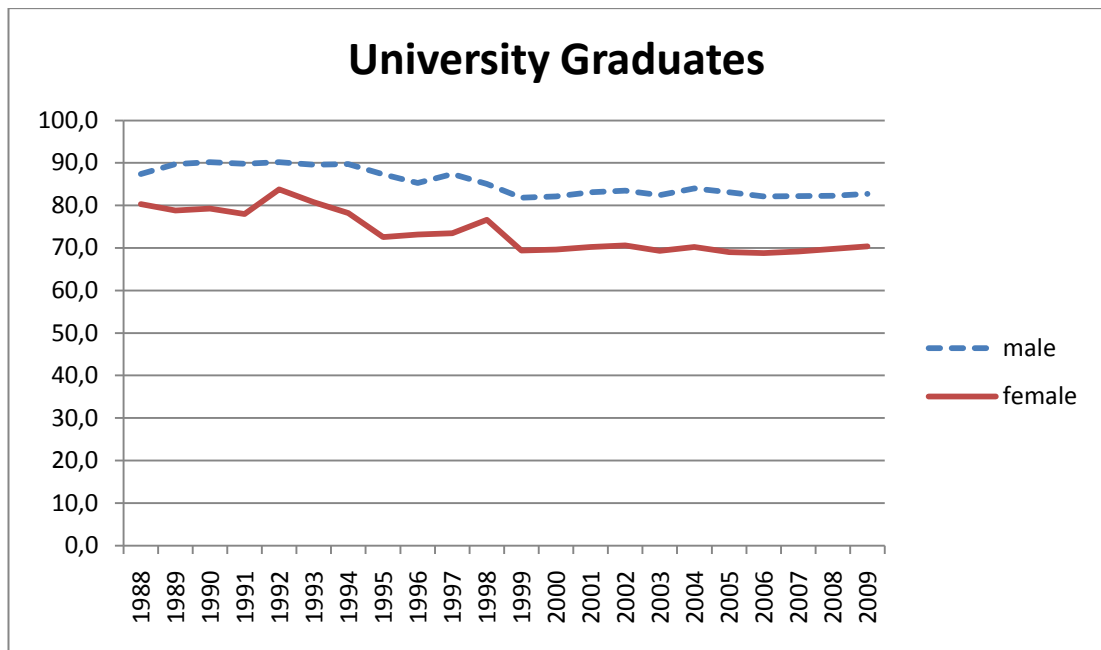


Figure 6. Female and male labor force participation rates of university graduates in urban regions

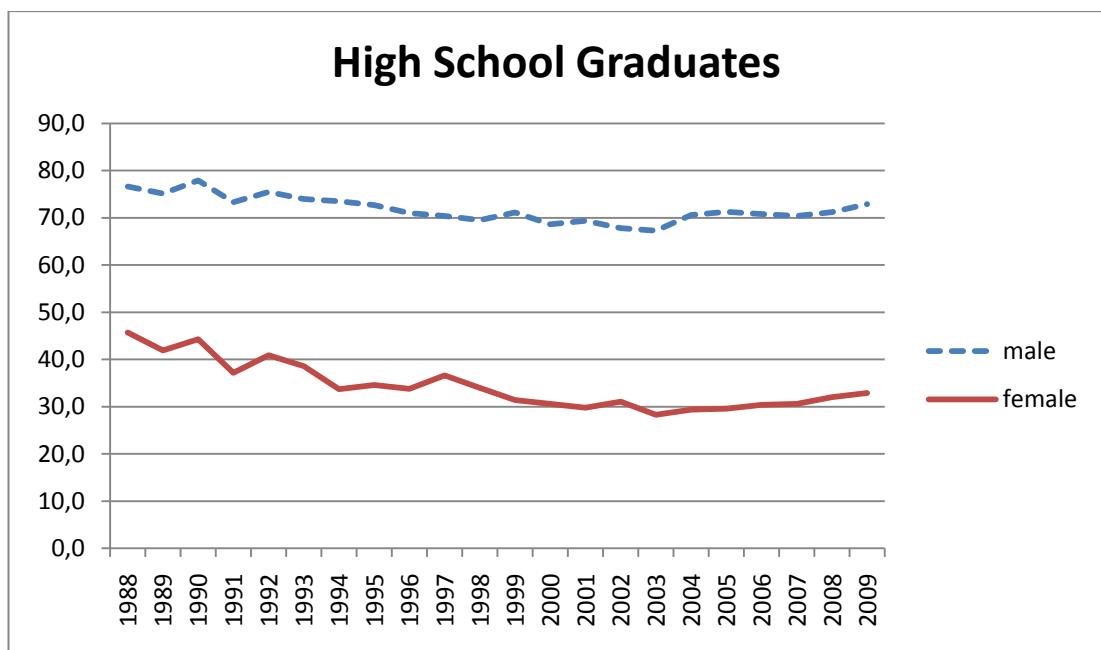


Figure 7. Female and male labor force participation rates of high school graduates in urban regions

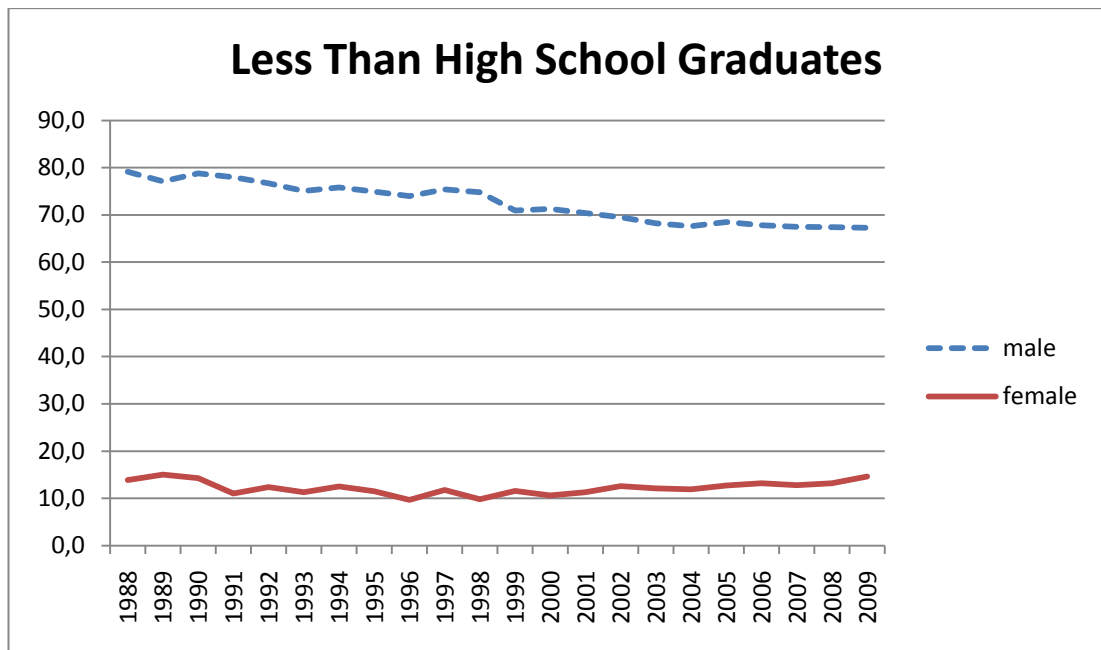


Figure 8. Female and male labor force participation rates of less than high school graduates in urban regions

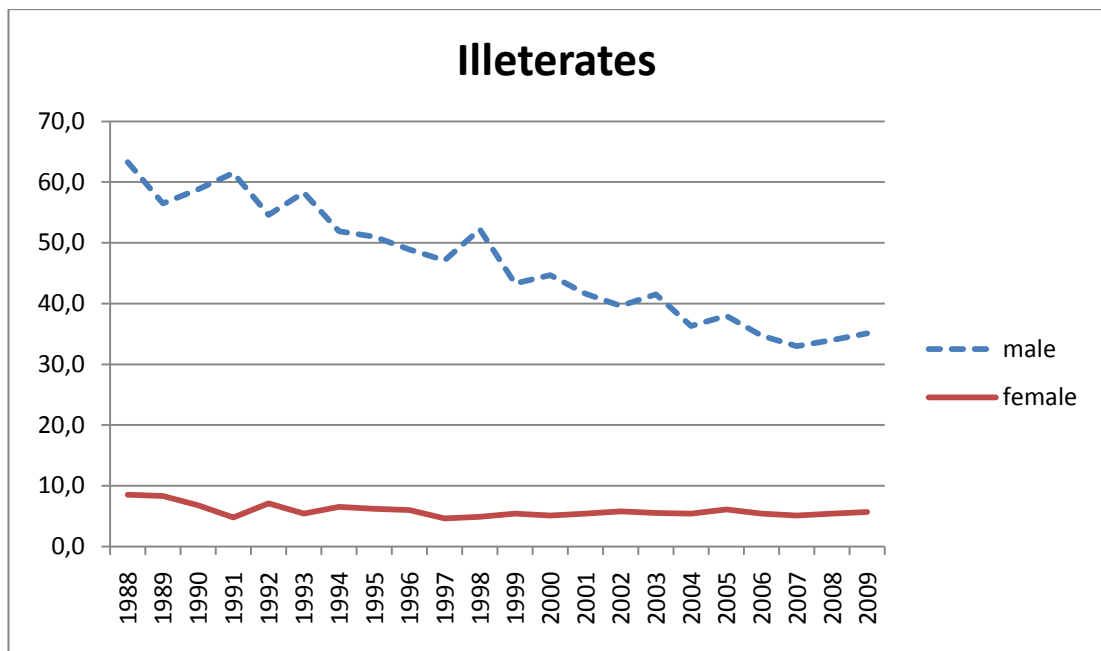


Figure 9. Female and male labor force participation rates of illeterates in urban regions

When we look at the informality trend in urban in Figure 10, we can see a significant informal portion of workers and an overrepresentation of females. The share of informal workers in total employed women is higher than male's, which shows that women are in more vulnerable jobs compared to men in urban regions.

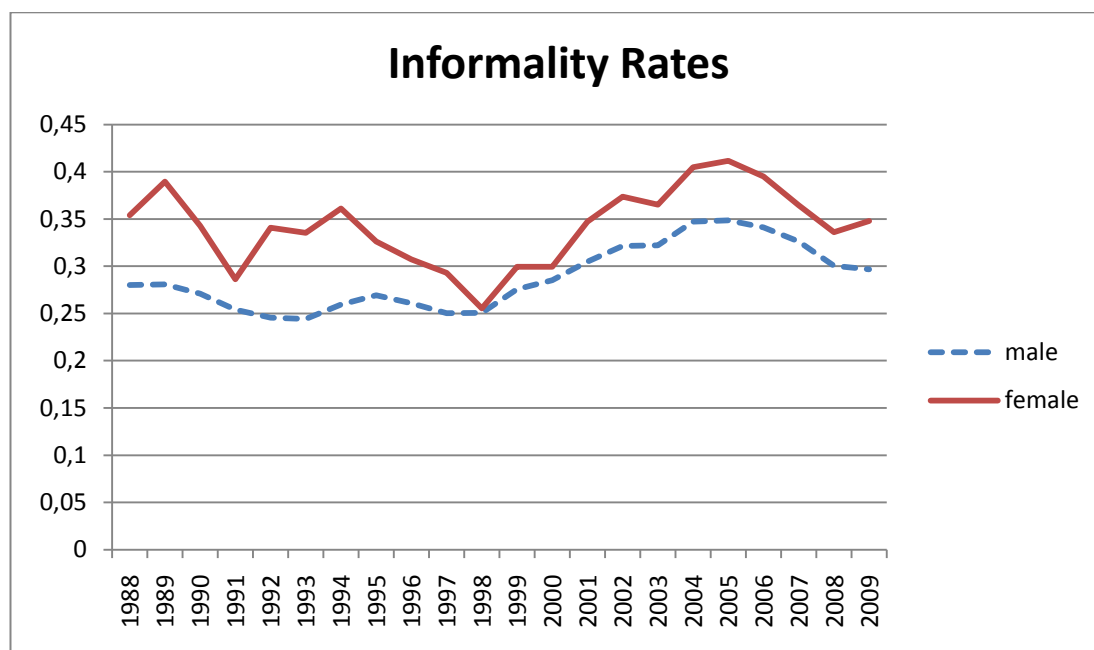


Figure 10. Rate of informal workers in total employed between 1988-2009 in urban regions

When we look at the figure, we can see that especially after 1998 trends for women and men are very similar. Following a slight increase from 1998 till 2000, there is a relatively sharp increase during and after the crisis of 2001. Informal employment then persisted till 2005 and began to decrease afterwards.

#### Reasons for Non-Participation in Urban Regions

An important share of working age women is not participating in labor force in the urban. It is worth discovering the reasons stated in the HLFs. The most important reason stated by the non-participants is being a housewife. The share of non-

participants who stated the reason for non participation as being a housewife is higher than all other reasons and always above %60.

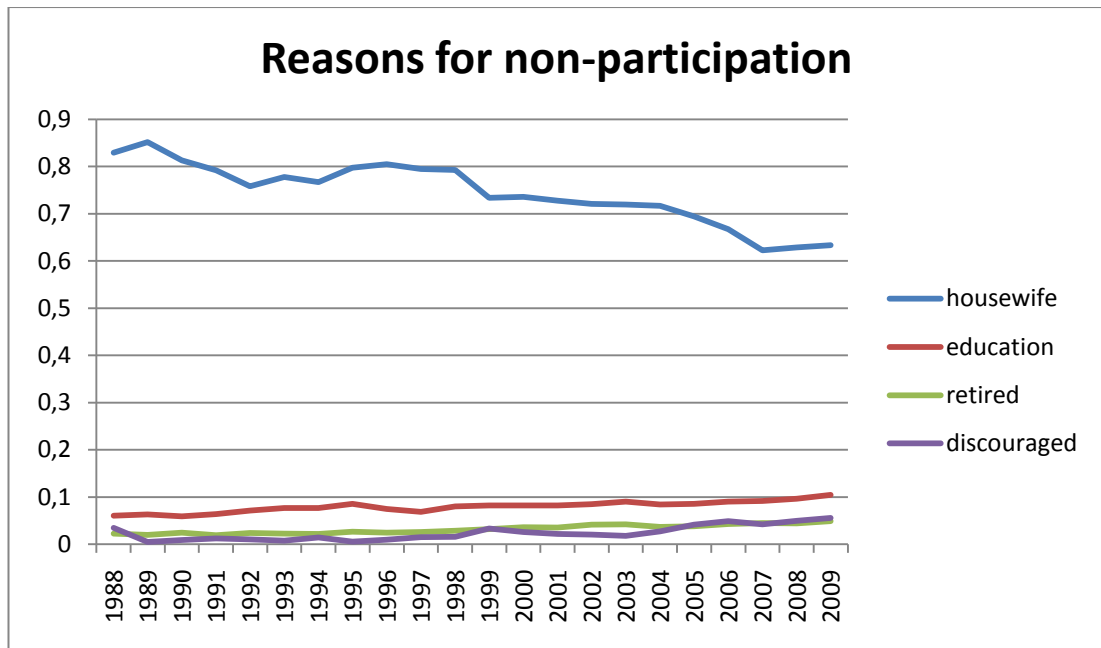


Figure 11. Share of reasons for non-participation among total working age non-participant women between 1988-2009 in urban regions

Although the proportion of women who state being a housewife as a reason for non-participation is quite high, there is a declining trend in urban regions as shown in Figure 11. In comparison, being retired and being a student are more often stated throughout the years, but they are still less frequent compared to being a housewife. Rising numbers of discouraged workers is also an important point to be noted. Although not shown in Figure 11, the reason of being disabled and “other” are on a rise throughout the years as well. While they were around %2 for 1988, for the year 2009 being disabled and the category “other” each has a share of %8.

The declining trend in the reason of being a housewife for non-participation can partially be explained by increases in the share of other reasons like being retired, education etc. As another possible explanation we may say that the falling

trend of being a housewife may be linked with the rising informalization in urban areas. Some women may have started to work informally and to earn some additional money to help household survive.

## CHAPTER 5

### DATA

Data used in this study is the Household Budget Survey prepared by TUIK for the year 2003. HBS is conducted every year since 2002. The unit of interest is the household in the dataset but survey does also provide information about the individuals in the household. Households are chosen from all over Turkey considering urban, rural divide and 26 regions that were identified beforehand. Probability sampling method is used in sample selection and survey is conducted face to face.

An alternative data source could be Household Labor Surveys prepared annually in Turkey. This survey however does not include wage and income information except for the very first round conducted in 1988.

Although HBS is available until 2008, year 2003 is selected for the empirical analysis. The reason for using 2003 data is the higher number of observations compared to following years (26000 vs 8000 households) and presence of identifiers for 26 regions. In following years the regional specifications became invisible for the researchers. Since the regional specifications are also important for our analysis, household budget survey of 2003 seemed to be the most appropriate data.

In the year 2001, there was an economic crisis in Turkey. We hope that by 2003 the effects of the crisis on labor market outcomes are weakened. There are 25 764 households and 107 614 individuals in total in the HBS of 2003. Since we are interested in married women aged between 15-64 and living in urban, we have 16 876 women left in the sample.

In the study, the effect of husband's premium based public health insurance on workforce participation choice of women is an important point of interest. For that reason women who are household head are eliminated from the dataset (%5.67 of the women in total). One last elimination is for large families which consist of more than one nuclear family. Since in these families it is ambiguous who should be taken as the household head and the heads of the nuclear families in these groups are not identified, they are also eliminated from the dataset. Women in large families, consist %22.53 of the whole sample. By eliminating this group we are also losing information regarding traditional families in which cultural values and barriers to labor force entry for women are strong. The further results should be interpreted taking this elimination of traditional families into account.

So we are left with 13 296 observations. These women are divided into 7 groups according to their work status, as described in the next section. An important divide between the groups comes from working formal or informal.

#### Definitions of Work States

Data provides information regarding the work state of an individual. We firstly distinguish between those in the labor force and those out of labor force. For those in the labor force we can identify whether they are employed or are looking for a job. Furthermore, information on the registration to social security of a working individual exists in the data. Therefore we can identify the workers who are working without registering to the social security organization which will be called informal workers from here on. Although there exists alternative definitions of informality in the literature, the most relevant identification for our study is the distinction between being registered or not to social security. It is also the case in Tansel (2001) that the formal and informal wage earners are separated from each other according to their

social security coverage. International agencies like World Bank publishes vulnerable employment statistics where they only include the workers who are unpaid family workers and self-employed. But as Castells and Portes (1989) argue taking all wage workers to be formal will lead to a huge underestimation of the informal economy. On the other hand, for Turkish literature other studies like Kizilirmak (2005) or Baslevent et al. (2002) who use multiple work states for labor force participation choice, do not make a distinction between formal and informal, but they rather use work states like regular wage earner, casual wage earner etc. as different work outcomes.

While formal working women are mostly regular wage earners (%92 of the formal workers in the sample are regular wage earners, formal workers are not divided into subgroups because of this high percentage.), informally working women can be regular wage earner, casual wage earner, family worker or self-employed (excluding employers). There also are 21 employers in our sample. Since this is not sufficient to obtain statistically meaningful results, female employers are excluded from further analysis (results for other categories do not change when we include them).

The definitions of work states are as follows:

**Non-participants:** The women who are neither working, nor looking for a job. This category consists mostly of housewives and then by students. There are also retired, disabled or sick individuals among non-participants.

**Formal workers:** The women who are registered to the social security.

**Informal wage earners:** The women who are not registered to the social security but they are regular wage earners.



Casual wage earners: The women who are not registered to social security and they are not working regularly but only casually for an employer. These women may be working seasonally or when a job is available.

Self-employed: These women are again not registered and working for themselves, not for an employer. Home-based workers or street vendors can be included in this group.

Family workers: Family workers are not registered and not working for pay either. But they are working in a family atelier or any other family enterprise.

Unemployed: Women who are not working but looking for a job are categorized as unemployed.

Average working hours a week might be informative for different job types. According to the data, self-employed women work shortest hours a week with 32.8 hours on average. It is followed by casual informal workers by 33 hours. Family workers work longer hours than these two groups on average with 37 hours a week. On the other hand regular wage earners formal or informal have similar weekly work hours. Formal workers work for 42.6 hours a week while informal wage earners work 42.5 hours.

There also are occupational differences between these job types as is seen in Table 1. While the formal workers mostly consist of professionals, assistant professionals or office workers, informal wage workers are in services, machine operators or in jobs that do not require any skills.

Casual wage workers also mostly consist of unskilled workers. A high percent of self-employed consist of agricultural workers as well as a high share of

craftsman. And family workers are agricultural workers in a high share followed by service personnel.

Table 1. Occupations of women in different work states

%	Formal work	Informal wage	Casual wage	Self-employed	Family worker
Top managers and law makers	5.1	1.4	0.0	6.4	0.5
Professionals	35.5	6.8	2.2	0.0	1.0
Assistant Professionals	15.3	4.8	0.0	0.0	0.5
Staff members in offices	14.9	4.8	0.3	0.0	3.6
Service and sales personnel	5.9	17.7	17.0	5.6	28.4
Agricultural workers	1.0	0.0	1.9	44.0	57.4
Craftsman	6.4	21.1	13.0	37.6	4.1
Machine operators	3.9	10.2	2.8	4.0	2.5
Unskilled workers	12.0	33.3	62.9	2.4	2.0

#### Definitions of Variables

The variables used in the analysis are obtained using household and individual level data. Individual level data of wife, husband and/or child can be linked through the household identification number. The available demographic variables of the individual are age and education. Education is reported as the highest grade obtained. Although there are 11 categories for education in the data, we combined them into 3 groups and accordingly created 3 dummy variables: education lower than primary school, middle school or high school graduate and university graduate or more. In the first category there are illiterates, people who began primary school but haven't finished and people who are graduated from primary school. The second category consists of middle school and high school graduates including vocational school. And the last category combines 2 or 4 year university graduates along with master degree and PhD holders.

Husband's health insurance coverage is represented with 4 dummies. These are; individual has premium based public insurance, private insurance, green card<sup>1</sup>, or none of those.

Number of children is included as another control variable. Since our sample consists of married women excluding large families, we are able to link children in the household to women. I also make a distinction between number of children under age 6 and number of children between age 6 and 15.

Income of the household excluding women's earnings is another variable. In order to create this variable, monthly household expenditure is taken as a proxy for income of the household and earnings of the woman is subtracted from it. Total expenditure of the household includes spending in the market, presents and aids given to the family, consumption from family's own production and in kind transfers from the employers.

Income of the household can also be used instead of expenditures but there may be underreporting of the income whereas this is not the case for expenditures because of the survey's expenditure focus mechanism. Natural logarithm of this number is taken in the analysis.

As a proxy for the wealth of the household, home-ownership is used as a dummy which equals one if the family owns an apartment, a house or a summer house. Houses that were built without license were not included as a proxy for wealth. This is because houses without license are usually built by the individuals who cannot afford to buy a house normally. These houses are also very low in

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<sup>1</sup> Green card is given to the individuals on a need-basis on the condition that individual's earnings are less than one third of the minimum income. The card is given after a screening and investigation of the individual's true situation.

number in the sample, such that only %2.3 of the home ownership is for houses that were built without license.

Regional dummies for 26 different regions are used as additional variables. These regions are created by NUTS II criteria of the European Union. According to this criterion 81 provinces are grouped by their economic, social and cultural characteristics considering geographical locations and population densities.

### Descriptive Statistics

In our sample, composed of married working age women living in urban nuclear families, the non-participant group has a share of %86. In the sample the informal working women's share, 5.86%, is nearly the same as the share of formal working women, 6.39%, displaying significance of informal working population.

Table 2. Share of Each Work State in the Sample

	number	%
Formal work	865	6.39
Informal wage	147	1.09
Casual wage	323	2.39
Self-employed	125	0.92
Family worker	197	1.46
Unemployed	177	1.31
Non-participants	11,703	86.45
Total	13,537	100

When we look at the summary statistics of the human capital variables for different groups, we can see that there is difference in ages of the women in different work groups. Unemployed women are the youngest among others and family workers are the oldest.

Not surprisingly formal workers are the most educated. They stand apart from other categories in terms of educational background. On the other hand, non-participant women are more like informal working women. It should also be noted

that education profile of self-employed women is also very similar to the education profile of non-participant women.

Table 3. Average Age and Percentages of Women in Each Education Level for Every Work State

	Age	Primary school or less	High school or middle school	University
Formal work	35.18	0.18	0.31	0.51
Informal wage	37.01	0.67	0.26	0.07
Casual wage	37.58	0.89	0.09	0.02
Self-employed	39.26	0.77	0.22	0.01
Family worker	42.11	0.81	0.16	0.03
Unemployed	32.99	0.60	0.29	0.11
Non-participants	38.84	0.74	0.23	0.03

When we look at the summary statistics for factors that may raise the reservation wage of a woman, such as owning a house or number of children presented in Table 4, we can again see that self-employed women are similar to the non-participants. Family workers on average do seem to have the highest income effect on average since average non-wage income and home ownership is highest for them. According to the sample, %53 of the family workers own a single house which is higher than all other work states' home ownership. This may be because family workers are usually working in family farms, and they may have single houses as well by the farm side. Furthermore since in the calculation of non-wage income total expenditures are used to proxy total income, consumption from own production is also included. This can exaggerate family workers non-wage income.

Non-participants do not appear to be the wealthiest group neither do they have a large number of children as the theory usually suggests. So we cannot find significant differences between non-participant women and informal workers although the difference between formal and non-participant group is more visible.

Non-participant group seems to have a higher number of children, more wealth, and more non-female income than formal workers on average.

Table 4. Averages of Variables that Raise Reservation Wage of Women, for Each Work State

	Home ownership	Ln(non-wage income)	# of children under 6	# of children between 6-15
Formal work	0.53	6.04	0.35	0.64
Informal wage	0.52	5.95	0.12	0.84
Casual wage	0.46	5.72	0.25	1.02
Self-employed	0.66	6.06	0.44	1.15
Family worker	0.82	6.45	0.24	0.70
Unemployed	0.40	6.21	0.38	0.89
Non-participants	0.64	6.42	0.42	0.79

The husband's health insurance type for women in different work groups reveals some interesting information. We can see that %92 of formal working women are married with men with premium based public health insurance. This percentage is very high for non-participants as well, %77 of non-participant women have husbands with public health insurance<sup>2</sup>. This ratio is still high for informal workers and unemployed but not as high as formal workers or non-participants. This variable creates a visible difference between non-participants and other informal working groups.

The high percentage of public health insurance for husbands of formal working women may be due to assortative mating, such that people with similar abilities or education levels marry each other. We can see that husbands of informal working women represent a more heterogeneous group compared to husbands of formal working women.

<sup>2</sup> From here on "premium based public health insurance" will be referred as "public health insurance" for simplicity.

Table 5. Percentages of Women who Have Husbands with Associated Health

Insurance Type

	Public health ins.	Private health ins.	Green card	None
Formal work	0.911	0.002	0.002	0.058
Informal wage	0.571	0.000	0.048	0.340
Casual wage	0.489	0.012	0.077	0.384
Self-employed	0.616	0.008	0.040	0.288
Family worker	0.650	0.015	0.020	0.310
Unemployed	0.565	0.011	0.068	0.316
Non-participants	0.766	0.006	0.026	0.184

Since women are covered by their husband's health insurance this may increase the reservation wage.

In Table 6, we can see the education levels of the husbands. Although husbands of formal working women were very homogenous in terms of health insurance type they are more heterogeneous in terms of educational level. Casual wage earner women have the greatest share of low educated husbands while this ratio is smallest for formal workers.

Table 6. Percentages of Women who Have Husbands with Associated Education

Levels

	Primary school or less	High school or middle school	University
Formal work	0.16	0.36	0.48
Informal wage	0.58	0.33	0.09
Casual wage	0.74	0.22	0.04
Self-employed	0.61	0.31	0.08
Family worker	0.67	0.28	0.06
Unemployed	0.54	0.31	0.15
Non-participants	0.52	0.37	0.11

(Summary statistics for the 1st and 4th income quartiles are presented in Appendix A.)

## CHAPTER 6

### METHODOLOGY

We want to estimate the factors affecting the participation decisions of women using a general binary participation model first. In order to do so, a reduced form participation equation will be estimated using a binary logit model. Then a multinomial logit model will be estimated with all work states included. The participation equation is in reduced form since the wages/earnings of women are not included directly in the equation and instead they are approximated using human capital variables.

We use a utility framework for the labor force participation model. Although this is a utility framework, it takes into account costs and benefits of every work state outcome for each individual including cultural barriers imposed on women. Therefore since it offers a framework which reflects expected wage and reservation wage of individuals, it is in line with our analysis.

In the binary logit model, the dependent variable is the labor force participation outcome taking a value of one if the individual participates in labor force.

The theoretical logic behind binary logit models is the random utility model. According to random utility model, the individual compares the utilities from two outcomes and chooses the one with highest utility. In this utility function  $V_j$  is the deterministic component and  $e_j$  is the stochastic component, which can also be stated as the random component.

$$U_j = V_j + \epsilon_j \text{ for } j = 1, 0$$



The probability of individual  $i$  to be in outcome  $j=1$  is as follows (Cameron et. al., 2005):

$$\begin{aligned}
 P_i &= P_i[U_1 \geq U_0] \\
 &= P_i[0 \geq U_1 - U_0] \\
 &= P_i[\epsilon_0 - \epsilon_1 \leq V_1 - V_0] \\
 &= F(V_1 - V_0) \\
 &= F(X' \beta + Z' \gamma)
 \end{aligned}$$

In this model  $U_1$  is the utility when the outcome is equal to 1 and  $U_0$  is the utility when the outcome is equal to 0.  $F$  is the logistic cdf of the error terms and since they are assumed to be in type I extreme value distribution, the probability is calculated as follows (Cameron et al., 2005):

$$P[y = 1] = \frac{\exp(X' \beta + Z' \gamma)}{1 + \exp(X' \beta + Z' \gamma)}$$

In this function  $X$  represents the personal characteristics like education that affect expected wage and reservation wage of an individual.  $Z$  represents the household characteristics like presence of children that affect the reservation wage of an individual.

Coefficients obtained from this model can be interpreted by looking at their significance levels and signs. Such that a negative sign means that the variable decreases the probability to participate while a positive sign indicates vice versa. But in the literature odds ratio or relative risk ratios are more commonly used in interpreting the effects of independent variables. Odds ratio which is  $p/1-p$  shows the probability that  $y=1$  relative to the probability  $y=0$ . Therefore for example, if odds ratio for university graduate dummy is equal to 5, this means that the odds of

university graduates are 5 times those of the primary school graduates(reference category) for labor force participation.

In the multinomial model there are 7 different labor force participation outcomes for women. They are formal employment, informal wage employment, casual informal work, self-employed work, family work, unemployment and not working for pay in the market (non-participant). Informal wage employment, casual informal work, self-employment and family work are informal work states and represent the women working without social security.

These outcomes are assumed to be mutually exclusive and the individual participates in one of these by comparing the utilities each participation choice gives. So there is no priority or order between them. The utility of jth choice is given by:

$$U_{ij} = V_{ij} + \epsilon_{ij}, \quad j = 1, 2, \dots, 7,$$

$$U_{ij} > \max_{k \neq j} \{U_{ik}\} \forall j$$

The utility function associated with multinomial outcomes is the random utility model like in the binary logit model. The alternatives are compared using the differences between the utilities each outcome gives to the individual. Or we can say that the probability that individual i will be in participation outcome j is the probability that the utility of participation choice j is greater than all other alternatives.

$$P_{ij} = P[U_{ij} \geq U_{ik}, \quad \forall \quad j \neq k]$$

$$= P[0 \geq U_{ik} - U_{ij}, \quad \forall \quad j \neq k]$$

$$= P[\epsilon_k - \epsilon_j \leq V_j - V_k, \quad \forall \quad j \neq k]$$

The utility function is a function of the difference between the actual wage and the reservation wage of each alternative for each individual following Heckman (1974). Since reservation wages cannot be observed for individuals, observable components that determine them are included instead. Furthermore actual wages are not observable for some women either because they are not participating in the labor force or they are unemployed. As a solution the wages are approximated by using some observable variables (denoted by X) proxying human capital. So the function is as follows like in Hill (1983) and Tiefenthaler (1994) but separating X and Z from each other like in De Hoyos (2006):

$$\begin{aligned} U_{ij} &= V_{ij} + \epsilon_{ij}, & j &= 1, 2, \dots, 7, \\ V_{ij} &= \beta_j X_i + \gamma_j Z_i \end{aligned}$$

In this utility function, same as before, X represents the personal characteristics and Z represents the household characteristics of an individual.

The distribution of error terms, the stochastic part of the utility function, determines the type of the multinomial function. We assume that errors are independently and identically distributed with type I extreme value distribution, in which case difference between errors has a logistic distribution, and we use multinomial logit model to estimate the participation equation.

All the variables are individual or household specific and do not change across alternatives. Hence we employ a multinomial logit model with alternative-invariant regressors. The probability for individual i to for participation choice j is:

$$P_{ij} = \frac{\exp(\beta_j X_i + \gamma_j Z_i)}{\sum_{k=1}^7 \exp(\beta_k X_i + \gamma_k Z_i)}$$

Interpretation of the coefficients of the multinomial logit model is similar to the binary logit model but this time there is a base category used as a reference point. Therefore a negative sign indicates that the probability of being in alternative 1 is lower for a one unit change in that independent variable compared to the base alternative. Interpretation using odds ratios is again more common. Similar to the binary logit model odds ratio shows the change in odds of choosing that alternative compared to the base alternative.

#### Discussion of Explanatory Variables

In the model, most explanatory variables aim to capture actual wage and reservation wage of a woman. Along with these, variables that are expected to capture the cultural barriers are also included.

Variables that increase the actual wage or expected wage in the market of an individual are called “human capital variables”. These are education and work experience of an individual. It is expected that the higher the education level of an individual the higher her probability to participate in the labor force since her wage prospects increase. Similarly the higher the experience of an individual the higher her income prospects thus we expect a higher probability to participate in the labor force.

Dummy for lower than primary school education is the omitted category in the analysis. It is expected that coefficients for the other two schooling levels will have a positive sign indicating that they increase the odds to participate in labor force in the binary model. The signs and degrees of significance cannot be predicted for the different work states in the multinomial model.

Age is included as a proxy for experience since experience for non-participant woman cannot be found in the data. Age is not a good proxy for experience since

woman's participation patterns according to age is argued to be M shaped. This means that women increase their participation to the age they get married and have children, then they leave the labor force and they participate in the labor force again after the children reach a certain age. Their participation trend then falls due to retirement and old age. Thus age cannot capture experience thoroughly but yet it is the only proxy we have on hand for experience. Studies like Dayioglu and Kirdar (2010) show an inverse U shaped trend for women's age patterns. In order to capture this trend, age and its square is used following Baslevent and Onaran (2004) and Tansel (2001). Since years of experience will also show an inverse U shaped trend because of retirement, using age and age square is appropriate. Therefore for the binary model and the multinomial model as well, age is expected to have a positive effect while age square should have a smaller negative effect in order to have an inverse U shaped age structure.

The effects of these human capital variables are expected to change between different participation states. We expect that their signs will be positive for every work choice but the degree or the significance of the effect might change. Effect of human capital variables will be more significant for formal employment whereas they are not predicted to be as such for the informal employment types. Between informal employment types the effect of age might be different as well.

We use number of children under age 6 and between ages 6-15, household income other than woman's own earnings and owning a house to capture the reservation wage of an individual.

Number of children under 6 is a household variable that is expected to increase the reservation wage of an individual. Since outsourcing the childcare is

expensive, the woman is faced with a higher reservation wage when they have small children. Number of children between 6 and 15 is also expected to have a similar effect but not as strong as number of children under 6, since children begin to attend school after age 6.

The effect of the children variables are expected to be weaker for informal sector participation since it is proposed that informal sector jobs tend to be more flexible compared to formal jobs (Tiefenthaler, 1994, Edwards and Field-Hendrey, 2002). Especially unpaid family workers or self-employed are expected to have this flexibility because of shorter hours of work and the availability of changing work hours.

Another household variable is the income of the household other than woman's own wage. This income includes husband's earnings as well as other income of the household such as interest payments or rents. This variable is expected to increase the reservation wage for the woman for every work state, creating a negative income effect.

Home ownership is a wealth measure expected to increase the reservation wage of an individual since it creates a negative income effect. Thus we expect owning a home to decrease participation to each work outcome.

Last variable that increases the reservation wage is the husband's public health insurance coverage. This variable is expected to decrease women's participation introducing an income effect. Buchmueller et al. (1998) argue that husband's health insurance coverage may lower work with social security whereas it may increase the work without social security since there is already health coverage coming from the husband. They haven't found a negative income effect coming from

husband's health insurance for informal work states. Wellington and Cobb-Clark (2000) took husband's insurance and husband's insurance coverage for dependents as distinct variables. In Turkey, however, wife is usually covered as dependent. So we consider husband's public health insurance as representing husband's insurance coverage for the dependents.

It should be noted, however, that husband's health insurance status may also capture a social status effect. Men with public health insurance are in higher social status levels and wives on the other hand may have to find jobs according to this social status level. Since formal jobs are usually better and have higher status compared to informal jobs, those married to men in formal jobs may prefer formal jobs. Furthermore there might be assortative mating such that women who are more probable to work formally may be married with men with formal insurance. These effects may cancel out and even exceed the effect through reservation wage and we might get coefficients of either sign.

In the analysis the husband with no health insurance is the omitted category. The other categories are husband having private insurance, husband having green card and husband having public insurance with dependent coverage. Green card does not offer coverage for the dependents. Private insurance may or may not offer dependent coverage.

Finally regional dummies and husband's education are used to capture cultural factors. The signs of the regional dummies cannot be predicted beforehand but husband's higher education is expected to raise the participation probability. Especially university education is expected to lower the probability to participate in

informal work whereas it is expected to increase the probability to participate in formal work.



## CHAPTER 7

### RESULTS

#### Results of the Binary Model

For binary participation model the results are presented in Table 7. The results are mostly as predicted.

Table 7. Results of the Logit Model for the Whole Sample, Income Quartile 1 and 4 (in Odds Ratios)

	Overall	Q1	Q4
age	1.396*** (0.038)	1.273*** (0.067)	1.487*** (0.097)
age square	0.995*** (0.000)	0.997*** (0.001)	0.994*** (0.001)
High/middle school	2.378*** (0.196)	1.470 (0.346)	2.008*** (0.325)
University	31.983*** (4.213)	1.963 (2.828)	25.639*** (5.341)
Home ownership	0.959 (0.061)	1.124 (0.168)	0.818 (0.110)
Ln(non-wage income)	0.245*** (0.014)	0.055*** (0.010)	0.059*** (0.010)
# of children under 6	0.550*** (0.033)	0.545*** (0.069)	0.655*** (0.086)
# of children between 6-15	0.905*** (0.033)	1.065 (0.080)	0.684*** (0.057)
Husb. High/middle school	0.808*** (0.063)	1.124 (0.206)	0.659** (0.112)
Husb. University	0.990 (0.121)	0.619 (0.459)	0.742 (0.153)
Husb. Public health i.	0.864* (0.066)	0.601*** (0.097)	0.566*** (0.110)
Husb. Private health i.	0.854 (0.313)	1.232 (0.782)	0.554 (0.470)
Husb. Green card	1.033 (0.180)	1.292 (0.305)	2.101 (2.490)
Number of observations	13,470	3,370	3,370
Pseudo R <sup>2</sup>	0.24	0.27	0.42

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

Variables age and age square are both significant. The coefficient for age is positive while coefficient for age square is much smaller and negative. This supports the nonlinear relationship between age and labor force participation. Probability of labor force participation increases with age up to 33.3 for the whole sample, 40.2 for the lower income quartile and 33.1 for the upper income quartile and then starts to decrease from these points on (See Table 33 in Appendix B for the relevant coefficients). This result suggests that women in the lower income quartile work longer years compared to the women in the upper income quartile. Education dummies are significant and they increase the odds for labor force participation for the whole sample and for the upper income quartile. Higher the education level greater is its effect on the odds of being in the labor force. On the other hand, education dummies are not significant for lower income quartile and their effects are much more lower compared to the effects of same variables for the upper income quartile. The share of university graduates is near zero for the lower income quartile, so the insignificant effect is not surprising (See Table 23 in Appendix A for summary statistics of lower income quartile.) On the other hand, the share of the high or middle school graduates is around %11 which cannot be said to be insignificant. Therefore the result of the logit model may be suggesting that women in the lower income quartile cannot obtain adequate returns for their education level or jobs available for the women in the lower income quartile may be seen “improper” for women in these education levels.

The effect of household variables which are expected to increase reservation wage is mostly as predicted. Home ownership decreases the odds for labor force participation for the whole sample and for the upper income quartile but the effect is not significant. On the other hand home ownership increases the odds to participate

for the lower income quartile but the effect is again insignificant. But the difference between income quartiles may suggest that home ownership's effect is not the same for the rich and the poor women.

Income of the household other than woman's own earnings significantly decreases the odds to participate in the whole sample and in 1<sup>st</sup> and 4<sup>th</sup> quartiles as well. This is the income effect for women's labor force participation and the result is negative as predicted.

Number of children under 6 decreases the odds to participate significantly. The effect is more severe for the lower income quartile. This is probably because women in the fourth income quartile can afford childcare services while small children generate a serious barrier for entry for the poor group. Number of children between 6 and 15 also has a similar effect while the odds ratio for children under 6 is smaller compared to children between 6 and 15. Furthermore number of children between 6 and 15 has an insignificant effect for the lower income quartile. The negative effect of number of children is most likely to be associated with the lack of adequate and cheap child care services for most women and the caregiver role of the women given by the society. The effect of number of children drops in older ages since children begin school after age 6 and this leads to a less severe effect for female labor force participation.

Another variable which is expected to increase the reservation wage acting as a negative income effect is husband's public health insurance. It decreases the odds to participate in labor force in %10 significance level. So women with health insurance coverage from their husbands have lower probability to participate in the

labor force and it holds for both lower and upper income quartiles in higher significance levels.

The variables that try to capture the cultural barrier effects were husband's education level dummies and regional dummy variables. Among these variables the husband being a university graduate seems to have no significant effect neither for the whole sample nor for the income quartiles 1 or 4. This is reasonable for the low income group, since the number of university graduate husbands is quite low compared to other groups. But the share is higher for the overall sample and also for the upper income quartile (See Table 24 in Appendix A for the relevant summary statistics.). Whereas the effect of husband being a high or middle school graduate is significant in decreasing the odds to participate for the whole sample and for the upper income quartile. Therefore compared to a primary school or lower educated husband, higher educated husbands lower the probability of women to participate in the labor force, but there is no significant relation in between if the husband is at the university level. So we cannot say that higher education of the husband releases the cultural barriers for labor force entry for women. Ilkkaracan (2007) found a similar result regarding household head's education level. She found that household head's higher education level decreases the odds to participate for women rather than releasing the cultural barriers for women's entry.

Some regional dummies are also significant in explaining labor force participation of women. The omitted region was Istanbul, so comparisons are made relative to Istanbul. The results are as follows for the whole sample; Izmir is the only region affecting LFP of women positively. Kastamonu, Agri, Malatya and Van have a negative effect on labor force participation at %5 significance level. The regions

that affect participation negatively in the highest significance level are; Adana, Kırkkale, Kayseri, Zonguldak, Trabzon, Gaziantep, Sanliurfa and Mardin.

These regional dummies not only capture cultural effects but also regional labor demand. There is no clear cut answer from the regional dummies but we can see a positive effect in west whereas there is a negative effect especially in northern and southeast regions. (Results concerning regional dummies are not presented in any of the tables; they can be obtained upon request from writers.)

#### Results of the Multinomial Model

For the multinomial model, odds ratios reflect the probability of being in that particular outcome relative to the omitted category which is non-participants for the first model. Therefore odds ratios show the probability of being in one alternative compared to being in the non-participant group.

Table 8. Results of the Multinomial Logit Model, Base is Non-Participants (in Odds Ratios)

	Formal work	Informal wage	Casual informal	Self-emp.	Family work	Unemp.
age	1.980*** (0.114)	1.549*** (0.138)	1.372*** (0.0758)	1.351*** (0.112)	1.241*** (0.0785)	1.298*** (0.107)
age square	0.990*** (0.000776)	0.994*** (0.00118)	0.996*** (0.000699)	0.997*** (0.00100)	0.998*** (0.000732)	0.995*** (0.00117)
High/middle school	6.764*** (0.937)	2.339*** (0.561)	0.665* (0.148)	1.937** (0.508)	1.069 (0.239)	2.029*** (0.425)
University	196.6*** (37.89)	15.79*** (6.725)	1.988 (1.052)	0.744 (0.781)	1.397 (0.723)	12.51*** (4.465)
Home ownership	0.906 (0.0940)	0.935 (0.173)	0.853 (0.112)	1.317 (0.273)	2.210*** (0.443)	0.617*** (0.104)
Ln(non-wage income)	0.134*** (0.0116)	0.185*** (0.0255)	0.160*** (0.0164)	0.309*** (0.0529)	1.367** (0.191)	0.543*** (0.0810)
# of children under 6	0.494*** (0.0491)	0.195*** (0.0504)	0.470*** (0.0642)	1.013 (0.165)	0.936 (0.157)	0.492*** (0.0726)
# of children between 6-15	0.712*** (0.0477)	0.779** (0.0830)	1.041 (0.0709)	1.238** (0.117)	0.926 (0.0849)	0.926 (0.0874)
Husb. High/middle school	0.973 (0.136)	0.804 (0.182)	0.813 (0.129)	0.804 (0.192)	0.693** (0.128)	0.662** (0.136)
Husb. University	1.360* (0.248)	0.759 (0.307)	0.993 (0.361)	0.886 (0.367)	0.337*** (0.125)	0.877 (0.287)
Husb. Public health i.	2.662*** (0.430)	0.587*** (0.117)	0.633*** (0.0904)	0.795 (0.185)	0.366*** (0.0661)	0.480*** (0.0901)
Husb. Private health i.	0.347 (0.376)	2.93e-20 (.)	1.000 (0.575)	1.206 (1.246)	1.319 (0.825)	1.103 (0.825)
Husb. Green card	0.276* (0.207)	1.166 (0.498)	1.331 (0.337)	0.740 (0.363)	0.632 (0.336)	1.740* (0.584)
Number of observations	13,470					
Pseudo R <sup>2</sup>	0.28					

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent,

respectively

As shown in Table 8, age significantly increases the odds to participate to every work state while age square significantly decreases the odds in smaller amounts. This result supports the nonlinear relationship between participation to any work state and age. Hence age increases the odds to participate in any work state in a decreasing fashion. Age increases the odds to participate till the ages of 35.0, 35.2, 37.9, 43.9, 45.8 and 28.6 for formal work, informal wage work, casual informal work, self-employment, family work and unemployment respectively (See Table 38 in Appendix D for the relevant coefficients in the multinomial model.). These top points on age structures for different work states suggest that women work longer years in self-employment and family work. Formal work and informal wage work resemble each other in terms of age structures. It is interesting to see that unemployment continues till a very young age which is 28.6. After this point on, women may become discouraged for continuing their job search.

High school or middle school education compared to primary education and lower education, increases the odds to participate in four work states, which are formal work, informal wage work, self-employment and unemployment, but the ratio is higher for regular wage work either formal or informal. On the other hand the effect is not significant for family work. High or middle school education decreases the odds to participate as casual informal worker in %10 significance level. On the other hand university education is only significant for regular jobs with wage both formal and informal and also unemployment. Therefore women with higher education levels are more likely to participate in labor force not only in formal work but also as informal wage employees. But the chances do not change with university education to work in irregular jobs such as casual wage employee or self-employed

at least significantly. Therefore higher educated women can be found working in either more regular jobs which are thought as safer or in unemployment.

Effect of owning a house is significant only for the outcome of family workers and unemployed relative to non participation. Surprisingly the effect is positive for family workers. Therefore, comparatively wealthy women can be found in family work compared to non-participation. This effect is in contradiction with the income effect. But as we said before since the total expenditures of the household includes consumption of the goods produced by the household itself, for family workers non-wage income could be higher than what it should be in the absence of these expenditures from own production.

On the other hand effect of household income excluding woman's wage decreases the odds significantly to be in all work states except in family work again. These findings for family work point out that the effect of wealth or income do not result in a non-participation state for family workers. That may be because these variables work as a proxy for presence of a family business where woman may work. Dedeoglu (2004) provides the example of garment ateliers in this respect, where women see their work as a separate branch of daily housework. If a household owns a family business it is probable that they own a house as well and are wealthier than other households in the neighbourhood. Hence negative income effect becomes ineffective for these women.

Number of children under age 6 significantly decreases the odds to be in any work state except in self-employment and family work. This is meaningful since family workers and self-employed can arrange their work hours more easily compared to other work types. Self-employed work lower hours on average



compared to other work types in our sample as well. Another result is that we observe odds to be lower for informal wage earners compared to formal workers. This shows that not all types of informal work offers flexible working schedules and it is probably harder for informal wage earner women to arrange a child care alternative for themselves. On the contrary formal working women may have different childcare alternatives either because they have higher income or their workplace offers childcare service etc.

Number of children aged between 6 and 15 does not create such a severe barrier as number of children under 6 for labor force entry. Only formal workers still face significant negative effects from older children. The effect is negative for informal wage earners also, significant at %5 level. The effect is positive for self-employed women significant at %5 level again. This may be possible because of the flexible work types of self-employed women and the presence of obligatory school attendance for older children.

Therefore we may say that children decreases participation in formal work significantly whereas there are different results for different informal work states. Self-employment and family work are especially seem to be compatible with child care.

Last variable affecting the reservation wage which is husband's public health insurance coverage gives different results compared to Buchmueller et al. (1998). We found that a husband with public health insurance decreases the odds significantly for every work state compared to non-participation except for formal working and self-employment. Husband's public health insurance decreases the odds to participate as a self-employed as well but the effect is insignificant. Our result is

somehow similar with Chou et al. (2001) regarding the positive effect for formal work. They also found that the effect of being a government employee's wife is positive for labor force participation. As was discussed before, this result may be associated with a status effect from the husband or assortative mating, meaning that people with similar abilities are marrying each other. So our health insurance variable captures the effect of having a husband with a "good job" and possibly the omitted effect of ability for an individual, such that the omitted ability of the woman is correlated with public health insurance variable. So we couldn't capture the effect of husband's health insurance coverage as an outside benefit for the women.

In the binary model, we saw that the effect is significantly negative such that public health insurance coverage from the husband lowers the odds to participate in the labor force when everything else is controlled for. But we see that in the multinomial model public health insurance increases the odds to participate in formal work compared to being a non-participant while it decreases the odds to participate in informal work or be unemployed compared to the same base. Therefore we can say that the negativity that comes from participation to informal work outweighs the positivity that comes from participation to formal work which leads to the negative effect of the husband's health insurance coverage in the binary model.

Contrast with Buchmueller et al.'s results could also be due to differences between Turkey, a developing country with a significant informal sector, and US, an advanced country where vulnerable jobs are relatively lower. So the degree of informality, precariousness and vulnerability of the jobs without social security may be different among the two countries. Therefore an outside benefit can truly act as a negative income effect for participation to informal work, since informal work is not a desirable option here in Turkey, whereas it acted in the other direction for US.

Hence the effect of the husband’s public insurance can be negative for informal work states because of an outside benefit acting as a negative income effect or a social status effect acting negatively by raising the reservation wage.

On the other hand we cannot offer such an explanation for formal work since the results clearly show that women who are more probable to work formally marry men with formal health insurance rather than an uninsured man.

Furthermore, the effect of husband’s public health insurance is negative and significant for all informal work states except for the self-employed. Since self-employment is mostly associated with home based work and craftsmanship the result may suggest that husband’s health insurance does not cause a negative status effect for this work state like the other informal work states.

Table 9. Odds Ratios for Husband’s Public Health Insurance for Income Quartiles 1 and 4, Base is Non-Participants

Husb. Public h.i.	Formal work	Informal wage	Casual informal	Self-employment	Family work	Unemployment
Q1	9.250*** (6.828)	0.881 (0.430)	0.490*** (0.133)	1.658 (0.782)	0.296*** (0.118)	0.344*** (0.114)
Q4	1.052 (0.301)	0.271*** (0.106)	0.456* (0.214)	0.218*** (0.104)	0.437* (0.200)	0.319** (0.162)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

Table 9 shows the effect of husband’s public health insurance for different income quartiles (See Table 39 and 40 in Appendix D for the whole regression results for income quartiles 1 and 4, respectively.) When we check the odds ratios in order to see if the effect is robust for different income quartiles, we see that for the lowest income quartile, the effect is still significantly positive for formal work. On the other hand the previous significant negative effect for informal wage earner

becomes insignificant. The significant negative effect still holds for other informal groups except for the self-employed again. Therefore we might say that assortative mating still holds for lower income group since the odds are higher to be a formal worker when the husband has public health insurance but the negative status effect of the husband begins to disappear for informal working in the lower income quartile.

On the contrary for the upper income quartile the significant positive effect of husband's health insurance for formal work becomes insignificant. While the variable's effect becomes insignificant for formal work it is again significantly negative for informal work groups except for casual wage earner and family workers for which the degree of significance is at %10 level. Therefore for the upper income levels husband's status effect regains its negative significant effect for the informal working women except for family workers and casual wage earners. Thus the results of the first and fourth quartile are somewhat complementary to each other, such that at lower income groups status effect of the husband coming from the health insurance does not exist for informal wage employee and self-employed, on the contrary the effect is significantly negative for these two work states for the richer group.

Although for both income quartiles the effect of husband's public insurance variable is negative for informal work states, its significance changes. The changes in significance especially for the upper income quartile shows that casual wage earner and family work states are not seen "improper" in such a significance as informal wage work or self-employment. Whereas the "improper" jobs for the top income quartile are chosen most probably because of necessity by the women in the lower income quartile, so the significance of informal wage employment and self-employment are weak.

On the other hand, the effect of husband's health insurance on formal working is probably insignificant and small at the upper income quartile firstly because for the women in this quartile whether husband has public insurance or not may simply be irrelevant in affecting the odds to be in formal work. For the high income group, not the status of the husband or assortative mating may be effective for women to participate in formal work but the higher education levels. In contrast with the low income group higher education dummies are significantly positive for the upper income group for participation in formal work. On the other hand they are insignificant for lower income group and the only variable that affects participation to formal work positively for the lower income group is the husband's public health insurance. Secondly while the women in the lower income group may be working out of necessity, for the upper income group to work for necessity is not the case. The higher education dummies do not increase the odds to work in formal work significantly for the lower income group indicating that the returns for human capital may not be high enough for the jobs available in this quartile, therefore the women may be working not because they will incur an opportunity cost otherwise, but because they sincerely need working. In this case they may prefer working in formal jobs compared to informal jobs because of the husband's relative status. But for the upper income group to work for necessity is out of the question whereas they may be working only if the returns are adequate for their human capital. Thus higher education dummies are significantly positive for them while husband's public insurance has no effect.

Gunduz-Hosgor and Smits (2008) found a similar result to the assortative mating between formal worker women and publicly insured men in our case. She found that husbands who are in lower non-manual or upper non-manual jobs

significantly increase the odds to participate as a formal worker or as an upper non-manual worker for women compared to a husband who is a farm worker. This result is in line with our findings about formal working women.

Husband's education level variables are mostly insignificant for explaining labor force participation of women. Those whose husband has a high or middle school degree are less likely to be family workers or unemployed. On the other hand those women whose husbands are university graduates are more likely to be formal workers with %10 significance level. The effect of the same variable is negative for family work. Therefore we may say that university level education is effective for men to release the barriers on women for labor force participation formally while the effect is insignificant but negative for most of the informal work compared to non-participation.

Regional dummies may be interpretive in where people tend to work informally. No region's effect is significantly positive for informal wage earner state. On the other hand Balıkesir, İzmir and Ankara are positive in affecting the probability of being a casual wage earner relative to Istanbul.

Nearly all regions other than Istanbul increase the odds to work as a family worker. On the other hand, Tekirdag, Izmir, Kastamonu, Antalya, Hatay, Trabzon, Erzurum increase the odds to work as a casual informal worker. Aydın, Ankara and Hatay are the regions that increase the probability to be unemployed.

Many of the regions other than Istanbul significantly decrease the odds to be in formal work compared to being a non-participant. These are; Balıkesir, Izmir, Manisa, Konya, Adana, Hatay, Kırıkkale, Kayseri, Zonguldak, Kastamonu, Samsun, Agri, Malatya, Van, Gaziantep, Sanliurfa, Mardin.

### Comparison of Formal Work with Informal Work States

We now focus on comparison between formal and informal workers. To do that we analyze the odds ratio relative to formal work. The degree and the significance of the coefficients will let us know the factors that increase or decrease the odds to be in informal work states compared to formal work.

Table 10. Results of the Multinomial Logit Model, Base Category is Formal Work  
(in Odds Ratios)

	Informal wage	Casual informal	Self-emp.	Family work	Unemp.	Non-Part.
age	0.782** (0.081)	0.693*** (0.054)	0.682*** (0.068)	0.627*** (0.053)	0.656*** (0.065)	0.505*** (0.029)
age square	1.004*** (0.001)	1.006*** (0.001)	1.006*** (0.001)	1.007*** (0.001)	1.005*** (0.001)	1.010*** (0.001)
High/middle school	0.346*** (0.092)	0.098*** (0.025)	0.286*** (0.084)	0.158*** (0.041)	0.300*** (0.074)	0.148*** (0.020)
University	0.080*** (0.036)	0.010*** (0.006)	0.004*** (0.004)	0.007*** (0.004)	0.064*** (0.024)	0.005*** (0.001)
Home ownership	1.033 (0.212)	0.942 (0.153)	1.454 (0.333)	2.440*** (0.547)	0.681** (0.131)	1.104 (0.115)
Ln(non-wage income)	1.382** (0.199)	1.192 (0.138)	2.300*** (0.428)	10.19*** (1.660)	4.047*** (0.668)	7.454*** (0.645)
# of children under 6	0.394*** (0.107)	0.950 (0.157)	2.049*** (0.387)	1.894*** (0.366)	0.994 (0.171)	2.023*** (0.201)
# of children between 6-15	1.094 (0.133)	1.461*** (0.135)	1.738*** (0.199)	1.300** (0.147)	1.300** (0.147)	1.404*** (0.0940)
Husb. High/middle school	0.827 (0.213)	0.836 (0.172)	0.826 (0.226)	0.713 (0.164)	0.681 (0.165)	1.028 (0.144)
Husb. University	0.558 (0.239)	0.730 (0.290)	0.652 (0.291)	0.248*** (0.101)	0.645 (0.233)	0.735* (0.134)
Husb. Public health i.	0.221*** (0.054)	0.238*** (0.049)	0.298*** (0.083)	0.137*** (0.033)	0.180*** (0.043)	0.376*** (0.061)
Husb. Private health i.	8.45e-20 (.)	2.883 (3.378)	3.477 (5.155)	3.802 (4.727)	3.181 (4.005)	2.883 (3.125)
Husb. Green card	4.218* (3.541)	4.813** (3.722)	2.676 (2.367)	2.286 (2.084)	6.293** (5.091)	3.617* (2.703)
Number of observations	13,470					
Pseudo R <sup>2</sup>	0.28					

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

Age significantly decreases the odds of working informal for every informal work type, while age square is also significant but positive. This suggests that age decreases the odds to work informally but in a decreasing fashion. So higher ages decrease the odds less to be in informal work compared to formal work.



Two education dummies both decrease the odds to be in every informal work state significantly. Therefore education higher than primary school is effective in the work outcome between formal and informal.

From the variables which increase the reservation wage; owning a house is not significant except for family workers and unemployed. It seems that owning a house significantly increases the probability of being a family worker compared to being a formal worker. This is again in line with our explanation for the previous model. Owning a house variable here may be capturing the effect of owning a family establishment since people who own a family work usually own a house as well. And those women therefore seem to be working at this family establishment rather than seeking outside jobs when everything else is controlled for.

Owning a house on the other hand decreases the probability to be unemployed compared to working formal. This may be in line with reaching information networks more easily when someone is wealthier so it is easier to find a formal job than stay unemployed.

Another variable which increases reservation wage of an individual is non wage income of the woman and surprisingly it increases the odds to work informally compared to formal work. But it should be noted that the odds ratio is only very small for informal wage earners and less significant compared to self-employment and family work. For casual informal work, effect of non-wage income is also small compared to other work states and furthermore the effect is insignificant. The heterogeneity between informal work types is visible here. Informal wage work regular or casual is generally more precarious compared to self-employment or

family work. Self-employment can be thought of a more entrepreneurial job and family work is associated with a certain level of wealth.

Another interesting effect of the non-wage income is for unemployed women. This positive and significant effect can be explained in a similar way as our previous explanation for informal working women. The higher the level of non-wage income, the less ambitious a woman may be for finding a job. When there is more income or wealth, she could wait longer until a job she really desires appears.

Number of children under 6 decreases the odds of working as informal wage employee significantly while it increases the odds to work as self-employed or a family worker or stay as a non-participant compared to formal work. On the other hand number of children between 6 and 15 increases the odds to be in every informal work state except the informal wage employee. These results regarding number of children may suggest that women who have small children can end up with more flexible informal jobs such as self-employment or family work while informal wage work is not compatible with caring small children compared to formal work. On the other hand number of older children may have a positive effect on informal work compared to formal work possibly because informal working women already have more children compared to formal working women.

Husband's education variables are in general insignificant only except for the effect of university education for family workers. The effect is significantly negative. Therefore if a woman is married with a high educated man, then the odds are lower for her to work in the family establishment compared to formal work. We can't see such a significant effect of husband's high education on other informal work states.

Husband's public health insurance coverage decreases the odds to work informally compared to work formal. There might be the negative effect of husband's status on informal working. Information networks might be more available in finding a formal job for a formal worker's wife and also there might be assortative mating such that those women who are more probable to work formally might be married to men with formal insurance.

Table 11. Odds Ratios for Husband's Public Health Insurance for Income Quartiles 1 and 4, Base is Formal Work

Husb. Public h.i.	Informal wage	Casual informal	Self-employment	Family work	Unemployment	Non-Participants
Q1	0.095*** (0.080)	0.053*** (0.040)	0.179** (0.154)	0.032*** (0.027)	0.037*** (0.030)	0.108*** (0.080)
Q4	0.299** (0.143)	0.445 (0.238)	0.138*** (0.081)	0.430 (0.231)	0.302** (0.182)	0.986 (0.297)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

In Table 11, we can see the odds ratios for husband's public health insurance for the upper and lower income quartiles when base is formal work this time (See Table 42 and 43 in Appendix D for the whole regression results for income quartiles 1 and 4, respectively.). For the bottom quartile the effect is significantly negative for every work state. So this suggests that the assortative mating holds between formal worker women and publicly insured men. On the other hand the story is a little different for the upper income quartile. The odds are significantly lower to be in informal wage employment, self-employment and unemployment compared to formal work when the husband has public health insurance, but the coefficients are insignificant for other work types. Therefore for family work and casual wage employment husband's status may not be that effective for the upper income quartile.

The reason that the effect of husband's public health insurance does not increase the odds to be in formal work compared to casual work and family work for the upper income quartile may be because these work states are not seen "improper" for the upper income group. This may drop the significance of the husband's health insurance variable for these work states.

In addition to the results regarding public health insurance, if husband of the woman has green card then the odds are higher for her to be in informal wage work, casual informal work, unemployment or non-participation compared to formal work as we see in Table 10. This is meaningful and similar to the assortative mating between formal worker women and public insurance holder men.

#### Results When Interaction Terms are Added

The variable for husband's public health insurance coverage captures some other effects we did not intend to catch like the omitted ability or the effect of husband's social status on women.

Wellington and Cobb-Clark (2000) also suspect a similar issue. They argue that other aspects of spouse's job may be correlated with health insurance and it may affect women's own labor supply decision. So in their study they make a distinction between spouse having insurance and spouse's insurance having coverage for the woman (since not all types of insurance offer coverage for the wives in their sample). This distinction allows them to separate the effect of "good job" and its correlation with woman's labor force participation from the effect of health insurance's outside benefit.

In order to better understand how the positive effect of husband's health insurance variable is reversed for formal work and stays negative for informal work,

we added some interaction terms in the model. With the help of these interaction terms we try to shed light on the impact of husband's health insurance and try to see if it has a different effect when it is interacted with some other terms which are expected to be influential.

The interactions considered in the analysis are between husband's public health insurance and husband's education, women's education, and home ownership.

The first interaction term tries to capture the effect of husband's status in society. Education being a proxy for higher status, we expect for those households where husband has less education, public health insurance does not reflect a concern for status. Vice versa for the woman whose husband is high educated and has public health insurance we expect to see the odds to be lower to work informally compared to non-participation and the odds to be higher to work formally compared to non-participation. Therefore high status of the man is expected to drive women away from informal jobs but into formal jobs compared to non-participation. The logic behind this term is that it captures the effect of husband's health insurance on the condition that he is high educated. On the other hand husband's public insurance term will become conditional as well when the interaction term is added. It will show the effect of insurance on participation when the husband's education dummies are zero, which means husband's education is lower than primary school. If we can capture a significant effect then we can understand that husband's social status is effective in women's participation decisions.

The second interaction term's aim is to capture the effect of woman's high education on condition that her husband has public health insurance. By separating lower educated women from higher educated women who have husbands with public

health insurance as a common point, we try to capture the effect of omitted ability. So what we assume is that women who are higher educated should have higher ability levels compared to women who are lower educated. Therefore the assortative mating is supposed to hold only for the high educated women. We interact husband's insurance status with two dummies indicating education level of the woman, one for high school or middle school graduate and the other for a university graduate. Therefore by omitting lower than primary school graduates, we will make a comparison between them and higher education levels. What we expect to see is a positive effect for these interaction terms for formal work and negative effect for informal work compared to non-participation. Since assortative mating suggests that people not only in similar education levels but also in similar abilities marry each other we should be capturing omitted ability's effect with this interaction term. Similar to the previous interaction term, this term will change the effect of husband's public health insurance which will be conditional. It will show the effect of insurance on participation when the woman's education dummies are zero, which means woman's education is lower than primary school.

On the other hand the third interaction term tries to capture the effect of husband's public health insurance when the family has wealth. The wealth which is proxied by home ownership is expected to lighten the necessity to work. When the women are both covered by their husband's health insurance and they also own a house, the odds are expected to decrease for women's labor force participation to any work state. Therefore the interaction will show what the women do when there is outside health coverage on the condition that they are wealthy. We expect it to be negative since it will capture a negative income effect and women who are working for necessity will be separated from the women who are not working for necessity.

The husband's public health insurance term this time will show the effect of insurance on participation when the home ownership dummy is zero.

The terms are included in the model separately. Hence there are four models for each participation outcome; the first one is the model without any interaction term and following three models add the terms in the order above.

Table 12. Results of the Model with Interaction Term Husband's Public Health Insurance\*Husband's Education, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.979*** (0.162)	0.910*** (0.208)	-0.533*** (0.200)	-0.342 (0.237)	-0.457*** (0.143)	-0.327** (0.157)
husb. h.i.*husb. high school		0.0592 (0.328)		-0.509 (0.396)		-0.448 (0.302)
husb. h.i.*husb.university		0.213 (0.614)		-1.045 (0.889)		-1.755** (0.761)

	Self-employment		Family work		Unemployment	
	Without int	With int	Without int	With int	Without int	With int
husband's public h.i.	-0.230 (0.233)	-0.205 (0.262)	-1.006*** (0.181)	-0.769*** (0.203)	-0.734*** (0.188)	-0.703*** (0.226)
husb. h.i.*husb. high school		-0.193 (0.471)		-0.861** (0.363)		0.0715 (0.385)
husb. h.i.*husb.university		18.02 (.)		-1.526* (0.857)		-0.851 (0.664)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

The first term's effect is insignificant for nearly all work states except for casual informal and family work as it can be seen in Table 12. These outcomes suggest that husband's social status is significantly effective in preventing woman to work in these two work states whereas such a significant relation does not exist with husband's social status and other work states.

In addition, when the interaction term is added to the model, we can see that the coefficient of husband's public health insurance for informal wage work has lost its significance. When there is an interaction term, this variable itself also becomes conditional as we told before and represents the effect of husband's public health insurance when husband is lower than primary school graduate. Therefore as we can see again, status of the husband is not a concern for the women to participate in informal wage work when the husband is low educated.

Table 13. Results of the Model with Interaction Term Husband's Public Health Insurance\*Husband's Education for the First Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	2.225*** (0.738)	2.850*** (0.927)	-0.126 (0.488)	0.263 (0.531)	-0.714*** (0.271)	-0.426 (0.296)
husb. h.i.*husb. high school		-1.520 (1.244)		-1.790 (1.258)		-1.157* (0.619)
husb. h.i.*husb.university		-4.261 (3.867)		11.62 (.)		-45.45 (.)
	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.505 (0.471)	0.374 (0.519)	-1.216*** (0.398)	-0.939** (0.432)	-1.066*** (0.331)	-1.245*** (0.405)
husb. h.i.*husb. high school		0.870 (1.203)		-1.190 (0.833)		0.504 (0.627)
husb. h.i.*husb.university		7.903 (.)		9.354 (.)		11.93 (.)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively



Furthermore if we look at the results for the first and the fourth income quartiles as presented in Tables 13 and 14 respectively, we can see that for the lower income quartile the effect of the interaction term is significantly negative for casual work and family work again. On the other hand such a significant effect cannot be found for other work states. The effect of husband's public health insurance for casual work lost its significance as well when the interaction is added.

Since the share of university graduates is pretty low in the lower income quartile the effect of the interaction with husband's university education is not interpretable (See Table 27 in Appendix A for relevant summary statistics.).

Table 14. Results of the Model with Interaction Term Husband's Public Health Insurance\*Husband's Education for the Fourth Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.0503 (0.286)	-0.0634 (0.405)	-1.307*** (0.392)	-1.139** (0.494)	-0.784* (0.470)	-0.746 (0.542)
husb. h.i.*husb. high school		0.116 (0.606)		-0.728 (0.817)		-0.238 (0.947)
husb. h.i.*husb.university		-2482571.5 (.)		32.03*** (0.603)		22.16 (.)

	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	-1.523*** (0.476)	-2.141*** (0.665)	-0.827* (0.457)	-0.0309 (0.654)	-1.141** (0.507)	-1.509*** (0.582)
husb. h.i.*husb. high school		0.991 (1.024)		-2.259** (0.905)		1.341 (1.331)
husb. h.i.*husb.university		30.28 (.)		27.98 (.)		25.26 (.)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

For the upper income quartile as we can see in Table 14, the term is significantly negative for family work state. We can also see that for informal wage work, family work and casual work husband's health insurance has a smaller significance. There is an unexpected effect for informal wage work when the husband is university graduate. The effect is significantly positive with an extremely high coefficient.

These results suggest that casual informal work is not seen as a "proper" work choice for the wives of men in high social status. And when the husband is low educated, the concern for status is relaxed for informal wage work which seemed to be "improper" for wives of public insurees according to the first model. A similar situation holds for causal informal work only for the lower income quartile for low educated men.

The insignificant effect of interaction terms for formal work on the other hand suggests that high status of men is not significantly related with formal work for the women. There seems to be no significant difference caused by husband's higher education between formal working women whose husband's have public insurance. Interestingly, there is no significantly negative relationship of husband's high status with other informal work states as it was expected. These results may suggest that not the education level of the husband but his insurance type is more effective in determining his social status.

Table 15. Results of the Model with Interaction Term Husband's Public Health

Insurance\*Woman's Education, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.979*** (0.162)	1.034*** (0.225)	-0.533*** (0.200)	-0.342 (0.232)	-0.457*** (0.143)	-0.387*** (0.149)
husb. h.i.*woman high school		-0.0980 (0.328)		-0.631 (0.411)		-0.790* (0.411)
husb. h.i.*woman university		-0.378 (0.505)		-0.827 (0.817)		19.94 (.)

	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	-0.230 (0.233)	-0.0251 (0.257)	-1.006*** (0.181)	-1.042*** (0.192)	-0.734*** (0.188)	-0.838*** (0.223)
husb. H.i.*woman high school		-0.987** (0.466)		0.0824 (0.476)		0.431 (0.392)
husb. H.i.*woman university		19.14 (.)		20.55 (.)		-0.335 (0.684)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

The second interaction term's effect is insignificant again for all work states except for casual informal work and self-employment as it can be seen in Table 15. Therefore given that the husband has public insurance if the woman is high educated, then the odds are lower for her to participate as a casual wage earner or self-employed compared to non-participation. Furthermore formerly significant negative effect of husband's public health insurance became insignificant for informal wage work after the addition of interaction terms. This means that when the woman is low educated, then the negative status effect coming from husband's public health insurance becomes insignificant.

Table 16. Results of the Model with Interaction Term Husband's Public Health Insurance\*Woman's Education for the First Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	2.225*** (0.738)	1.266** (0.532)	-0.126 (0.488)	0.145 (0.481)	-0.714*** (0.271)	-0.581** (0.271)
husb. H.i.*woman high school		-0.748 (1.214)		-2.667 (1.882)		-1.190 (0.915)
husb. H.i.*woman university		1027.7 (.)		1040.8 (.)		1040.9 (.)
	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.505 (0.471)	0.684 (0.468)	-1.216*** (0.398)	-1.082*** (0.396)	-1.066*** (0.331)	-1.184*** (0.369)
husb. H.i.*woman high school		-1.413 (1.201)		-1.620 (1.877)		0.545 (0.657)
husb. H.i.*woman university		1041.1 (.)		1039.3 (.)		1038.4 (.)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

There is no significant effect for the lower income quartile for any of the work states. The only change is the drop in significance level of the husband's public health insurance term for casual informal workers. For the upper income quartile there is a significant effect for unemployment and it is negative in the case when woman is university graduate as can be seen in Table 17.

Table 17. Results of the Model with Interaction Term Husband's Public Health Insurance\*Woman's Education for the Fourth Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.0503 (0.286)	-0.163 (0.467)	-1.307*** (0.392)	-1.301*** (0.494)	-0.784* (0.470)	-0.587 (0.588)
husb. H.i.*woman high school		0.228 (0.598)		0.181 (0.904)		-1.024 (1.000)
husb. H.i.*woman university		0.940 (2.297)		0.537 (3.208)		5.394 (58.49)
	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	-1.523*** (0.476)	-1.731*** (0.588)	-0.827* (0.457)	-0.927* (0.539)	-1.141** (0.507)	-2.096*** (0.642)
husb. H.i.*woman high school		0.371 (0.900)		-0.0137 (1.003)		0.164 (0.801)
husb. H.i.*woman university		4.089 (54.35)		4.895 (55.08)		-6.890*** (2.194)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

The results for the second interaction term suggest that higher education of women do not directly result in labor force participation when the husband has public health insurance. And those women do not seem to be in casual work again along with self-employment which may be improper because of high human capital of the woman. When we looked at the effect of husband's public health insurance we can see that it became insignificant for informal wage work. This suggests that for women who are low educated and married with public insurees, working as an informal wage worker is not a problem in such significance as in the first model. We make a distinction between low educated and high educated women with the interaction term and we saw that there is no significant difference between these

groups of women on the condition that husband has public health insurance.

Therefore our expectation that high educated women married with public insurees have higher abilities might be wrong since we couldn't find a significant relationship.

Although the results are mostly insignificant, the sign of the interaction term is mostly negative for every work state for the lower income quartile whereas it is mostly positive for the upper income quartile. This may suggest that education of the woman is effective in releasing barriers for entry including husband's social status only for the richer women.

Table 18. Results of the Model with Interaction Term Husband's Public Health Insurance\*Home Ownership, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.979*** (0.162)	1.181*** (0.212)	-0.533*** (0.200)	-0.0658 (0.270)	-0.457*** (0.143)	-0.159 (0.181)
husb. h.i.* home ownership		-0.435 (0.296)		-0.919*** (0.351)		-0.640*** (0.244)

	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	-0.230 (0.233)	0.0555 (0.342)	-1.006*** (0.181)	-1.040*** (0.353)	-0.734*** (0.188)	-0.480** (0.224)
husb. h.i.* home ownership		-0.473 (0.401)		0.0241 (0.387)		-0.646** (0.321)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

The last interaction term which is acting like a benefit package is significant for informal wage work, casual informal work and unemployment as it is presented in Table 18. Its effect is negative for these work states. What we can understand from these results is that home ownership has a negative effect on the condition that husband has public health insurance for these three work states. On the other hand

given that the husband has public health insurance, she also has some wealth proxied by home ownership does not result in odds to be significantly lower for formal work, self-employment or family work. Thus wealth drives women away from the firstly stated three work states when the women have publicly insured husbands but it is irrelevant in the decision between the other three work states and non-participation.

On the other hand, this interaction term changes the interpretation of husband's health insurance term as well like in the former two cases. Now the coefficient shows the effect of husband's public health insurance when there is no home ownership. We can see that its previous negative effect which was significant has become insignificant for informal wage work and casual work states. These suggest that similarly to the previous cases, negative status effect of the husband also disappears on the condition that the family is not wealthy. This is because there is a necessity for work in order to survive.

Table 19. Results of the Model with Interaction Term Husband's Public Health Insurance\*Home Ownership for the First Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	2.225*** (0.738)	2.827*** (0.933)	-0.126 (0.488)	-0.469 (0.715)	-0.714*** (0.271)	-0.261 (0.321)
husb. h.i.* home ownership		-1.447 (1.208)		0.630 (0.913)		-1.183** (0.516)
	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.505 (0.471)	0.540 (0.710)	-1.216*** (0.398)	-1.485* (0.827)	-1.066*** (0.331)	-0.940** (0.366)
husb. h.i.* home ownership		-0.0778 (0.828)		0.329 (0.900)		-0.464 (0.678)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

For the lower income quartile only the effect for casual informal work is significant. This suggests that the odds are lower for women to work as casual informal worker if they own a home on the condition that their husbands have public health insurance. On the other hand for the upper income quartile as it is presented in Table 20, the significance of husband's public health insurance drops for informal wage work, self-employment and unemployment. This suggests that negative status effect of the husbands with public health insurance loses its significance when there is no home ownership also in the upper income quartile. Thus wealth seems to be important in the decision between informal work and non-participation. When there is no wealth as it is proxied by home ownership, then the significant negative effect of husband's social status on informal working becomes less severe. Furthermore results regarding formal work suggest that, wealthy and non-wealthy women has no



significant difference from each other in terms of formal work participation on the condition that their husband has public health insurance. In overall, for formal work we couldn't find any distinction in terms of husband's higher education, woman's higher education or ownership of a home on the condition that husband is publicly insured. Therefore if the husband has public insurance the odds are higher for women to participate formally and this effect is independent from these three variables which were thought to be influential.

Table 20. Results of Model with Interaction Term Husband's Public Health Insurance\*Home Ownership for the Fourth Income Quartile, Base is Non-Participants (in Coefficients)

	Formal work		Informal wage work		Casual informal	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	0.0503 (0.286)	0.503 (0.451)	-1.307*** (0.392)	-0.459 (0.708)	-0.784* (0.470)	-1.317** (0.659)
husb. h.i.* home ownership		-0.730 (0.534)		-1.208 (0.811)		0.860 (0.900)

	Self-employment		Family work		Unemployment	
	Without int.	With int	Without int.	With int	Without int.	With int
husband's public h.i.	-1.523*** (0.476)	-1.346 (0.866)	-0.827* (0.457)	-1.028 (0.843)	-1.141** (0.507)	-0.537 (0.806)
husb. h.i.* home ownership		-0.286 (0.982)		0.264 (0.973)		-0.941 (0.915)

\*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively

In order to understand husband's public health insurance's effect more deeply, we have added the interaction terms regarding husband's high education, woman's high education and wealth of the family into the model. Although we have found some insightful results on informal work decisions, we couldn't find a

significant effect of any of these interactions for formal work. The results will be discussed and concluded now.

## CHAPTER 8

### CONCLUSION

We intended to see the effects of different factors for labor force participation of women in Turkey. Since the informal sector is significant in Turkey, it is also incorporated in our study. Our study points to some important results.

First of all we can say that the degree and significance of factors driving women into formal and informal work are different. Not only these two sectors are different from each other but also there are different branches in the informal sector itself. We see these differences by looking at a range of factors that determine labor force participation of women and how different they are in between informal work states. The heterogeneity of the informal sector is supported by econometric evidence for our data. To be aware of this heterogeneity is important for creating policies regarding the informal sector.

Second, it is clear from our study that using a binary model to understand the dynamics of labor force participation of women can be either misleading or limited. Although we can reach some important insights from the binary model regarding the general participation behaviour, when there is a significant informality we cannot capture the differences within the labor force participating women. For example the effect of husband's public health insurance seems to be negative for labor force participation of women whereas it is actually positive for formal work and negative for informal work states. Similarly, husband's university education seems to effect labor force participation negatively whereas its effect is actually positive for formal work.

Third, from the results we can see that education significantly affects labor force participation in a positive direction. Not surprisingly, higher education levels increase the odds to work formally compared to non-participation. But interestingly university education also increase the odds to work as an informal wage earner compared to non-participation. This significant positive effect of university education cannot be seen for other informal work states. Therefore for women with university degree informal wage work seems to stand as an alternative to formal work. On the other hand, when we compare formal work with other work alternatives, we can see that higher education significantly lowers the odds to participate in the labor force informally. Hence although informal wage work is an alternative, the chances are lower to be in it if the woman is high educated.

Regarding higher education levels, the significantly positive effect for labor force participation does not exist for the poor women. This shows that for the lower income quartile, higher education levels may not solve the problem of low labor force participation of women. Unless the returns for high education levels do not increase for the women in this income quartile, solely higher education cannot be enough to increase participation.

Fourth, level of income of the household other than woman's own wage is important in determining the participation behaviour of women. It has a negative effect for participation to every work state and furthermore chances of working informally increase with increasing household income. This points out to the fact that the benefits of formal work get small with increasing household income. This leads women to work in informal jobs since needs for the benefits of formal work are lower.

Fifth, number of children under 6 is especially important in driving women away from labor force participation. The effect is less severe for the women in the upper income quartile possibly because they have resources enough to afford childcare services.

Having small children leads women to be not only non-participants but also informal workers compared to formal work. The odds are higher for women to be informal workers and non-participants in the case of having small children. The odds are especially significant for self-employed and family workers compared to formal workers. This shows us that women in more flexible jobs like family work and self-employment can manage childcare with work. And furthermore not all informal work types offer this flexibility.

Sixth, husband's higher education affects participation positively only if he is a university graduate and for only formal work. This shows that high and middle school education of men is not a high enough education to release the cultural barriers on women.

Seventh, husband's public health insurance both captures the social status of men and the omitted ability of the woman coming from the fact that similar people marry each other. The sign and effect of the variable for the whole group and for the lower income quartile show that there is assortative mating between formal working women and publicly insured men. Furthermore informal work states do not seem appropriate for the women if they are married with these men. On the other hand in the fourth income quartile the significance of the variable for formal work disappears along with a significance drop for casual informal work and family work. This might be showing that women in the higher income group do not value formal work as the

women in the lower income group. And formal work might be losing its appeal for richer women who have insurance coverage from their husbands. One other explanation for this insignificant effect of husband's public health insurance might also be the significant and positive effect of higher education in very large numbers for the women in this income level, such that the odds to participate formally are 3.7 times higher for high school education and 76.7 times higher for university education (See Table 36 in Appendix C). Therefore public health insurance type of the husband might simply be irrelevant in the case of participation to formal work for rich women.

Furthermore, for the lower income quartile, informal wage work and self-employment do not seem to be inappropriate as they are in the fourth income quartile, possibly out of necessity. On the other hand, odds are significantly lower for the women in the upper income group to be in these work states, if they have publicly insured husbands.

In order to understand the effect of husband's public health insurance more rigorously, we have used some interaction terms. With the help of interaction with higher education we could see that the negative status effect of the husband disappears for informal wage work if he is or the woman is low educated. On the other hand casual informal work and self-employment do not seem appropriate if husband is in higher status. In addition if the woman is higher educated then casual informal work again along with family work do not seem appropriate on the condition that husband has public health insurance.

Regarding the interaction of husband's public health insurance with home ownership, we found that wealth is an important factor determining informal labor

force participation on the condition that husband has public health insurance. If there is no home ownership then the negative effect of husband's public health insurance becomes insignificant for informal work states which are changing between quartiles. This suggests that husband's status doesn't have a negative effect when there is a need to work.

Regarding formal work, we couldn't find any significant effect coming from the interaction terms. This suggests that husband's public health insurance increases the odds for women to participate formally independent of husband's or woman's education and home ownership. Thus a strong assortative mating holds between formal workers and publicly insured men and it cannot be broken into parts with the other terms investigated.

Eighth, it can be seen from the results that there is also heterogeneity in the informal work branches, such that women in the high income group may prefer working as casual informal workers or family workers. Thus casual wage work alternatives for the upper income group may not be that precarious compared to the casual work alternatives for the lower income group. It should also be noted that casual informal work seems to be the most precarious alternative among informal work states. There are two findings supporting this view. First one is when base outcome is formal work, casual informal work has the smallest odds ratio which is also insignificant compared to other informal work states for household income other than woman's own wage. Second one is that for the lower income group casual informal work is largely tried to be avoided. The results with the interaction terms and the effect of husband's public health insurance on casual work for the lower income quartile support this view. Although the effect of husband's public health insurance becomes insignificant for informal wage work for the lower income group,

it persists to stay significantly negative for casual informal work. There are contradictory results regarding self-employment. Husband's public health insurance has an insignificant effect only for self-employment among the informal work states, probably because it includes home-based work and craftsmanship. But we saw that higher educated women do not prefer self-employment on the condition that their husband's have public health insurance. There is also no significant negative effect for self-employment coming from husband's health insurance for the lower income quartile while it is vice versa for the upper income quartile. These suggest that self-employment is mostly associated with lower income women who are lower educated but need to work. And it is seen "proper" by the relatively high status men in lower income group.

There may be some policy responses we can reach from this analysis in order to increase the labor force participation of women and in order to drive them into formal jobs.

As it can be seen from the results, education is always important and significant. But we also saw that even high educated women may stay out of the labor force since there are no proper jobs for them or there are cultural barriers for their entry in the lower income quartile. Therefore especially for the lower income group, decent job opportunities should be created.

The "proper job" concept may also be problematic and very restrictive for women. Like the women working in the garment ateliers, the proper jobs for the women may be restricted to the jobs available in the neighbourhood run by "trustable" friends or relatives and where there is always an eye on the women such that she wouldn't do anything "wrong". Not only these kinds of jobs which are



traditionally seen as feminine but also other jobs which pay back more money should be made available for women and the society's attitude towards women in this regard should be changed systematically. It shouldn't be forgotten that jobs seen as masculine actually have higher returns compared to feminine jobs. Furthermore traditionally men oriented jobs in the upper income quartiles like management or engineering have changed from solely being men oriented in the recent decades, such changes should also take place in the jobs for lower income quartiles. Women should not be restricted to solely work as house-cleaners, maids or garment atelier workers which are obviously low-paid and precarious.

Another important policy response would be to create childcare services which are affordable. Since the results clearly show that children under 6 drive women away from labor force participation and into informal jobs, this kind of a policy response will not only increase labor force participation significantly but also will drive women into formal jobs.

## APPENDICES

### APPENDIX A. SUMMARY STATISTICS FOR THE OVERALL SAMPLE, FIRST AND FOURTH INCOME QUANTILES RESPECTIVELY

Table 23. Woman Linked Summary Statistics for the Overall Sample, Lower and Upper Income Quartiles Respectively

	Overall	Q1	Q4
age	38.53	36.54	40.48
Primary school or less	0.71	0.88	0.47
High/middle school	0.23	0.11	0.34
University	0.06	0.00	0.18
Home ownership	0.63	0.50	0.75
Ln(non-wage)	6.37	5.67	7.11
# of children under 6	0.40	0.57	0.26
# of children between 6-15	0.79	0.89	0.66
# of observations	13542	3385	3385

Table 24. Husband Linked Summary Statistics for the Overall Sample, Lower and Upper Income Quartiles Respectively

	Overall	Q1	Q4
Primary school or less	0.50	0.73	0.28
High/middle school	0.36	0.25	0.40
University	0.13	0.02	0.32
Public health ins.	0.78	0.54	0.92
Private health ins.	0.01	0.01	0.01
Green card	0.03	0.08	0.00
None	0.19	0.37	0.07

Table 25. Average Age and Percentages of Women in Each Education Level for the Lower Income Quartile

	Age	Primary school or less	High/middle school	University	# of observations
Formal work	35.89	0.64	0.22	0.14	36
Informal wage	36.73	0.90	0.10	0.00	30
Casual wage	35.74	0.93	0.07	0.00	130
Self-employed	39.38	0.91	0.09	0.00	34
Family worker	41.05	0.95	0.05	0.00	41
Unemployed	31.92	0.79	0.21	0.00	66
Non-participants	36.59	0.89	0.11	0.00	3049

Table 26. Averages of Variables that Raise Reservation Wage for Women for the Lower Income Quartile

	Home ownership	Ln(non-wage income)	# of children under 6	# of children between 6-15
Formal work	0.36	4.55	0.17	0.75
Informal wage	0.47	5.08	0.13	1.27
Casual wage	0.40	5.09	0.36	1.11
Self-employed	0.68	5.27	0.56	1.35
Family worker	0.78	5.72	0.39	0.80
Unemployed	0.24	5.54	0.48	0.95
Non-participants	0.51	5.71	0.59	0.87

Table 27. Percentages of Women who Have Husbands with Associated Health Insurance Type for the Lower Income Quartile

	Public health ins.	Private health ins.	Green card	None
Formal work	0.81	0.00	0.03	0.16
Informal wage	0.31	0.00	0.17	0.52
Casual wage	0.24	0.03	0.16	0.57
Self-employed	0.48	0.03	0.06	0.42
Family worker	0.37	0.00	0.07	0.55
Unemployed	0.31	0.00	0.16	0.53
Non-participants	0.56	0.01	0.07	0.36

Table 28. Percentages of Women who Have Husbands with Associated Education Levels for the Lower Income Quartile

	Primary school or less	High/middle school	University
Formal work	0.42	0.42	0.16
Informal wage	0.79	0.21	0.00
Casual wage	0.82	0.17	0.01
Self-employed	0.74	0.26	0.00
Family worker	0.78	0.23	0.00
Unemployed	0.73	0.27	0.00
Non-participants	0.73	0.26	0.02

Table 27. Average Age and Percentages of Women in Each Education Level for Every Work State for the Upper Income Quartile

	Age	Primary school or less	High/middle school	University	# of observations
Formal work	35.66	0.07	0.26	0.67	517
Informal wage	39.10	0.53	0.25	0.23	40
Casual wage	40.94	0.64	0.22	0.14	36
Self-employed	40.58	0.46	0.50	0.04	24
Family worker	42.81	0.65	0.26	0.09	43
Unemployed	37.88	0.38	0.42	0.19	26
Non-participants	41.40	0.54	0.36	0.09	2696

Table 30. Averages of Variables that Raise Reservation Wage for Women for the Upper Income Quartile

	Home ownership	Ln(non-wage income)	# of children under 6	# of children between 6-15
Formal work	0.59	6.52	0.38	0.59
Informal wage	0.65	6.79	0.03	0.63
Casual wage	0.67	6.80	0.06	0.67
Self-employed	0.75	6.92	0.38	0.67
Family worker	0.79	7.21	0.14	0.49
Unemployed	0.69	7.25	0.19	0.85
Non-participants	0.78	7.23	0.25	0.68

Table 31. Percentages of Women who Have Husbands with Associated Health Insurance Type for the Upper Income Quartile

	Public health ins.	Private health ins.	Green card	None
Formal work	0.96	0.00	0.00	0.04
Informal wage	0.76	0.00	0.00	0.24
Casual wage	0.81	0.00	0.00	0.19
Self-employed	0.76	0.00	0.05	0.19
Family worker	0.84	0.00	0.00	0.16
Unemployed	0.76	0.04	0.00	0.20
Non-participants	0.92	0.01	0.00	0.07

Table 32. Percentages of Women who Have Husbands with Associated Education Levels for the Upper Income Quartile

	Primary school or less	High/middle school	University
Formal work	0.08	0.29	0.63
Informal wage	0.46	0.30	0.24
Casual wage	0.47	0.31	0.22
Self-employed	0.24	0.43	0.33
Family worker	0.56	0.33	0.12
Unemployed	0.32	0.36	0.32
Non-participants	0.31	0.42	0.27

Work states are coded with numbers in the tables along with 4 different models differing in their interaction terms. Coding is as follows:

For work states:

- 1 Formal Work
- 2 Informal wage work
- 3 Casual informal work
- 4 Self-employment
- 5 Family work
- 6 Unemployment
- 7 Non-Participation

For models with and without interactions:

- (1) Model without any interaction
- (2) Model with interaction term husband's public health insurance\*husband's education
- (3) Model with interaction term husband's public health insurance\*woman's education
- (4) Model with interaction term husband's public health insurance\*home ownership

In the tables throughout the appendices \*, \*\*, \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent, respectively.

## APPENDIX B. RESULTS OF THE BINARY LOGIT MODEL

Table 33. Results of the Logit Model Represented in Coefficients for the Whole Sample, Income Quartile 1 and 4

	Overall	Q1	Q4
age	0.333*** (0.027)	0.241*** (0.053)	0.397*** (0.065)
age square	-0.005*** (0.000)	-0.003*** (0.001)	-0.006*** (0.001)
High/middle school	0.866*** (0.082)	0.385 (0.236)	0.697*** (0.162)
University	3.465*** (0.132)	0.675 (1.441)	3.244*** (0.208)
Home ownership	-0.042 (0.064)	0.117 (0.149)	-0.201 (0.134)
Ln(non-wage income)	-1.406*** (0.056)	-2.894*** (0.186)	-2.830*** (0.170)
# of children under 6	-0.598*** (0.061)	-0.608*** (0.127)	-0.423*** (0.131)
# of children between 6-15	-0.100*** (0.036)	0.063 (0.075)	-0.380*** (0.084)
Husb. High/middle school	-0.213*** (0.078)	0.117 (0.183)	-0.417** (0.169)
Husb. University	-0.011 (0.122)	-0.480 (0.741)	-0.298 (0.206)
Husb. Public health i.	-0.146* (0.077)	-0.509*** (0.162)	-0.569*** (0.193)
Husb. Private health i.	-0.157 (0.367)	0.208 (0.635)	-0.591 (0.848)
Husb. Green card	0.032 (0.174)	0.256 (0.236)	0.743 (1.185)
Number of observations	13,470	3,370	3,370
Pseudo R <sup>2</sup>	0.24	0.27	0.42

APPENDIX C. RESULTS OF THE MULTINOMIAL LOGIT MODELS  
REPRESENTED IN ODDS RATIOS WITH BASES NON-PARTICIPANTS AND  
FORMAL WORK, RESPECTIVELY



Table 34. Results of the Multinomial Logit Model When Base Category is Non-Participants (Odds Ratios)

	1				2			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.980*** (0.114)	1.985*** (0.114)	1.980*** (0.113)	1.981*** (0.114)	1.549*** (0.138)	1.549*** (0.138)	1.559*** (0.139)	1.549*** (0.138)
age square	0.990*** (0.000776)	0.990*** (0.000777)	0.990*** (0.000775)	0.990*** (0.000776)	0.994*** (0.00118)	0.994*** (0.00117)	0.994*** (0.00118)	0.994*** (0.00117)
High/middle school	6.764*** (0.937)	6.771*** (0.938)	7.293*** (2.304)	6.757*** (0.936)	2.339*** (0.561)	2.333*** (0.560)	3.475*** (1.208)	2.339*** (0.562)
University	196.6*** (37.89)	196.8*** (37.95)	276.2*** (137.0)	196.7*** (37.88)	15.79*** (6.725)	16.35*** (7.060)	27.81*** (19.63)	15.76*** (6.705)
Home ownership	0.906 (0.0940)	0.908 (0.0944)	0.904 (0.0939)	1.305 (0.364)	0.935 (0.173)	0.934 (0.173)	0.935 (0.173)	1.623* (0.445)
Ln(non-wage income)	0.134*** (0.0116)	0.134*** (0.0116)	0.134*** (0.0117)	0.134*** (0.0116)	0.185*** (0.0255)	0.186*** (0.0257)	0.184*** (0.0253)	0.185*** (0.0255)
# of children under 6	0.494*** (0.0491)	0.493*** (0.0489)	0.495*** (0.0492)	0.493*** (0.0490)	0.195*** (0.0504)	0.196*** (0.0508)	0.196*** (0.0508)	0.196*** (0.0508)
# of children between 6-15	0.712*** (0.0477)	0.710*** (0.0476)	0.714*** (0.0478)	0.712*** (0.0477)	0.779** (0.0830)	0.786** (0.0838)	0.783** (0.0836)	0.777** (0.0828)
Husb. High/middle school	0.973 (0.136)	0.930 (0.288)	0.977 (0.137)	0.977 (0.137)	0.804 (0.182)	1.109 (0.366)	0.809 (0.181)	0.812 (0.184)
Husb. University	1.360* (0.248)	1.123 (0.688)	1.381* (0.252)	1.368* (0.249)	0.759 (0.307)	1.773 (1.516)	0.851 (0.349)	0.784 (0.317)
Husb. Public health i.	2.662*** (0.430)	2.483*** (0.516)	2.812*** (0.632)	3.257*** (0.690)	0.587*** (0.117)	0.710 (0.168)	0.710 (0.165)	0.936 (0.253)
Husb. Private health i.	0.347 (0.376)	0.494 (0.496)	0.247 (0.307)	0.339 (0.364)	2.93e-20 (.)	3.65e-18 (1.20e-09)	1.96e-19 (2.78e-10)	2.49e-20 (.)
Husb. Green card	0.276* (0.207)	0.270* (0.201)	0.294 (0.219)	0.277* (0.207)	1.166 (0.498)	1.193 (0.512)	1.225 (0.527)	1.203 (0.517)
Int1-husb. High/middle sch.		1.061 (0.348)				0.601 (0.238)		
Int1-husb. Univ.		1.238 (0.761)				0.352 (0.313)		
Int2-woman high/middle sch.			0.907 (0.297)				0.532 (0.219)	
Int2-woman univ.			0.685 (0.346)				0.438 (0.357)	
Int3-home ownership				0.647 (0.191)				0.399*** (0.140)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.372*** (0.0758)	1.374*** (0.0759)	1.374*** (0.0760)	1.370*** (0.0754)	1.351*** (0.112)	1.353*** (0.112)	1.357*** (0.113)	1.350*** (0.112)
age square	0.996*** (0.000699)	0.996*** (0.000698)	0.996*** (0.000699)	0.996*** (0.000695)	0.997*** (0.00100)	0.997*** (0.00100)	0.997*** (0.00100)	0.997*** (0.00100)
High/middle school	0.665* (0.148)	0.655* (0.147)	1.085 (0.340)	0.667* (0.148)	1.937** (0.508)	1.963** (0.514)	3.889*** (1.546)	1.937** (0.508)
University	1.988 (1.052)	1.863 (1.020)	5.01e-09** (2.73e-09)	1.990 (1.053)	0.744 (0.781)	0.734 (0.771)	3.65e-09** (3.86e-09)	0.750 (0.787)
Home ownership	0.853 (0.112)	0.852 (0.112)	0.858 (0.113)	1.223 (0.224)	1.317 (0.273)	1.329 (0.276)	1.326 (0.275)	1.775* (0.571)
Ln(non-wage income)	0.160*** (0.0164)	0.160*** (0.0165)	0.159*** (0.0165)	0.160*** (0.0165)	0.309*** (0.0529)	0.307*** (0.0527)	0.305*** (0.0525)	0.308*** (0.0527)
# of children under 6	0.470*** (0.0642)	0.473*** (0.0646)	0.472*** (0.0645)	0.472*** (0.0645)	1.013 (0.165)	1.012 (0.165)	1.030 (0.168)	1.013 (0.165)
# of children between 6-15	1.041 (0.0709)	1.047 (0.0714)	1.042 (0.0711)	1.037 (0.0707)	1.238** (0.117)	1.241** (0.118)	1.251** (0.119)	1.235** (0.117)
Husb. High/middle school	0.813 (0.129)	1.086 (0.267)	0.809 (0.128)	0.813 (0.130)	0.804 (0.192)	0.931 (0.383)	0.804 (0.188)	0.805 (0.192)
Husb. University	0.993 (0.361)	4.444** (3.186)	1.030 (0.385)	1.017 (0.369)	0.886 (0.367)	1.39e-08** (5.83e-09)	0.943 (0.390)	0.887 (0.367)
Husb. Public health i.	0.633*** (0.0904)	0.721** (0.113)	0.679*** (0.101)	0.853 (0.154)	0.795 (0.185)	0.814 (0.213)	0.975 (0.250)	1.057 (0.361)
Husb. Private health i.	1.000 (0.575)	0.878 (0.509)	1.046 (0.601)	0.937 (0.544)	1.206 (1.246)	1.188 (1.228)	1.190 (1.231)	1.180 (1.219)
Husb. Green card	1.331 (0.337)	1.339 (0.339)	1.344 (0.340)	1.358 (0.345)	0.740 (0.363)	0.732 (0.359)	0.770 (0.378)	0.752 (0.369)
Int1-husb. High/middle sch.		0.639 (0.193)				0.825 (0.388)		
Int1-husb. Univ.		0.173** (0.131)				67307274.2 (.)		
Int2-woman high/middle sch.			0.454* (0.187)				0.373** (0.174)	
Int2-woman univ.			45545584C (.)				204663327. (.)	
Int3-home ownership				0.527*** (0.129)				0.623 (0.250)

	5				6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.241*** (0.0785)	1.260*** (0.0802)	1.240*** (0.0785)	1.242*** (0.0786)	1.298*** (0.107)	1.298*** (0.108)	1.297*** (0.107)	1.294*** (0.107)
age square	0.998*** (0.000732)	0.997*** (0.000736)	0.998*** (0.000733)	0.998*** (0.000732)	0.995*** (0.00117)	0.995*** (0.00117)	0.995*** (0.00117)	0.996*** (0.00117)
High/middle school	1.069 (0.239)	1.082 (0.244)	1.023 (0.435)	1.070 (0.240)	2.029*** (0.425)	2.027*** (0.425)	1.544 (0.521)	2.032*** (0.426)
University	1.397 (0.723)	1.440 (0.753)	2.26e-09** (1.21e-09)	1.401 (0.725)	12.51*** (4.465)	12.51*** (4.475)	17.57*** (11.02)	12.46*** (4.442)
Home ownership	2.210*** (0.443)	2.231*** (0.448)	2.211*** (0.444)	2.213*** (0.638)	0.617*** (0.104)	0.614*** (0.103)	0.614*** (0.103)	0.911 (0.226)
Ln(non-wage income)	1.367** (0.191)	1.348** (0.188)	1.369** (0.191)	1.364** (0.190)	0.543*** (0.0810)	0.541*** (0.0806)	0.542*** (0.0809)	0.545*** (0.0812)
# of children under 6	0.936 (0.157)	0.945 (0.158)	0.935 (0.157)	0.935 (0.156)	0.492*** (0.0726)	0.491*** (0.0727)	0.489*** (0.0722)	0.492*** (0.0725)
# of children between 6-15	0.926 (0.0849)	0.925 (0.0851)	0.925 (0.0850)	0.926 (0.0849)	0.926 (0.0874)	0.926 (0.0877)	0.921 (0.0871)	0.925 (0.0872)
Husb. High/middle school	0.693** (0.128)	1.292 (0.401)	0.690** (0.128)	0.693** (0.128)	0.662** (0.136)	0.630 (0.202)	0.663** (0.137)	0.667** (0.137)
Husb. University	0.337*** (0.125)	1.225 (0.984)	0.313*** (0.120)	0.337*** (0.125)	0.877 (0.287)	1.880 (1.202)	0.868 (0.286)	0.891 (0.291)
Husb. Public health i.	0.366*** (0.0661)	0.464*** (0.0941)	0.353*** (0.0676)	0.353*** (0.125)	0.480*** (0.0901)	0.495*** (0.112)	0.432*** (0.0963)	0.619** (0.139)
Husb. Private health i.	1.319 (0.825)	1.140 (0.719)	1.354 (0.850)	1.312 (0.822)	1.103 (0.825)	0.893 (0.698)	1.031 (0.788)	1.054 (0.787)
Husb. Green card	0.632 (0.336)	0.651 (0.346)	0.623 (0.331)	0.634 (0.337)	1.740* (0.584)	1.769* (0.595)	1.718 (0.578)	1.782* (0.599)
Int1-husb. High/middle sch.		0.423** (0.154)				1.074 (0.413)		
Int1-husb. Univ.		0.217* (0.186)				0.427 (0.283)		
Int2-woman high/middle sch.			1.086 (0.517)				1.539 (0.603)	
Int2-woman univ.			840382813 (.)				0.716 (0.489)	
Int3-home ownership				1.024 (0.396)				0.524** (0.168)

Table 35. Results of the Multinomial Logit Model for the First Income Quartile  
When Base Category is Non-Participants (Odds Ratios)

1	2							
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	2.157*** (0.577)	2.159*** (0.585)	1.521** (0.252)	2.202*** (0.591)	2.144*** (0.569)	2.119*** (0.562)	1.756*** (0.372)	2.175*** (0.587)
age square	0.990*** (0.00345)	0.990*** (0.00347)	0.995** (0.00212)	0.990*** (0.00344)	0.990*** (0.00348)	0.990*** (0.00348)	0.992*** (0.00273)	0.990*** (0.00355)
High/middle school	1.802 (1.301)	1.822 (1.341)	2.494 (2.650)	1.795 (1.305)	1.927 (1.380)	1.809 (1.321)	4.183* (3.105)	1.804 (1.310)
University	21.41 (52.52)	7.848 (29.59)	0 (0)	28.35 (67.39)	4.44e-13 (0.000037)	3.52e-16 (.)	0 (0)	1.94e-16 (.)
Home ownership	0.680 (0.371)	0.682 (0.380)	0.700 (0.306)	1.936 (1.964)	1.278 (0.553)	1.274 (0.552)	1.302 (0.541)	1.097 (0.582)
Ln(non-wage income)	0.00377** (0.00182)	0.00352** (0.00174)	0.0109*** (0.00390)	0.00334** (0.00169)	0.0150*** (0.00610)	0.0150*** (0.00610)	0.0223*** (0.00822)	0.0148*** (0.00604)
# of children under 6	0.137** (0.112)	0.152** (0.127)	0.333** (0.148)	0.133** (0.110)	0.178*** (0.104)	0.181*** (0.106)	0.256*** (0.126)	0.178*** (0.104)
# of children between 6-15	0.622 (0.203)	0.645 (0.211)	0.734 (0.178)	0.616 (0.205)	0.998 (0.219)	1.023 (0.225)	1.041 (0.217)	1.001 (0.221)
Husb. High/middle school	3.582** (2.147)	11.01** (12.22)	2.184 (1.058)	3.590** (2.177)	1.026 (0.592)	1.974 (1.310)	0.949 (0.515)	1.053 (0.608)
Husb. University	5.478 (7.570)	253.9 (959.5)	5.323 (5.721)	6.548 (8.967)	5.46e-16 (1.82e-08)	2.90e-24 (.)	0.0693 (0.284)	3.21e-20 (.)
Husb. Public health i.	9.250*** (6.828)	17.29*** (16.02)	3.546** (1.887)	16.90*** (15.77)	0.881 (0.430)	1.301 (0.691)	1.156 (0.556)	0.626 (0.448)
Husb. Private health i.	9.72e-15 (0.000000)	1.79e-18 (.)	0.00811 (0.258)	7.23e-19 (.)	1.19e-15 (6.03e-08)	2.61e-19 (.)	0.0923 (0.541)	1.69e-19 (.)
Husb. Green card	0.913 (1.158)	0.902 (1.155)	0.811 (0.723)	0.892 (1.124)	2.315 (1.363)	2.357 (1.388)	2.186 (1.246)	2.338 (1.375)
Int1-husb. High/middle sch.		0.219 (0.272)				0.167 (0.210)		
Int1-husb. Univ.		0.0141 (0.0546)				111750.1 (.)		
Int2-woman high/middle sch.			0.473 (0.575)				0.0695 (0.131)	
Int2-woman univ.			.			.	.	
Int3-home ownership int_hsag_mulk				0.235 (0.284)				1.878 (1.715)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.263*** (0.103)	1.251*** (0.102)	1.221** (0.0949)	1.270*** (0.104)	1.623*** (0.299)	1.619*** (0.299)	1.494** (0.247)	1.621*** (0.299)
age square	0.997*** (0.00104)	0.997*** (0.00104)	0.997*** (0.000984)	0.997*** (0.00104)	0.995** (0.00217)	0.995** (0.00217)	0.996** (0.00196)	0.995** (0.00218)
High/middle school	1.170 (0.502)	1.065 (0.472)	1.749 (0.800)	1.206 (0.514)	2.284 (1.638)	2.198 (1.579)	4.662* (3.831)	2.268 (1.630)
University	1.55e-15 (6.94e-08)	1.29e-19 (.)	0 (0)	1.89e-19 (.)	1.86e-15 (0.000000)	1.38e-18 (.)	0 (0)	1.68e-18 (.)
Home ownership	0.988 (0.236)	0.977 (0.234)	0.982 (0.227)	1.367 (0.374)	2.546** (1.111)	2.505** (1.092)	2.380** (0.990)	2.691* (1.502)
Ln(non-wage income)	0.0218*** (0.00588)	0.0220*** (0.00592)	0.0271*** (0.00678)	0.0220*** (0.00593)	0.0215*** (0.00973)	0.0225*** (0.0101)	0.0242*** (0.00982)	0.0213*** (0.00962)
# of children under 6	0.452*** (0.0942)	0.459*** (0.0953)	0.493*** (0.0967)	0.456*** (0.0951)	1.137 (0.369)	1.134 (0.370)	1.139 (0.344)	1.135 (0.369)
# of children between 6-15	1.165 (0.137)	1.178 (0.139)	1.157 (0.132)	1.149 (0.136)	1.767*** (0.343)	1.749*** (0.340)	1.646*** (0.305)	1.773*** (0.346)
Husb. High/middle school	1.041 (0.318)	1.594 (0.573)	1.025 (0.300)	1.010 (0.309)	1.341 (0.708)	0.713 (0.776)	1.408 (0.689)	1.340 (0.708)
Husb. University	0.662 (0.923)	4.287 (10.60)	1.105 (1.388)	0.615 (0.885)	2.20e-15 (5.58e-08)	5.14e-23 (.)	0.225 (0.666)	1.02e-19 (.)
Husb. Public health i.	0.490*** (0.133)	0.653 (0.193)	0.559** (0.152)	0.770 (0.247)	1.658 (0.782)	1.454 (0.755)	1.981 (0.928)	1.716 (1.218)
Husb. Private health i.	2.494 (1.923)	2.533 (1.931)	2.420 (1.803)	2.297 (1.796)	5.831 (7.039)	5.607 (6.818)	5.710 (6.633)	5.991 (7.226)
Husb. Green card	1.469 (0.492)	1.440 (0.482)	1.397 (0.453)	1.452 (0.488)	0.814 (0.671)	0.882 (0.728)	0.804 (0.636)	0.817 (0.674)
Int1-husb. High/middle sch.		0.314* (0.194)				2.386 (2.871)		
Int1-husb. Univ.		1.82e-20 (.)				2705.0 (.)		
Int2-woman high/middle sch.			0.304 (0.278)				0.243 (0.292)	
Int2-woman univ.			.(.)				.(.)	
Int3-home ownership				0.306** (0.158)				0.925 (0.766)

	5				6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.142 (0.131)	1.165 (0.135)	1.140 (0.127)	1.145 (0.131)	1.465** (0.226)	1.464** (0.227)	1.282* (0.163)	1.458** (0.224)
age square	0.999 (0.00135)	0.999 (0.00136)	0.999 (0.00131)	0.999 (0.00135)	0.994*** (0.00225)	0.994*** (0.00226)	0.996** (0.00180)	0.994*** (0.00225)
High/middle school	0.478 (0.373)	0.493 (0.386)	0.869 (0.684)	0.484 (0.378)	2.182** (0.811)	2.186** (0.812)	1.745 (0.831)	2.180** (0.808)
University	7.60e-16 (9.28e-08)	7.68e-19 (.)	0 (0)	7.59e-19 (.)	5.69e-15 (0.000000)	1.45e-18 (.)	0 (0)	1.67e-18 (.)
Home ownership	3.215*** (1.315)	3.340*** (1.374)	3.023*** (1.201)	2.962** (1.409)	0.507** (0.158)	0.504** (0.157)	0.512** (0.155)	0.591 (0.216)
Ln(non-wage income)	1.273 (0.791)	1.210 (0.756)	1.241 (0.762)	1.262 (0.785)	0.220*** (0.0822)	0.222*** (0.0829)	0.227*** (0.0837)	0.221*** (0.0824)
# of children under 6	1.062 (0.322)	1.071 (0.326)	1.069 (0.314)	1.061 (0.322)	0.542*** (0.118)	0.539*** (0.117)	0.556*** (0.119)	0.543*** (0.118)
# of children between 6-15	0.982 (0.184)	0.972 (0.183)	0.976 (0.180)	0.980 (0.184)	0.839 (0.126)	0.831 (0.126)	0.870 (0.127)	0.839 (0.126)
Husb. High/middle school	1.480 (0.633)	2.492* (1.311)	1.498 (0.617)	1.472 (0.630)	0.825 (0.282)	0.686 (0.303)	0.836 (0.284)	0.826 (0.282)
Husb. University	2.75e-15 (0.000000)	2.05e-23 (.)	0.312 (1.227)	3.35e-19 (.)	1.42e-15 (4.22e-08)	5.00e-25 (.)	0.110 (0.367)	6.67e-20 (.)
Husb. Public health i.	0.296*** (0.118)	0.391** (0.169)	0.339*** (0.134)	0.226* (0.187)	0.344*** (0.114)	0.288*** (0.117)	0.306*** (0.113)	0.391** (0.143)
Husb. Private health i.	7.65e-16 (2.83e-08)	7.55e-20 (.)	0.0605 (0.257)	9.54e-20 (.)	1.12e-15 (4.26e-08)	1.06e-19 (.)	0.0850 (0.373)	1.37e-19 (.)
Husb. Green card	0.712 (0.464)	0.651 (0.431)	0.712 (0.457)	0.713 (0.464)	1.874 (0.734)	1.882 (0.737)	1.809 (0.694)	1.860 (0.729)
Int1-husb. High/middle sch.		0.304 (0.253)				1.656 (1.039)		
Int1-husb. Univ.		11549.5 (.)				152270.0 (.)		
Int2-woman high/middle sch.			0.198 (0.371)				1.725 (1.133)	
Int2-woman univ.			.				.	
Int3-home ownership				1.389 (1.250)				0.629 (0.426)

Table 36. Results of the Multinomial Logit Model for the Fourth Income Quartile When Base Category is Non-Participants (Odds Ratios)

	1				2			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.748*** (0.157)	1.735*** (0.158)	1.758*** (0.162)	1.747*** (0.157)	1.039 (0.133)	1.034 (0.133)	1.039 (0.138)	1.034 (0.132)
age square	0.992*** (0.00119)	0.992*** (0.00120)	0.992*** (0.00122)	0.992*** (0.00119)	0.999 (0.00164)	0.999 (0.00165)	0.999 (0.00170)	0.999 (0.00163)
High/middle school	3.699*** (0.838)	3.779*** (0.871)	3.032** (1.711)	3.702*** (0.838)	0.981 (0.436)	1.005 (0.447)	0.817 (0.641)	0.960 (0.429)
University	76.68*** (20.94)	72.33*** (19.95)	32.54 (74.41)	77.05*** (21.03)	5.958*** (3.320)	5.876*** (3.348)	4.022 (12.81)	5.873*** (3.283)
Home ownership	0.799 (0.133)	0.823 (0.138)	0.791 (0.134)	1.545 (0.788)	0.731 (0.267)	0.743 (0.271)	0.736 (0.275)	1.824 (1.297)
Ln(non-wage income)	0.0360*** (0.00718)	0.0428*** (0.00824)	0.0358*** (0.00722)	0.0361*** (0.00721)	0.0519*** (0.0193)	0.0592*** (0.0215)	0.0535*** (0.0203)	0.0533*** (0.0199)
# of children under 6	0.700** (0.111)	0.745* (0.117)	0.702** (0.113)	0.696** (0.110)	0.117*** (0.0867)	0.124*** (0.0900)	0.122*** (0.0896)	0.115*** (0.0865)
# of children between 6-15	0.643*** (0.0714)	0.647*** (0.0719)	0.641*** (0.0721)	0.647*** (0.0718)	0.730 (0.162)	0.728 (0.162)	0.725 (0.166)	0.742 (0.164)
Husb. High/middle school	0.798 (0.188)	0.719 (0.399)	0.785 (0.189)	0.802 (0.189)	0.539 (0.227)	0.867 (0.569)	0.535 (0.235)	0.544 (0.230)
Husb. University	0.892 (0.240)	.*** (.)	0.859 (0.239)	0.900 (0.242)	0.662 (0.376)	7.57e-15 (.)	0.651 (0.406)	0.679 (0.386)
Husb. Public health i.	1.052 (0.301)	0.939 (0.380)	0.850 (0.397)	1.654 (0.746)	0.271*** (0.106)	0.320** (0.158)	0.272*** (0.135)	0.632 (0.447)
Husb. Private health i.	24.31*** (19.42)	32.01 (11626.0)	28.24*** (26.57)	16.04*** (12.40)	0.000389 (0.0566)	0.174 (846.4)	0.000346 (0.0754)	0.000376 (0.0476)
Husb. Green card	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Int1-husb. High/middle sch.		1.123 (0.681)				0.483 (0.395)		
Int1-husb. Univ.		0 (.)				8.16465e+ (4.92311e-		
Int2-woman high/middle sch.			1.257 (0.751)				1.198 (1.083)	
Int2-woman univ.			2.559 (5.880)				1.710 (5.487)	
Int3-home ownership				0.482 (0.257)				0.299 (0.242)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.202 (0.201)	1.140 (0.164)	1.198 (0.200)	1.208 (0.200)	1.274 (0.221)	1.271 (0.229)	1.274 (0.219)	1.292 (0.224)
age square	0.997 (0.00204)	0.998 (0.00176)	0.997 (0.00203)	0.997 (0.00203)	0.997 (0.00207)	0.997 (0.00215)	0.997 (0.00205)	0.997 (0.00208)
High/middle school	0.545 (0.257)	0.536 (0.234)	1.172 (1.021)	0.535 (0.251)	1.366 (0.593)	1.354 (0.592)	0.982 (0.804)	1.408 (0.623)
University	2.057 (1.340)	1.937 (1.164)	0.0110 (0.643)	1.977 (1.287)	0.828 (0.706)	0.744 (0.647)	0.0160 (0.871)	0.821 (0.729)
Home ownership	0.691 (0.261)	0.684 (0.243)	0.700 (0.267)	0.347 (0.278)	1.332 (0.603)	1.333 (0.615)	1.326 (0.598)	1.524 (1.292)
Ln(non-wage income)	0.0472*** (0.0181)	0.0564*** (0.0208)	0.0480*** (0.0186)	0.0493*** (0.0192)	0.145*** (0.0790)	0.143*** (0.0766)	0.147*** (0.0798)	0.143*** (0.0810)
# of children under 6	0.222** (0.155)	0.296** (0.167)	0.229** (0.160)	0.234** (0.159)	1.424 (0.495)	1.402 (0.506)	1.440 (0.500)	1.403 (0.499)
# of children between 6-15	0.874 (0.200)	0.827 (0.168)	0.884 (0.204)	0.869 (0.200)	0.797 (0.180)	0.792 (0.183)	0.792 (0.177)	0.770 (0.181)
Husb. High/middle school	0.629 (0.268)	0.770 (0.658)	0.638 (0.272)	0.632 (0.267)	1.098 (0.523)	0.540 (0.470)	1.088 (0.518)	1.100 (0.539)
Husb. University	0.921 (0.539)	2.08e-10** (1.15e-10)	0.891 (0.550)	0.918 (0.535)	1.484 (0.865)	1.44e-13** (9.55e-14)	1.436 (0.845)	1.598 (0.958)
Husb. Public health i.	0.456* (0.214)	0.474 (0.257)	0.556 (0.327)	0.268** (0.177)	0.218*** (0.104)	0.118*** (0.0781)	0.177*** (0.104)	0.260 (0.225)
Husb. Private health i.	0.00118 (0.147)	0.0231 (572.5)	0.0138 (0.564)	0.00115 (0.125)	0.000806 (0.0858)	0.0949 (1103.1)	0.0112 (0.394)	0.000928 (0.0766)
Husb. Green card	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Int1-husb. High/middle sch.		0.788 (0.746)				2.693 (2.757)		
Int1-husb. Univ.		4.21460e+ (.)				1.41515e+ (.)		
Int2-woman high/middle sch.			0.359 (0.359)				1.450 (1.304)	
Int2-woman univ.			220.1 (12874.0)				59.67 (3243.1)	
Int3-home ownership				2.364 (2.127)				0.751 (0.738)



	5				6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	1.171 (0.162)	1.172 (0.163)	1.176 (0.164)	1.173 (0.163)	1.265 (0.234)	1.021 (0.136)	1.239 (0.207)	1.256 (0.233)
age square	0.998 (0.00161)	0.998 (0.00160)	0.998 (0.00162)	0.998 (0.00161)	0.996 (0.00236)	0.999 (0.00164)	0.997 (0.00216)	0.996 (0.00237)
High/middle school	1.164 (0.474)	1.194 (0.496)	1.201 (1.106)	1.161 (0.473)	1.687 (0.815)	1.348 (0.554)	2.482 (1.610)	1.668 (0.815)
University	2.554 (1.662)	2.983 (1.989)	0.0252 (1.390)	2.530 (1.646)	3.969** (2.693)	3.562** (1.961)	5818.8*** (12149.8)	3.912** (2.668)
Home ownership	0.799 (0.322)	0.859 (0.351)	0.788 (0.320)	0.650 (0.577)	0.890 (0.378)	0.832 (0.312)	0.907 (0.363)	1.787 (1.428)
Ln(non-wage income)	1.193 (0.452)	1.134 (0.424)	1.187 (0.450)	1.192 (0.451)	0.836 (0.368)	0.508* (0.207)	0.793 (0.331)	0.825 (0.366)
# of children under 6	0.792 (0.356)	0.798 (0.355)	0.794 (0.360)	0.795 (0.358)	0.543 (0.256)	0.641 (0.237)	0.590 (0.250)	0.527 (0.250)
# of children between 6-15	0.732 (0.168)	0.720 (0.167)	0.736 (0.171)	0.729 (0.167)	1.105 (0.258)	1.027 (0.214)	1.031 (0.232)	1.105 (0.257)
Husb. High/middle school	0.479* (0.181)	3.073 (2.523)	0.465** (0.178)	0.477* (0.180)	0.660 (0.335)	0.250 (0.316)	0.716 (0.339)	0.663 (0.339)
Husb. University	0.187*** (0.114)	1.13e-13* (6.98e-14)	0.167*** (0.106)	0.188*** (0.114)	0.652 (0.410)	1.18e-11* (6.71e-12)	0.610 (0.370)	0.679 (0.431)
Husb. Public health i.	0.437* (0.200)	0.970 (0.634)	0.396* (0.213)	0.358 (0.302)	0.319** (0.162)	0.221*** (0.129)	0.123*** (0.0789)	0.585 (0.471)
Husb. Private health i.	0.00131 (0.121)	0.136 (425.9)	0.0113 (0.519)	0.00196 (0.135)	37.82*** (32.00)	251857407 (6.20623e-	32.83*** (30.08)	27.59*** (23.22)
Husb. Green card	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Int1-husb. High/middle sch.		0.104** (0.0945)				3.824 (5.089)		
Int1-husb. Univ.		1.41810e+ (.)				9.30888e+ (.)		
Int2-woman high/middle sch.			0.986 (0.989)				1.178 (0.944)	
Int2-woman univ.			133.7 (7363.3)				0.00102** (0.00223)	
Int3-home ownership				1.302 (1.267)				0.390 (0.357)

Table 37. Results of the Multinomial Logit Model When Base Category is Formal Work (Odds Ratios)

	2				3			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.782** (0.0806)	0.781** (0.0804)	0.787** (0.0812)	0.782** (0.0804)	0.693*** (0.0540)	0.692*** (0.0540)	0.694*** (0.0541)	0.692*** (0.0538)
age square	1.004*** (0.00139)	1.004*** (0.00139)	1.003** (0.00139)	1.004*** (0.00138)	1.006*** (0.00104)	1.006*** (0.00104)	1.006*** (0.00103)	1.006*** (0.00103)
High/middle school	0.346*** (0.0925)	0.345*** (0.0922)	0.477* (0.213)	0.346*** (0.0926)	0.0983*** (0.0250)	0.0967*** (0.0247)	0.149*** (0.0629)	0.0988*** (0.0251)
University	0.0803*** (0.0352)	0.0831*** (0.0369)	0.101*** (0.0717)	0.0801*** (0.0351)	0.0101*** (0.00551)	0.00946** (0.00532)	1.81e-11** (1.02e-11)	0.0101*** (0.00551)
Home ownership	1.033 (0.212)	1.029 (0.211)	1.034 (0.212)	1.244 (0.465)	0.942 (0.153)	0.939 (0.152)	0.949 (0.154)	0.937 (0.302)
Ln(non-wage income)	1.382** (0.199)	1.390** (0.201)	1.368** (0.197)	1.375** (0.198)	1.192 (0.138)	1.194 (0.139)	1.187 (0.139)	1.195 (0.139)
# of children under 6	0.394*** (0.107)	0.398*** (0.109)	0.396*** (0.108)	0.397*** (0.108)	0.950 (0.157)	0.960 (0.159)	0.952 (0.158)	0.957 (0.158)
# of children between 6-15	1.094 (0.133)	1.107 (0.135)	1.097 (0.134)	1.091 (0.133)	1.461*** (0.135)	1.475*** (0.137)	1.460*** (0.135)	1.458*** (0.135)
Husb. High/middle school	0.827 (0.213)	1.193 (0.514)	0.828 (0.212)	0.831 (0.214)	0.836 (0.172)	1.168 (0.445)	0.828 (0.170)	0.832 (0.171)
Husb. University	0.558 (0.239)	1.578 (1.429)	0.616 (0.267)	0.573 (0.245)	0.730 (0.290)	3.956 (3.326)	0.746 (0.303)	0.743 (0.295)
Husb. Public health i.	0.221*** (0.0543)	0.286*** (0.0870)	0.253*** (0.0792)	0.287*** (0.0942)	0.238*** (0.0493)	0.290*** (0.0728)	0.241*** (0.0629)	0.262*** (0.0700)
Husb. Private health i.	8.45e-20 (.)	4.98e-20 (.)	3.21e-16 (2.26e-08)	1.62e-15 (4.52e-08)	2.883 (3.378)	1.778 (1.929)	4.235 (5.734)	2.762 (3.219)
Husb. Green card	4.218* (3.541)	4.423* (3.707)	4.173* (3.502)	4.345* (3.653)	4.813** (3.722)	4.965** (3.831)	4.578** (3.534)	4.906** (3.803)
Int1-husb. High/middle sch.		0.567 (0.279)				0.602 (0.259)		
Int1-husb. Univ.		0.284 (0.265)				0.140** (0.122)		
Int2-woman high/middle sch.			0.587 (0.295)				0.500 (0.253)	
Int2-woman univ.			0.639 (0.526)				66476789E (.)	
Int3-home ownership				0.616 (0.272)				0.815 (0.302)

	4				5			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.682*** (0.0683)	0.682*** (0.0684)	0.685*** (0.0687)	0.682*** (0.0682)	0.627*** (0.0533)	0.635*** (0.0542)	0.626*** (0.0533)	0.627*** (0.0533)
age square	1.006*** (0.00127)	1.006*** (0.00128)	1.006*** (0.00127)	1.006*** (0.00127)	1.007*** (0.00108)	1.007*** (0.00108)	1.007*** (0.00108)	1.007*** (0.00108)
High/middle school	0.286*** (0.0837)	0.290*** (0.0847)	0.533 (0.264)	0.287*** (0.0838)	0.158*** (0.0412)	0.160*** (0.0419)	0.140*** (0.0734)	0.158*** (0.0413)
University	0.00378** (0.00402)	0.00373** (0.00396)	1.32e-11** (1.41e-11)	0.00381** (0.00404)	0.00710** (0.00388)	0.00732** (0.00403)	8.17e-12** (4.62e-12)	0.00712** (0.00388)
Home ownership	1.454 (0.333)	1.464* (0.336)	1.466* (0.337)	1.360 (0.571)	2.440*** (0.547)	2.458*** (0.552)	2.445*** (0.548)	1.696 (0.673)
Ln(non-wage income)	2.300*** (0.428)	2.295*** (0.427)	2.273*** (0.424)	2.296*** (0.426)	10.19*** (1.660)	10.07*** (1.638)	10.19*** (1.659)	10.16*** (1.655)
# of children under 6	2.049*** (0.387)	2.054*** (0.388)	2.080*** (0.393)	2.054*** (0.388)	1.894*** (0.366)	1.918*** (0.370)	1.888*** (0.365)	1.895*** (0.366)
# of children between 6-15	1.738*** (0.199)	1.748*** (0.201)	1.753*** (0.202)	1.735*** (0.199)	1.300** (0.147)	1.304** (0.147)	1.296** (0.146)	1.301** (0.147)
Husb. High/middle school	0.826 (0.226)	1.001 (0.508)	0.823 (0.222)	0.824 (0.225)	0.713 (0.164)	1.390 (0.602)	0.706 (0.163)	0.709 (0.163)
Husb. University	0.652 (0.291)	1.24e-08** (5.62e-09)	0.683 (0.305)	0.649 (0.290)	0.248*** (0.101)	1.090 (1.071)	0.227*** (0.0952)	0.246*** (0.101)
Husb. Public health i.	0.298*** (0.0835)	0.328*** (0.108)	0.347*** (0.117)	0.325*** (0.129)	0.137*** (0.0330)	0.187*** (0.0537)	0.125*** (0.0368)	0.108*** (0.0443)
Husb. Private health i.	3.477 (5.155)	2.405 (3.427)	4.819 (7.750)	3.479 (5.134)	3.802 (4.727)	2.308 (2.711)	5.483 (7.610)	3.870 (4.778)
Husb. Green card	2.676 (2.367)	2.713 (2.396)	2.623 (2.316)	2.715 (2.408)	2.286 (2.084)	2.412 (2.196)	2.124 (1.935)	2.290 (2.092)
Int1-husb. High/middle sch.		0.777 (0.439)				0.399* (0.193)		
Int1-husb. Univ.		54370691. (.)				0.176* (0.180)		
Int2-woman high/middle sch.			0.411 (0.229)				1.198 (0.684)	
Int2-woman univ.			298720423 (.)				1.22660e+ (.)	
Int3-home ownership				0.963 (0.473)				1.583 (0.765)

	6				7			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.656*** (0.0646)	0.654*** (0.0646)	0.655*** (0.0645)	0.653*** (0.0642)	0.505*** (0.0290)	0.504*** (0.0290)	0.505*** (0.0290)	0.505*** (0.0290)
age square	1.005*** (0.00139)	1.005*** (0.00140)	1.005*** (0.00139)	1.005*** (0.00139)	1.010*** (0.000791)	1.010*** (0.000793)	1.010*** (0.000790)	1.010*** (0.000791)
High/middle school	0.300*** (0.0736)	0.299*** (0.0734)	0.212*** (0.0950)	0.301*** (0.0737)	0.148*** (0.0205)	0.148*** (0.0205)	0.137*** (0.0433)	0.148*** (0.0205)
University	0.0636*** (0.0244)	0.0635*** (0.0244)	0.0636*** (0.0436)	0.0634*** (0.0243)	0.00509** (0.000980)	0.00508** (0.000980)	0.00362** (0.00180)	0.00508** (0.000979)
Home ownership	0.681** (0.131)	0.676** (0.130)	0.679** (0.130)	0.698 (0.253)	1.104 (0.115)	1.102 (0.115)	1.106 (0.115)	0.766 (0.214)
Ln(non-wage income)	4.047*** (0.668)	4.040*** (0.667)	4.034*** (0.667)	4.063*** (0.670)	7.454*** (0.645)	7.470*** (0.647)	7.442*** (0.646)	7.452*** (0.644)
# of children under 6	0.994 (0.171)	0.997 (0.172)	0.987 (0.170)	0.998 (0.172)	2.023*** (0.201)	2.030*** (0.202)	2.020*** (0.201)	2.027*** (0.201)
# of children between 6-15	1.300** (0.147)	1.305** (0.148)	1.291** (0.146)	1.300** (0.146)	1.404*** (0.0940)	1.409*** (0.0945)	1.401*** (0.0938)	1.405*** (0.0941)
Husb. High/middle school	0.681 (0.165)	0.678 (0.293)	0.679 (0.166)	0.683 (0.165)	1.028 (0.144)	1.076 (0.333)	1.023 (0.143)	1.023 (0.143)
Husb. University	0.645 (0.233)	1.674 (1.312)	0.629 (0.228)	0.651 (0.235)	0.735* (0.134)	0.890 (0.545)	0.724* (0.132)	0.731* (0.133)
Husb. Public health i.	0.180*** (0.0433)	0.199*** (0.0599)	0.154*** (0.0479)	0.190*** (0.0566)	0.376*** (0.0607)	0.403*** (0.0837)	0.356*** (0.0799)	0.307*** (0.0651)
Husb. Private health i.	3.181 (4.005)	1.809 (2.188)	4.177 (5.756)	3.107 (3.898)	2.883 (3.125)	2.025 (2.034)	4.049 (5.037)	2.949 (3.166)
Husb. Green card	6.293** (5.091)	6.556** (5.298)	5.850** (4.736)	6.438** (5.221)	3.617* (2.703)	3.707* (2.764)	3.406 (2.544)	3.612* (2.706)
Int1-husb. High/middle sch.		1.012 (0.499)				0.942 (0.309)		
Int1-husb. Univ.		0.345 (0.276)				0.808 (0.496)		
Int2-woman high/middle sch.			1.698 (0.845)				1.103 (0.362)	
Int2-woman univ.			1.045 (0.772)				1.460 (0.738)	
Int3-home ownership				0.810 (0.343)				1.545 (0.457)

APPENDIX D. RESULTS OF THE MULTINOMIAL LOGIT MODELS  
REPRESENTED IN COEFFICIENTS WITH BASES NON-PARTICIPANTS AND  
FORMAL WORK, RESPECTIVELY

Table 38. Results of the Multinomial Logit Model When Base Category is Non-Participants (Coefficients)

	1				2			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.683*** (0.0574)	0.685*** (0.0575)	0.683*** (0.0573)	0.684*** (0.0574)	0.438*** (0.0890)	0.438*** (0.0890)	0.444*** (0.0892)	0.438*** (0.0888)
age square	-0.010*** (0.001)	-0.010*** (0.001)	-0.010*** (0.001)	-0.010*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)
High/middle school	1.912*** (0.139)	1.913*** (0.139)	1.987*** (0.316)	1.911*** (0.138)	0.850*** (0.240)	0.847*** (0.240)	1.246*** (0.348)	0.850*** (0.240)
University	5.281*** (0.193)	5.282*** (0.193)	5.621*** (0.496)	5.282*** (0.193)	2.759*** (0.426)	2.794*** (0.432)	3.325*** (0.706)	2.757*** (0.425)
Home ownership	-0.0990 (0.104)	-0.0970 (0.104)	-0.101 (0.104)	0.266 (0.279)	-0.0669 (0.185)	-0.0683 (0.185)	-0.0675 (0.185)	0.484* (0.274)
Ln(non-wage income)	-2.009*** (0.0865)	-2.011*** (0.0866)	-2.007*** (0.0867)	-2.008*** (0.0865)	-1.685*** (0.138)	-1.682*** (0.138)	-1.694*** (0.138)	-1.690*** (0.138)
# of children under 6	-0.704*** (0.0993)	-0.708*** (0.0993)	-0.703*** (0.0993)	-0.707*** (0.0994)	-1.636*** (0.259)	-1.629*** (0.259)	-1.629*** (0.259)	-1.630*** (0.259)
# of children between 6-15	-0.339*** (0.0670)	-0.343*** (0.0671)	-0.337*** (0.0670)	-0.340*** (0.0670)	-0.250** (0.107)	-0.241** (0.107)	-0.245** (0.107)	-0.253** (0.107)
Husb. High/middle school	-0.0276 (0.140)	-0.0730 (0.310)	-0.0231 (0.140)	-0.0232 (0.140)	-0.218 (0.226)	0.104 (0.330)	-0.212 (0.224)	-0.208 (0.227)
Husb. University	0.307* (0.182)	0.116 (0.612)	0.323* (0.183)	0.313* (0.182)	-0.276 (0.405)	0.572 (0.855)	-0.161 (0.411)	-0.243 (0.405)
Husb. Public health i.	0.979*** (0.162)	0.910*** (0.208)	1.034*** (0.225)	1.181*** (0.212)	-0.533*** (0.200)	-0.342 (0.237)	-0.342 (0.232)	-0.0658 (0.270)
Husb. Private health i.	-1.059 (1.084)	-0.705 (1.005)	-1.399 (1.244)	-1.081 (1.074)	-44.98 (.)	-40.15 (32843334)	-43.07 (1.41546e+11)	-45.14 (.)
Husb. Green card	-1.286* (0.747)	-1.310* (0.746)	-1.226 (0.747)	-1.284* (0.749)	0.154 (0.427)	0.176 (0.429)	0.203 (0.430)	0.185 (0.430)
Int1-husb. High/middle sch.		0.0592 (0.328)				-0.509 (0.396)		
Int1-husb. Univ.		0.213 (0.614)				-1.045 (0.889)		
Int2-woman high/middle sch.			-0.0980 (0.328)				-0.631 (0.411)	
Int2-woman univ.			-0.378 (0.505)				-0.827 (0.817)	
Int3-home ownership				-0.435 (0.296)				-0.919*** (0.351)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.316*** (0.0553)	0.318*** (0.0552)	0.318*** (0.0553)	0.315*** (0.0551)	0.301*** (0.0830)	0.303*** (0.0831)	0.305*** (0.0831)	0.300*** (0.0829)
age square	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
High/middle school	-0.408* (0.222)	-0.424* (0.224)	0.0816 (0.314)	-0.404* (0.222)	0.661** (0.262)	0.674** (0.262)	1.358*** (0.398)	0.661** (0.262)
University	0.687 (0.529)	0.622 (0.547)	-19.11*** (0.546)	0.688 (0.529)	-0.296 (1.050)	-0.310 (1.051)	-19.43*** (1.058)	-0.288 (1.050)
Home ownership	-0.159 (0.131)	-0.160 (0.131)	-0.153 (0.131)	0.201 (0.184)	0.275 (0.207)	0.284 (0.207)	0.282 (0.208)	0.574* (0.322)
Ln(non-wage income)	-1.833*** (0.103)	-1.834*** (0.103)	-1.836*** (0.103)	-1.830*** (0.103)	-1.176*** (0.171)	-1.180*** (0.172)	-1.186*** (0.172)	-1.177*** (0.171)
# of children under 6	-0.756*** (0.137)	-0.749*** (0.137)	-0.752*** (0.137)	-0.751*** (0.137)	0.0128 (0.163)	0.0117 (0.163)	0.0295 (0.163)	0.0132 (0.163)
# of children between 6-15	0.0399 (0.0682)	0.0459 (0.0682)	0.0415 (0.0682)	0.0365 (0.0681)	0.213** (0.0948)	0.216** (0.0948)	0.224** (0.0951)	0.211** (0.0947)
Husb. High/middle school	-0.207 (0.159)	0.0825 (0.246)	-0.211 (0.159)	-0.207 (0.159)	-0.218 (0.238)	-0.0718 (0.411)	-0.218 (0.234)	-0.217 (0.238)
Husb. University	-0.00698 (0.363)	1.492** (0.717)	0.0299 (0.373)	0.0164 (0.363)	-0.121 (0.414)	-18.09*** (0.419)	-0.0585 (0.414)	-0.120 (0.414)
Husb. Public health i.	-0.457*** (0.143)	-0.327** (0.157)	-0.387*** (0.149)	-0.159 (0.181)	-0.230 (0.233)	-0.205 (0.262)	-0.0251 (0.257)	0.0555 (0.342)
Husb. Private health i.	-0.000193 (0.576)	-0.130 (0.580)	0.0448 (0.575)	-0.0656 (0.581)	0.187 (1.033)	0.172 (1.034)	0.174 (1.035)	0.165 (1.033)
Husb. Green card	0.286 (0.253)	0.292 (0.253)	0.296 (0.253)	0.306 (0.254)	-0.302 (0.490)	-0.312 (0.490)	-0.261 (0.491)	-0.285 (0.491)
Int1-husb. High/middle sch.		-0.448 (0.302)				-0.193 (0.471)		
Int1-husb. Univ.		-1.755** (0.761)				18.02 (.)		
Int2-woman high/middle sch.			-0.790* (0.411)				-0.987** (0.466)	
Int2-woman univ.			19.94 (.)				19.14 (.)	
Int3-home ownership				-0.640*** (0.244)				-0.473 (0.401)

5					6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.216*** (0.0632)	0.231*** (0.0636)	0.215*** (0.0633)	0.217*** (0.0632)	0.261*** (0.0827)	0.261*** (0.0828)	0.260*** (0.0828)	0.258*** (0.0824)
age square	-0.002*** (0.001)	-0.003*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)
High/middle school	0.0665 (0.224)	0.0792 (0.225)	0.0228 (0.426)	0.0674 (0.224)	0.707*** (0.210)	0.707*** (0.210)	0.434 (0.337)	0.709*** (0.210)
University	0.334 (0.518)	0.365 (0.523)	-19.91*** (0.537)	0.337 (0.518)	2.527*** (0.357)	2.526*** (0.358)	2.866*** (0.627)	2.523*** (0.356)
Home ownership	0.793*** (0.201)	0.803*** (0.201)	0.793*** (0.201)	0.794*** (0.288)	-0.483*** (0.168)	-0.488*** (0.168)	-0.487*** (0.168)	-0.0933 (0.248)
Ln(non-wage income)	0.313** (0.140)	0.299** (0.139)	0.314** (0.139)	0.310** (0.140)	-0.611*** (0.149)	-0.615*** (0.149)	-0.612*** (0.149)	-0.607*** (0.149)
# of children under 6	-0.0659 (0.167)	-0.0566 (0.167)	-0.0673 (0.168)	-0.0674 (0.167)	-0.710*** (0.148)	-0.711*** (0.148)	-0.716*** (0.148)	-0.708*** (0.147)
# of children between 6-15	-0.0766 (0.0917)	-0.0776 (0.0920)	-0.0776 (0.0919)	-0.0771 (0.0917)	-0.0770 (0.0944)	-0.0764 (0.0946)	-0.0819 (0.0945)	-0.0776 (0.0942)
Husb. High/middle school	-0.367** (0.185)	0.256 (0.310)	-0.372** (0.186)	-0.367** (0.185)	-0.412** (0.205)	-0.462 (0.320)	-0.411** (0.207)	-0.405** (0.205)
Husb. University	-1.089*** (0.370)	0.203 (0.803)	-1.161*** (0.382)	-1.089*** (0.370)	-0.132 (0.327)	0.631 (0.639)	-0.142 (0.330)	-0.116 (0.326)
Husb. Public health i.	-1.006*** (0.181)	-0.769*** (0.203)	-1.042*** (0.192)	-1.040*** (0.353)	-0.734*** (0.188)	-0.703*** (0.226)	-0.838*** (0.223)	-0.480** (0.224)
Husb. Private health i.	0.277 (0.625)	0.131 (0.631)	0.303 (0.627)	0.272 (0.626)	0.0985 (0.748)	-0.113 (0.781)	0.0310 (0.764)	0.0523 (0.747)
Husb. Green card	-0.459 (0.531)	-0.430 (0.532)	-0.472 (0.531)	-0.456 (0.532)	0.554* (0.336)	0.570* (0.337)	0.541 (0.336)	0.578* (0.336)
Int1-husb. High/middle sch.		-0.861** (0.363)				0.0715 (0.385)		
Int1-husb. Univ.		-1.526* (0.857)				-0.851 (0.664)		
Int2-woman high/middle sch.			0.0824 (0.476)				0.431 (0.392)	
Int2-woman univ.			20.55 (.)				-0.335 (0.684)	
Int3-home ownership				0.0241 (0.387)				-0.646** (0.321)



Table 39. Results of the Multinomial Logit Model for the First Income Quartile  
When Base Category is Non-Participants (Coefficients)

	1				2			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.769*** (0.267)	0.770*** (0.271)	0.419** (0.166)	0.790*** (0.268)	0.763*** (0.265)	0.751*** (0.265)	0.563*** (0.212)	0.777*** (0.270)
age square	-0.010*** (0.003)	-0.010*** (0.004)	-0.005** (0.002)	-0.010*** (0.003)	-0.010*** (0.003)	-0.010*** (0.004)	-0.008*** (0.003)	-0.010*** (0.004)
High/middle school	0.589 (0.722)	0.600 (0.736)	0.914 (1.062)	0.585 (0.727)	0.656 (0.716)	0.593 (0.730)	1.431* (0.742)	0.590 (0.726)
University	3.064 (2.453)	2.060 (3.771)	-1004.2 (1033.9)	3.345 (2.377)	-28.44 (84283646.)	-35.58 (.)	-1038.5 (45816.8)	-36.18 (.)
Home ownership	-0.386 (0.545)	-0.383 (0.558)	-0.356 (0.437)	0.661 (1.014)	0.245 (0.433)	0.242 (0.433)	0.264 (0.415)	0.0926 (0.530)
Ln(non-wage income)	-5.582*** (0.483)	-5.650*** (0.494)	-4.515*** (0.356)	-5.702*** (0.507)	-4.200*** (0.407)	-4.198*** (0.406)	-3.804*** (0.369)	-4.212*** (0.408)
# of children under 6	-1.991** (0.817)	-1.882** (0.835)	-1.100** (0.444)	-2.020** (0.829)	-1.728*** (0.586)	-1.710*** (0.587)	-1.363*** (0.493)	-1.723*** (0.581)
# of children between 6-15	-0.475 (0.326)	-0.438 (0.326)	-0.309 (0.243)	-0.484 (0.332)	-0.00152 (0.220)	0.0229 (0.220)	0.0405 (0.209)	0.00150 (0.221)
Husb. High/middle school	1.276** (0.599)	2.399** (1.110)	0.781 (0.485)	1.278** (0.606)	0.0255 (0.578)	0.680 (0.663)	-0.0527 (0.543)	0.0517 (0.577)
Husb. University	1.701 (1.382)	5.537 (3.779)	1.672 (1.075)	1.879 (1.370)	-35.14 (33374294.)	-54.20 (.)	-2.669 (4.101)	-44.89 (.)
Husb. Public health i.	2.225*** (0.738)	2.850*** (0.927)	1.266** (0.532)	2.827*** (0.933)	-0.126 (0.488)	0.263 (0.531)	0.145 (0.481)	-0.469 (0.715)
Husb. Private health i.	-32.26 (46854142.)	-40.86 (.)	-4.815 (31.88)	-41.77 (.)	-34.36 (50598109.)	-42.79 (.)	-2.383 (5.862)	-43.23 (.)
Husb. Green card	-0.0906 (1.268)	-0.103 (1.279)	-0.209 (0.892)	-0.114 (1.260)	0.839 (0.589)	0.857 (0.589)	0.782 (0.570)	0.849 (0.588)
Int1-husb. High/middle sch.		-1.520 (1.244)				-1.790 (1.258)		
Int1-husb. Univ.		-4.261 (3.867)				11.62 (.)		
Int2-woman high/middle sch.			-0.748 (1.214)				-2.667 (1.882)	
Int2-woman univ.			1027.7 (.)				1040.8 (.)	
Int3-home ownership				-1.447 (1.208)				0.630 (0.913)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.233*** (0.0820)	0.224*** (0.0819)	0.200** (0.0778)	0.239*** (0.0818)	0.484*** (0.184)	0.482*** (0.185)	0.401** (0.165)	0.483*** (0.185)
age square	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.005** (0.002)	-0.005** (0.00219)	-0.004** (0.002)	-0.005** (0.002)
High/middle school	0.157 (0.429)	0.0634 (0.443)	0.559 (0.457)	0.187 (0.426)	0.826 (0.717)	0.788 (0.718)	1.539* (0.822)	0.819 (0.719)
University	-34.10 (44612614.)	-43.49 (.)	-1040.5 (23092.9)	-43.11 (.)	-33.92 (14802755.)	-41.12 (.)	-1041.2 (59456.3)	-40.93 (.)
Home ownership	-0.0117 (0.239)	-0.0230 (0.239)	-0.0187 (0.231)	0.312 (0.274)	0.935** (0.436)	0.918** (0.436)	0.867** (0.416)	0.990* (0.558)
Ln(non-wage income)	-3.824*** (0.269)	-3.819*** (0.269)	-3.609*** (0.250)	-3.818*** (0.270)	-3.839*** (0.453)	-3.796*** (0.451)	-3.720*** (0.405)	-3.847*** (0.451)
# of children under 6	-0.794*** (0.208)	-0.779*** (0.208)	-0.706*** (0.196)	-0.785*** (0.209)	0.129 (0.325)	0.126 (0.327)	0.130 (0.302)	0.127 (0.325)
# of children between 6-15	0.153 (0.118)	0.164 (0.118)	0.146 (0.114)	0.139 (0.118)	0.569*** (0.194)	0.559*** (0.194)	0.498*** (0.186)	0.573*** (0.195)
Husb. High/middle school	0.0406 (0.306)	0.466 (0.360)	0.0251 (0.293)	0.00948 (0.306)	0.294 (0.528)	-0.338 (1.088)	0.342 (0.489)	0.293 (0.528)
Husb. University	-0.413 (1.394)	1.456 (2.474)	0.0998 (1.256)	-0.486 (1.438)	-33.75 (25353048.)	-51.32 (.)	-1.491 (2.958)	-43.73 (.)
Husb. Public health i.	-0.714*** (0.271)	-0.426 (0.296)	-0.581** (0.271)	-0.261 (0.321)	0.505 (0.471)	0.374 (0.519)	0.684 (0.468)	0.540 (0.710)
Husb. Private health i.	0.914 (0.771)	0.929 (0.762)	0.884 (0.745)	0.832 (0.782)	1.763 (1.207)	1.724 (1.216)	1.742 (1.162)	1.790 (1.206)
Husb. Green card	0.385 (0.335)	0.364 (0.335)	0.334 (0.324)	0.373 (0.336)	-0.205 (0.824)	-0.126 (0.826)	-0.218 (0.790)	-0.202 (0.825)
Int1-husb. High/middle sch.		-1.157* (0.619)				0.870 (1.203)		
Int1-husb. Univ.		-45.45 (.)				7.903 (.)		
Int2-woman high/middle sch.			-1.190 (0.915)				-1.413 (1.201)	
Int2-woman univ.			1040.9 (.)				1041.1 (.)	
Int3-home ownership				-1.183** (0.516)				-0.0778 (0.828)

	5				6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.132 (0.114)	0.153 (0.116)	0.131 (0.111)	0.135 (0.115)	0.382** (0.154)	0.381** (0.155)	0.249* (0.127)	0.377** (0.154)
age square	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.006*** (0.002)	-0.006*** (0.002)	-0.004** (0.002)	-0.006*** (0.002)
High/middle school	-0.737 (0.779)	-0.708 (0.783)	-0.141 (0.787)	-0.725 (0.780)	0.780** (0.372)	0.782** (0.371)	0.557 (0.476)	0.779** (0.371)
University	-34.81 (12202859)	-41.71 (.)	-1040.6 (25588.6)	-41.72 (.)	-32.80 (86624876)	-41.08 (.)	-1038.9 (21716.2)	-40.93 (.)
Home ownership	1.168*** (0.409)	1.206*** (0.411)	1.106*** (0.397)	1.086** (0.476)	-0.679** (0.312)	-0.685** (0.312)	-0.669** (0.303)	-0.525 (0.366)
Ln(non-wage income)	0.241 (0.621)	0.191 (0.625)	0.216 (0.614)	0.233 (0.622)	-1.513*** (0.373)	-1.504*** (0.373)	-1.484*** (0.369)	-1.510*** (0.373)
# of children under 6	0.0601 (0.304)	0.0686 (0.304)	0.0665 (0.294)	0.0594 (0.304)	-0.613*** (0.218)	-0.619*** (0.218)	-0.587*** (0.214)	-0.611*** (0.218)
# of children between 6-15	-0.0180 (0.187)	-0.0280 (0.188)	-0.0240 (0.184)	-0.0200 (0.187)	-0.176 (0.151)	-0.185 (0.151)	-0.139 (0.146)	-0.176 (0.151)
Husb. High/middle school	0.392 (0.427)	0.913* (0.526)	0.404 (0.412)	0.387 (0.428)	-0.192 (0.342)	-0.377 (0.442)	-0.179 (0.340)	-0.191 (0.341)
Husb. University	-33.53 (36942451)	-52.24 (.)	-1.163 (3.927)	-42.54 (.)	-34.19 (29742332)	-55.96 (.)	-2.204 (3.327)	-44.15 (.)
Husb. Public health i.	-1.216*** (0.398)	-0.939** (0.432)	-1.082*** (0.396)	-1.485* (0.827)	-1.066*** (0.331)	-1.245*** (0.405)	-1.184*** (0.369)	-0.940** (0.366)
Husb. Private health i.	-34.81 (37037752)	-44.03 (.)	-2.806 (4.243)	-43.80 (.)	-34.43 (38174143)	-43.69 (.)	-2.465 (4.390)	-43.43 (.)
Husb. Green card	-0.340 (0.651)	-0.429 (0.662)	-0.340 (0.642)	-0.338 (0.651)	0.628 (0.392)	0.632 (0.392)	0.593 (0.384)	0.621 (0.392)
Int1-husb. High/middle sch.		-1.190 (0.833)				0.504 (0.627)		
Int1-husb. Univ.		9.354 (.)				11.93 (.)		
Int2-woman high/middle sch.			-1.620 (1.877)				0.545 (0.657)	
Int2-woman univ.			1039.3 (.)				1038.4 (.)	
Int3-home ownership				0.329 (0.900)				-0.464 (0.678)

Table 40. Results of the Multinomial Logit Model for the Fourth Income Quartile When Base Category is Non-Participants (Coefficients)

	1				2			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.558*** (0.0899)	0.551*** (0.0909)	0.564*** (0.0922)	0.558*** (0.0900)	0.0379 (0.128)	0.0335 (0.129)	0.0381 (0.133)	0.0334 (0.128)
age square	-0.008*** (0.001)	-0.008*** (0.001)	-0.008*** (0.001)	-0.008*** (0.001)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)
High/middle school	1.308*** (0.227)	1.329*** (0.230)	1.109** (0.564)	1.309*** (0.226)	-0.0188 (0.444)	0.00511 (0.445)	-0.202 (0.785)	-0.0412 (0.447)
University	4.340*** (0.273)	4.281*** (0.276)	3.483 (2.286)	4.344*** (0.273)	1.785*** (0.557)	1.771*** (0.570)	1.392 (3.185)	1.770*** (0.559)
Home ownership	-0.224 (0.167)	-0.195 (0.168)	-0.235 (0.169)	0.435 (0.510)	-0.313 (0.366)	-0.297 (0.365)	-0.307 (0.374)	0.601 (0.711)
Ln(non-wage income)	-3.323*** (0.199)	-3.150*** (0.192)	-3.330*** (0.202)	-3.321*** (0.200)	-2.958*** (0.371)	-2.827*** (0.363)	-2.929*** (0.379)	-2.931*** (0.373)
# of children under 6	-0.357** (0.158)	-0.294* (0.157)	-0.354** (0.161)	-0.362** (0.158)	-2.147*** (0.742)	-2.086*** (0.725)	-2.106*** (0.736)	-2.166*** (0.755)
# of children between 6-15	-0.442*** (0.111)	-0.436*** (0.111)	-0.444*** (0.112)	-0.436*** (0.111)	-0.315 (0.223)	-0.318 (0.223)	-0.322 (0.229)	-0.298 (0.221)
Husb. High/middle school	-0.225 (0.236)	-0.330 (0.555)	-0.242 (0.241)	-0.221 (0.236)	-0.617 (0.420)	-0.142 (0.656)	-0.626 (0.440)	-0.609 (0.422)
Husb. University	-0.114 (0.269)	2482571.4* (0.288)	-0.152 (0.278)	-0.105 (0.269)	-0.413 (0.568)	-32.52 (.)	-0.430 (0.624)	-0.387 (0.569)
Husb. Public health i.	0.0503 (0.286)	-0.0634 (0.405)	-0.163 (0.467)	0.503 (0.451)	-1.307*** (0.392)	-1.139** (0.494)	-1.301*** (0.494)	-0.459 (0.708)
Husb. Private health i.	3.191*** (0.799)	3.466 (363.2)	3.341*** (0.941)	2.775*** (0.773)	-7.851 (145.5)	-1.749 (4866.9)	-7.970 (218.1)	-7.885 (126.5)
Husb. Green card	-5503.9 (.)	-5513.9 (.)	-5533.8 (.)	-4183.5 (.)	-5506.3 (.)	-5516.2 (.)	-5536.3 (.)	-4184.5 (.)
Int1-husb. High/middle sch.		0.116 (0.606)				-0.728 (0.817)		
Int1-husb. Univ.		-2482571.5 (.)				32.03*** (0.603)		
Int2-woman high/middle sch.			0.228 (0.598)				0.181 (0.904)	
Int2-woman univ.			0.940 (2.297)				0.537 (3.208)	
Int3-home ownership				-0.730 (0.534)				-1.208 (0.811)

	3				4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.184 (0.167)	0.131 (0.144)	0.181 (0.167)	0.189 (0.166)	0.242 (0.173)	0.239 (0.180)	0.243 (0.172)	0.256 (0.174)
age square	-0.003 (0.002)	-0.002 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)
High/middle school	-0.606 (0.471)	-0.623 (0.436)	0.158 (0.871)	-0.625 (0.469)	0.312 (0.434)	0.303 (0.437)	-0.0180 (0.818)	0.342 (0.442)
University	0.721 (0.651)	0.661 (0.601)	-4.511 (58.49)	0.682 (0.651)	-0.189 (0.853)	-0.296 (0.870)	-4.133 (54.35)	-0.198 (0.888)
Home ownership	-0.370 (0.378)	-0.380 (0.356)	-0.357 (0.381)	-1.059 (0.802)	0.287 (0.453)	0.287 (0.461)	0.282 (0.451)	0.422 (0.847)
Ln(non-wage income)	-3.053*** (0.384)	-2.875*** (0.368)	-3.036*** (0.388)	-3.010*** (0.390)	-1.929*** (0.543)	-1.945*** (0.536)	-1.915*** (0.542)	-1.946*** (0.567)
# of children under 6	-1.506** (0.698)	-1.218** (0.565)	-1.473** (0.697)	-1.453** (0.678)	0.354 (0.347)	0.338 (0.361)	0.365 (0.348)	0.339 (0.356)
# of children between 6-15	-0.134 (0.229)	-0.190 (0.204)	-0.123 (0.231)	-0.140 (0.230)	-0.226 (0.226)	-0.234 (0.231)	-0.233 (0.223)	-0.262 (0.235)
Husb. High/middle school	-0.464 (0.426)	-0.261 (0.855)	-0.449 (0.426)	-0.459 (0.422)	0.0935 (0.476)	-0.617 (0.870)	0.0848 (0.476)	0.0953 (0.490)
Husb. University	-0.0823 (0.585)	-22.29*** (0.554)	-0.115 (0.617)	-0.0853 (0.583)	0.395 (0.583)	-29.57*** (0.665)	0.362 (0.588)	0.469 (0.599)
Husb. Public health i.	-0.784* (0.470)	-0.746 (0.542)	-0.587 (0.588)	-1.317** (0.659)	-1.523*** (0.476)	-2.141*** (0.665)	-1.731*** (0.588)	-1.346 (0.866)
Husb. Private health i.	-6.746 (125.4)	-3.768 (24795.6)	-4.283 (40.86)	-6.770 (109.0)	-7.123 (106.5)	-2.355 (11620.8)	-4.492 (35.18)	-6.982 (82.55)
Husb. Green card	-5506.4 (.)	-5515.4 (.)	-5536.1 (.)	-4184.7 (.)	-5494.4 (.)	-5504.7 (.)	-5524.3 (.)	-4174.5 (.)
Int1-husb. High/middle sch.		-0.238 (0.947)				0.991 (1.024)		
Int1-husb. Univ.		22.16 (.)				30.28 (.)		
Int2-woman high/middle sch.			-1.024 (1.000)				0.371 (0.900)	
Int2-woman univ.			5.394 (58.49)				4.089 (54.35)	
Int3-home ownership				0.860 (0.900)				-0.286 (0.982)

	5				6			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	0.158 (0.139)	0.159 (0.139)	0.162 (0.140)	0.160 (0.139)	0.235 (0.185)	0.0210 (0.133)	0.214 (0.167)	0.228 (0.186)
age square	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.004 (0.002)	-0.001 (0.002)	-0.003 (0.002)	-0.004 (0.002)
High/middle school	0.152 (0.407)	0.177 (0.416)	0.183 (0.921)	0.149 (0.407)	0.523 (0.483)	0.299 (0.411)	0.909 (0.649)	0.512 (0.488)
University	0.938 (0.651)	1.093 (0.667)	-3.680 (55.08)	0.928 (0.651)	1.379** (0.679)	1.270** (0.550)	8.669*** (2.088)	1.364** (0.682)
Home ownership	-0.225 (0.403)	-0.152 (0.409)	-0.239 (0.406)	-0.430 (0.888)	-0.117 (0.425)	-0.184 (0.375)	-0.0974 (0.400)	0.580 (0.799)
Ln(non-wage income)	0.177 (0.379)	0.126 (0.374)	0.171 (0.380)	0.175 (0.379)	-0.179 (0.440)	-0.677* (0.407)	-0.231 (0.417)	-0.192 (0.444)
# of children under 6	-0.234 (0.449)	-0.225 (0.445)	-0.230 (0.453)	-0.229 (0.450)	-0.611 (0.472)	-0.445 (0.370)	-0.528 (0.424)	-0.640 (0.473)
# of children between 6-15	-0.313 (0.229)	-0.328 (0.232)	-0.306 (0.232)	-0.317 (0.230)	0.100 (0.234)	0.0271 (0.208)	0.0306 (0.225)	0.100 (0.232)
Husb. High/middle school	-0.737* (0.378)	1.123 (0.821)	-0.765** (0.382)	-0.739* (0.378)	-0.415 (0.508)	-1.385 (1.262)	-0.334 (0.474)	-0.410 (0.511)
Husb. University	-1.674*** (0.607)	-29.81*** (0.619)	-1.789*** (0.637)	-1.670*** (0.607)	-0.428 (0.630)	-25.17*** (0.570)	-0.494 (0.606)	-0.388 (0.635)
Husb. Public health i.	-0.827* (0.457)	-0.0309 (0.654)	-0.927* (0.539)	-1.028 (0.843)	-1.141** (0.507)	-1.509*** (0.582)	-2.096*** (0.642)	-0.537 (0.806)
Husb. Private health i.	-6.640 (92.49)	-1.993 (3124.0)	-4.486 (46.10)	-6.234 (68.62)	3.633*** (0.846)	19.34 (246.4)	3.491*** (0.916)	3.318*** (0.842)
Husb. Green card	-5506.1 (.)	-5515.2 (.)	-5536.1 (.)	-4185.8 (.)	-5507.9 (.)	-5517.9 (.)	-5538.6 (.)	-4186.6 (.)
Int1-husb. High/middle sch.		-2.259** (0.905)				1.341 (1.331)		
Int1-husb. Univ.		27.98 (.)				25.26 (.)		
Int2-woman high/middle sch.			-0.0137 (1.003)				0.164 (0.801)	
Int2-woman univ.			4.895 (55.08)				-6.890*** (2.194)	
Int3-home ownership				0.264 (0.973)				-0.941 (0.915)

Table 41. Results of the Multinomial Logit Model When Base Category is Formal Work (Coefficients)

	2				3			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.246** (0.103)	-0.248** (0.103)	-0.239** (0.103)	-0.246** (0.103)	-0.367*** (0.0779)	-0.368*** (0.0779)	-0.365*** (0.0779)	-0.369*** (0.0777)
age square	0.004*** (0.001)	0.004*** (0.001)	0.003** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)
High/middle school	-1.062*** (0.268)	-1.066*** (0.268)	-0.741* (0.446)	-1.061*** (0.268)	-2.320*** (0.254)	-2.336*** (0.256)	-1.905*** (0.423)	-2.315*** (0.254)
University	-2.522*** (0.439)	-2.488*** (0.445)	-2.296*** (0.713)	-2.524*** (0.438)	-4.594*** (0.545)	-4.660*** (0.562)	-24.73*** (0.563)	-4.594*** (0.544)
Home ownership	0.0322 (0.205)	0.0286 (0.205)	0.0331 (0.205)	0.218 (0.374)	-0.0597 (0.162)	-0.0633 (0.162)	-0.0523 (0.163)	-0.0647 (0.322)
Ln(non-wage income)	0.324** (0.144)	0.329** (0.145)	0.314** (0.144)	0.318** (0.144)	0.175 (0.116)	0.177 (0.116)	0.171 (0.117)	0.178 (0.116)
# of children under 6	-0.931*** (0.272)	-0.921*** (0.273)	-0.926*** (0.273)	-0.923*** (0.273)	-0.0516 (0.165)	-0.0409 (0.165)	-0.0487 (0.165)	-0.0443 (0.165)
# of children between 6-15	0.0894 (0.122)	0.101 (0.122)	0.0926 (0.122)	0.0875 (0.122)	0.379*** (0.0927)	0.389*** (0.0928)	0.379*** (0.0927)	0.377*** (0.0927)
Husb. High/middle school	-0.190 (0.258)	0.177 (0.431)	-0.189 (0.256)	-0.185 (0.258)	-0.179 (0.205)	0.156 (0.381)	-0.188 (0.205)	-0.184 (0.206)
Husb. University	-0.584 (0.428)	0.456 (0.906)	-0.484 (0.433)	-0.557 (0.427)	-0.314 (0.397)	1.375 (0.841)	-0.293 (0.407)	-0.297 (0.397)
Husb. Public health i.	-1.512*** (0.246)	-1.252*** (0.304)	-1.376*** (0.314)	-1.247*** (0.328)	-1.436*** (0.207)	-1.236*** (0.251)	-1.421*** (0.260)	-1.340*** (0.267)
Husb. Private health i.	-43.92 (.)	-44.45 (.)	-35.68 (70471811)	-34.06 (27969561)	1.059 (1.172)	0.575 (1.085)	1.443 (1.354)	1.016 (1.165)
Husb. Green card	1.439* (0.839)	1.487* (0.838)	1.429* (0.839)	1.469* (0.841)	1.571** (0.773)	1.603** (0.771)	1.521** (0.772)	1.590** (0.775)
Int1-husb. High/middle sch.		-0.568 (0.492)				-0.507 (0.430)		
Int1-husb. Univ.		-1.259 (0.934)				-1.969** (0.873)		
Int2-woman high/middle sch.			-0.533 (0.503)				-0.692 (0.505)	
Int2-woman univ.			-0.448 (0.823)				20.31 (.)	
Int3-home ownership				-0.484 (0.441)				-0.205 (0.371)

	4				5			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.382*** (0.100)	-0.383*** (0.100)	-0.378*** (0.100)	-0.383*** (0.100)	-0.467*** (0.0850)	-0.454*** (0.0854)	-0.468*** (0.0851)	-0.467*** (0.0850)
age square	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)
High/middle school	-1.250*** (0.292)	-1.238*** (0.292)	-0.629 (0.495)	-1.249*** (0.292)	-1.845*** (0.261)	-1.833*** (0.262)	-1.964*** (0.523)	-1.843*** (0.261)
University	-5.577*** (1.061)	-5.592*** (1.062)	-25.05*** (1.070)	-5.570*** (1.061)	-4.947*** (0.546)	-4.918*** (0.551)	-25.53*** (0.565)	-4.945*** (0.546)
Home ownership	0.374 (0.229)	0.381* (0.229)	0.383* (0.230)	0.308 (0.419)	0.892*** (0.224)	0.900*** (0.225)	0.894*** (0.224)	0.528 (0.397)
Ln(non-wage income)	0.833*** (0.186)	0.831*** (0.186)	0.821*** (0.187)	0.831*** (0.186)	2.322*** (0.163)	2.310*** (0.163)	2.321*** (0.163)	2.319*** (0.163)
# of children under 6	0.717*** (0.189)	0.720*** (0.189)	0.732*** (0.189)	0.720*** (0.189)	0.638*** (0.193)	0.651*** (0.193)	0.636*** (0.193)	0.639*** (0.193)
# of children between 6-15	0.553*** (0.115)	0.559*** (0.115)	0.561*** (0.115)	0.551*** (0.115)	0.263** (0.113)	0.265** (0.113)	0.260** (0.113)	0.263** (0.113)
Husb. High/middle school	-0.191 (0.273)	0.00121 (0.507)	-0.195 (0.270)	-0.194 (0.273)	-0.339 (0.230)	0.329 (0.433)	-0.348 (0.231)	-0.344 (0.230)
Husb. University	-0.428 (0.447)	-18.21*** (0.454)	-0.381 (0.447)	-0.433 (0.447)	-1.396*** (0.409)	0.0866 (0.982)	-1.484*** (0.420)	-1.402*** (0.409)
Husb. Public health i.	-1.209*** (0.280)	-1.115*** (0.330)	-1.059*** (0.337)	-1.125*** (0.397)	-1.986*** (0.240)	-1.678*** (0.288)	-2.076*** (0.293)	-2.221*** (0.409)
Husb. Private health i.	1.246 (1.482)	0.878 (1.425)	1.573 (1.608)	1.247 (1.476)	1.336 (1.243)	0.836 (1.175)	1.702 (1.388)	1.353 (1.234)
Husb. Green card	0.984 (0.885)	0.998 (0.883)	0.964 (0.883)	0.999 (0.887)	0.827 (0.912)	0.881 (0.910)	0.753 (0.911)	0.829 (0.913)
Int1-husb. High/middle sch.		-0.252 (0.565)				-0.920* (0.484)		
Int1-husb. Univ.		17.81 (.)				-1.740* (1.027)		
Int2-woman high/middle sch.			-0.889 (0.557)				0.180 (0.571)	
Int2-woman univ.			19.52 (.)				20.93 (.)	
Int3-home ownership				-0.0378 (0.492)				0.459 (0.483)



	6				7			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.422*** (0.0986)	-0.424*** (0.0987)	-0.423*** (0.0985)	-0.426*** (0.0983)	-0.683*** (0.0574)	-0.685*** (0.0575)	-0.683*** (0.0573)	-0.684*** (0.0574)
age square	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.010*** (0.001)	0.010*** (0.001)	0.010*** (0.001)	0.010*** (0.001)
High/middle school	-1.204*** (0.245)	-1.206*** (0.245)	-1.552*** (0.449)	-1.202*** (0.245)	-1.912*** (0.139)	-1.913*** (0.139)	-1.987*** (0.316)	-1.911*** (0.138)
University	-2.755*** (0.383)	-2.756*** (0.384)	-2.755*** (0.685)	-2.759*** (0.383)	-5.281*** (0.193)	-5.282*** (0.193)	-5.621*** (0.496)	-5.282*** (0.193)
Home ownership	-0.384** (0.192)	-0.391** (0.192)	-0.387** (0.192)	-0.359 (0.362)	0.0990 (0.104)	0.0970 (0.104)	0.101 (0.104)	-0.266 (0.279)
Ln(non-wage income)	1.398*** (0.165)	1.396*** (0.165)	1.395*** (0.165)	1.402*** (0.165)	2.009*** (0.0865)	2.011*** (0.0866)	2.007*** (0.0867)	2.008*** (0.0865)
# of children under 6	-0.00585 (0.172)	-0.00303 (0.173)	-0.0128 (0.172)	-0.00168 (0.172)	0.704*** (0.0993)	0.708*** (0.0993)	0.703*** (0.0993)	0.707*** (0.0994)
# of children between 6-15	0.262** (0.113)	0.266** (0.113)	0.255** (0.113)	0.263** (0.113)	0.339*** (0.0670)	0.343*** (0.0671)	0.337*** (0.0670)	0.340*** (0.0670)
Husb. High/middle school	-0.384 (0.242)	-0.389 (0.433)	-0.388 (0.244)	-0.382 (0.242)	0.0276 (0.140)	0.0730 (0.310)	0.0231 (0.140)	0.0232 (0.140)
Husb. University	-0.439 (0.361)	0.515 (0.784)	-0.464 (0.363)	-0.429 (0.361)	-0.307* (0.182)	-0.116 (0.612)	-0.323* (0.183)	-0.313* (0.182)
Husb. Public health i.	-1.713*** (0.240)	-1.612*** (0.300)	-1.872*** (0.311)	-1.661*** (0.298)	-0.979*** (0.162)	-0.910*** (0.208)	-1.034*** (0.225)	-1.181*** (0.212)
Husb. Private health i.	1.157 (1.259)	0.593 (1.210)	1.430 (1.378)	1.134 (1.254)	1.059 (1.084)	0.705 (1.005)	1.399 (1.244)	1.081 (1.074)
Husb. Green card	1.839** (0.809)	1.880** (0.808)	1.766** (0.809)	1.862** (0.811)	1.286* (0.747)	1.310* (0.746)	1.226 (0.747)	1.284* (0.749)
Int1-husb. High/middle sch.		0.0123 (0.492)				-0.0592 (0.328)		
Int1-husb. Univ.		-1.065 (0.800)				-0.213 (0.614)		
Int2-woman high/middle sch.			0.529 (0.498)				0.0980 (0.328)	
Int2-woman univ.			0.0436 (0.739)				0.378 (0.505)	
Int3-home ownership				-0.210 (0.424)				0.435 (0.296)

Table 42. Results of the Multinomial Logit Model for the First Income Quartile When Base Category is Formal Work (Coefficients)

	2				3			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.006 (0.363)	-0.019 (0.366)	-0.034 (0.381)	-0.012 (0.367)	-0.535* (0.273)	-0.546** (0.277)	-0.602** (0.290)	-0.551** (0.274)
age square	-0.000 (0.005)	-0.000 (0.005)	-0.000 (0.005)	-0.000 (0.005)	0.007* (0.004)	0.007* (0.004)	0.007** (0.004)	0.007* (0.004)
High/middle school	0.0669 (0.956)	-0.00730 (0.975)	-0.959 (1.540)	0.00517 (0.965)	-0.432 (0.813)	-0.537 (0.832)	-1.966 (1.431)	-0.397 (0.817)
University	-39.51 (.)	-34.64 (.)	-46.19 (.)	-39.52 (.)	-46.16 (.)	-37.55 (.)	-51.33 (.)	-46.46 (.)
Home ownership	0.631 (0.667)	0.625 (0.678)	0.748 (0.695)	-0.568 (1.105)	0.374 (0.574)	0.360 (0.587)	0.469 (0.597)	-0.348 (1.019)
Ln(non-wage income)	1.382*** (0.496)	1.452*** (0.511)	1.433*** (0.528)	1.490*** (0.518)	1.758*** (0.449)	1.832*** (0.465)	1.872*** (0.479)	1.884*** (0.475)
# of children under 6	0.262 (0.984)	0.172 (0.999)	0.177 (0.997)	0.297 (0.993)	1.197 (0.832)	1.103 (0.849)	1.107 (0.846)	1.235 (0.843)
# of children between 6-15	0.473 (0.378)	0.461 (0.378)	0.461 (0.380)	0.486 (0.384)	0.628* (0.337)	0.602* (0.337)	0.636* (0.338)	0.623* (0.342)
Husb. High/middle school	-1.251 (0.788)	-1.719 (1.238)	-1.356* (0.789)	-1.227 (0.797)	-1.235* (0.643)	-1.933* (1.126)	-1.309** (0.637)	-1.269* (0.650)
Husb. University	-46.85 (.)	-53.73 (18914578C	-46.85 (.)	-46.77 (.)	-2.113 (1.911)	-4.081 (4.480)	-2.486 (2.031)	-2.365 (1.949)
Husb. Public health i.	-2.351*** (0.845)	-2.587** (1.027)	-2.572*** (0.951)	-3.296*** (1.122)	-2.938*** (0.758)	-3.276*** (0.943)	-3.359*** (0.870)	-3.088*** (0.950)
Husb. Private health i.	-23.10 (.)	-19.93 (28872474E	-24.76 (.)	-22.45 (.)	21.18*** (1.277)	18.79*** (1.283)	19.62*** (1.276)	21.60*** (1.279)
Husb. Green card	0.930 (1.353)	0.960 (1.362)	0.876 (1.346)	0.963 (1.344)	0.475 (1.269)	0.467 (1.280)	0.360 (1.267)	0.487 (1.260)
Int1-husb. High/middle sch.		-0.271 (1.713)				0.362 (1.342)		
Int1-husb. Univ.		15.88 (.)				-33.19 (.)		
Int2-woman high/middle sch.			-43.14 (.)				1.099 (1.924)	
Int2-woman univ.			45.29 (.)				45.49 (.)	
Int3-home ownership				2.078 (1.452)				0.264 (1.271)

	4				5			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.284 (0.322)	-0.288 (0.325)	-0.343 (0.335)	-0.307 (0.323)	-0.636** (0.290)	-0.617** (0.294)	-0.699** (0.306)	-0.654** (0.291)
age square	0.005 (0.004)	0.004 (0.004)	0.005 (0.004)	0.005 (0.004)	0.009** (0.004)	0.008** (0.004)	0.009** (0.004)	0.009** (0.004)
High/middle school	0.237 (0.998)	0.188 (1.007)	-0.889 (1.598)	0.234 (1.003)	-1.326 (1.058)	-1.308 (1.070)	-2.688* (1.592)	-1.310 (1.062)
University	-43.98 (.)	-39.18 (.)	-52.66 (.)	-44.27 (.)	-44.88 (.)	-39.77 (.)	-55.12 (.)	-45.07 (.)
Home ownership	1.320* (0.684)	1.302* (0.694)	1.442** (0.704)	0.329 (1.134)	1.553** (0.679)	1.589** (0.690)	1.650** (0.697)	0.425 (1.116)
Ln(non-wage income)	1.743*** (0.600)	1.854*** (0.609)	1.820*** (0.622)	1.855*** (0.617)	5.823*** (0.780)	5.841*** (0.790)	5.904*** (0.797)	5.935*** (0.796)
# of children under 6	2.120** (0.874)	2.008** (0.891)	2.027** (0.885)	2.146** (0.885)	2.051** (0.870)	1.951** (0.887)	1.958** (0.883)	2.079** (0.882)
# of children between 6-15	1.044*** (0.374)	0.997*** (0.374)	1.045*** (0.374)	1.057*** (0.379)	0.457 (0.375)	0.410 (0.376)	0.460 (0.375)	0.464 (0.380)
Husb. High/middle school	-0.982 (0.783)	-2.737* (1.527)	-0.999 (0.770)	-0.985 (0.788)	-0.884 (0.733)	-1.486 (1.221)	-0.920 (0.723)	-0.891 (0.738)
Husb. University	-45.45 (.)	-49.86 (.)	-45.85 (.)	-45.61 (.)	-44.23 (.)	-51.78 (.)	-44.90 (.)	-44.42 (.)
Husb. Public health i.	-1.719** (0.858)	-2.476** (1.043)	-2.090** (0.964)	-2.287** (1.146)	-3.441*** (0.836)	-3.789*** (1.020)	-3.895*** (0.943)	-4.313*** (1.243)
Husb. Private health i.	22.03 (.)	19.59 (.)	20.48 (.)	22.56 (.)	-23.54 (.)	-20.17 (.)	-25.11 (.)	-23.03 (.)
Husb. Green card	-0.115 (1.478)	-0.0235 (1.491)	-0.202 (1.472)	-0.0879 (1.470)	-0.249 (1.420)	-0.326 (1.434)	-0.401 (1.416)	-0.224 (1.412)
Int1-husb. High/middle sch.		2.389 (1.700)				0.329 (1.490)		
Int1-husb. Univ.		12.16 (.)				13.62 (.)		
Int2-woman high/middle sch.			1.024 (2.072)				-41.84 (.)	
Int2-woman univ.			48.02 (.)				48.22 (.)	
Int3-home ownership				1.369 (1.434)				1.776 (1.501)

	6				7			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.387 (0.307)	-0.388 (0.310)	-0.461 (0.321)	-0.413 (0.308)	-0.769*** (0.267)	-0.770*** (0.271)	-0.837*** (0.284)	-0.790*** (0.268)
age square	0.004 (0.004)	0.004 (0.004)	0.005 (0.004)	0.004 (0.004)	0.010*** (0.004)	0.010*** (0.004)	0.011*** (0.004)	0.010*** (0.003)
High/middle school	0.191 (0.797)	0.182 (0.809)	-1.990 (1.454)	0.195 (0.801)	-0.589 (0.722)	-0.600 (0.736)	-2.567* (1.390)	-0.585 (0.727)
University	-43.86 (.)	-38.14 (.)	-52.16 (.)	-44.28 (.)	-3.064 (2.453)	-2.060 (3.771)	-7.507 (5.365)	-3.345 (2.377)
Home ownership	-0.293 (0.622)	-0.302 (0.634)	-0.192 (0.641)	-1.186 (1.070)	0.386 (0.545)	0.383 (0.558)	0.484 (0.567)	-0.661 (1.014)
Ln(non-wage income)	4.068*** (0.586)	4.146*** (0.595)	4.193*** (0.607)	4.192*** (0.605)	5.582*** (0.483)	5.650*** (0.494)	5.696*** (0.510)	5.702*** (0.507)
# of children under 6	1.378 (0.842)	1.263 (0.860)	1.264 (0.856)	1.409* (0.854)	1.991** (0.817)	1.882** (0.835)	1.886** (0.831)	2.020** (0.829)
# of children between 6-15	0.299 (0.356)	0.253 (0.357)	0.302 (0.356)	0.308 (0.362)	0.475 (0.326)	0.438 (0.326)	0.481 (0.326)	0.484 (0.332)
Husb. High/middle school	-1.468** (0.681)	-2.775** (1.183)	-1.536** (0.677)	-1.469** (0.687)	-1.276** (0.599)	-2.399** (1.110)	-1.344** (0.593)	-1.278** (0.606)
Husb. University	-45.89 (.)	-54.49 (.)	-46.30 (.)	-46.03 (.)	-1.701 (1.382)	-5.537 (3.779)	-2.108 (1.367)	-1.879 (1.370)
Husb. Public health i.	-3.291*** (0.802)	-4.095*** (1.004)	-4.017*** (0.929)	-3.768*** (0.994)	-2.225*** (0.738)	-2.850*** (0.927)	-2.788*** (0.855)	-2.827*** (0.933)
Husb. Private health i.	-23.16 (.)	-19.83 (.)	-24.77 (.)	-22.66 (.)	20.26*** (1.207)	17.86*** (1.216)	18.70*** (1.209)	20.77*** (1.206)
Husb. Green card	0.718 (1.315)	0.735 (1.326)	0.554 (1.311)	0.735 (1.307)	0.0906 (1.268)	0.103 (1.279)	-0.0667 (1.265)	0.114 (1.260)
Int1-husb. High/middle sch.		2.024 (1.378)				1.520 (1.244)		
Int1-husb. Univ.		16.19 (.)				4.261 (3.867)		
Int2-woman high/middle sch.			3.309* (1.735)				2.735* (1.625)	
Int2-woman univ.			46.33 (.)				41.89 (.)	
Int3-home ownership				0.983 (1.374)				1.447 (1.208)

Table 43. Results of the Multinomial Logit Model for the Fourth Income Quartile  
When Base Category is Formal Work (Coefficients)

	2				3			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.763*** (0.167)	-0.761*** (0.168)	-0.769*** (0.167)	-0.768*** (0.167)	-0.636*** (0.197)	-0.638*** (0.197)	-0.643*** (0.196)	-0.630*** (0.197)
age square	0.010*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.009*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.009*** (0.002)
High/middle school	-1.465*** (0.503)	-1.425*** (0.505)	-1.158 (0.922)	-1.501*** (0.505)	-2.037*** (0.517)	-2.028*** (0.531)	-0.857 (0.974)	-2.062*** (0.518)
University	-2.866*** (0.613)	-2.806*** (0.629)	-2.362** (1.044)	-2.920*** (0.615)	-4.091*** (0.717)	-3.902*** (0.744)	-22.02*** (0.769)	-4.099*** (0.716)
Home ownership	-0.149 (0.399)	-0.149 (0.399)	-0.135 (0.399)	-0.128 (0.848)	-0.172 (0.409)	-0.193 (0.409)	-0.145 (0.411)	-1.526 (0.941)
Ln(non-wage income)	0.505 (0.360)	0.516 (0.363)	0.510 (0.362)	0.525 (0.362)	0.516 (0.387)	0.562 (0.395)	0.529 (0.389)	0.526 (0.390)
# of children under 6	-2.360** (1.035)	-2.362** (1.036)	-2.362** (1.036)	-2.348** (1.035)	-1.140 (0.759)	-1.139 (0.765)	-1.116 (0.759)	-1.160 (0.765)
# of children between 6-15	0.192 (0.250)	0.188 (0.251)	0.192 (0.250)	0.197 (0.248)	0.414 (0.254)	0.406 (0.256)	0.426* (0.255)	0.399 (0.257)
Husb. High/middle school	-0.391 (0.479)	0.121 (0.833)	-0.365 (0.483)	-0.382 (0.479)	-0.220 (0.481)	0.609 (1.077)	-0.180 (0.480)	-0.214 (0.480)
Husb. University	-0.300 (0.624)	-18.07*** (0.665)	-0.255 (0.668)	-0.258 (0.624)	0.0475 (0.642)	3.272** (1.309)	0.0544 (0.676)	0.0365 (0.643)
Husb. Public health i.	-1.208** (0.478)	-0.917 (0.626)	-0.886 (0.680)	-1.023 (0.809)	-0.810 (0.536)	0.0444 (0.772)	-0.261 (0.743)	-1.766** (0.788)
Husb. Private health i.	-43.44 (.)	-40.89 (.)	-43.68 (.)	-43.41 (.)	-42.76 (.)	-38.04 (.)	-43.34 (.)	-42.75 (.)
Husb. Green card	-2.102 (.)	-2.129 (.)	-2.086 (.)	-1.724 (.)	-1.751 (.)	-0.871 (.)	-1.503 (.)	-2.230 (.)
Int1-husb. High/middle sch.		-0.779 (1.000)				-1.059 (1.192)		
Int1-husb. Univ.		17.67 (.)				-3.782*** (1.379)		
Int2-woman high/middle sch.			-0.383 (1.049)				-1.520 (1.113)	
Int2-woman univ.			-0.604 (1.236)				17.96 (.)	
Int3-home ownership				-0.219 (0.943)				1.617 (1.033)

	4				5			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.477** (0.237)	-0.498** (0.241)	-0.474** (0.237)	-0.478** (0.236)	-0.679*** (0.176)	-0.678*** (0.176)	-0.678*** (0.176)	-0.677*** (0.176)
age square	0.008*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)
High/middle school	-0.991* (0.553)	-0.969* (0.546)	-1.183 (1.003)	-0.991* (0.554)	-1.323*** (0.473)	-1.276*** (0.480)	-0.900 (1.051)	-1.329*** (0.473)
University	-5.430*** (1.170)	-5.543*** (1.169)	-23.97*** (1.218)	-5.425*** (1.172)	-3.861*** (0.707)	-3.679*** (0.722)	-22.31*** (0.754)	-3.881*** (0.706)
Home ownership	0.534 (0.541)	0.593 (0.546)	0.525 (0.539)	0.0378 (1.027)	-0.00843 (0.439)	0.0616 (0.442)	-0.00959 (0.440)	-1.006 (1.019)
Ln(non-wage income)	1.136* (0.672)	1.050 (0.677)	1.151* (0.670)	1.161* (0.669)	3.876*** (0.440)	3.809*** (0.437)	3.870*** (0.440)	3.881*** (0.440)
# of children under 6	0.914** (0.428)	0.889** (0.436)	0.914** (0.429)	0.914** (0.429)	0.236 (0.482)	0.226 (0.477)	0.233 (0.485)	0.247 (0.483)
# of children between 6-15	0.184 (0.301)	0.196 (0.301)	0.168 (0.298)	0.176 (0.300)	0.242 (0.258)	0.228 (0.260)	0.249 (0.260)	0.229 (0.258)
Husb. High/middle school	0.326 (0.612)	-0.439 (1.029)	0.365 (0.623)	0.338 (0.613)	-0.476 (0.451)	1.429 (0.973)	-0.483 (0.455)	-0.483 (0.451)
Husb. University	0.866 (0.720)	-21.45*** (0.918)	0.876 (0.739)	0.860 (0.722)	-1.544** (0.667)	-19.36*** (0.686)	-1.617** (0.697)	-1.552** (0.667)
Husb. Public health i.	-1.982*** (0.591)	-2.900*** (0.950)	-2.034** (0.837)	-2.251** (1.050)	-0.844 (0.538)	0.0824 (0.764)	-0.592 (0.719)	-1.603* (0.952)
Husb. Private health i.	-43.03 (.)	-42.35 (.)	-43.52 (.)	-43.88 (.)	-43.49 (.)	-40.75 (.)	-42.44 (.)	-43.18 (.)
Husb. Green card	11.00 (.)	10.26 (.)	10.91 (.)	11.30 (.)	-1.963 (.)	-0.907 (.)	-2.187 (.)	-2.048 (.)
Int1-husb. High/middle sch.		1.495 (1.312)				-2.340** (1.075)		
Int1-husb. Univ.		23.03 (.)				17.59 (.)		
Int2-woman high/middle sch.			0.363 (1.129)				-0.477 (1.145)	
Int2-woman univ.			18.77 (.)				18.62 (.)	
Int3-home ownership				0.490 (1.191)				1.148 (1.107)

	6				7			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
age	-0.533** (0.247)	-0.520** (0.250)	-0.536** (0.248)	-0.549** (0.245)	-0.838*** (0.108)	-0.837*** (0.108)	-0.840*** (0.109)	-0.837*** (0.108)
age square	0.008** (0.003)	0.008** (0.003)	0.008** (0.003)	0.008** (0.003)	0.01*** (0.001)	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)
High/middle school	-0.978* (0.576)	-0.960* (0.579)	-2.348* (1.292)	-0.979* (0.577)	-1.479*** (0.245)	-1.462*** (0.246)	-1.144* (0.592)	-1.483*** (0.245)
University	-3.393*** (0.789)	-3.373*** (0.794)	-3.441** (1.496)	-3.422*** (0.788)	-4.795*** (0.301)	-4.779*** (0.303)	-3.874*** (0.780)	-4.809*** (0.301)
Home ownership	0.0909 (0.481)	0.0932 (0.483)	0.0636 (0.483)	-0.00887 (1.014)	0.223 (0.177)	0.225 (0.177)	0.233 (0.177)	-0.560 (0.554)
Ln(non-wage income)	3.447*** (0.531)	3.457*** (0.539)	3.479*** (0.534)	3.436*** (0.534)	3.704*** (0.220)	3.702*** (0.220)	3.707*** (0.221)	3.711*** (0.221)
# of children under 6	-0.197 (0.554)	-0.204 (0.552)	-0.237 (0.556)	-0.191 (0.551)	0.471*** (0.170)	0.469*** (0.170)	0.465*** (0.171)	0.479*** (0.170)
# of children between 6-15	0.628** (0.278)	0.650** (0.279)	0.555** (0.281)	0.635** (0.275)	0.556*** (0.119)	0.560*** (0.120)	0.556*** (0.120)	0.548*** (0.119)
Husb. High/middle school	-0.177 (0.597)	-0.687 (1.269)	-0.155 (0.630)	-0.168 (0.598)	0.263 (0.252)	0.244 (0.570)	0.286 (0.254)	0.261 (0.252)
Husb. University	-0.220 (0.735)	1.384 (1.464)	-0.287 (0.770)	-0.203 (0.734)	0.136 (0.287)	0.501 (0.977)	0.179 (0.291)	0.125 (0.287)
Husb. Public health i.	-1.199** (0.603)	-1.067 (0.810)	-1.739** (0.843)	-1.156 (0.976)	-0.0140 (0.301)	0.0664 (0.428)	0.336 (0.495)	-0.566 (0.487)
Husb. Private health i.	0.473 (1.623)	-0.778 (1.864)	0.645 (1.688)	0.212 (1.623)	-0.242 (1.142)	-0.446 (1.251)	-0.468 (1.146)	-0.378 (1.125)
Husb. Green card	-3.235 (.)	-3.360 (.)	-4.309 (.)	-3.070 (.)	85.66 (.)	85.80 (.)	86.20 (.)	64.93 (.)
Int1-husb. High/middle sch.		0.558 (1.406)				-0.00896 (0.626)		
Int1-husb. Univ.		-1.810 (1.567)				-0.410 (1.002)		
Int2-woman high/middle sch.			1.875 (1.397)				-0.405 (0.633)	
Int2-woman univ.			0.370 (1.643)				-1.029 (0.815)	
Int3-home ownership				-0.0481 (1.136)				0.871 (0.579)

## REFERENCES

- Angel-Urdinola, D., Haimovich, F. & Robayo, M. (2009). Is social assistance contributing to higher informality in Turkey?. World Bank, Washington D. C.
- Başlevent, C. & Onaran, O. (2003). Are Married Women in Turkey More Likely to Become Added or Discouraged Workers?. *Labour*, Vol.27 (3), 439-458.
- Baslevent, C., & Onaran, O. (2004). The effect of export-oriented growth on female labor market outcomes in Turkey. *World Development*, 32, 1375–1393.
- Baslevent, C. & Tunali, I. (2002). Married women’s participation choices and productivity differentials: Evidence from urban Turkey. Workshop on Gender, Work and Family in the Middle East and North Africa, Mahdia, Tunisia, June 7-11.
- Becker G.S. (1965). A theory of the allocation of time. *Economic Journal*, 75, 493-517.
- Becker G. S. (1974). A theory of marriage: Part II. NBER Chapters, in: Marriage, family, human capital, and fertility, 11-26 National Bureau of Economic Research, Inc.
- Becker, G. S. (1985). Human capital, effort and the sexual division of labor. *Journal of Labor Economics*, 3(1), 33-58.
- Beneria, L. (1995). Toward a greater integration of gender in economics. *World Development*, 23(11), 1839-1850.
- Beneria, L., Floro, M., Grown, C. & MacDonald, M. (2000). Introduction: Globalization and gender. *Feminist Economics*, 6(3), vii-xvii.
- Beneria, L. ( 2001). Changing employment patterns and the informalisation of jobs: general trends and gender dimensions. International Labour Organisation, Geneva.
- Beneria, L. (2001). Shifting the risk: New employment patterns, informalization, and women’s work. *International Journal of Politics, Culture and Society*, 15(1), 27-53.
- Bergmann, B. R. (1981). The economic risks of being a housewife. *American Economic Review*, 71(2), 81-86.
- Blau, F., Ferber, M. A. & Winkler, A. E. (1998). The economics of women, men and work, Englewood Cliffs, NJ: Prentice Hall.
- Buchmueller, T. C. & Valletta, R. G., 1999. The effect of health insurance on married female labor supply. *Journal of Human Resources*, 34 (1), 42–70.
- Cagatay, N. & Berik, G. (1991). Transition to export-led growth in Turkey: Is there a feminization of employment?. *Capital & Class*, 15, 153-177.
- Cameron, A. C. & Trivedi, P. K. (2005). Microeconometrics- Methods and applications. New York: Cambridge University Press.



- Carr, M. & Chen, M.A. (2002). Globalization and the informal economy and how trade and investment impact on the working poor. Working Paper on the Informal Economy No.1. Geneva, ILO.
- Castells, M. & Portes, A. (1989). World underneath: The origins, Dynamics, and effects of the informal economy. in Alejandro Portes (ed.) The informal economy: Studies in advanced and less developed countries, 11-37, Baltimore, MD: Johns Hopkins University Press.
- Cerrutti, M. (2000). Economic reform, structural adjustment and female labor force participation in Buenos Aires, Argentina. *World Development*, 28(5), 879-891.
- Chen, M., Vanek, J., Lund, F., Heintz, J., Jhabvala, R. & Bonner, C. (2005). Progress of the world's women 2005: Women, work and poverty. United Nations Development Fund for Women (UNIFEM).
- Chou, Y. J. & Staiger, D. (2001). Health insurance and female labor supply in Taiwan. *Journal of Health Economics*, 20, 187-211.
- Çınar, M. (1994). Unskilled urban migrant women and disguised employment: Home-working women in Istanbul, Turkey. *World Development*, 22(3), 369–380.
- Cogan, J. F. (1981). Fixed costs and labor supply. *Econometrica*, 49(4), 945-963.
- Connelly, R. (1992). The effect of child care costs on married women's labor force participation. *The Review of Economics and Statistics*, 74(1), 83-90.
- Dedeoglu, S. (2004). Working for family: The role of women's informal labor in the survival of family-owned garment ateliers in Istanbul, Turkey. Women and International Development, *Southampton University Working Paper #281*.
- Dayioglu, M. and Kasnakoglu, Z. (1997). Kentsel kesimde kadin ve erkeklerin isgucune katilimleri ve kazanc farkliliklari [Male and female labor force participation rates in urban areas and earnings differentials between genders], *METU Studies in Development*, 24 (3), 329-361
- Dayioglu, M. (2000). Labor market participation of women in Turkey. in Gender and Identity Construction: Women in Central Asia, the Caucasus and Turkey, F. Acar and A. Gunes-Ayata (eds), Köln: Brill, 44 –73.
- Dayioglu, M. And Ercan, H. (2009). Labor market policies and institutions with a focus on inclusion, equal opportunities and the informal economy. Working paper.
- Dayioglu, M. & Kirdar, M. G. (2010). Determinants of and trends in labor force participation of women in Turkey. *State Planning Organization of the Republic of Turkey and World Bank Welfare and Social Policy Analytical Work Program*, Working Paper #5.

- De Hoyos, R. E. (2006). Structural modelling of female labor participation and occupation decisions. Cambridge Working Papers in Economics 0611, Faculty of Economics, University of Cambridge.
- DPT&World Bank, (2009). Türkiye’de kadınların işgücüne katılımı: Eğilimler, belirleyici faktörler ve politika çerçevesi [Labor force participaiton of women in Turkey: Trends, determinants and policy responses].
- Edwards L. N. & Field-Hendrey, E. (2002). Home-based work and women's labor force decisions. *Journal of Labor Economics*, 20(1), 170-169.
- Ferber, M. A. & Birnbaum, B. G. (1977). The new home economics: Retrospects and prospects. *Journal of Consumer Re-search*, 4(1), 19-28.
- Funkhouser, E. (1996). The urban informal sector in Central America: Household survey evidence. *World Development*, 24(11), 1737-1751.
- Fussell, M. E. (2000). Making labour flexible: The recomposition of Tijuana’s maquiladora female labour force. *Feminist Economics*, 6(3), 59-80.
- Gindling, T. H. (1991). Labor market segmentation and the determination of wages in the public, private-formal, and informal sectors in San Jose, Costa Rica. *Economic Development and Cultural Change*, 39(3), 584-605.
- Glick, P. & Sahn, D. E. (1997). Gender and education impacts on employment and earnings in West Africa: Evidence from Guinea. *Economic Development and Cultural Change*, 45(4), 793-823.
- Gronau, R. (1973). The effect of children on the housewife's value of time. *Journal of Political Economy*, (83), 168-199
- Gündüz-Hoşgör, A. & Smits, J. (2008). Variation in labor market participation of married women in Turkey. *Women’s Studies International Forum*, 31, 104-117.
- Gustafsson, S. & Jacobsson, R. (1985). Trends in female labor force participation in Sweden. *Journal of Labor Economics*, 3(1), 256-74.
- Heckman, J. J. (1974). Shadow prices, market wages, and labor supply. *Econometrica*, (42), 679-694.
- Heckman, J. J. & Willis, R. J. (1977). A beta logistic model fort he analysis of sequential labor force participation by married women. *The Journal of Political Economy*, 85(1), 27-58.
- Hill, M. A. (1983). Female labor force participation in developing and developed countries-consideration of the informal sector. *The Review of Economics and Statistics*, 65(3), 459-468.

- Hill, M. A. (1989). Female labor supply in Japan: Implications of the informal sector for labor force participation and hours of work. *The Journal of Human Resources*, 24(1), 143-161.
- Ilkcaracan, I. & Acar, S. (2007). The determinants of female labor force participation in Turkey: Who cares determines who participates and who does not. *Annual Conference on Feminist Economics (IAFFE)*, Bangkok, Thailand, June 29 - July 1.
- Kabeer, N. & Mahmud, S. (2004). Globalization, gender, and poverty: Bangladeshi women workers in export and local markets. *Journal of International Development* 16, 93–109.
- Kantor, P. (2009). Women's exclusion and unfavorable inclusion in informal employment in Lucknow, India: Barriers to voice and livelihood security. *World Development*, 37(1), 194-207.
- Khandker, S. R. (1987). Labor market participation of married women in Bangladesh. *The Review of Economics and Statistics*, 69(3), 536-541.
- Kucera, D. & Roncolato, L. (2008). Informal employment: Two contested policy issues. *International Labor Review*, 147(4), 321-348.
- Lee, K. W. & Cho, K. (2005). Female labor force participation during economic crises in Argentina and the Republic of Korea. *International Labour Review*, 144(4), 423-449.
- Maloney, W. F. (2004). Informality revisited. *World Development*, 32(7), 1159-1178.
- Mincer, J. (1962). Labor force participation of married women. in *Aspects of labor economics*. New York: National Bureau of Economic Research.
- Ogawa, N. & Ermisch, J. F. (1996). Family structure, home time demands, and the employment patterns of Japanese married women. *Journal of Labor Economics*, 14(4), 677-702.
- Oppenheimer, V. K. (1977). The sociology of women's economic role in the family. *American Sociological Review*, 42 (3), 387-406.
- Ozar, S. & Gunluk-Senesen, G. (1998). Determinants of female (non-) participation in the urban labor force in Turkey. *METU Studies in Development*, 25(2), 311-328.
- Ozler, S. (2000). Export orientation and female share of employment: Evidence from Turkey. *World Development*, 28(7), 1239-1248.
- Royalty, A. B. & Abraham, J. M. (2006). Health insurance and labor market outcomes: Joint decision-making within households. *Journal of Public Economics*, 90, 1561-1577
- Schultz, T.P. (1990). Testing the neoclassical model of family labor supply and fertility. *Journal of Human Resources*, 25(4), 599-634.

- Seguino, S. (2000). Accounting for Asian economic growth: Adding gender to the equation. *Feminist Economics*, 6(3), 27-58.
- Sen, A. (1990). Gender and cooperative conflicts in Irene Tinker (ed.) *Persistent inequalities: Women and world development*, 123-149, New York: Oxford University Press.
- Smits, J., Ultee, W., & Lammers, J. (1996). Effects of occupational status differences between spouses on the wife's labor force participation and occupational achievement: findings from 12 European countries. *Journal of Marriage and the Family*, 58, 101-115.
- Soopramien, D. & Johnes, G. (2001). A new look at gender effects in participation and occupation choice. *Labour*, 15(3), 415-443.
- Standing, G. (1999). Global feminization through flexible labor: A theme revisited. *World Development*, 27(3), 583-602.
- Tansel, A. (2001). Wage earners, self employed and gender in the informal sector in Turkey. Working Papers 0102, Economic Research Forum.
- Tiefenthaler, J. (1994). A multisector model of female labor force participation: Empirical evidence from Cebu Island, Philippines. *Economic Development and Cultural Change*, 42(4), 719-42.
- Wellington, A. J. & Cobb-Clark, D. A. (2000). The labor-supply effects of universal health coverage: What can we learn from individuals with spousal coverage. *Research in Labor Economics*, 19, 315-344.
- Wood, A. (1991). North-South trade and female labour in manufacturing: An asymmetry. *Journal of Development Studies*, 27(2), 168-189.