DROPPING OUT OF THE LABOR FORCE: WOMEN IN TURKEY
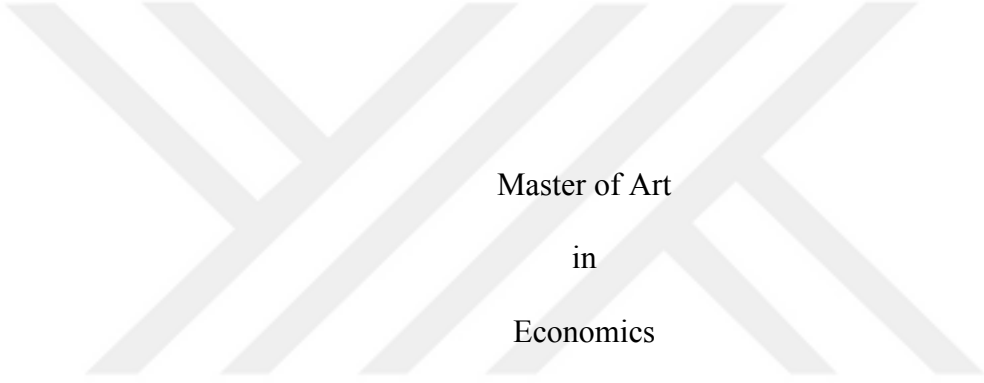
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DROPPING OUT OF THE LABOR FORCE: WOMEN IN TURKEY

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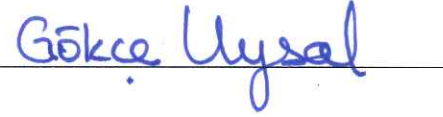Dropping Out of the Labor Force:

Women in Turkey

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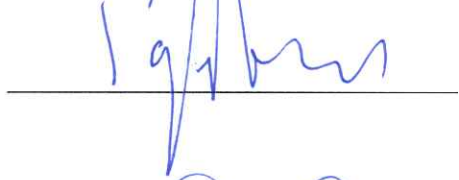(Thesis Advisor)

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ABSTRACT

Dropping Out of the Labor Force: Women in Turkey

According to the microdata of Household Labor Force Survey (HLFS) in 2017, the half amount of women are not in the labor force even though they are not disabled, retired or students. The share of the women who have worked before and who are no longer in the labor force substantially increased from 24.4 percent to 31.7 percent in the period of 2010-2017. As the share of women who dropped out women increased, the share of women who are not in the labor force and have never worked before substantially decreased by 18.0 percentage points and recorded at 19.2 percent in 2017. The data implies that women have more problems staying in labor force than entering it. I find that being married, having a child aged between 0 and 5 and having low education levels women increase the likelihood of labor market exit. Also, working in agriculture, the sector of other services, and elementary occupations or as craft workers, plant and machine operators, and assemblers increases the probability of labor market exit. Lastly, I examined the dropping out of the labor market exit by education levels. I find that marginal effect of the last sector is similar across education levels while the effect of occupational groups are different for women in every education levels.

ÖZET

Türkiye İşgücü Piyasasından Düşen Kadınlar

Hanehalkı işgücü anketlerine göre (HİA) emekli, hasta ve öğrenciler dışında kalan kadınların yarısından fazlası 2017 itibari ile işgücü dışındadırlar. Daha önce çalışmış fakat halihazırda işgücünde olmayan kadınların 2010'da yüzde 24,4 olan oranı 2017'de yüzde 31,7'ye ulaşmıştır. İşgücünden çıkan kadın oranının artışına paralel olarak, hayatında hiç çalışmamış ve şu an işgücünün dışında olan kadınların oranı ise 18 yüzde puan azalarak 2017'de yüzde 19,2 olarak kaydedilmiştir. Bu oranlar kadınların işgücü piyasasına girmekten çok işgücünde kalmakta daha çok zorlandıklarına işaret etmektedir. Analizler sonucunda evli olmanın, 0-5 yaş arası çocuğa sahip olmanın ve düşük eğitimli olmanın işgücünden çıkma ihtimalini arttırdığını buluyorum. Aynı zamanda tarımda, diğer hizmetlerde ve niteliksiz işlerde çalışmak, sanatkâr, tesis ve makine operatörü ve montajcı olarak çalışmak, işgücünden çıkma ihtimalini arttırmaktadır. Son olarak, kadınların işgücünden çıkmalarını eğitim seviyelerine ve evlilik durumlarına göre inceledim. Bulgular, çalışılan son sektörün etkisi her eğitim durumundaki kadın için benzer iken, son meslek grubu farklı eğitim düzeyindeki kadınlar için farklılaştığını göstermektedir.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

The low female labor force participation rate is one of the major problems in Turkey's labor market. According to World Bank, 32.2 percent of women were in labor force in 2017. Nonetheless, more than half of the women who are not in labor force have ever worked and dropped out of labor force due to several reasons (63 percent in HLFS 2017). This fact demonstrates that women have a lot more issues to stay in labor market than to enter it; therefore, low labor force participation might be regarded as a weak labor force attachment in Turkey. The objective of this paper is to shed light on the reasons why females are dropping out of labor force and to suggest a policy recommendations in order to retain women in the labor market as much as possible. Therefore, I am conducting a research targeting women who have previously worked by examining the differences between women currently in the labor force and those who dropped out of the labor force.

Existing studies on the low female labor force participation rate in Turkish labor economic literature are about the determinants of participation. In the lights of those researches, my evaluation is based on the determinants that make it difficult for females to stay in labor force. Moreover, as far as I know it is the first empirical study about dropping out of labor force in Turkey.

Before the results, I introduce the gender characteristics of labor market in Turkey and descriptive statistics of women who are currently in employment and no longer in labor force. The statistics about gender characteristics are shown that share of ever-worked non-participant women in the cluster of all women[1] has increased

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[1] The term of all women refers the sample of women who are not disabled, not retired or not student. It will be argued in the chapter of Data and Sample.

1

over the period of 2010-2017 and reached 31.7 percent, whereas this share is 3.6 percent for men. In addition, the share of non-participant women (men) who have never worked before decreased to 19.2 percent (0.8 percent). In other words, there is an eagerness or compulsion to enter the labor force for women and the dropping out is obviously women's issue in Turkey. The descriptive tables indicate that the labor market and individual characteristics of employed and dropped out women have substantial differences. My estimation methodology investigates whether these differences are significant or not?

In the estimation methodology, I control not only individual characteristics but also the last sector, occupation status and working status so as to understand the effect of previous job experience on the labor market exit. Working as an employer, own account worker and an unpaid family worker declines the plausibility of dropping out of women at least 13.7 percent compared to the wage earners. Wage earners are different from other working status in terms of flexible working time. It is easier to arrange their own working hours and holidays for women who work as an employer, own account worker or unpaid family worker compared to the wage earners. Therefore, I use the ever-worked wage earners for further analysis. For the sample of ever-worked wage earners, working in "agriculture" and "other services" significantly increase the probability of labor market exit. In contrast, working in other sectors significantly decrease the likelihood of dropping outs compared to the "wholesale retail trade, transportation and storage, accommodation, information and communication". Among the occupational groups, working as "craft and related trades workers" or "elementary occupations" significantly increases the probability of dropping out of labor force, while the effects of other occupations are negative and

2

significant except for plant and machine operators, and assemblers. I also examine these effects thoroughly across educational groups and marital status.

Besides the last job experiences, I also control the variables of traditional division of labor to determine the labor market exit. The estimation results reveals the fact that being married, having a child aged between 0 and 5 and lower education level has still a negative effect on labor market exit. Average marginal effects of being married or having a child aged 0-5 are positive on labor market exit across every education level i.e.: in a regression of labor market exit on married (having a child 0-5) controlling for other individual and labor market characteristics, the marginal effect is 21 percent (20 percent) for less than high school graduates and 12 percent (10 percent) for university graduates. In addition, husband's education level and unemployment status are still important for labor market exit decision for married women. Especially husbands with a college degree have a significant positive effect on labor market exit for ever-worked women in every education level (11.1 percent for less than high school graduates, 5.3 percent and 2 percent for high school and vocational high school graduates, respectively) except for college graduates (-3.8 percent). While taking everything into the consideration, traditional division of labor still have a substantial impact on being in labor force, alongside with the studies that point out the importance of the gender roles for decision of labor market participation.

CHAPTER 2

STUDIES OF LABOR MARKET EXIT

There are a number of interdisciplinary studies about female labor force participation; however, determinants that make staying in labor force difficult for females are not commonly investigated as participation issue.

Vandecasteele and Esche (2016) examined the effects of partner's socio-economic position on females' labor market exit by using German Socio-economic Panel data. They found that females being together with high status husband are more likely to exit labor force compared to the females with lower status partners. Similarly, Bernardi (1999) examined the effects of husbands on married women's employment in Italy. He points out the fact that husband's education and occupational status have a positive impact on women's exit from labor market.

The study of Hotchkiss, Pitts and Walker (2011) investigated the females' decision about labor market exit upon the birth of a child. They also examined the causal relationship between exit rates of women giving birth and the change labor force participation rates over the period of 1994-2002. They reveal that probability of dropping out of labor force upon a birth of a child increases with being married and decreases with college degree. Though, they came to the conclusion that exit rates of single and less educated women started to increase at the time of birth and the exit patterns of those may be consistent with changing female labor force participation over the period 1994-2002. They point out that possible reason for the increasing exit rates may be State Children's Health Insurance Program (SCHIP) in 1997 which provides health insurance for low income children who are not poor enough for general help program. Ilkkaracan (2012) mentioned the effects of marital status and

a birth of a child on labor market exit for women in Turkey by considering different work-family balance environment in 7 OECD countries. She points out that women enter the labor force before marriage and exit after the birth of first child because of the lack of the policies on work-family balance in Turkey. She underlines the political discourse in Turkey as a reason for the absence of care facilities because conservative political understanding emphasizes the women's role as a mother and wife and provides financial aid by the government for women being at home. According to the comparisons among different policies in different countries, she concluded that legislation on parental leave should be based on gender equality; moreover, care services should be widely accessible. Uysal et al (2015) examined the decision of participation for at least high school graduated females in Turkey by conducting a survey with 3600 people and in-depth interview with 70 females. They arrive at a decision that marital status and having a child affect the labor force participation of educated females. They underline that not only improvements of institutional child care facilities as well as proliferation of secure flexible working arrangements make being in labor force easier for inactive women who are close to be in labor force.

In addition to the child care cases, Schneider et all (2013) investigated the labor market exit intentions of employees providing informal care to older adults by considering their current work environment with gender based analysis. They found out that risk of labor market exit significantly and strongly decreased for employed women who provided care for elderly with a supervision. In addition, they shed light on the importance of flexible work arrangements which increase the labor market attachment for women caregivers to older person. They focus on the traditional

gender roles as a possible reason of gender differences and suggest the further investigation for this case.

Vos, Kalwij and Kapteyn (2011) examine the effects of reforms on Disability Insurance, Early Retirement benefit and Unemployment Insurance on labor market exit for senior workers in Netherlands by using Income Panel Study of Netherlands. These reforms contributed stricter eligibility rules and the major changes in the amount of benefit and its period. They came to a decision that reforms of disability insurance and early retirement affected the shrinkage in labor market exit of elderly employees. On the gender basis, they stated that probability of labor market exit for employed women is less plausible through these three reforms compared to the male workers.

There are also some studies that regard the working conditions as a determination of labor market exit. Firstly, Gould and Saupe (1989) conducted the research on the determinants of off-farm labor market entry compared to the off-farm labor market exit for married farm women in Wisconsin. They expressed that vocational training is effective to eliminate the negative effects of increasing age for entry into off-farm work. Furthermore, they stated that on the job training is quite important for staying in labor force. Lastly, as it was mentioned in many studies on labor market exit, the authors demonstrate that having a child raised the probability of an exit from the off-farm labor market. Eyüboğlu, Özar and Tanrıöver (2000) construct 5 focus groups and 23 in-depth interviews to understand the working conditions for females in urban areas and the reasons for quitting working life in Turkey. According to their study, age and education are the main factors to determine the working conditions. Members in the study mentioned that they decided to quit their jobs after having a child. The participants of survey state that they

decided to be out of the employment due to the only their spouses' decision or the decision made together. Lastly, Desai and Waite (1991) examined the relationship between occupational characteristics and women's withdrawal from work. For this purpose, they investigated the argument that women prefer to work at occupations that maintain them the combination of employee and mother roles. According to the authors, the effects of occupations should be the strongest during pregnancy and early years after the first birth; therefore, they examined these periods for women in employment. They found out that occupational characteristics that increase the cost of dropping out of labor force (wages, job-specific training and high level of education) diminish the probability of leaving from work. All women are affected from the cost of dropping out of labor force; however, women with low work commitment are also influenced by financial situations.

Flippen and Tienda (2000) studied the pre-retirement labor force participation behavior of Black, White and Hispanic male and female in the US to understand how patterns of labor market exit are being different among groups by using multinomial logit regression. They finalized that likelihood of not being in labor force are higher for women than men. Women's being more likely to respond unemployment by dropping out of labor force than men is explained by them. Moreover, in parallel to this case they are more likely to drop out of labor force overtime. They underline that women's unemployment rates are not higher than men's or their retirements are not as low as men's.

The descriptive study of Uysal and Genc (2018), the one of the latest study in Turkey about labor market exit, shed light on the gender norms and nature of the job as the reasons of dropping outs by using HLFS 2016. They suggest that women who dropped out of labor force are older, less educated, more likely married and have

more children compared the women remaining in labor force; moreover, they are likely to work in agriculture, manufacturing and have unqualified occupations. KEIG Platform (2018) also investigated that who has the highest possibility of labor market exit by using descriptive statistics of women who exited from labor force one year ago. They end up the fact that most of the women in manufacturing sector dropped out of labor force and come back to their home. They also point out that risk of dropping out is the highest for craft workers, service and sales workers and women in elementary occupations.

In addition to the limited exit literature, the studies related with female labor force participation is highly valuable for women's labor market exit analysis. Many studies for Turkey have focused on the labor supply model by emphasizing the importance of education on labor force participation (Baslevent & Onaran, 2003; Ince and Demir, 2006; Tansel 2001; Gündüz Hoşgör & Smits, 2008; Kasnakoglu & Dayioglu, 1997; Taymaz, 2010; Özar, Günlük, Şenesen, 1998; Ucdoruk and Demirbilek, 1995) In economic literature, there is a fact that increasing human capital investment makes the female participation rates higher; however, the gap between participation rates of highly educated women and men is still wide in Turkey.[2] In parallel with this gap, there are a great deal of studies that argued human capital variables cannot explain the female labor market participation on its own even if they continue to be important factors for affecting females' participation. They stated low level of female labor force participation might be explained better by social and cultural values (Güner and Uysal 2014; Eyüboğlu, Özar and Tanrıöver 2000; Göksel, 2013; Gündüz-Hoşgör and Smits, 2008; Ilkkaracan, 2012) In addition to these studies, as an alternative to labor supply model, Moghadam (1998) have

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[2] Among university graduates, the female participation rate is 72.7 percent while male participation rate is 86.5 percent.

stated following constraints on women employments: household conditions and traditional gender division of labor, gender roles in society and social infrastructure, economics condition and legal system.

Besides, there are many studies that examine the relationship between growth, macroeconomic conditions and female labor force participation. These studies indicate that female labor force participation rates follow a U-shaped pattern with an increase in economic development which is measured by GDP (Goldin, 1994; İlkkaracan and Tunalı, 2010; Dayıoğlu and Kırdar, 2011; Kızılırmak, 2008; Tansel, 2002). They argued that changing the production patterns both within the family and the nation raises the household earnings and this strong income effect result in the increasing dropping of labor force for women.

In sum, labor market exit is not commonly investigated in Turkey as labor force participation. In economic literature, studies on female labor force participation in Turkey principally emphasize on the importance of higher education and the obstacles in relation to gender roles. In the light of the mentioned studies, this study aims to conduct empirical research that elucidates the determinants women's dropping out of labor force.

CHAPTER 3

EMPIRICAL STRATEGY

My goal is to analyze the factors behind the labor market exit focused on the women who have previously worked by examining the differences between women currently in the labor force[3] and those who dropped out of the labor force. It should be noted that HLFS includes the dropping outs women who left their job within eight years before reference category. In other words, the sample I use for the rest of the paper includes the women in currently in labor force and those exit from labor force within the last eight years and they are named as ever-worked women for the rest of the paper. It should be noted that sample of ever-worked women does not include the women who never worked before and those who dropped out more than 8 years ago before the reference years. [4] The empirical analysis relies on a logistic regression of the ever-worked women. The labor market exit decision might be estimated by following equation where the dependent variable LFE stands for the labor market exit decision of woman i in year t. It takes 0 when the ever-worked woman is a participant and 1 when she is no longer in the labor force.

$$logit(LME_{it}) = \beta_0 + \beta_1 Sector_{it} + \beta_2 Occupation_{it} + \beta_3 WorkStatus_{it} + \beta_4 Year_i$$
$$+ \beta_5 X_{it} + \beta_6 RegionalUnemployment_{it} + u_{it}$$

The X_{it} includes the individual characteristics such as education, age, marital status and having children aged 0 and 5i and 6 and 14. Sector ($Sector_{it}$), occupation ($Occupation_{it}$) and work status ($WorkStatus_{it}$) refer to the last sector, occupation and work status for women who are no longer in employment and the current ones

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[3] The state of women currently in labor force includes employed women and unemployed women who have previously worked.

[4] For more information on ever-worked sample can be found in the chapter of data and sample.

for women who are employed. The independent variable of RegionalUnemployment$_{it}$ indicates the non-agricultural unemployment rate in NUTS2 regions. Lastly, year specifies the reference year in HLFS.

It can be said that decision of labor market exit is about to comparison between the life time utilities that might be got from employment conditions and labor market exit. I categorize the explanatory variables as follows: variables which are related to labor market conditions and the variables of life cycle or household division of labor. Wages, working hours, informality and all factors of labor market conditions can be considered as the variables that affect to stay in the labor force. Moreover, the variables of traditional division of labor force and life cycle might be more crucial in the decision of labor market exit.

Firstly, the education levels, the last sectors, occupational groups and employment status and regional unemployment (RegionalUnemployment$_{it}$) might define the labor market conditions. These variables are directly related to working conditions in the job that women might be employed. Yılmaz (2010) clarified that working environment of women are experienced with many health risk and includes many risks such as discrimination, non-ergonomic working conditions, mobbing and sexual harassment. Therefore, working at some sectors or occupations which cannot be considered as better work might increase the probability of labor market exit. For instance, Izdes and Yucel (2016) stated that gender gap in terms of favorable work is significant to the detriment of women in manufacturing sectors. Therefore, probability of dropped out from labor force after working in manufacturing sectors might be higher compared to the other sectors. In contrast, working as professionals or in public administration, education and health services might decrease the probability of labor market exit for women since they have better working

conditions. Education level are also an important determination of labor market exit since it is substantial for the nature of the job that women might be employed. For instance, it might be said that less than high school graduate women are more likely to work with high informality rates and low wages. Bad working conditions for less educated women might push them out of the employment. Thus, education level is not only crucial for employment conditions but also risk of unemployment.

Secondly, the number of kids aged between 0 and 5, and 6 and 14, being married and age are the variables of life cycle and traditional division of labor force. Age is considered as life cycle variable since it affects being married and having a child. It is expected that women are less likely in labor force at lower ages since they continue to their education and more likely in labor force after they finish their education. Then, labor market exit is observed upon marriage and child care. After a certain age of their children, they might participate in the labor force again. The independent variables of marital status and having children in 0-5 and 6-14 age groups are considered as gender division of labor. Ilkkaracan (2012) were interested in gender roles as binding constraints on female labor supply in Turkey; moreover, she found that marriage and kids are the main barriers for female participation across education groups. Turkey have substantial numbers of women getting married and giving births. According to the TNSA (2013) the share of never married women aged between 40 and 44 in all women are limited to 2.1 percent and only 5.7 percent of women have not a child. As it is shown in the data, being married and having a child are almost universal in Turkey. Thus, being married is expected to be a pushing factor for labor market exit of women. Having children aged between 0 and 5 can also be regarded as an encouraging factor since the looking after the children are seen as the primary responsibility of mother at home. To sum up, as it was mentioned

in the study of Uysal et all (2015), gender norms force the women to decide to have a job or a child.

Besides being married, the education levels and ages of husbands might be considered as household livelihood variables or variables in traditional gender division of labor and have an important impact on married women's labor market exit. In the case of married couples, the exit probability might be lower at higher education levels of husbands. In contrast, the plausibility of exit might be higher at higher education levels of husbands for women because of the income effect in parallel with the study of Ilkkaracan (2012). She stated that increase in the education level of household head decreases the probability of female labor force participation. As a drawback, HLFS includes the information of wages for only people who are currently employed as wage earners. Therefore, the age and education level of husbands are used as proxies for household income.

CHAPTER 4

DATA AND SAMPLE

Turkish Household Labor Force Survey (HLFS) data is used for the empirical work. It is a nationally-representative dataset executed by Turkish Statistical Institute (TURKSTAT) and implemented by Eurostat guidelines since 2004. Based on the HLFS, the ever-worked sample that I use, is restricted with the following criteria.

First of all, as it is used in the Uysal and Genc (2018), women who are retired, disabled or students are excluded from the sample. It might not be optimal to facilitate the return of these women into the labor market. In the survey, reasons of not being in labor force is asked to ever work females not in labor force. The answers to this question like "being a student" (11.8 percent), "a retired" (5.4 percent) and "a disabled" (6 percent) have quite low shares (HLFS, 2017). For instance, encouraging students to continue their education rather than to participate to labor force would be the most efficient policy proposal for increasing labor force participation in the future. Disabled and retired people might need special social policies.

Secondly, the ever-worked sample is restricted to women aged between 15 and 44. Most of the ever-worked women (57.2 percent) in 2017 are aged between 15 and 44 years old. Also, the labor market commitment of these ages are stronger since the retirement of women is possible at the age of 45 because of early retirement regulations in Turkey.

Thirdly, the information on women's last job experiences such as last sectors, occupational groups, working status are clarified in the HLFS.[5] However, the questions about the past work experience are asked only to survey participants who

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[5] HLFS includes the data on the current sector, occupational group and working status for employed women and the last ones for dropped out women and unemployed women.

left their last job within the last eight years before the reference year. Therefore, the reasons of leaving job, information on the last sector and occupational group are available for the less number of women. In other words, I focus on the women who have worked before and left from their job within the eight years before the reference years. For instance, I cannot examine the women's sectors, occupational group and working status who dropped out of the labor force in 2001 by using the HLFS for 2010-2017. In addition, TURKSTAT changed the answers of the question about last sector over time in HLFS. In order to use largest and consistent time period in terms of the last sector I use the HLFS between 2010 and 2017. Also it should be noted that HLFS have two occupational code ISCO88 and ISCO08 over the period 2010-2017. It includes the ISCO08 for pre-2012 while data from 2012 onward includes ISCO88 occupational codes.

In addition, it should be noted that HLFS includes the information on woman, her children and her husband under the certain circumstances that they live in the same house. In other words, the information of "number and age of kids" and "the education level and age of spouse" are defined only for women who live in the same house with her kids and spouse, respectively. Finally, TURKSTAT announced some important methodological changes in the HLFS in February 2014. The definition of unemployment and the population projections based on the Address Based Population Registration System (ABPRS) were updated. It means that main changes are about the sampling.[6] On the one hand, my regression analysis are not weighted; therefore, it is expected that methodological changes in HLFS might not affect my

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[6] For more information about the revision of TURKSTAT:
https://betam.bahcesehir.edu.tr/en/2018/12/gender-based-revision-in-the-household-labor-force-surveys/

results. On the other hand, the revised microdata for the pre-2014 period is not available.

Taking all these into the consideration, analysis of labor market exit is conducted for 458,848 ever worked women who are not retired, not disabled and not student and aged between 15 and 44 over the period of 2010-2017. More detailed information about the number of ever-worked women in different groups are shown in Appendix A.

CHAPTER 5

GENDER CHARACTERISTICS OF THE LABOR MARKET IN TURKEY

AND DESCRIPTIVE STATISTICS

5.1 Labor market characteristics in Turkey

Turkey has the lowest female labor force participation rate (32.2 percent) among

OECD countries (World Bank, 2019). Turkey's low participation rate is followed by

Italy (39.4 percent). However, it should be noted that female labor force participation

gap between Italy and Turkey is remarkable (7.2 percentage points). In addition,

Mexico and Chile as emerging countries like Turkey have female labor force

participation rates -44.3 percent and 50.8 percent, respectively- which are not even

close to Turkey's.

On the one hand, the participation rate among women aged between 15 and

44 experienced an increasing trend in the period of 2005-2017 and enhanced from

27.4 percent to 41.8 percent (see Figure 1). On the other hand, the steady trend in

men's participation rates is not surprising since their rates are already high with 77.6

percent on average over the same period. Even the increasing participation of

women, the 35.2 percentage points participation gap between men and women is still

remarkable. The participation gap gets smaller in higher education levels. According

to the HLFS for 2017, the participation gap between men and women is 46.6

percentage points for the ones being less than high school graduates, whereas it is

30.9 percentage points for high school graduates and 16.4 percent for university

graduates.

Besides the participation rates, the non-agricultural unemployment rates of

men and women experienced the similar trends in the period of 2005-2012. The

unemployment rates of both men and women reached the highest levels due to the financial crisis of 2008-2009 (23.4 percent for women, 17.3 percent for men). At the same time, the gender gap in non-agricultural unemployment rates decreased to lowest level with 6.2 percentage points. After the crisis, the unemployment rates reduced for both women and men until 2012. Then, the unemployment rate of women regularly increased and reached 20.4 percent. On the contrary, the men's unemployment rate has stabilized and recorded as 11.4 percent in 2017. As women and male unemployment rates moved in opposite directions, in 2017, the gender gap in non-agricultural unemployment rates advanced to 9.0 percentage points which is the highest unemployment gap recorded over the period of 2005-2017.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female labor force participation	27.4	28.1	28.2	29.4	31.4	33.2	34.3	35.2	37.0	37.3	39.0	40.5	41.8
Male labor force participation rate	78.9	78.0	78.8	78.8	77.9	77.8	78.1	76.6	76.9	77.3	76.7	76.4	77.1
Female non-agricultural unemployment	20.2	19.3	18.8	19.4	23.4	21.6	19.1	17.8	18.9	17.9	18.6	19.7	20.4
Male non-agricultural unemployment	13.2	12.3	12.4	13.3	17.3	14.1	11.3	10.5	10.8	10.8	11.0	11.6	11.4

Figure 1. Labor force participation and non-agricultural unemployment rates (Ages 15-44, %)

The reasons for not looking for a job might give crucial insights behind the low female labor force participation in Turkey. According to the Table 1, the reasons for women's non-participation can be classified into three main titles: reasons related to traditional division of labor, nature of the job and working conditions and other

reasons. The data shows that traditional division of labor are the main reasons for non-participation. In 2010, the 56.3 percent of non-participant women stated that they do not look for a job since they are "engaged with household chores". This share increased and reached 64.1 percent in 2017. The study of Kongar and Memis (2017) point out the gender gap in paid and unpaid work by using time use surveys in Turkey. They state that women with kids aged 0 and 5 spend 6 hours 49 minutes for unpaid work while husbands spend only 1 hours. Table 1 also shows that the share of nonparticipant women stating, "looking after children or adults in need of a care in the family" as a reason for nonparticipation decreased by 4.3 percentage points and recorded as 7.8 percent in 2017 compared to 2010. Kongar and Memis (2017) also mention that highest employment rate of women is observed in those without children. After having children, the employment rate substantially decreases and it cannot recover in further periods of life. It can be interpreted as having a child is a driving factor in dropping out of labor market for women. Lastly, 3.3 percent nonparticipant women are not looking for a job because of the family and personal reasons in 2017. The content of these reasons cannot be known exactly; however, it may be related to gender roles.

According to the reasons about the nature of the job, 1.3 percent nonparticipant women stated, not believing in finding a job appropriate for his/her as a reason for nonparticipation in 2010 and increased to 1.8 percent in 2017. These women might be considered as discouraged workers. In addition, because having made too much effort seeking before, but could not found, the women not currently looking for a job might also be considered as discouraged workers. Thus, the share of discouraged workers in nonparticipants does not change over the period and recorded as 2.4 percent. The share of women not looking a job because of "seasonal work",

19

did not change and was limited to 0.5 percent in 2017. Lastly, the ratio of women who are not in the labor force since they continue their education or training, decreased by 5.2 percentage points and reached 17.4 percent in 2017. As it is mentioned in the data section, the reasons for being sick, disabled, retired and student are excluded from the further analysis.

Table 1. Reasons for not Looking for a Job for Non-Participants (Ages 15-44, %)

	2010	2017	Changes
Working seasonally / Waiting recall from previous job	0.5	0.5	0.0
Having made too much effort seeking before but could not found	1.1	0.6	-0.5
Do not believe in finding a job appropriate for his/her skills/qualifications	1.3	1.8	0.5
Continuing to his/her education or training	22.6	17.4	-5.2
Engaged with household chores	56.3	64.1	7.8
Retired	0.1	0.2	0.1
Looking after children in need of care in the family	12.1	7.8	-4.2
Looking after adults in need of care in the family	0.4	0.4	0.0
Looking after both adults and children in need of a care in the family	0.1	0.4	0.2
Other family or personal reasons	2.4	3.3	0.9
Disabled or sick	3.0	2.7	-0.4
Other	0.2	1.0	0.8

Table 2 indicates the total number of women[7] in Turkey aged between 15 and 44 and their composition in terms of their labor market status. The 38.4 percent of women were in labor force while 61.6 percent women were not in labor force in 2010. On the other hand, 82.9 percent of men in labor force and the share of non-participant men is limited to 5.1 percent (see Appendix B). The employed women are the 32.4 percent of my sample and the share of unemployed women were limited to 6.0 percent in 2010. The low share of unemployed women can be related with the

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[7] Total number of women does not include the women who are retired, disabled or students.

low number of women in labor force. It can be also said that once they enter in the labor force they may be able to find a job and be employed. When we examine the non-participant women, the 24.4 percent of women dropped out of labor force with several reasons while this share is 3.5 percent for men (see Appendix B) This fact points out that dropping out of labor force is the problem for women and they have many obstacles to stay in labor force. Moreover, the 37.2 percent of women are nonparticipants and have not worked before. It should be recalled that students, disabled and retired women are excluded from these statistics; therefore, all these non-participant women might be attached to the labor force. The obstacles that 24.4 percent women face up should be investigated and eliminated in order to keep them in labor force.

Table 2. Labor Market Status of Women (Ages 15-44)

Years	TOTAL	Currently in Labor Force			Currently not in Labor Force		
		Employed	Unemployed	Total	Ever worked	Never worked	Total
2010	14,801,226	32.4	6.0	38.4	24.4	37.2	61.6
2011	14,878,462	34.4	5.5	39.9	25.3	34.8	60.1
2012	14,956,834	35.8	5.4	41.2	26.3	32.5	58.8
2013	14,979,507	37.3	6.3	43.6	28.6	27.8	56.4
2014	14,998,848	37.9	6.3	44.2	31.4	24.5	55.8
2015	15,150,034	39.1	6.9	46.0	31.5	22.5	54.0
2016	15,163,020	40.1	7.8	47.9	31.7	20.4	52.1
2017	15,364,525	40.8	8.3	49.2	31.7	19.2	50.8

The share of women in labor force aged between 15 and 44 regularly increased by 10.8 percentage points and reached 49.2 percent, over the period 2010-2017. However, the half of women still are not in labor force. In other words, one women out of 2 are not in labor force even they are not disabled, retired or student.

21

In addition to increase in women labor force participation rates, the share of women dropped out of labor force also increased by 7.3 percentage points and reached 31.7 percent in 2017. In other words, 72.5 percent of all women have previously worked (employed and ever worked nonparticipants). Lastly, the share of women who are not in labor force and have never worked before substantially decreased by 18.0 percentage points and recorded as 19.2 percent in 2017. This rapid decline might be interpreted as there is a willingness to enter in the labor force over the period of 2010-2017. All these taking into the consideration, entering in the labor force increased over the time; however, growing share of ever-worked nonparticipant women is interpreted as decreasing labor market commitment. In other words, there is a developing supply of women in the labor force; however, it seems that labor marker pushing them out. Therefore, the reasons for dropping outs should be investigated and policy recommendations should be suggested in order to keep women in the labor market as much as possible.

5.2 Descriptive statistics

The basic descriptive characteristics of women in employment are shown in Table 3 compared to the women who are no longer in labor force.   During the descriptive statistics I use the employed women rather than the unemployed women for comparison with non-participant ever worked women. The reason behind the case is that characteristics of women in labor force are mainly driven by employed women. Because the number of unemployed women are limited compared to the employed and non-participant women. According to the HLFS 2017, 51.3 percent of ever worked women is employed, while 9 percent of ever-worked sample is unemployed. In addition, the individual characteristics and the labor market characteristics of

nonparticipant ever-worked women are more similar to employed women than unemployed women. Also, I am able to observe the nonparticipant women who dropped out of the employment. Firstly, it can be shown that in 2010, 85.9 percent of non-participant women who have worked before are married, while 60.6 percent of employed women are married. In other words, the probability of being married may be higher for women who dropped out of labor force than for employed women. These rates did not substantially change over the period of 2010-2017. The limited increases are not a surprise since the share of married women among two groups is already too high. It can be concluded that being a single woman might enhance to be employed, in other words, being a married woman might increase to exit from labor force. It is consistent with the study of Ilkkaracan (2012) which is interested in gender roles as binding constraints on female labor supply in Turkey. She found that marriage and kids are the main barriers for female participation in any education levels.

In the economic literature, education is one of the major determinant of labor market outcomes. According to the data, most of the employed and dropped out women have graduate levels being less than high school. The education level of 75.2 percent of ever worked non-participant women is less than high school, while this ratio was 57.6 percent for employed women in 2010. The share of less than high school graduate women among both employed and dropped out women decreased over the period of 2010-2017 and reached 46.2 percent and 67.8 percent, respectively. Therefore, the probability of being less educated might be higher in dropped out women than employed women.

Table 3. Descriptive Statistics of Employed Women and Ever Worked Nonparticipant Women (Ages 15-44)[8]

	EMPLOYED								EVER-WORKED NONPARTICIPANT							
	2010	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
MARITAL STATUS																
Single	39.4	39.0	38.3	38.9	38.9	39.5	39.0	38.1	14.1	13.5	14.0	13.3	13.0	12.5	12.3	11.2
Married	60.6	61.0	61.7	61.1	61.1	60.5	61.0	61.9	85.9	86.5	86.0	86.7	87.0	87.5	87.7	88.8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EDUCATION LEVEL																
Less than high school	57.6	57.2	55.1	53.5	52.4	50.2	47.8	46.2	75.2	73.9	72.5	72.2	73.8	72.0	69.5	67.8
High school	10.1	10.2	10.2	10.2	10.0	9.5	9.4	9.5	10.5	10.6	10.9	10.7	10.3	10.3	10.3	10.9
Vocational high school	8.4	8.1	8.1	8.5	8.6	9.1	9.3	9.5	8.7	8.9	9.1	9.4	8.4	8.7	9.7	9.7
University	23.9	24.5	26.6	27.9	29.0	31.2	33.5	34.8	5.5	6.6	7.5	7.8	7.5	9.0	10.5	11.5
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
SECTORS																
Agriculture	32.7	32.5	29.8	27.7	24.3	22.9	20.4	20.2	35.6	33.3	32.1	32.2	32.9	30.2	27.7	25.3
Manufacturing, mining and quarrying and other industries	17.9	17.4	16.9	17.1	18.7	17.3	16.8	16.6	28.7	29.0	28.2	27.1	26.1	26.2	24.4	24.6
Construction	1.1	0.9	0.9	1.0	1.2	1.0	1.2	1.1	1.0	1.0	0.9	0.8	0.8	1.0	1.1	1.0
Wholesale retail trade, transportation and storage, accommodation and service	15.4	15.8	16.8	17.4	17.1	17.9	18.2	18.7	18.0	18.5	18.9	19.8	19.8	20.4	21.3	22.6
Information and communication	1.0	1.0	1.0	1.1	0.9	1.0	0.9	0.9	0.4	0.6	0.5	0.6	0.5	0.5	0.6	0.7
Financial and insurance activities	2.3	2.3	2.1	2.1	2.3	2.2	2.0	1.6	0.6	0.6	0.8	0.7	0.7	0.8	0.9	0.6
Real estate activities	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.7	0.2	0.3	0.2	0.4	0.4	0.3	0.4	0.5
Professional, scientific and technical activities, administrative and support services	5.8	5.9	7.5	8.2	9.5	10.6	11.3	11.2	3.6	4.0	5.0	5.5	6.0	6.2	7.4	7.5
Public administration and defense, education, health and social services	18.8	19.2	21.0	21.4	22.3	23.6	25.8	25.8	6.3	6.9	7.7	7.4	7.6	9.0	10.4	11.2
Other service activities	4.8	4.7	3.3	3.6	3.3	3.1	2.9	3.1	5.6	5.8	5.6	5.5	5.2	5.5	5.8	6.0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
OCCUPATIONS																
Managers	3.1	3.0	2.7	2.6	2.5	2.4	2.7	2.6	1.1	1.4	1.1	1.0	1.1	0.8	1.1	0.9
Professionals	11.6	11.3	15.2	15.3	15.8	17.0	18.2	18.4	3.2	3.7	4.9	4.7	4.3	5.2	5.9	6.3
Technicians and associate professionals	8.4	8.5	6.1	5.4	5.8	6.0	6.1	6.1	4.9	5.6	2.7	2.7	3.2	3.0	2.8	3.1
Clerical support workers	12.9	13.4	10.9	11.2	11.9	12.3	12.7	12.0	10.0	11.0	8.2	7.9	7.2	7.5	8.8	9.0
Service and sales workers	11.2	11.8	16.0	17.7	18.9	19.5	19.8	20.7	13.0	13.3	18.0	19.2	20.1	21.7	22.6	23.7
Skilled agricultural, forestry and fishery workers	24.1	22.8	21.1	19.4	16.2	14.8	12.7	12.6	13.3	12.1	12.6	12.0	11.5	9.8	8.2	7.1
Craft and related trades workers	6.5	5.8	5.6	5.9	6.2	5.4	5.5	5.6	11.0	11.0	11.1	11.2	10.6	10.8	9.7	9.2
Plant and machine operators, and assemblers	4.5	4.4	4.3	4.4	4.4	4.0	3.9	4.1	8.8	7.8	8.0	7.4	6.4	6.1	5.6	6.2
Elementary occupations	17.7	19.1	18.1	18.1	18.3	18.7	18.4	17.8	34.8	34.1	33.3	33.8	35.7	34.9	35.2	34.4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EMPLOYMENT STATUS																
Regular employee or casual	60.6	61.7	63.9	66.1	69.0	70.7	72.4	72.2	72.5	73.6	73.8	74.8	73.9	75.4	76.6	77.6
Employer	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4
Self employed	10.2	9.1	8.4	8.3	7.3	6.9	7.1	7.5	5.4	5.3	5.7	6.4	6.5	6.9	6.8	6.7
Unpaid family worker	27.9	28.1	26.4	24.4	22.6	21.4	19.3	19.1	21.7	20.6	20.0	18.4	19.2	17.3	16.2	15.4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The share of university graduates increased for both groups over the period of 2010-2017 and an increase in university graduates among employed women is much larger than those who are among dropped outs. The share of university graduates increased by 10.9 percent points and reached 34.8 percent for employed women. On the other hand, it escalated 6 percent points for dropped out women (5.5 percent in 2010 and 11.5 percent in 2017). Lastly, when we compare the share of high school and vocational high school graduates between two groups, it can be said that two groups are quite similar. From 2010 to 2017, the share of high school and vocational high school graduates does not change much and reached 19 percent and 20.6 percent for employed and ever worked non-participant women in 2017, respectively.

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[8] The same descriptive statistics for men are shown in the Appendix C.

The current sectors of employed women and the last sector of women dropped out indicate that most of the employed (32.7 percent) and dropped out women (35.6 percent) worked in agriculture in 2010. The share of agriculture decreased for both groups of women and reached 20.2 percent and 25.3 percent, respectively. Besides, 28.7 percent of women who are no longer in the labor force worked in manufacturing, while 17.9 percent of women in employment are in manufacturing. These rates did not change much over the period and reached 24.6 and 16.6 percent, respectively. The share of employed women in the sector of "wholesale retail trade, transportation and storage, accommodation, information and communication" expanded by 3.3 percent points and reached 18.7 percent in 2017. On the other hand, 18.0 percent of women dropped out of labor force worked in the same sector and this share increased by 4.6 percentage points and reached 22.6 percent in 2017. Briefly, it can be inferred that likelihood of dropping out of labor force after working in these sectors might be higher than in other sectors.

The descriptive statistics on sectors and occupational groups might be evaluated with the working conditions. Table 4 shows the some employment conditions of the sectors and occupational groups that I used in the analysis. I used the following rates in employed women to shed light on the working conditions in the sectors and occupations: the share of employed women who earn less than minimum wage (1400 TL in 2017), the informality rate and the share of employed women who worked more than 48 hours in a week.[9] Table 4 shows that working conditions in the sectors of "manufacturing" and "wholesale retail trade, transportation and storage, accommodation, information and communication" are relatively unfavorable compared to the other sectors. In these sectors, wages are low

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[9] İzdeş and Yücel (2017) mentioned ILO standards in working hours. They stated that working hours between 48 and 60 are considered as extreme.

and working hours are relatively high. The 48.3 percent of all employed women in manufacturing and 47.7 percent women in wholesale earned less than minimum wages (1400 TL) in 2017. In addition, 27.6 percent women in manufacturing and 35.1 percent women in wholesale work more than 48 hours in a week. Lastly, informality rates for women in these sectors are remarkable: 17.3 percent and 18.5 percent employed women worked as informal in "wholesale retail trade, transportation and storage, accommodation, information and communication" and "manufacturing", respectively. To sum up, working conditions on these two sectors are detrimental to the women.

Table 4. Employment Conditions by Sectors and Occupational Groups

	the rate of employed women who earn less than minimum wage	informality rate	the rate of employed women who worked more than48 hours in a week
SECTOR			
Agriculture	76.0	92.6	23.0
Manufacturing, mining and quarrying and other industries	48.3	18.5	27.6
Construction	33.9	10.0	24.7
Wholesale retail trade, transportation and storage, accommodation and service	47.7	17.3	35.1
Information and communication	24.6	2.9	13.2
Financial and insurance activities	11.5	2.5	8.7
Real estate activities	44.4	24.6	29.5
Professional, scientific and technical activities, administrative and support services	33.6	7.3	12.0
Public administration and defense, education, health and social services	32.1	20.5	18.3
Other service activities	67.6	48.4	37.5
OCCUPATION			
Managers	3.0	3.1	18.0
Professionals	6.4	2.3	6.4
Technicians and associate professionals	19.5	3.6	15.2
Clerical support workers	27.1	4.1	18.8
Service and sales workers	65.3	38.8	42.4
Skilled agricultural, forestry and fishery workers	68.6	92.5	21.0
Craft and related trades workers	57.6	33.8	22.2
Plant and machine operators, and assemblers	54.3	18.0	39.0
Elemantary occupations	64.4	50.8	23.9

In contrast to these sectors, the data implies that sector of public administration and defense, education, health and social services might be seen as a sector with better employment conditions. (see Table 4). In 2010, 18.8 percent employed women worked in this sector, while only 6.3 percent of dropped out

women worked in the same sector (see Table 3). The share of employed women in this sector regularly increased over the period 2010-2017 and most of the women (25.8 percent) were employed here in 2017. The share of dropped out women also enhanced and reached 11.2 percent in 2017. It can be said that probability of working in this sector may be lower for dropped out women than being employed there for employed women.

Table 3 shows that most women worked on the occupational group of skilled agricultural forestry and fishery workers (24.1 percent) in 2010. However, the share of women in this occupational group decreased over time and reached 12.6 percent in 2017. Besides, 13.3 percent of dropped out women worked here before and this share decreased over time and reach 7.1 percent in 2017. This change is consistent with the decreasing share of agricultural employment in Turkey. The share of services and sales workers in employment is also remarkable: 11.2 percent of women in employment worked in this sector in 2010. This share substantially increased over time and most of the employed women (20.7 percent) worked as service and sales workers in 2017. In addition, the probability of employed in the service and sales works might be close to the probability of dropping out of labor force after working here. In the period of 2010-2017, the share of dropped women who worked here escalated by 10.7 percentage points and reach 23.7 percent in 2017. The high share of employed women in this sector is persistent with the education levels of women in employment. Another important occupational group is elementary occupations. The 17.8 percent of employed women are here while 34.4 percent of dropped out women worked here in 2017. In other words, it can be deducted that probability of exiting from labor market might be higher than being employed in elementary occupations.

After the sales services and sales workers, most women in employment worked as professionals in 2017. It is related to the high education level of employed women. Unlike services and sales workers, the share of women who have worked here before is low (6.3 percent). On the other hand, the probability of employed as managers are quite low. Only the 2.6 percent of the employed women are managers; moreover, only 0.9 percent of dropped out women worked as managers in 2017. The low probabilities of working in these occupations before dropping out might be related with the better working conditions in these occupations (see Table 4).

Table 3 shows the employment status of both groups of women who are no longer in labor force and in employment. Firstly, most of women are employed as wage earners. The share of wage earners in women employment increased by 11.6 percentage points over the period of 2010-2017 and reached 72.2 percent in 2017. In addition, the share of wage earners among dropped out women increased from the 72.5 percent to 77.6 percent over the same period. In other words, the probability of dropping out as a wage earner may be higher than being employed as a wage earner. Furthermore, wage earners are followed by the unpaid family workers: 27.6 percent of employed women worked as unpaid family workers in 2010. It decreased over the time and reached 19.1 percent in 2017. This trend is consistent with the decreasing share of the agriculture in employment. On the other hand, the share of unpaid family workers in dropped out women is lower than in employed women. It decreased by 6.3 percentage points over the period 2010-2017 and reached 15.4 percent in 2017. In other words, the probability of being unpaid family worker may be higher for dropped out women than employed women. The share of self-employed women among the employed women changes in the range of 10.2 percent and 7.5 percent while it changes between 5.4 percent and 6.7 percent for dropped out women.

CHAPTER 6

ESTIMATION RESULTS

In this section, I summarize the results from logistic regressions of labor market exit decision. I run the regressions for total sample of ever worked women aged between 15 and 44 and separately the samples based on marital status and education group. I tested the difference between the same coefficients for different sample by using Chow Test. According to the results, I reject the hypothesis that same regressions apply to all of the education levels, marital status or both at any significance level. In other words, the average marginal effects of all control variables are significantly different in different sample by education level, marital status or both. Table 5 shows the results of logistic regression analysis which are computed as average marginal effects to quantify the factors behind labor market exit. These average marginal effects are first computed for each individual with their detected levels of covariates then these calculations averaged across all individuals. To note that all the regressions below include the year dummies for the period of 2010-2017, regional non-agricultural unemployment rates, square and cube of age.

I start out with a baseline model where I control for all independent variables (see Table 5). According to the results of the baseline regression, the probability of labor market exit seems to decrease by at least 13.7 percent when the ever-worked woman worked as an employer, an own account worker or an unpaid family worker compared to a reference category which is a wage earner. Also, as it was mentioned before, most of the women are employed and dropped out as a wage earner (see Table 3). The wage earners are more affected from the employment conditions compared to the other employment status. For instance, employers, unpaid family

worker or own account worker are more flexible to arrange their own working hours or holidays. Taking everything into the consideration, I focused on the wage earners among ever-worked women in the further analysis.

Table 5. The Regression Results of All Ever-Worked Women and Those of Wage Earners (Ages 15-44)

Independent Variables	ALL	WAGE EARNERS	
	(1)	(2)	(3)
Age	-0.00294***	-0.00332***	-0.00363***
	(0.000131)	(0.000150)	(0.000153)
Last working status(Reference: wage-earners)			
Employer	-0.156***		
	(0.00751)		
Own account worker	-0.137***		
	(0.00234)		
Unpaid family worker	-0.168***		
	(0.00196)		
Last sectors (Reference: wholesale retail trade, transportation and storage, accommodation, information and communication)			
Agriculture	0.150***	0.223***	0.224***
	(0.00320)	(0.00406)	(0.00404)
Manufacturing, mining and quarrying and other industries	-0.0114***	-0.0154***	-0.0149***
	(0.00255)	(0.00291)	(0.00290)
Construction	-0.0167***	-0.0179**	-0.0180**
	(0.00637)	(0.00717)	(0.00716)
Information and communication	-0.0505***	-0.0514***	-0.0509***
	(0.00717)	(0.00819)	(0.00819)
Financial and insurance activities	-0.116***	-0.123***	-0.122***
	(0.00516)	(0.00597)	(0.00597)
Real estate activities	-0.0749***	-0.0907***	-0.0899***
	(0.00943)	(0.0110)	(0.0110)
Professional, scientific and technical activities, administrative and support services	-0.0741***	-0.0840***	-0.0837***
	(0.00268)	(0.00314)	(0.00314)
Public administration and defense, education, health and social services	-0.134***	-0.146***	-0.145***
	(0.00223)	(0.00262)	(0.00262)
Other service activities	0.0219***	0.0332***	0.0329***
	(0.00316)	(0.00372)	(0.00370)
Last occupational groups (Reference: service and sales workers)			
Managers	-0.0482***	-0.0749***	-0.0756***
	(0.00565)	(0.00607)	(0.00606)
Professionals	-0.0365***	-0.0343***	-0.0350***
	(0.00389)	(0.00382)	(0.00383)
Technicians and associate professionals	-0.0424***	-0.0423***	-0.0429***
	(0.00361)	(0.00356)	(0.00356)
Clerical support workers	-0.0129***	-0.0105***	-0.0109***
	(0.00283)	(0.00279)	(0.00280)
Skilled agricultural, forestry and fishery workers	-0.138***	-0.00788	-0.00871
	(0.00301)	(0.00841)	(0.00837)
Craft and related trades workers	0.0960***	0.0577***	0.0581***
	(0.00372)	(0.00383)	(0.00383)
Plant and machine operators, and assemblers	0.0107***	0.00633*	0.00599
	(0.00386)	(0.00378)	(0.00378)
Elementary occupations	0.0348***	0.0255***	0.0251***
	(0.00265)	(0.00269)	(0.00269)
Education levels (Reference: less than high school educated)			
High school	-0.0336***	-0.0496***	-0.0490***
	(0.00237)	(0.00269)	(0.00269)
Vocational high school	-0.0376***	-0.0488***	-0.0481***
	(0.00248)	(0.00278)	(0.00278)
University	-0.145***	-0.158***	-0.157***
	(0.00250)	(0.00290)	(0.00290)
Marital status and children			
Married	0.191***	0.206***	0.202***
	(0.00176)	(0.00212)	(0.00292)
Having a child aged between 0 and 5	0.143***	0.183***	0.163***
	(0.00168)	(0.00207)	(0.00331)
Having a child aged between 6 and 14	-0.0545***	-0.0482***	-0.0243***
	(0.00153)	(0.00184)	(0.00241)
Year dummies (2010-2017)	YES	YES	YES
Regional non-agricultural unemployment rates	YES	YES	YES
Married#children dummies interaction	NO	NO	YES
Age squared and cube	YES	YES	YES
Observations	458,848	313,227	313,227
Pseudo R2	0.158	0.216	0.216

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

30

The magnitudes and significance levels of the sectors and occupational groups are mostly similar for all ever-worked women and those of wage earners. The reference category for the sectors and occupational groups are wholesale retail trade, transportation and storage, accommodation and service, and service and sales workers, respectively. I consider the last column to interpret the results of wage earners. When we consider only the wage earners, the marginal effects of working at agriculture and other service activities on the probability of labor market exit are higher compared to the marginal effects computed with all ever-worked women. In addition, significant negative effect of being skilled agricultural, forestry and fishery workers on labor market exit for all sample is no longer significant at any probability level when I consider only the wage earners of ever-worked women. The reason behind the change in agriculture is obvious: women in agriculture mostly worked as unpaid family workers rather than wage earners.

Working at agriculture and other service activities increase the likelihood of labor market exit by 22.4 percent and 3.3 percent, respectively. On the other hand, working at other sectors decreases by at least 1.5 percent compared to the reference category of sector (Wholesale retail trade, transportation and storage, accommodation and service). The reason behind the positive average marginal effect of agriculture on the probability of labor market exit might be the unqualified status of women leaving agricultural that makes difficult their transition to non-agricultural sectors. It should be recall that wage earners in agriculture are used in all regressions except regression (1). Negative marginal effect of working in manufacturing, mining and quarrying and other industries is limited to 1.5 percent compared to the wholesale retail trade, transportation and storage, accommodation and service. This limited effect can be partly explained by the garment industry which is the one of the

31

top exporters in manufacturing.[10] Dedeoglu (2010) points out that women are considered as main providers of informal employment for garment industry; moreover, they are hired as informal, subcontractor workers. She also implies the many women who worked for years in garment industry but did not even once work as a formal worker. The average marginal effects of working at public administration and defense, education, health and social services are remarkable (14.5 percent). It is the highest marginal effect compared to the other sectors. This may not be a surprising case when the characteristics of this sector are examined in terms of working conditions in Table 4. The share of employed women who worked more than 48 hours in a week is 18.3 percent in this sector. As it is mentioned before, 35.2 percent of employed women in "wholesale retail trade, transportation and storage, accommodation, information and communication" worked more than 48 hours in a week. In addition, 32,1 percent of employed women in public administration and defense, education, health and social services earned less than minimum wage in 2017 (1400 TL). Although it is a high share in employed women; it is lower than the share in reference category wholesale retail trade, transportation and storage, accommodation and service (47.7 percent). Lastly, the informality rate (20.5 percent) in this sector might be a major drawback in terms of employment conditions compared to the other sectors. Even the reference sector, the informality rate is 17.3 percent. In other words, one woman out of five is employed as an informal worker in the sector of public administration and defense, education, health and social services. One of the reasons behind this rate might be the situation of workers in social work activities without accommodation which is the subsector of

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[10]The HLFS does not include more detailed information on the last sector that nonparticipant and unemployed women worked before. Therefore, I am not able to control the effect of garment industry on dropping out of labor force.

health sector. Uysal and Kavuncu (forthcoming Betam Information Note) shed light on the women who look after her disabled relatives and get social benefit as much as the minimum wage due to Home Care Service Program of the Ministry of Family and Social Policies in Turkey since the 2007.[11] They also implies that these women are evaluated as employed women in the sector of social work activities without accommodation by TURKSTAT since 2011. However, they do not have any social security coverage. According to HLFS in 2017, 84.7 percent of women in this sector are informal worker.

The marginal effects of occupational groups are computed by considering the service and sales workers as a reference category. First, working as plant and machine operators, and assemblers and skilled agricultural, forestry and fishery workers do not have significant marginal effects on labor market exit. Second, working as craft and related trades workers and elementary occupations increase the probability of exit by 5.8 and 2.5 percent significantly, while the impact of other occupations on the probability of exit is negative and significant except skilled agricultural, forestry and fishery workers. The effects of sectors and occupational groups might be explained by the working conditions (see Table 4). Most of the women who work as a craft and related trade workers and in elementary occupations earn less than minimum wage in 2017 (57.6 percent and 64.4 percent, respectively). Their informality rates are also remarkable. One out of two (three) women in elementary occupations (craft and trade workers) are employed as informal workers (50.8 percent and 33.8 percent, respectively). Especially the informality in

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[11] For more information in Turkish:
https://www.tbmm.gov.tr/komisyon/insanhaklari/belge/um_bakimamuhtacozurlulertesbitivebakimi.pdf

elementary occupations is outstanding compared to the reference category service and sales workers (38.8 percent).

As I mentioned before, education is a crucial factor to define the employment conditions of women. It has a substantial effect on wages, unemployment rates and access to jobs in better sectors and occupations. Moreover, the relationship between education and labor market exit is apparent. Dropping outs are decreased along with education when I consider the less than high school educated women as a reference group. The low probability of labor market exit for university graduates might be explained with the help of the higher wages and better working conditions that highly educated women have compared to the other education levels. For instance, the median wages for university graduates is 2400 TL in 2017 while it is 1404 TL for general high school and vocational high school graduates (HLFS 2017). In other words, higher education level affects not only labor force participation but also the probability of staying in the labor force. Also, education may be considered as a crucial factor to define household division of labor. It is obvious that less educated women cannot afford the day care centers and they might choose to stay at home and look after their children. When these facts are taken into consideration with the gender roles based on caring responsibilities, it is not a surprise to high dropping outs for less educated women. Education should be evaluated as patriarchy norms as well as human capital characteristics. It can be said that patriarchal norms generate the gender roles; thus, increasing education level should not be only policy recommendation keeping women in labor force as much as possible. The less educated women should also work with favorable conditions; thus, the results and interpretation on the variable education, should be evaluated in different aspects.

The marginal effects of independent variables that might be considered as traditional division of labor and life cycle variables such as marital status, having children and age are similar in magnitude and significance level across all ever-worked women and those of wage earners. I focused on the last column for interpreting the effects of these control variables.

The marginal effect of age is negative; therefore, being in older ages decreases the probability of labor market exit. The negative average marginal effect of age might be related with the ever-worked sample of women that is used here. As it is mentioned before, the sample includes women who are currently in employed or left their last job within the previous eight years before the reference year. The decreasing probability of labor market exit in older ages might be explained with the help of Figure 2. I used the women in the area of 1 and 2 for analysis. The dimension of the area 1 gets smaller in older ages; thus, it might be said that sample selection issues are strong. These might be the reason why exit probability decreases with age.
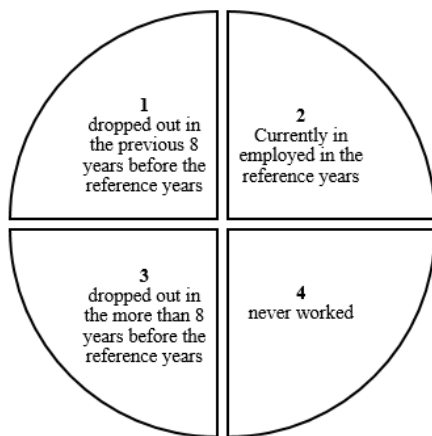
Figure 2. The different sample of women in the regressions

The results in Table 5 are compatible with the existing literature: having children aged between 0 and 5 increases the probability of exit by 16 percent. In

contrast, having children aged between 6 and 14 decreases the probability of labor market exit for women by 2.4 percent. The reason for this change might be going back to labor force after their children start compulsory education. Lastly, marginal effect of being married is 20.2 percent. This substantial effect might be interpreted in two aspects. Firstly, conservative framework in Turkey assigns a role to woman as a housewife and mother. Marriage and having a child cannot be evaluated separately in Turkey. HLFS 2017 shows that 22 percent of married women aged between 15 and 44 have not a child. In other words, most of the married women have children or will be having children. Under these circumstances, families do the cost benefit analysis whether women are employed or not by considering caring and housework facilities. Note that most of the women are less than high school educated and working at bad working conditions with low wages. Secondly, there is a severance pay practice for newly-wed wives in Turkey. Newly married women can resign from their jobs and get their severance pay within the first year of marriage.[12] To conclude, when gender roles and the incentive for newly married women are taking into consideration, increasing the exit probability with marriage should not be surprising.

6.1 Women's labor market exit by marital status

Table 6 shows the labor market exit determinations of married and single women. The way of effect and the significance levels in sectors are similar across the group of married and single ever-worked women. All sectors decrease the probability of labor market exit except for agriculture and other service activities compared to the reference category which is wholesale retail trade.

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[12] This incentive is applied for only newly-wed wife. For more information on the law in Turkish: http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=1.5.1475&MevzuatIliski=0&sourceXmlSearch

Table 6. The Regression Results of Married and Single Sample (Ages 15-44, Wage Earners)

Independent Variables	MARRIED (4)	SINGLE (5)
Age	-0.00953***	0.00224***
	(0.000302)	(0.000263)
Last sectors (Reference: wholesale retail trade, transportation and storage, accom information and communication)		
Agriculture	0.209***	0.239***
	(0.00498)	(0.00773)
Manufacturing, mining and quarrying and other industries	-0.0250***	-0.00829**
	(0.00405)	(0.00401)
Construction	-0.0315***	-0.00515
	(0.0101)	(0.00934)
Information and communication	-0.0392***	-0.0503***
	(0.0129)	(0.00869)
Financial and insurance activities	-0.160***	-0.0707***
	(0.00855)	(0.00741)
Real estate activities	-0.144***	-0.00189
	(0.0154)	(0.0154)
Professional, scientific and technical activities, administrative and support services	-0.108***	-0.0445***
	(0.00453)	(0.00397)
Public administration and defense, education, health and social services	-0.201***	-0.0477***
	(0.00379)	(0.00343)
Other service activities	0.0278***	0.0325***
	(0.00513)	(0.00527)
Last occupational groups (Reference: service and sales workers)		
Managers	-0.0894***	-0.0729***
	(0.00834)	(0.00773)
Professionals	-0.0521***	-0.0140***
	(0.00535)	(0.00537)
Technicians and associate professionals	-0.0412***	-0.0580***
	(0.00508)	(0.00451)
Clerical support workers	0.00296	-0.0389***
	(0.00411)	(0.00358)
Skilled agricultural, forestry and fishery workers	-0.0128	0.0220*
	(0.0112)	(0.0132)
Craft and related trades workers	0.0665***	0.0354***
	(0.00513)	(0.00614)
Plant and machine operators, and assemblers	0.0190***	-0.0230***
	(0.00522)	(0.00559)
Elemantary occupations	0.0188***	0.0417***
	(0.00359)	(0.00449)
Education levels (Reference: less than high school educated)		
High school	-0.0504***	-0.0551***
	(0.00397)	(0.00368)
Vocational high school	-0.0594***	-0.0419***
	(0.00408)	(0.00389)
University	-0.195***	-0.104***
	(0.00460)	(0.00372)
Children		
Having a child aged between 0 and 5	0.192***	0.0939***
	(0.00227)	(0.00790)
Having a child aged between 6 and 14	-0.0401***	-0.0145***
	(0.00236)	(0.00407)
Spouse information		
Age	-0.000621**	
	(0.000251)	
High school	0.0104***	
	(0.00340)	
Vocational high school	0.00835***	
	(0.00318)	
University	0.0289***	
	(0.00355)	
Unemployed	-0.0233***	
	(0.00411)	
Year dummies (2010-2017)	YES	YES
Regional non-agricultural unemployment rates	YES	YES
Women's age squared and cube	YES	YES
Observations	187,435	115,937
Pseudo R2	0.196	0.129

Standard errors in parentheses

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

In other words, the sector with the highest exit probability is wholesale retail trade, transportation and storage, accommodation, information and communication. However, magnitudes of those in married samples differ from single ones. Average marginal effects of sectors are systematically higher for married women than the single women. For instance, working in public administration and defense, education, health and social services diminishes the likelihood of dropping outs by 20 percent for married ever-worked women. On the contrary, it decreases by 4.7 percent for single ever-worked women. It may be inferred that working conditions in the most sectors are more detrimental for married women than single women. Marginal effects of occupational groups are similar across different marital status. There are two exception of this case. First, the marginal effect of working as clerical support workers is significant for single women while it is not significant for married women. Secondly, working as plant and machine operators, and assemblers increases the likelihood of labor market exit for married women; however, it decreases for single women. In other words, it seems that working conditions of this occupation may not be reconcilable with work-life balance for married women compared to the single women.

The education level as another variable that may affect the employment conditions affects the probability of labor market exit in the same direction for married and single women (see Table 6). All education levels decrease the probability of labor market exit for single and married women. Marginal effects of being a vocational high school graduates and general high school graduates are similar in terms of magnitude for single and married women (approximately 5 percent) while the effect of being university graduated are higher in married women (19.5 percent) than in single women (10.4 percent). It might be inferred that effect of

university graduation on employment conditions is more crucial for married women since conservative framework in Turkey assigns the households and care services to married women. Regardless of education, marriage is important even for university graduates who have access to better job.

Other control variables affect the single and married women in the same way except the determinants of age. The case of age might be explained by the age of women in the both sample. The single ever-worked women are younger than married ever worked women[13] and 86.3 percent of single ones are never married (HLFS 2017). Thus, the never married ever worked women in the last eight years before the reference year is a substantial group among the single ever worked women. Therefore, older ages may increase the probability of labor market exit for single women along with their marriage and the first birth. On the one hand, having a child aged between 0 and 5 increases the probability of exit for married and single women by 19 percent and 9 percent respectively. On the other hand, a child aged between 6 and 14 decreases the likelihood of exit for both groups of women. The limited access to child care services for children aged between 0 and 5 might the reason behind this case. In Turkey, pre-school education is not common; moreover, pre-schools are all paid. The formal free education starts with the age 6; therefore, it can be inferred that women are going back to the labor force after their children access to compulsory education.

6.2 Women's labor market exit by education levels

The wage earners of ever-worked women are investigated in four education groups: less than high school graduates, high school graduates, vocational high school

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[13] The mean age is 39 for single ever worked women while it is 43 for married ever worked women.

graduates and university graduates. According to the results in Table 7 the marginal effects of last sector are mostly similar across education groups. Therefore, it might be said that education does not seem to help much in a given sector of employment. The marginal effect of working at agriculture and other services are positive in all education levels as it is in the total sample compared to reference category (wholesale retail trade, transportation and storage, accommodation and service). Other sectors mainly decrease the likelihood of labor market exit compared to the reference category. It might be inferred that reference category which is wholesale retail trade, transportation and storage, accommodation and service is one of the worst for all education categories.

Most of the women worked in agriculture and other services are less than high school educated; moreover, the working in agriculture and other services significantly increase the probability of exit by 23 percent and 2 percent for these women. Working in manufacturing, mining and quarrying and other industries decreases the probability of dropping outs for every education level except for vocational high school graduates. The effect of working in this sector is positive but it is no more a statistically significant for vocational high school graduates. In addition, working in "professional, scientific and technical activities, administrative and support services" and "public administration and defense, education, health and social services" have a significant negative impact on dropping outs for all education level. However, the effect of working at these sectors are higher for less than high school graduates than university graduates. For instance, working in "public administration and defense, education, health and social services" decrease the probability of exit by 19.4 percent for high school graduates and 10.8 percent for university graduates. This can be probably interpreted in the following way:

university graduates have more work opportunities than any other education level and their expectations differ from those of lower educated women; therefore, the better working conditions in certain jobs may not be encouraging for them as much as lower educated women. In other words, attachment to better jobs are higher for lower educated women compared to the university graduates since they do not always have not always the chance to find a job with favorable conditions.

The average marginal effects of occupations on dropping outs are different across education levels. To sum, the marginal effects of all occupations except managers are positive for less than high school graduates. Therefore, it might be interpreted that reference category (service and sales workers) is the best for less than high school graduates to be in the labor force. The reason behind the case might be the lack of skills to be employed in other occupations. In contrast to less than high school graduates, working in all occupations decrease the likelihood of labor market exit compared to the service and sales workers for vocational high school graduates; thus, working as service and sales workers might be the worst for these women. In other words, vocational high school graduates with their current skills might find better working conditions-compared to service and sales workers. Ozkaplan, Oztan and Ruben (2017) pointed out the bad working conditions of sales workers in shopping malls. They stated that long working hours (48-60 hours in a week), uncertain annual leave, obligation of working on public holidays and weekends, standing up during all day and working without daylight are the main characteristics of these jobs. Lastly, it is not a possible to mention about the worst and best occupations for university graduates.

The impact of working as "technicians and associate professionals" on labor market exit is higher for less than high school graduate even though it is negative for

other education levels. Working as "clerical support workers" decreases the likelihood of labor market exit in all education levels except less than high school graduates. The effect is positive and no longer significant for this group of women.

Table 7. The Regression Results by Education Levels (Ages 15-44, Wage Earners)

Independent Variables	(6) LESS THAN HIGH SCHOOL	(7) HIGH SCHOOL	(8) VOCATIONAL HIGH SCHOOL	(9) UNIVERSITY
Age	-0.00171***	-0.00548***	-0.00739***	-0.00542***
	(0.000283)	(0.000531)	(0.000580)	(0.000292)
Last sectors (Reference: wholesale retail trade, transportation and storage, accommodation, information and communication)				
Agriculture	0.235***	0.225***	0.240***	0.0136
	(0.00471)	(0.0190)	(0.0251)	(0.0196)
Manufacturing, mining and quarrying and other industries	-0.0118***	-0.0315***	0.00729	-0.0307***
	(0.00442)	(0.00785)	(0.00849)	(0.00549)
Construction	-0.0557***	-0.00147	0.0159	0.00258
	(0.0137)	(0.0165)	(0.0182)	(0.0104)
Information and communication	-0.0472**	-0.0467***	-0.0502**	-0.0437***
	(0.0235)	(0.0176)	(0.0200)	(0.00938)
Financial and insurance activities	-0.103***	-0.0881***	-0.0286	-0.106***
	(0.0219)	(0.0160)	(0.0200)	(0.00563)
Real estate activities	-0.176***	0.00475	0.0412	-0.0100
	(0.0159)	(0.0296)	(0.0348)	(0.0213)
Professional, scientific and technical activities, administrative and	-0.109***	-0.0842***	-0.0839***	-0.0441***
	(0.00553)	(0.00727)	(0.00803)	(0.00511)
Public administration and defense, education, health and social services	-0.194***	-0.103***	-0.0796***	-0.108***
	(0.00459)	(0.00673)	(0.00676)	(0.00435)
Other service activities	0.0228***	0.0474***	0.0772***	0.123***
	(0.00496)	(0.0110)	(0.0117)	(0.0140)
Last occupational groups (Reference: service and sales workers)				
Managers	-0.00887	-0.110***	-0.104***	-0.0648***
	(0.0267)	(0.0142)	(0.0196)	(0.00591)
Professionals	0.185***	0.122***	0.0276***	-0.0559***
	(0.0169)	(0.0161)	(0.0104)	(0.00473)
Technicians and associate professionals	0.0324***	-0.0443***	-0.140***	-0.0503***
	(0.00908)	(0.00846)	(0.00769)	(0.00502)
Clerical support workers	0.00500	-0.0353***	-0.0544***	-0.0212***
	(0.00652)	(0.00591)	(0.00666)	(0.00454)
Skilled agricultural, forestry and fishery workers	0.00348	0.0128	-0.140***	-0.00771
	(0.0105)	(0.0491)	(0.0519)	(0.0449)
Craft and related trades workers	0.0767***	0.0470***	-0.0200*	0.0604***
	(0.00528)	(0.0125)	(0.0121)	(0.0137)
Plant and machine operators, and assemblers	0.0118**	0.00694	-0.0389***	0.0182
	(0.00533)	(0.0128)	(0.0125)	(0.0169)
Elementary occupations	0.0407***	0.00996	-0.0275***	0.0582***
	(0.00373)	(0.00866)	(0.00973)	(0.0120)
Marital status and children				
Married	0.215***	0.290***	0.277***	0.121***
	(0.00491)	(0.00775)	(0.00856)	(0.00437)
Having a child aged between 0 and 5	0.202***	0.181***	0.168***	0.102***
	(0.00480)	(0.0102)	(0.0113)	(0.00733)
Having a child aged between 6 and 14	-0.0375***	-0.0211***	-0.00879	-0.00149
	(0.00352)	(0.00767)	(0.00914)	(0.00550)
Year dummies (2010-2017)	YES	YES	YES	YES
Regional non-agricultural unemployment rates	YES	YES	YES	YES
Married#children dummies interaction	YES	YES	YES	YES
Women's age squared and cube	YES	YES	YES	YES
Observations	143,730	37,895	35,796	95,806
Pseudo R2	0.164	0.184	0.171	0.134

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The marginal effect of working as "craft and related trades workers" increases the probability of exit for every educational groups apart from vocational high school graduates. In addition, more than 80 percent of women who are working as "craft and related trades workers" are less than high school graduates and having

this occupation increases the probability of exit 7 percent for them. It should not be bewildering when we think about the share of women who earn less than minimum wage in this occupational group (57.6 percent in 2017). The effects of working "plant and machine operators, and assemblers" and "elementary occupations" are similar with "craft and related trades workers". The marginal effects of "Plant and machine operators, and assemblers" and "elementary occupations" are 1 percent and 4 percent for less than high school graduates, respectively. It can also be explained by employment conditions of these occupations (see Table 4). Lastly, when I examined the occupations that share of university graduates are high like "professionals" and "managers", working in these occupations decline the probability of exit for university graduates. These negative effects on labor market exit is not surprising when we consider the employment conditions of these occupations. For instance, the informality rates are limited to 2.3 percent and 3.1 percent for women who are professionals and managers, respectively (see Table 4). The lowest two rates of women who earn less than minimum wages are recorded in the occupational groups of professionals and managers (6.4 percent and 3 percent). To sum, especially for the university graduates, exit behavior may not be determined by sectors and occupations since they generally work in better jobs and are able to change their job easily compared to the other education levels. In contrast, results indicate that working conditions in the sectors and occupations are detrimental for the exit behavior of less educated women.

The other control variables are similar for every education level except for one independent variable which is having a child aged between 6 and 14. It decreases the probability of exit for every education level but it has no longer a significant effect on dropping out of women who are vocational high school graduates or

university graduates. It might be inferred that higher education level causes the higher wages; therefore, university graduates afford the caring facilities easily compared to the less educated women. Another explanation of this result is that I am able to investigate the women who quit their last job within the eight years before the reference years if they are unemployed and non-participant in the reference year. Therefore, they might be dropped out of labor market in 9 or more years ago and it is not possible to define these women due to the lack of data. Lastly, marriage has an important effect for every education levels. Even in university graduates, the effect of being married on labor market exit is 12 percent. As it is mentioned in Uraz et all (2010), early exit of labor market as an important determination of labor force participation of high skilled workers.

6.3 Married women's labor market exit by educational groups

As it is mentioned before, most of the women in Turkey is married and marriage has an important effect on labor market exit in every education levels. Therefore, this subchapter examined the labor market exit decision of married women by education levels. Table 8 shows the determination of labor market exit for married women by educational groups. It can be said that results by education levels (see Table 7) are repeated for married women in every education levels.

The way and significance level of marginal effects of the last sectors are similar in agriculture and other service activities. Working in agriculture and other services significantly increase the probability of labor market exit in all education levels. This case has an exemption: the average marginal effect of working in agriculture is negative and not statistically significant for university graduates married women.

44

Table 8. The Regression Results of Married Women by Education Levels (Ages 15-44, Wage Earners)

Independent Variables	(10) less than high school	(11) high school	(12) vocational high school	(13) university
Age	-0.00729***	-0.0140***	-0.0136***	-0.0114***
	-0.000443	(0.000999)	(0.00101)	(0.000582)
Last sectors (Reference: wholesale retail trade, transportation and storage, accommodation, information and communication)				
Agriculture	0.211***	0.165***	0.147***	-0.0216
	(0.00550)	(0.0258)	(0.0334)	(0.0350)
Manufacturing, mining and quarrying and other industries	-0.0119**	-0.0558***	-0.00518	-0.0499***
	(0.00552)	-0.0116	(0.0121)	(0.00927)
Construction	-0.0711***	-0.0230	0.0159	-0.0121
	(0.0174)	(0.0239)	(0.0267)	(0.0173)
Information and communication	0.00729	-0.0607**	-0.0501	-0.0467***
	(0.0369)	(0.0293)	(0.0328)	(0.0170)
Financial and insurance activities	-0.0987***	-0.137***	-0.0650**	-0.157***
	(0.0321)	(0.0245)	(0.0290)	(0.00954)
Real estate activities	-0.216***	-0.0567	0.0511	-0.0189
	(0.0202)	(0.0460)	(0.0492)	(0.0378)
Professional, scientific and technical activities, administrative and support services	-0.118***	-0.118***	-0.121***	-0.0727***
	(0.00698)	(0.0115)	(0.0124)	(0.00883)
Public administration and defense, education, health and social services	-0.211***	-0.158***	-0.146***	-0.181***
	(0.00608)	(0.0105)	(0.0102)	(0.00735)
Other service activities	0.0267***	0.0382**	0.0727***	0.146***
	(0.00618)	(0.0158)	(0.0176)	(0.0235)
Last occupational groups (Reference: service and sales workers)				
Managers	-0.0183	-0.155***	-0.163***	-0.0799***
	(0.0337)	(0.0218)	(0.0290)	(0.00948)
Professionals	0.262***	0.163***	0.0158	-0.0753***
	(0.0234)	(0.0213)	(0.0144)	(0.00783)
Technicians and associate professionals	0.0788***	-0.0492***	-0.196***	-0.0598***
	(0.0126)	(0.0131)	(0.0118)	(0.00830)
Clerical support workers	0.0508***	-0.0336***	-0.0848***	-0.0217***
	(0.00934)	(0.00916)	(0.0101)	(0.00770)
Skilled agricultural, forestry and fishery workers	0.0110	0.00836	-0.145	0.0197
	(0.0126)	(0.0766)	(0.0977)	(0.0979)
Craft and related trades workers	0.0926***	0.0458***	-0.0392**	0.0675***
	(0.00642)	(0.0173)	(0.0176)	(0.0224)
Plant and machine operators, and assemblers	0.0424***	0.00767	-0.0561***	-0.00729
	(0.00665)	(0.0181)	(0.0181)	(0.0257)
Elemantary occupations	0.0460***	-0.00906	-0.0608***	0.0293
	(0.00452)	(0.0125)	(0.0140)	(0.0195)
Children				
Having a child aged between 0 and 5	0.208***	0.227***	0.154***	0.0736***
	(0.00359)	(0.00740)	(0.0136)	(0.0235)
Having a child aged between 6 and 14	-0.0513***	-0.0223***	-0.0214***	-0.0127
	(0.00334)	(0.00841)	(0.00750)	(0.0130)
Spouse information				
Age	-0.00121***	0.000589	-0.00188**	5.52e-05
	(0.000340)	(0.000839)	(0.000901)	(0.000481)
High school	0.0265***	-0.0226**	-0.0324***	-0.0232***
	(0.00521)	(0.00886)	(0.00987)	(0.00825)
Vocational high school	0.0151***	-0.00497	-0.0215**	-0.0285***
	(0.00477)	(0.00895)	(0.00857)	(0.00817)
University	0.111***	0.0534***	0.0199**	-0.0384***
	(0.00726)	(0.00908)	(0.00929)	(0.00699)
Unemployed	-0.0184***	-0.0699***	-0.0603***	-0.0133
	(0.00537)	(0.0145)	(0.0152)	(0.00921)
Year dummies (2010-2017)	YES	YES	YES	YES
Regional non-agricultural unemployment rates	YES	YES	YES	YES
Women's age squared and cube	YES	YES	YES	YES
Observations	94,865	20,282	19,446	52,842
Pseudo R2	0.151	0.121	0.125	0.144

Standard errors in parentheses

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

All other sectors mostly decrease the likelihood of dropping out of labor force in every education levels. Especially, the marginal effects of working in public administration and defense, education, health and social service are remarkable. It is 21.1 percent for less than high school graduates, 15.8 percent and 14.6 percent for high school and vocational high school graduates and 18.1 percent for university graduates. As we mentioned before, the effect of better jobs on labor market exit is much higher for less than high school graduates compared to the university graduates. The marginal effect of financial and insurance activities and professional, scientific and technical activities, administrative and support services have similar marginal effects. Working conditions of these sector are better compared to the other sectors. Especially, financial and insurance activities is the best sector in terms of favorable conditions. For instance, only 2.5 percent of women work as an informal worker and the share of employed women who work more than 48 hours in a week limited to 8.7 percent (see Table 4).

The average marginal effects of occupational groups are different across education levels. The marginal effect of working as technicians and associate professionals increases the probability of labor market exit by 7.9 percent in less than high school graduate while it decreases the probability in other education levels. It might be explained by the worse working conditions for less than high school graduates in this sector compared to the other education levels. For instance, the informality rate in this sector is 12.2 percent for married women who are less than high school graduated while it is less than 8 percent in all other education levels (HLFS 2017).

The marginal effect of working as clerical support workers is similar with the effect of working as technicians and associate professionals. Another remarkable

result is in the craft and related trade workers. Working in this occupation increases the probability of labor market exit for all education level except for vocational high school graduates. It increases the probability of labor market exit by 9.3 percent for less than high school graduates and 6.8 percent for university graduates.

The effect of having a child aged between 0 and 5 increases the likelihood of exit for married women in every education level. On the other side, the effect of having a child aged between 6 and 14 decreases the probability of labor market exit in every subsample. However, the effect is not significant for women who are married university graduates.

When I examined the effects of spouse characteristics on labor market exit for women across education groups, marginal effect of a husband with any education level is negative on dropping out of women who are less than high school graduates compared to reference category (a husband with less than high school graduate). Also, the marginal effect is rising with the higher education level of spouses. For instance, average marginal effect of having a university graduates husband is 11.1 percent for less than high school graduates women whereas the marginal effects of having a high school or vocational high school graduate husband are 2.6 percent and 1.5 percent, respectively. Having a husband with a university degree increases the labor market exit for women who are high school graduates or vocational high school graduates while other education levels of husbands decrease the probability of exit for these women. However, the effect of husbands with vocational high school degree is not significant for women who are high school graduates. The effect of having an unemployed spouse significantly decreases the probability of dropping out of women in every education levels.

CHAPTER 7

CONCLUSION

In this paper, I try to shed light upon the reasons behind the scenes of dropping out of labor force for women in Turkey. An important determination of labor market exit is the employment conditions. Working in the agriculture, other service activities, elementary occupations and working as craft and related trade workers and plant and machine operators and assemblers increase the probability of dropping outs. In addition to these sectors and occupations, reference categories which are wholesale retail trade and service and sales workers might not be considered as jobs with favorable conditions since the limited number of sectors and occupations that increase the probability of labor market exit. Sectors with better working conditions will help women to stay in the labor force. For the women in agriculture, policies focused on the job training may be effective to retain these women in labor force since they may not be able to use their skills in non-agricultural sectors. In other sectors, working conditions are detrimental for women. The results of education as another important determination in employment conditions, propose that education level has an essential impact for not only labor force participation but also dropping out of labor force. Therefore, the investment in human capital will decrease the labor market exit for women.

In addition, being married and having a child aged between 0 and 5 increase the likelihood of labor market exit. In other words, traditional division of labor still have a paramount importance to stay in labor force for women as it was found commonly in the literature. Thus, more egalitarian gender norms should be delineated to increase women's attachment to the labor force.

48

APPENDIX A

THE NUMBER OF EVER WORKED WAGE EARNERS

BY EDUCATION LEVELS AND MARITAL STATUS

	Less than high school			High school			Vocational high school			University			TOTAL
	Single	Married	Total	Single	Married	Total	Single	Married	Total	Single	Married	Total	
SECTORS													
Agriculture	7,828	20,295	28,123	404	438	842	203	238	441	256	170	426	29,832
Manufacturing, mining and quarrying and other industries	13,595	34,898	48,493	2,601	4,684	7,285	2,588	4,901	7,489	4,457	4,444	8,901	72,168
Construction	422	747	1,169	315	413	728	284	369	653	834	728	1,562	4,112
Wholesale retail trade, transportation and storage, accommodation and service	10,914	17,707	28,621	7,147	8,002	15,149	5,228	5,580	10,808	8,056	6,070	14,126	68,704
Information and communication	189	168	357	342	286	628	242	194	436	1,062	726	1,788	3,209
Financial and insurance activities	181	221	402	298	430	728	221	273	494	2,083	2,540	4,623	6,247
Real estate activities	220	570	790	155	119	274	75	97	172	201	137	338	1,574
Professional, scientific and technical activities, administrative and support services	2,374	6,857	9,231	2,215	2,512	4,727	1,723	2,165	3,888	5,585	4,236	9,821	27,667
Public administration and defense, education, health and social services	3,796	10,052	13,848	2,370	3,439	5,809	4,162	5,695	9,857	17,858	35,344	53,202	82,716
Other service activities	3,618	9,078	12,696	642	1,083	1,725	676	882	1,558	517	502	1,019	16,998
Total	43,137	100,593	143,730	16,489	21,406	37,895	15,402	20,394	35,796	40,909	54,897	95,806	313,227
OCCUPATIONS													
Managers	96	159	255	326	487	813	147	268	415	1,696	2,963	4,659	6,142
Professionals	349	306	655	340	493	833	1,210	1,840	3,050	16,699	30,326	47,025	51,563
Technicians and associate professionals	1262	1,463	2,725	1,472	1,799	3,271	2,124	2,854	4,978	5,299	6,500	11,799	22,773
Clerical support workers	3168	2,935	6,103	4,880	5,940	10,820	3,963	5,039	9,002	10,579	10,243	20,822	46,747
Service and sales workers	13051	23,802	36,853	6,609	7,543	14,152	5,577	5,748	11,325	5,177	3,718	8,895	71,225
Skilled agricultural, forestry and fishery workers	464	1,915	2,379	33	52	85	27	28	55	33	17	50	2,569
Craft and related trades workers	4349	12,965	17,314	610	1,216	1,826	633	1,277	1,910	451	445	896	21,946
Plant and machine operators, and assemblers	4551	10,536	15,087	553	1,098	1,651	533	1,178	1,711	245	214	459	18,908
Elementary occupations	15847	46,512	62,359	1,666	2,778	4,444	1,188	2,162	3,350	730	471	1,201	71,354
Total	43,137	100,593	143,730	16,489	21,406	37,895	15,402	20,394	35,796	40,909	54,897	95,806	313,227
KIDS													
Aged between 0 and 5													
1	1,294	41,135	42,429	390	11,056	11,446	322	10,998	11,320	524	29,078	29,602	94,797
0	41,843	59,458	101,301	16,099	10,350	26,449	15,080	9,396	24,476	40,385	25,819	66,204	218,430
Total	43,137	100,593	143,730	16,489	21,406	37,895	15,402	20,394	35,796	40,909	54,897	95,806	313,227
Aged between 6 and 14													
1	4,184	53,775	57,959	1,060	7,599	8,659	794	7,849	8,643	1,400	19,483	20,883	96,144
0	38,953	46,818	85,771	15,429	13,807	29,236	14,608	12,545	27,153	39,509	35,414	74,923	217,083
Total	43,137	100,593	143,730	16,489	21,406	37,895	15,402	20,394	35,796	40,909	54,897	95,806	313,227

APPENDIX B

LABOR MARKET STATUS OF MEN

WHO ARE NOT DISABLED, RETIRED OR STUDENTS

Years	TOTAL	Currently in Labor Force			Currently not in Labor Force		
		Employed	Unemployed	Total	Ever worked	Never worked	Total
2010	14,226,825	82.9	11.9	94.9	3.5	1.7	5.1
2011	14,516,606	85.4	9.6	95.0	3.3	1.7	5.0
2012	14,734,518	85.5	8.8	94.4	3.7	2.0	5.6
2013	14,894,668	85.9	9.2	95.2	3.4	1.5	4.8
2014	15,107,435	86.1	9.3	95.4	3.5	1.1	4.6
2015	15,258,912	85.9	9.5	95.4	3.7	0.9	4.6
2016	15,333,519	85.4	10.1	95.5	3.6	0.8	4.5
2017	15,549,528	85.5	10.0	95.5	3.6	0.8	4.5

DESCRIPTIVE STATISTICS OF EMPLOYED MEN AND

EVER WORKED NONPARTICIPANT MEN

	EMPLOYED								EVER-WORKED NONPARTICIPANT							
	2010	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
MARITAL STATUS																
Single	31.1	32.5	33.7	34.4	36.9	37.5	37.8	38.1	60.7	62.1	63.1	63.5	65.9	66.0	63.7	65.4
Married	68.9	67.5	66.3	65.6	63.1	62.5	62.2	61.9	39.3	37.9	36.9	36.5	34.1	34.0	36.3	34.6
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EDUCATION LEVEL																
Less than high school	59.8	58.8	56.7	55.3	54.8	52.9	51.1	50.3	67.9	68.3	68.5	66.3	65.3	68.0	64.7	60.8
High school	12.1	12.1	12.1	12.4	12.3	12.2	12.1	12.1	14.3	13.6	13.2	13.4	11.5	11.0	10.9	10.8
Vocational high school	12.7	12.6	13.1	13.3	13.0	13.4	13.7	14.1	9.6	8.7	8.4	9.1	11.2	9.4	10.1	10.6
University	15.4	16.5	18.2	19.0	19.9	21.5	23.0	23.5	8.3	9.4	9.9	11.2	12.0	11.5	14.4	17.8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
SECTORS																
Agriculture	12.2	12.2	12.1	11.5	10.3	10.0	9.6	9.7	21.0	19.4	21.9	18.5	14.9	14.9	16.2	15.2
Manufacturing, mining and quarrying and other industries	25.5	25.3	24.7	24.9	25.6	25.1	24.4	24.0	17.5	15.7	14.7	15.3	17.7	17.7	16.8	16.9
Construction	9.0	10.0	10.0	10.4	10.6	10.5	10.7	11.1	20.7	22.1	24.7	25.4	24.1	23.7	26.1	24.0
Wholesale retail trade, transportation and storage, accommodation and service	29.7	29.1	28.6	28.4	28.1	28.2	27.8	27.8	28.0	29.8	26.3	27.6	29.5	28.7	26.8	28.3
Information and communication	1.1	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.5	1.5	1.3	0.8	1.0	0.9	0.7	0.8
Financial and insurance activities	1.1	1.1	1.0	1.0	1.0	1.0	1.1	0.9	0.3	0.2	0.5	0.5	0.5	0.3	0.2	0.4
Real estate activities	0.2	0.6	0.8	0.8	0.9	0.9	1.0	1.0	0.2	0.2	0.4	0.5	0.3	0.3	0.2	0.2
Professional, scientific and technical activities, administrative and support services	6.1	5.8	6.2	6.6	7.5	8.1	8.8	9.4	3.5	3.6	3.7	3.5	4.1	4.4	3.9	4.7
Public administration and defense, education, health and social services	12.2	12.2	13.0	12.6	12.4	12.6	12.8	12.4	3.0	3.6	3.2	4.3	4.4	4.3	5.6	5.9
Other service activities	2.9	2.7	2.5	2.5	2.4	2.4	2.6	2.5	4.5	3.9	3.3	3.6	3.5	4.9	3.4	3.8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
OCCUPATIONS																
Managers	9.1	9.1	6.6	5.4	5.3	5.6	5.5	5.3	3.7	3.3	1.4	1.7	2.3	1.3	1.9	1.8
Professionals	6.4	6.6	7.7	7.7	8.2	8.5	8.9	8.8	2.7	3.9	3.4	3.9	4.0	4.5	4.6	5.4
Technicians and associate professionals	6.1	6.2	6.1	6.2	6.3	6.6	6.9	7.0	3.7	3.7	3.3	3.3	3.3	4.0	3.3	3.9
Clerical support workers	5.8	5.9	5.3	5.8	6.1	6.3	6.6	6.8	3.9	3.5	2.6	3.3	4.7	2.9	3.6	4.3
Service and sales workers	15.4	15.3	18.9	20.4	19.9	20.3	20.2	20.2	16.6	16.7	17.9	19.0	20.3	21.0	19.0	20.2
Skilled agricultural, forestry and fishery workers	9.7	9.3	9.4	9.0	8.0	7.5	7.0	7.1	6.9	6.1	8.0	7.0	5.1	5.3	5.4	5.7
Craft and related trades workers	18.9	18.5	19.4	19.4	19.8	19.1	18.9	19.2	21.0	19.4	19.8	20.4	22.9	22.5	22.9	22.5
Plant and machine operators, and assemblers	14.2	13.8	12.9	13.0	12.2	12.2	12.0	12.3	8.4	8.8	8.0	8.0	8.4	8.6	8.0	7.8
Elementary occupations	14.5	15.2	13.5	13.0	14.2	14.1	14.0	13.3	33.0	34.5	35.7	33.4	29.2	30.1	31.2	28.4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EMPLOYMENT STATUS																
Regular employee or casual	72.9	73.9	74.7	75.5	76.5	77.4	77.6	77.3	82.7	85.5	84.7	85.4	87.1	88.3	87.7	87.4
Employer	6.0	5.8	5.8	5.3	4.9	4.9	5.0	5.0	1.7	1.2	0.8	1.2	1.2	0.9	1.7	1.2
Self employed	14.7	14.1	13.6	13.4	12.5	11.9	11.6	12.0	5.2	4.8	4.6	5.4	5.1	5.1	4.0	4.5
Unpaid family worker	6.4	6.1	5.9	5.8	6.1	5.8	5.8	5.8	10.4	8.6	9.9	8.0	6.7	5.6	6.6	6.9
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

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