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FEMALE ENTREPRENEURSHIP in TURKEY: PATTERNS, CHARACTERISTICS and TRENDS

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FEMALE ENTREPRENEURSHIP in TURKEY: PATTERNS, CHARACTERISTICS and TRENDS

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ABBREVIATIONS

FLFPR	Female Labor Force Participation Rate
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
HLFS	Household Labour Force Survey
OAW	Own Account Workers
OECD	Organisation for Economic Co-operation and Development

EXECUTIVE SUMMARY

- Share of employers in self-employed remains low in Turkey at 13 percent compared to the EU average of 28 percent.
- Gender composition varies significantly across different categories of self-employment in Turkey with females constituting 7 percent of employers and 76 percent of unpaid family workers.
- Share of female employers in total employers increased from 4.82 percent in 2004 to 7.39 percent in 2012.
- Female employers are relatively less represented in high value added sectors such as construction and manufacturing.
- Female owned businesses tend to have smaller firm size than male owned business.
- Share of female employers in the informal economy decreased from 29.10 percent in 2004 to 20.80 in 2012.
- 90 percent of female OAW and about 60 percent of male OAW remained informal during 2004-2012.
- At 23 percent, a significant and equal share of employers from either sex has majored in business and management. However, there is also gender segregation in choice of majors, with male employers majoring in engineering and female employers majoring in health.
- Education, especially higher education increases the probability of becoming an employer and its effect is higher for females.
- Having small children decreases the probability of being an employer for females while it increases the probability of being an employer for males.
- Being female decreases the odds of looking for work as an entrepreneur by 50 percent over a paid employee among the unemployed.

Table 4 summarizes the effects of variables of interest on the likelihood of being an employer or an OAW over being inactive/unemployed for working age population and on the likelihood wanting to be an employer over a paid employee in unemployed population.

1. INTRODUCTION

1. Over a century ago, Schumpeter (1911) described the entrepreneur as a creative, driven individual who finds “new combinations of [factors] of production” to develop a new product, corner a new market, or design a new technology and he famously attributed endogenous development to the creative acts associated with entrepreneurial activity.
2. Understanding female entrepreneurship is important for three important reasons. First, as noted by Schumpeter (1911), entrepreneurship has an important role in the development process and paying attention to only male entrepreneurs ignores economic growth potential of half the population. Second, female led micro and small enterprises can have a more significant impact on overall household welfare and consumption than their male led counterparts. Women entrepreneurs and heads of households tend to spend more on household health, nutrition and education than men (Nichter and Goldmark, 2009). Third, understanding female entrepreneurship is important to promote gender equity in labor markets. Increasing female entrepreneurship not only increases the number of female employers but also female employees in the labor market since female entrepreneurs tend to employ proportionately more females than male headed firms (Nichter and Goldmark, 2009).
3. This paper contributes to our understanding of female entrepreneurship in Turkey by analyzing the patterns and characteristics of female entrepreneurs and examining time trends in entrepreneurial activity. Our data on entrepreneurs comes from data on employers and own account workers available in nationally representative Turkish Household Labor Force Surveys of 2004-2012 (HLFS 2004-2012, TURKSTAT).
4. In Turkey, share of self-employed¹ was 38 percent of total employment in 2012, much higher than the EU-27 average of 15 percent. However, the composition of self-employed in Turkey is markedly different than in EU-27. Only 13 percent of self-employed in Turkey are employers in contrast to 28 percent of self-employed in EU-27.

¹ According to International Labor Organization (ILO), self-employed persons include employers, own-account workers, members of producers' co-operatives, and unpaid family workers.

5. While the share of females in self-employed at 36 percent is comparable to EU-27 average of 30 percent, gender composition varies significantly across different categories of self-employment in Turkey. More specifically, 7.39 % of employers and 17.21 % of own account workers are females in sharp contrast with 76% of unpaid family workers (Author's calculations, HLFS 2012).

6. Previous empirical studies tried to explain the determinants of low levels of female labor force participation (FLFPR) in Turkey (Karaoglan and Okten, 2013; Tansel, 2002 and Baslevent and Onaran, 2003, Tepav, 2013).² Tepav (2013) also analyzed the determinants of FLFP as an employer and found that education and being married increases the probability of FLFP as an employer while the number of children has no significant effect.³ This study is the first analyzing the effects of socio-demographic characteristics such as education, marital status, number of children and urban/rural location on *gender gap* in entrepreneurship in Turkey. A multinomial logistic model was used where the odds of being an employer or own account worker over being inactive/unemployed was analyzed. The estimation strategy uses the total working age population in HLFS 2012 where gender gap is measured by including gender indicators and interaction terms of gender with socio-demographic characteristics such as education, marital status and number of children. It is found that higher education reduces the gender gap while marriage and number of children increases the gender gap in entrepreneurship. Perhaps surprisingly, living in an urban area also increases the gender gap as it increases the odds of becoming an employer for males and decreases the odds for females.

² Female labor force participation in Turkey declined and is significantly lower than the OECD average but above female participation in the MENA. In Turkey, the female Labor Force Participation Rate (LFPR) decreased from 36 percent in 1988 to 25 percent in 2004, and has slowly increased since then, to 32 percent in 2012 (OECD, 2012).

³ This study uses HLFS 2009-2011 to analyze the effects of education and marital status and 2007-2010 Survey of Income and Living Conditions Survey to analyze the effects of children on the probability of FLFPR as an employer or own account worker. Since regressions are run separately for females and males, it is not possible to determine the effects of covariates on gender gap in entrepreneurship.

7. In the next section, a brief literature survey on gender gap in entrepreneurial activity and entrepreneur characteristics is provided. In section 3, the entrepreneurship setting for women in Turkey is described. Section 4 describes the data and methodology. Section 5 presents results. Section 6 discusses policy implications. Section 7 provides an executive summary.

2. LITERATURE SURVEY

8. In recent years, there has been considerable interest and debate over entrepreneurial characteristics as a predictor of entrepreneurial success (Gartner and Shane 1995; Gürol and Atsan 2006; Koh 1996; Pavlovich and Corner 2006).

9. We now know that significantly fewer women than men own and manage businesses worldwide (Georgellis and Wall, 2005; Kim, 2007; Minniti and Naude, 2010). Though in recent years the number of women entrepreneurs has increased dramatically (De Bruin et al., 2006), empirical evidence indicates that still male entrepreneurs significantly outnumber female entrepreneurs and these differences are consistent across countries (Minniti et al., 2005). This could be because women fail more often than men or because fewer women than men start businesses to begin with, or both. Some evidence exists that, after correcting for factors such as size of the business and sectorial distribution, women's failure rates are not significantly different from those of men (Kalleberg and Leicht, 1991; Perry, 2002; Kepler and Shane, 2007).

10. Evidence to date suggests that a variety of reasons contribute to explaining observed differences in entrepreneurial activity across genders (Minniti et al, 2006). Perhaps women and men have different socioeconomic characteristics and, if we were to correct for factors such as education, wealth, family and work status, those differences would disappear. Indeed, quite a bit of empirical evidence shows that such differences do exist (Cowling and Taylor, 2001; Blanchflower, 2004; Minniti et al, 2005). Also, women tend to possess fewer years of experience than men (Aronson, 1991; Lee and Rendall, 2001) and tend to concentrate in different sectors (Orser et al, 2006; Klapper and Parker, 2011). In addition, the propensity of women to start a business may differ from that of men for cultural reasons or because of discrimination in access to credit (Neumark and McLennan, 1995, Klapper and Parker, 2011). One could also argue that men and women have different preferences and that women like being self-employed less than men do (Kanazawa, 2005).

11. The businesses owned and managed by men and women are also different. We now know that women's businesses tend to be smaller and to grow less than those owned by men (DuReitz and Henrekson, 2000; Coleman, 2007). Also, women's businesses tend to be less profitable than those of men (Robb and Wolken, 2002) and to generate lower sales turnover than men, even in same-industry comparisons (Chaganti and Parasuraman, 1996; Minniti (2009).

12. Recent evidence shows that prevalence of female entrepreneurship tends to be relatively higher in some of the developing countries than in developed countries (Minniti et al., 2006). This has traditionally been explained by the fact that women face higher barriers to entry in the formal labor market and have to resort to entrepreneurship as a way out of unemployment and poverty.

3. SETTING: FEMALE ENTREPRENEURSHIP IN TURKEY

13. Among OECD countries the share of self-employed workers in total employment ranged from around 8 percent in Luxembourg, Norway and the United States to over 30 percent in Greece, Mexico and Turkey (OECD, 2012).⁴ Self-employed persons accounted for 15.2 percent of total EU employment in 2012 (Eurostat, 2012). 28.3 percent of self-employed persons in the EU have employed staff and hence are employers whereas in Turkey, only 13 percent of self-employed persons are employers. Furthermore, unpaid family workers constitute 35 percent of self-employed persons in Turkey.

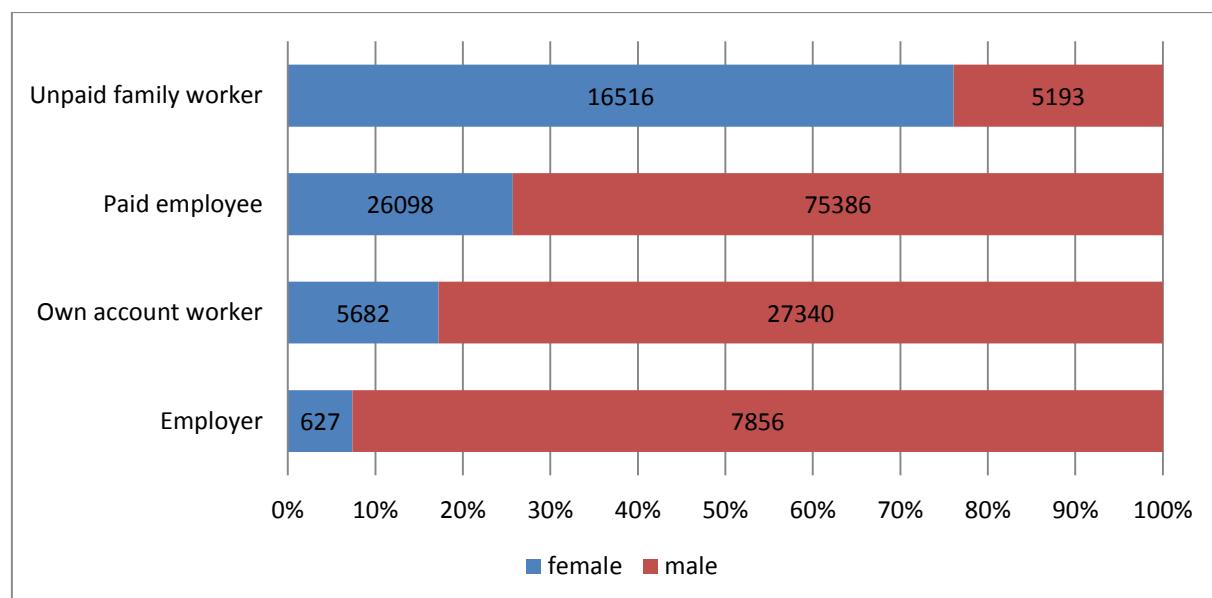
14. In general, self-employment rates are highest in countries with low per capita income and shares of self-employed persons with employed staff (employers) are higher in countries with high per capita income (OECD, 2012).

⁴ According to International Labor Organization (ILO), self-employed persons include employers, own-account workers, members of producers' co-operatives, and unpaid family workers.

15. Levels and changes in total self-employment conceal significant differences between men and women. In Turkey, almost half of all women in total employment are self-employed down from 78.4 recorded in 1990 (OECD Fact book, 2013). This statistic is largely driven by the large share of female unpaid family workers in total female self-employment. Women working on the family farm are counted as unpaid family workers and their share in total employment has decreased over the years with rapid urbanization in Turkey. Nevertheless, female unpaid family workers still constitute 72 percent of female self-employment and 34 percent of total female employment. 90 percent of female unpaid family workers still work on a farm.

16. Gender composition varies significantly across different categories of self-employment in Turkey. Figure 1 presents gender composition of different categories of employment (Author's calculations, HLFS 2012). 7.39 % of employers and 17.21 % of own account workers were females in sharp contrast with 76% of unpaid family workers.

Figure 1. Gender composition of employment, HLFS (2012)



17. Self-employment may be seen either as a survival strategy for those who cannot find any other means of earning an income or as evidence of entrepreneurial spirit and a desire to be one's own boss. The self-employment rates and their composition reflect these various motives.

18. In Turkey the prevalence of female entrepreneurship is very low compared to that of men according to other data sources as well. According to Global Entrepreneurship Monitor (GEM) 2010 data more than 70 percent of all entrepreneurs in Turkey are men.

19. The GEM 2010 data also show that gender attitudes are different towards entrepreneurship in Turkey. A higher percentage of men than women see more favorable opportunities in the environment for starting a business. Men are also more confident that they possess the knowledge and experience necessary for starting a new business and they have less fear of failure. Men have more networking resources and know, for example, more people who started a business than do women (Karadeniz, 2010).

20. Consistent with international findings, Turkish people in the highest household income brackets are more likely to start a new company. 76 percent of Turkish entrepreneurs are found in the highest 33 percent income level, and only 8 percent of Turkish entrepreneurs come from the lowest 33 percent income level (Karadeniz 2010).

In 2010, 33 percent of Turkish respondents mentioned that fear of failure prevented them from embarking on a new business. This figure is slightly lower than the average for efficiency-driven countries which is 35 percent.⁵ The share of those in Turkey delayed by fear of failure in starting a new business decreased by about 3 percent from 2008 to 2010 Karadeniz (2010).

21. According to Global Gender Gap Index in World Economic Forum Global Gender Gap Report 2012, Turkey ranked 124th out of a total 135 countries.⁶ Furthermore, Turkey has moved down from 122nd in 2011 to 124th in 2012, among the same 135 countries included in the rankings.

⁵ Since 2008 the countries that participate in the GEM project have been classified according to Porter's typology of "factor-driven economies", "efficiency-driven economies" and "innovationdriven economies" (GEM, 2008).

⁶ The Index is designed to measure gender-based gaps in access to resources and opportunities in individual countries rather than the actual levels of the available resources and opportunities in those countries.

4. DATA AND METHODOLOGY

22. Yearly cross-sectional Turkish Household Labor Force Survey (HLFS) data for the 2004-2012 periods, made available by TURKSTAT, were used.

23. Individuals who are aged 15 or older are asked their labor force status as well as socio-demographic characteristics in these surveys. Those who have indicated that they have worked in the reference week are further asked whether they worked as 1) paid employee 2) employer, 3) own account workers or as 4) unpaid family worker.

24. The “self-employed” category defined by ILO is a highly heterogeneous group composed of employers who employ at least one paid employee, own account workers (might have partners or employ unpaid family workers but no paid employees) and unpaid family workers.

25. In order to differentiate between the characteristics of individuals across heterogeneous groups in the “self-employed” category, multinomial logistic analysis where individuals can be 1) inactive/unemployed or 2) paid employees or choose to be 3) employers, 4) own account workers or 5) unpaid family workers were conducted. Inactive/unemployed dummy is the omitted category and coefficients on explanatory variables are interpreted compared to this omitted category. This set-up enables to make comparisons across different sub-groups of the “self-employed” since they are all contrasted against the same omitted category.

26. The sample of unemployed and the probability of wanting to start up one’s business versus looking for work as paid employee in a logistic estimation was analyzed.

27. The purpose is to analyze how socio-demographic factors affect the likelihood of being an employer or own account worker. Hence, the explanatory variables in the multinomial logistic regression of working age population sample and the logistic regression of the unemployed sample are a dummy variable for female (equals 1 if female), age, age squared, dummy variables for education levels completed (primary school, junior high school, high school, vocational school and university with less than primary school being the omitted category), variables for the number of children in the household aged 0-4, 5-11, marital status (married, divorce widow with single being the omitted category), interaction of education, children and marital status variables with the female dummy variable, dummy variable for urban, region dummies at the NUTS2 level. Since observations from the same household family are available in the data, error terms are clustered at the household level.

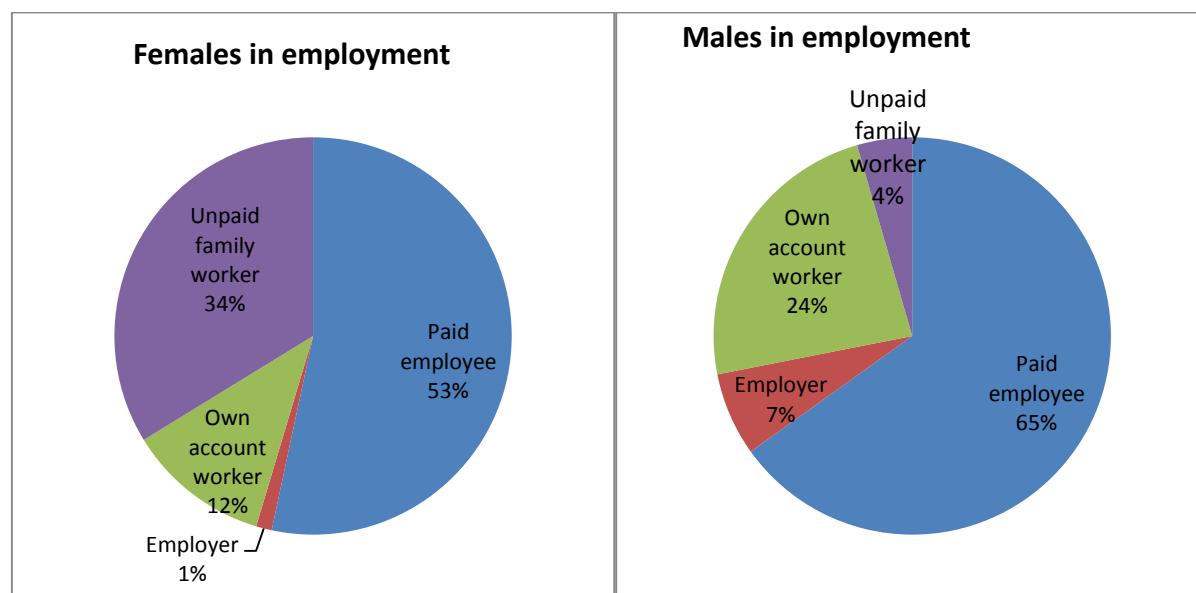
5. RESEARCH FINDINGS

5.1 PATTERNS AND TRENDS OF FEMALE AND MALE ENTREPRENEURSHIP

28. In Turkey, share of self-employed was 38 percent of total employment in 2012, much higher than the EU-27 average of 15 percent. The composition of self-employed in Turkey is markedly different than in EU-27. Only 13 percent of self-employed in Turkey are employers while employers constitute 28 percent of self-employed in EU-27. In Turkey, 36 percent of self-employed are females slightly higher than EU-27 average of 30 percent.

29. Figure 2 presents employment profiles of females and males in Turkey (HLFS 2012). Share of self-employed females is 47 percent in total female employed while share of self-employed males is 35 percent in total male employed. There are large differences in the composition of the self-employed across genders. Only 2 percent of self-employed females are employers while 20 percent of self-employed males are employers. In contrast, 72 percent of self-employed females are unpaid family workers and only 11 percent of self-employed males are unpaid family workers.

Figure 2. Employment Composition of Females and Males, HLFS 2012



30. The focus will be on time trends for employers and own account workers to provide a comprehensive picture of female entrepreneurship in Turkey. Table 1a presents time trends for employer population in Turkey during 2004-2012. Share of employers in working age population (age 15+)⁷ steadily increased from 1.98 percent in 2004 with a peak at 2.31 percent in 2008 and then started decreasing with a dip in 2009. In 2010, it started increasing again and is currently at 2.21 percent of the working age population. This dip is most likely due to the 2008-2009 economic crises. Share of employers in the labor force also increased steadily from 2004 till 2008. After its peak in 2008, it started decreasing and this downward trend still continues. Share of females in total employer population on the other hand has been steadily increasing from 4.82 percent in 2004 to 7.39 percent in 2012. Share of female employer in the informal economy decreased from 29.10 percent in 2004 to 20.89 percent in 2013.⁸

31. Table 1b presents time trends for own account workers (OAW). Share of OAW in working age population decreased from 10.17 percent in 2004 to 8.60 percent in 2012. The share of OAW in labor force (LF) decreased from 25.11 percent in 2004 to 20.05 percent in 2012. Share of females in OAW increased from 11.23 percent in 2004 to 17.21 percent in 2012. Share of female OAW who are in informal sector remained high and nearly constant at 90 percent during the period of analysis while share of male OAW in the informal sector increased from 62 percent in 2004 to 65.31 percent in 2009 and started decreasing and is currently at 60.37 percent. Hence own account workers appear very different than employers in terms of their activity mostly taking place in the informal economy.

⁷ We define working age population as older than 15 rather than 15-64, since we are interested in potential entrepreneurship population and there are older entrepreneurs/employers in our data. One can also argue that entrepreneurs are less likely to be constrained by physical constraints and legal limits that workers face.

⁸ We define a person as employed in the informal sector if is not included in the social security coverage due to his employment.

Female Entrepreneurship in Turkey: Patterns, Characteristics and Trends

Table 1a. Descriptive Statistics of Employers: HLFS 2004-2012

Year	Population (Age=15+) (POP)	Labor Force (LF)	employers	female employers	Informal employers	informal employers	share of employers in POP	share of employers in LF	share of females in employers	share of female employers in informal	share of male employers in informal
2004	338132	136902	6700	323	1568	94	1.98	4.89	4.82	29.10	23.11
2005	349864	140990	7168	346	1921	123	2.05	5.08	4.83	35.55	26.36
2006	356390	143451	7631	460	2130	159	2.14	5.32	6.03	34.57	27.49
2007	347402	138504	7682	486	2263	150	2.21	5.55	6.33	30.86	29.36
2008	348380	139860	8049	507	2357	173	2.31	5.76	6.30	34.12	28.96
2009	366273	145934	8016	524	2282	166	2.19	5.49	6.54	31.68	28.24
2010	384846	159343	8444	596	2308	173	2.19	5.30	7.06	29.03	27.20
2011	385231	165235	8724	614	2101	159	2.26	5.28	7.04	25.90	23.95
2012	383970	164698	8483	627	1717	131	2.21	5.15	7.39	20.89	20.19

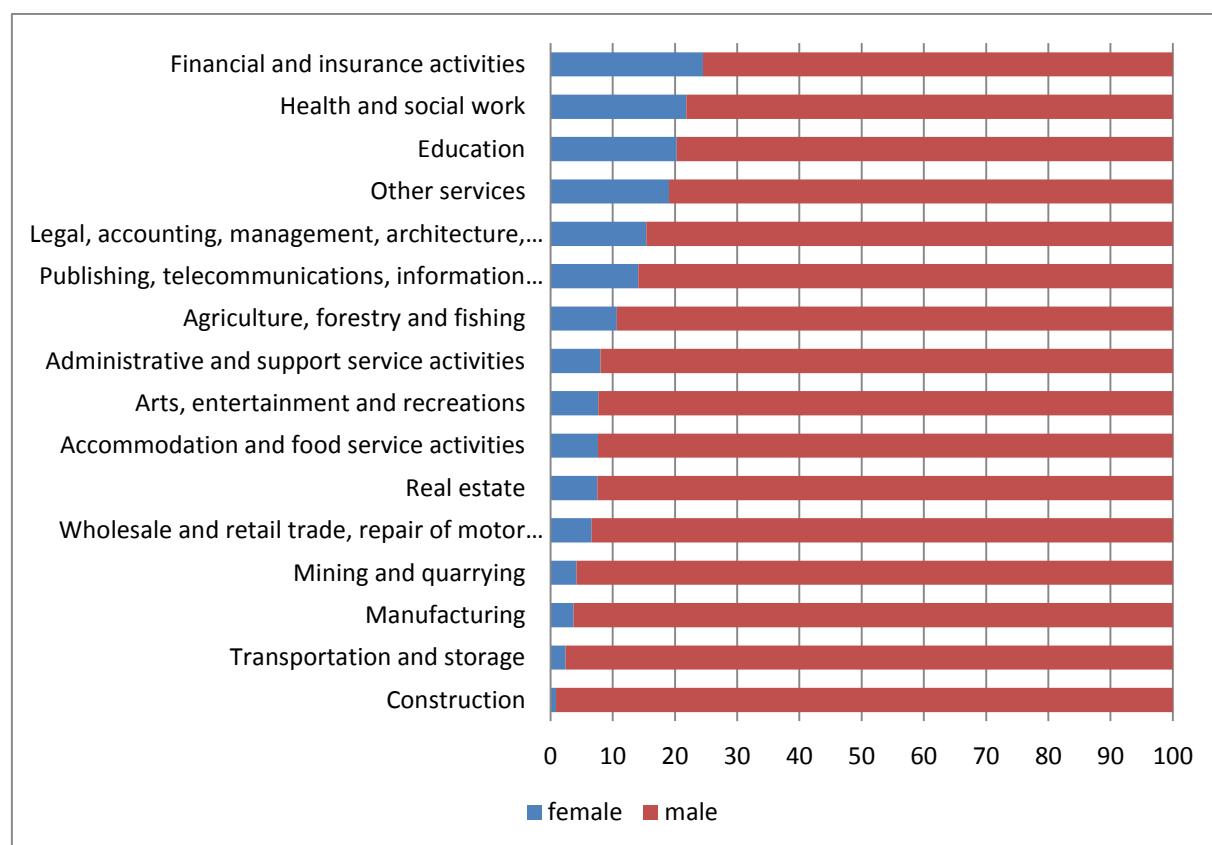
Table 1b. Descriptive Statistics of Own Account workers (OAW): HLFS 2004-2012

Year	Population (Age=15+) (POP)	Labor Force (LF)	OAW	female OAW	informal OAW	informal OAW	share of female OAW in POP	share of OAW in LF	share of females in OAW	share of female OAW in informal	share of male OAW in informal
2004	338132	136902	34380	3861	22448	3512	10.17	25.11	11.23	90.96	62.05
2005	349864	140990	35909	5188	23542	4753	10.26	25.47	14.45	91.62	61.16
2006	356390	143451	35278	5124	23345	4631	9.90	24.59	14.52	90.38	62.06
2007	347402	138504	32093	4495	21564	4107	9.24	23.17	14.01	91.37	63.25
2008	348380	139860	30814	4401	21035	3996	8.84	22.03	14.28	90.80	64.51
2009	366273	145934	33031	5598	23038	5122	9.02	22.63	16.95	91.50	65.31
2010	384846	159343	34973	6393	24329	5848	9.09	21.95	18.28	91.48	64.66
2011	385231	165235	34253	6224	22868	5624	8.89	20.73	18.17	90.36	61.52
2012	383970	164698	33022	5682	21604	5100	8.60	20.05	17.21	89.76	60.37

Source: Author's calculations, HLFS 2004-2012

32. There is significant gender segregation in sectors of employers and own account workers in Turkey. Figures 3a and 3b present the sector specific gender composition of employers and own account workers respectively. Share of female employers is smallest in sectors with high share of total GDP. Share of female employers is less than 1 percent in construction, 2.44 percent in transportation and storage and 3.74 percent in manufacturing and the combined sector share of total GDP of the three sectors mentioned is nearly 40 percent. Considering that construction sector has been a fast growing sector in Turkey in recent years, absence of female entrepreneurs in this sector implies that females are not likely to directly benefit from growth opportunities in this sector.

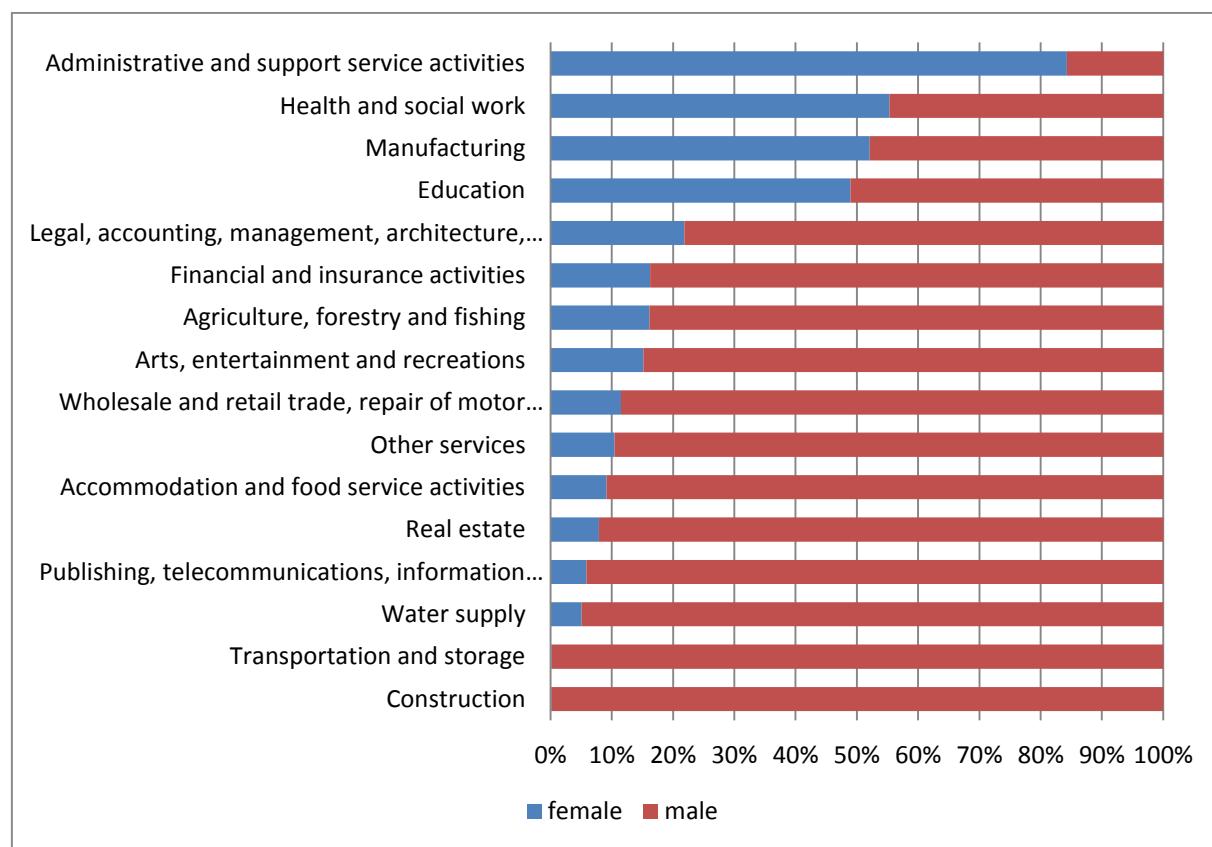
Figure 3a. Sector specific gender composition of employers



33. Share of female employers is over 20 percent in financial and insurance activities sector, health and social work sector and education sector where the combined sector share of total GDP of these three sectors is nearly 9 percent.

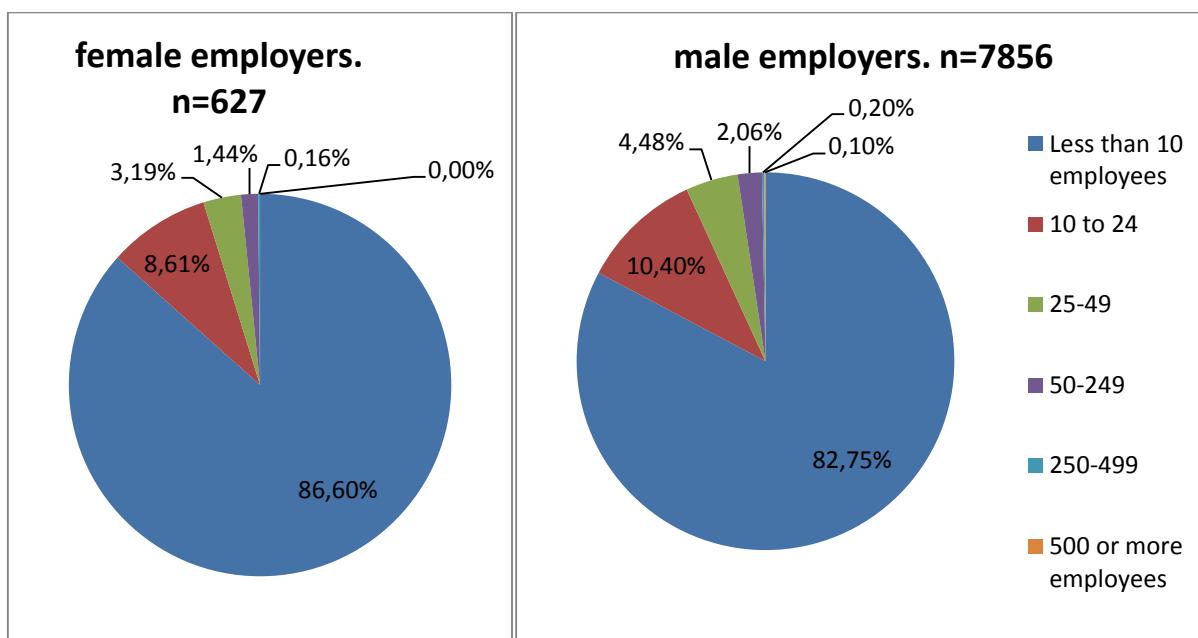
34. Similar to patterns for employers, share of female OAW is also very high in health and social work at 55 percent and education at 49 percent. In contrast to low share of female employers in manufacturing, share of female OAW in manufacturing is 52 percent. Share of female OAW is highest in administrative and support service activities at 84 percent.

Figure 3b. Sector specific gender composition of OAW



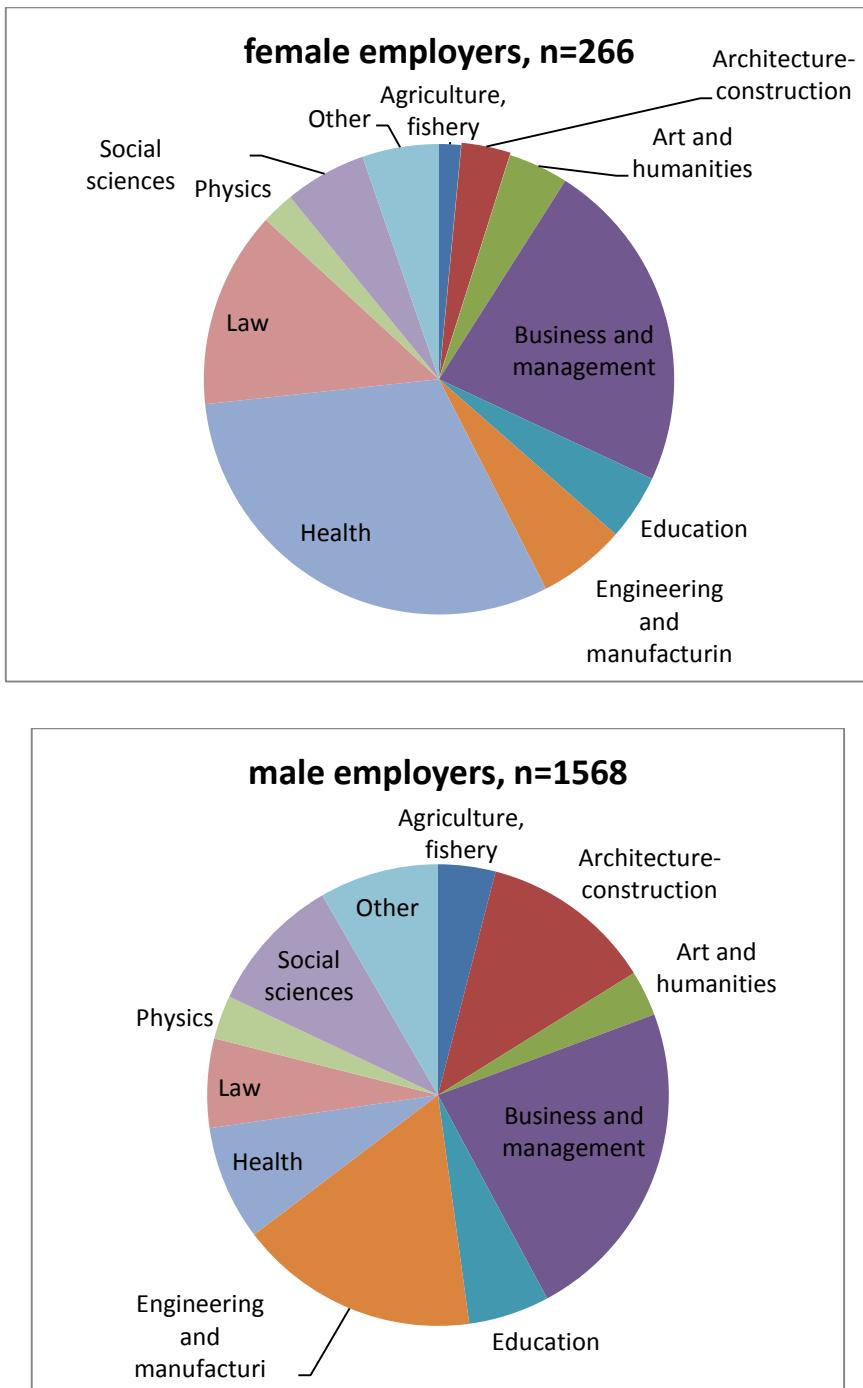
35. In addition to sector segregation, there appears to be segregation according to firm size. Female owned businesses tend to be smaller in size. Figure 4 presents the firm size composition of female and male employers. Over 80 percent of both female and male employers own businesses with less than 10 employees. However, 6.84 percent of male employers own businesses with 25 or more employees while only 4.79 percent of female employers own businesses with that size.

Figure 4. Firm size composition of female and male employers.



36. Although the share of females in total employers is 7 percent, share of females in university graduate employers is 14.5 percent. This striking statistic alludes to the importance of university education in closing the gender gap in entrepreneurship in Turkey. Hence, a closer look was taken at university graduate employers and the majors of female and male university graduates were examined to identify any existing similarities and differences across genders. Figure 5 presents the majors of female and male employers who are university graduates. Significant and equal shares (23 percent) of female employers and male employers majored in business and management. While health appears to be an important major for females with 30 percent of female employers majoring in health, only 8 percent of male employers majored in this field. Engineering major appears more important for males with 17 percent of male employers majoring in this field as opposed to 6 percent of female employers.

Figure 5. Majors of female and male employers.



37. Among employers who are vocational high school graduates, there are only 53 females as opposed to 903 males; hence only 5.5 percent of employers who are vocational high school graduates are females. While a plurality of male employers (38 percent) have majored in engineering, share of female employers with engineering major is less than 1 percent. Similar to results for university graduates, significant shares of females at 34 percent and males at 22 percent have majored in business and management in vocational high school.

5.2 THE IMPACT OF INDIVIDUAL CHARACTERISTICS ON THE PROBABILITY OF BEING AN ENTREPRENEUR

38. The socio-demographic characteristics influencing the probability of being an employer or OAW are examined. A multinomial logistic analysis using data on working age population (15+) from HLFS 2012 is conducted. Individuals are classified into five possible labor market outcomes: 1) inactive/unemployed, 2) paid employees, 3) employers, 4) own account workers or 5) unpaid family workers. Inactive/unemployed dummy is the omitted category and coefficients on explanatory variables are interpreted compared to this omitted category. This set-up enables to make comparisons across different sub-groups of the “self-employed” since they are all contrasted against the same omitted category.

39. Table 2 shows the means and standard deviations of variables used in the multinomial logistic model by labor market outcome.

40. Females constitute 68.38 percent of inactive or unemployed population, 25.7 percent of paid employees, 7.39 percent of employers, 17.21 percent of OAW and 76.08 percent of unpaid family workers.

41. On average, employers and paid employees are more educated than OAW, inactive/unemployed and unpaid family workers. 26 percent of paid employees and 21.61 percent of employers are university graduates whereas only 5.81 percent of inactive/unemployed, 3.76 percent of OAW and 2.17 percent of unpaid family workers are university graduates. Employers and OAW are significantly older than paid employees and unpaid family employees.

42. Over 80 percent of employers and paid employees live in urban areas whereas only 45.13 percent of OAW and 21.8 percent of unpaid family workers live in urban areas.

Table 2. Descriptive Statistics for Variables Used in Multinomial Logistic Analysis.

	Explanatory variables												
	female	age	primary s.	junior hs.	high s.	vocational hs.	university	married	divorced	widow	nchild4	nchild11	urban
Dependent variables													
Inactive or unemployed													
mean	0.68	43.57	0.33	0.20	0.09	0.06	0.06	0.61	0.02	0.10	0.25	0.41	0.75
st. dev.	0.46	20.32	0.47	0.40	0.29	0.23	0.23	0.49	0.14	0.31	0.56	0.76	0.43
N	219272	219272	219272	219272	219272	219272	219272	219272	219272	219272	219272	219272	219272
Paid employee													
mean	0.26	35.36	0.27	0.18	0.12	0.12	0.26	0.69	0.03	0.01	0.32	0.48	0.84
st. dev.	0.44	10.72	0.44	0.39	0.32	0.33	0.44	0.46	0.16	0.09	0.58	0.74	0.37
N	101484	101484	101484	101484	101484	101484	101484	101484	101484	101484	101484	101484	101484
Employer													
mean	0.07	43.03	0.37	0.15	0.14	0.11	0.22	0.89	0.02	0.01	0.31	0.51	0.85
st. dev.	0.26	11.17	0.48	0.36	0.34	0.32	0.41	0.32	0.14	0.10	0.56	0.74	0.35
N	8483	8483	8483	8483	8483	8483	8483	8483	8483	8483	8483	8483	8483
Own account workers													
mean	0.17	47.62	0.59	0.12	0.06	0.05	0.04	0.89	0.02	0.04	0.29	0.50	0.45
st. dev.	0.38	12.88	0.49	0.32	0.24	0.23	0.19	0.32	0.13	0.19	0.61	0.82	0.50
N	33022	33022	33022	33022	33022	33022	33022	33022	33022	33022	33022	33022	33022
Unpaid family employee													
mean	0.76	38.83	0.43	0.19	0.05	0.04	0.02	0.73	0.01	0.02	0.36	0.55	0.22
st. dev.	0.43	15.27	0.49	0.40	0.21	0.19	0.15	0.44	0.08	0.13	0.71	0.90	0.41
N	21709	21709	21709	21709	21709	21709	21709	21709	21709	21709	21709	21709	21709
Total working age population (15+)													
mean	0.52	41.47	0.34	0.19	0.10	0.07	0.11	0.67	0.02	0.07	0.28	0.44	0.72
st. dev.	0.50	17.68	0.48	0.39	0.29	0.26	0.31	0.47	0.15	0.25	0.58	0.77	0.45
N	383970	383970	383970	383970	383970	383970	383970	383970	383970	383970	383970	383970	383970

43. In this analysis, the objective is to analyze the characteristics of employers and own account workers. The focus is how gender affects the probability of being an employer or an own account worker and how other important characteristics such as education, marital status, number of children, urban/rural residence have differential effects for females versus males. In this section the results of this analysis is summarized. In the appendix section coefficients of the multinomial logistic analysis are presented in Table A1 and the explanations on how to interpret the coefficients are provided.

44. It is found that that being female decreases the odds of being an employer, OAW and paid employee and increases the odds of being an unpaid family worker over being inactive or unemployed.

45. More education increases the odds of being an employer or paid employee but decreases the odds of being an OAW or an unpaid family worker for both males and females. Furthermore, education appears more important in becoming an employer rather than a paid employee.

46. There appears to be differential effects of education levels on closing the gender gap in being an employer. Primary school degree over not finishing school increases the odds of being an employer for both males and females though its effect is higher for males. There is no differential effect of high school education on males versus females; it increases the odds of becoming an employer over being inactive/unemployed for both genders at the same rate. However, higher education has a more important effect for a female than a male in becoming an employer. A university education increases the odds of a male becoming an employer by 8 folds whereas it increases the odds of a female becoming an employer by 29 folds over being inactive/unemployed compared to less than primary school education.

47. Being married increases the odds of being an employer for males while it has no effect for females over being single. Being married increases the odds of being an OAW for both males and females but its effect is higher for males. Interestingly, being married *increases* the odds of being an unpaid family worker for females while it *decreases* the odds of being an unpaid family worker for males.

48. Being divorced increases the odds of being an employer, own account worker or paid employee, while it decreases the odds of being an unpaid family worker for both females and males. Furthermore, its effect on the odds of being an OAW or a paid employee is higher for females than males.
49. Number of children aged 0-4 *decreases* the odds of being an employer/OAW/paid employee for females while it *increases* the odds for males.
50. Similarly, number of children aged 5-11 *decreases* the odds of being an employer or paid employee for females while it *increases* the odds for males. This variable increases the odds of becoming an OAW for males but has no effect on females.
51. Surprisingly, living in an urban area decreases the odds of being an employer for females and increases the odds of being an employer for males whereas it increases the odds of being an OAW for females and decreases the odds of being OAW for males.

5.3 THE IMPACT OF INDIVIDUAL CHARACTERISTICS ON THE PROBABILITY OF BEING A NASCENT Entrepreneur in the Unemployed Sample

52. The unemployed sample was examined and the characteristics of those who want to start their business versus those who are looking for work as a paid employee were analyzed.

53. Table 3 presents the descriptive statistics of the unemployed sample. 37 percent of those looking for work as paid employees and 24 percent of those looking for work as employers are females and this difference in shares is statistically significant. We also considered the sample of unemployed whose business had been closed or gone bankrupt at the time search for employment has started. In this sample of unsuccessful former entrepreneurs, 24 percent of those looking for work as employees and 13 percent of those looking for work as employers are females and this difference in shares is statistically significant. While this difference is statistically significant, it should be noted that the share of females in persons looking for work as employers in both of these unemployed samples is much higher than share of females in existing employers which is 7 percent.

Table 3. Descriptive Statistics for Variables used in Logistic Analysis of the Unemployed Sample

Explanatory Variables																
	female	Age	primary s.	junior hs.	High s	vocational hs.	university	married	divorced	widow	nchild4	nchild11	urban	worked		
Looking for work																
as employee																
mean	0.37	32.43		0.27	0.23	0.13		0.11	0.19	0.49	0.05	0.01	0.25	0.42	0.83	0.88
st. dev.	0.48	11.52		0.44	0.42	0.34		0.31	0.39	0.50	0.21	0.09	0.55	0.76	0.38	0.32
N	15637	15637		15637	15637			15637	15637	15637	15637	15637	15637	15637	15637	
Looking for work																
as employer																
mean	0.24	35.42		0.25	0.20	0.16		0.13	0.22	0.59	0.05	0.00	0.29	0.44	0.87	0.94
st. dev.	0.43	10.98		0.43	0.40	0.37		0.34	0.41	0.49	0.21	0.06	0.58	0.73	0.34	0.24
N	500	500		500	500			500	500	500	500	500	500	500	500	
Total unemployed																
mean	0.36	32.52		0.27	0.22	0.14		0.11	0.19	0.49	0.05	0.01	0.25	0.42	0.83	0.88
st. dev.	0.48	11.51		0.44	0.42	0.34		0.31	0.39	0.50	0.21	0.09	0.55	0.76	0.38	0.32
N	16137	16137		16137	16137			16137	16137	16137	16137	16137	16137	16137		

54. Next, using the unemployed sample we do a logistic regression analysis where dependent variable is equal to 1 if individual wants to start his/her own business 0 if he/she is looking for work as a paid employee. Table A2 in the appendix section shows this estimation. We present two sets of results. First one is with all the regressors used in the multi-nomial regression with all the interaction terms and the second one excludes the interaction terms. In the second regression we do not use the interaction terms, since interaction terms are found to be insignificant in the first regression. The odds ratio on female is not significant in the first regression where interaction terms are included. The odds ratios for education variables are all greater than 1 and significant for all except primary school.

55. In the second set of results where interaction terms are excluded, it is observed that the odds ratio for female is 0.498 and significant. This means that being female decreases the odds of wanting to start up a business as opposed to looking for work as paid employee by 50 percent. Education, work experience and living in an urban area increase the odds of wanting to start up a business over looking for work as a paid employee. A university graduate is three times more likely to want to start up a business than someone with less than primary school or with only a primary school degree.

Public Policy implications

56. The results show that higher education decreases the gender gap in entrepreneurship in Turkey since it has a much larger positive differential impact for females than males. Primary education on the other hand as a terminal degree has a larger positive effect for males and increases the gender gap in entrepreneurship. High school as a terminal degree has the same positive effect on males and females. Hence, policies that will increase university enrollment of females will have a strong impact on female entrepreneurship rates and decrease the gender gap.

57. Having small children *decreases* the probability of being an employer for females while it *increases* the probability of being an employer for males. Public policies on child care subsidies are likely to increase female entrepreneurship rates more than males and help close the gender gap.

58. It is disturbing that over 90 percent of female own account workers work in the informal economy. These individuals do not have social security insurance as a result of their employment. Public policies should also be designed with the goal of transitioning these individuals into the formal economy.

59. It is also of concern that 72 percent of self-employed females are unpaid family workers. How women may transition from this traditional role to a more entrepreneurial role warrants more investigation and research. Since 90 percent of female unpaid family workers work on the family farm, agricultural policies need to consider how to encourage female entrepreneurship in rural areas.

60. Perhaps surprisingly, living in an urban area increases the odds of being an employer for males while decreases the odds for females. This might result from more ample employment alternatives for women as paid employees in urban areas as well as high market concentrations favoring large firms in urban areas putting female employers with small firm sizes at a disadvantage. Both of these possibilities warrant further investigation.

**Table 4. Summary of Results from Multinomial Logistic and Logistic Regression Analysis
Impact on the odds of being an employer or OAW or nascent entrepreneur**

	Employer	OAW	Nascent Entrepreneur
female	Negative	Negative	no effect* negative**
age	Positive	Positive	positive
primary school	positive with larger effect for males	positive for males negative for females	no effect
junior high school	Positive	Negative	positive
high school	Positive	Negative	positive
vocational high school	Positive	Negative	positive
university	positive with larger effect for females	negative with larger effect for males	positive
married	positive for males no effect for females	positive with larger effect on males	no effect
divorced	Positive	positive with larger effect for females	no effect
widow	positive with larger effect for males	Positive	no effect
nchild4	positive for males	positive for males	positive
no of children, ages 0-4	negative for females	negative for females	
nchild11	positive for males	positive with	no effect
no of children, ages 5-11	negative for females	larger effect for males	
urban	positive for males negative for females	negative with larger effect for males	positive
experience			no effect* positive**

* with interaction terms; ** without interaction terms

†Odds of being an employer or OAW over being inactive/unemployed

‡Odds of wanting to start up a business as opposed to looking for work as paid employee

6. REFERENCES

- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory & Practice*, 30, 595–622.
- Antal, B.A. & Israeli, D.N. (1993). A global comparison of women in management: Women managers in their homelands and as expatriates. In E. Fagenson (Ed.), *Women in management: Trends, issues, and challenges in managerial diversity*. Newbury Park, CA: Sage.
- Aronson, R.L. (1991) *Self-Employment: A Labor Market Perspective*. Ithaca, NY: ILR Press.
- Baines, S. & Wheelock, J. (2000). Work and employment in small businesses: Perpetuating and challenging gender traditions. *Gender, Work and Organization*, 7, 45–56.
- Banaji, M.R. & Greenwald, A.G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology*, 68, 181–198.
- Baron, R.A., Markman, G.D., & Hirsa, A. (2001). Perceptions of women and men as entrepreneurs: Evidence for differential effects of attributional augmenting. *Journal of Applied Psychology*, 86, 923–929.
- Baslevent, C. and O. Onaran. 2003. “Are Married Women in Turkey More Likely to Become Added or Discouraged Workers,” *Labor* 17(3): 439-458.
- Blanchflower, D.G., Oswald, A.J. and Stutzer, A. (2001) Latent entrepreneurship across nations. *European Economic Review* 45: 680–691.
- Chaganti, R. and Parasuraman, S. (1996) A study of the impact of gender on business performance and management patters in small businesses. *Entrepreneurship Theory and Practice* 21(2): 73–85.
- Cowling, M. and Taylor, M. (2001), “Entrepreneurial women and men: Two different species?” *Small Business Economics* 16(3): 167–176.
- DuReitz, A. and Henrekson, M. (2000) Testing the female underperformance hypothesis. *Small Business Economics* 14: 1–10.

- De Bruin, A., Brush, C.G. and Welter, F. (2006) "Introduction to the special Issue: Towards building cumulative knowledge on women's entrepreneurship", *Entrepreneurship Theory and Practice* 30(5): 585–593.
- Kalleberg, A.L. and Leicht, K.T. (1991) Gender and organizational performance: Determinants of small business survival and success. *Academy of Management Journal* 34(1): 136–161.
- Klapper L. and S. Parker (2011). "Gender and business environment for new firm creation" *World Bank Research Observer*, 26(2), 237-257.
- Karadeniz E. (2010), *Entrepreneurship in Turkey*, Glober Entrepreneurship Monitor. Labor market and labour force statistics, European Union Labour force survey-annual results 2012.
- Neumark, D. and McLennan, M. (1995) Sex discrimination and women's labor market outcomes. *The Journal of Human Resources* 30: 713–740.
- Gartner W.B., Shane S.A. (1995), "Measuring Entrepreneurship Over Time", *Journal of Business Venturing*, 10(4):283-301.
- Georgellis Y. and H. Wall, 2005. "Gender differences in self-employment," *International Review of Applied Economics*, vol. 19(3), pages 321-342.
- Gurol, Y. and N. Atsan (2006). "Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey." *Education + Training* 48(1): 25-38.
- Hian Chye Koh, (1996) "Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students", *Journal of Managerial Psychology*, Vol. 11 Iss: 3, pp.12 – 25.
- Kanazawa, S. (2005) Is 'discrimination' necessary to explain the sex gap in earnings? *Journal of Economic Psychology* 26(2): 269–287.
- Karaoglan D. And C. Okten (2013), Labor force participation of married women in Turkey: A study of the added worker effect and the discouraged worker effect, IZA working paper, no: 6616.
- Kepler E. and S. Scott, (2007). "Are male and female entrepreneurs really that different?", *The Office of Advocacy Small Business Working Papers*.
- Kim, G. (2007) "The analysis of self-employment levels over the life-cycle", *Quarterly Review of Economics and Finance* 47(3): 397.

- Lee, M.A. and Rendall, M.S. (2001) Self-employment disadvantage in the working lives of blacks and females. *Population Research and Policy Review* 20: 291–320.
- Minniti, M., Arenius, P. and Langowitz, N. (2005) The 2004 Global Entrepreneurship Monitor Special Topic Report: Women in Entrepreneurship. Center for Women Leadership, Babson College. Babson Park, MA.
- Minniti, M. (2009) Gender issues in entrepreneurship. *Foundations and Trends in Entrepreneurship* 5(7–8): 497–621.
- Minniti, Maria; Naude, Wim (2010). What do we know about the patterns and determinants of female entrepreneurship across countries? *European Journal of Development Research*, v. 22, iss. 3, pp. 277-93.
- Nichter, S. and Goldmark, L. (2009). Small Firm Growth in Developing Countries. *World Development*, 37(9), 1453-1464.
- OECD Fact book 2011: Economic, Environmental and Social Statistics - ISBN 978-92-64-11150-9 - © OECD 2011.
- OECD Economic Survey of Turkey (2012).
- Orser, B.J., Riding, A.L. and Manley, K. (2006) Women entrepreneurs and financial capital. *Entrepreneurship Theory and Practice* 30(5): 643–665.
- Pavlovich and Corner 2006, Knowledge creation through co-entrepreneurship, *International Journal of Knowledge Management Studies* 1 (1), 178-197.
- Perry, S. (2002) A comparison of failed and non-failed small businesses in the United States. *Journal of Developmental Entrepreneurship* 7: 415–428.
- Schumpeter Joseph, A. (1911, translated in 1934). *Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest and the Business Cycle*.
- Tansel, Aysit. 2002. "Economic Development and Female Labor Force Participation in Turkey: Time Series Evidence and Cross-Province Estimates", *Employment of Women*. Ankara: Turkish Statistical Institute, No:2594, pp: 111-151.
- Tepav, 2013. Female Entrepreneurs in Turkey.

7. APPENDIX

Table A1. Characteristics of Employers. Multinomial Logit Model

Data: HLFS 2012. Sample: Working age population (15+). Base category: Inactive/unemployed

	paid employee	employer	OAW	unpaid family employee
Female	0.285*** (0.014)	0.187*** (0.047)	0.147*** (0.012)	2.245*** (0.165)
Age	1.421*** (0.004)	1.397*** (0.013)	1.280*** (0.005)	1.134*** (0.004)
age squared	0.995*** 0.000	0.996*** 0.000	0.997*** 0.000	0.998*** 0.000
Primary	1.164*** (0.037)	3.230*** (0.314)	1.088*** (0.032)	1.302*** (0.089)
Junior	1.646*** (0.054)	4.621*** (0.464)	0.931** (0.033)	2.021*** (0.138)
High	1.320*** (0.045)	4.891*** (0.496)	0.711*** (0.029)	1.607*** (0.126)
vocational high	2.090*** (0.074)	5.576*** (0.573)	0.868*** (0.037)	2.033*** (0.163)
University	3.482*** (0.122)	8.385*** (0.841)	0.499*** (0.023)	1.597*** (0.140)
primary*female	0.893*** (0.039)	0.513*** (0.115)	0.875*** (0.038)	0.649*** (0.046)
junior*female	0.993 (0.046)	0.785 (0.196)	0.926 (0.063)	0.294*** (0.022)
high*female	1.468*** (0.072)	1.259 (0.291)	0.944 (0.074)	0.212*** (0.020)
vocationalhigh*female	1.415*** (0.072)	1.092 (0.274)	1.048 (0.088)	0.172*** (0.018)
university*female	3.086*** (0.147)	3.458*** (0.753)	1.699*** (0.148)	0.167*** (0.020)
Married	3.270*** (0.067)	6.063*** (0.404)	5.688*** (0.240)	0.440*** (0.022)
Divorced	1.419*** (0.076)	2.221*** (0.270)	2.154*** (0.178)	0.471*** (0.071)
Widow	2.132*** (0.234)	5.060*** (0.859)	3.847*** (0.289)	0.378*** (0.068)
married*female	0.206*** (0.005)	0.175*** (0.022)	0.328*** (0.024)	3.248*** (0.166)
divorced*female	1.289*** (0.084)	1.200 (0.248)	1.810*** (0.214)	0.823 (0.153)
widow*female	0.546*** (0.066)	0.598** (0.152)	1.088 (0.111)	0.690** (0.130)
nchild4 (no. of children, ages 0-4)	1.164*** (0.017)	1.324*** (0.033)	1.255*** (0.021)	1.919*** (0.055)

nchild11	1.072*** (no. of children, ages 5-11)	1.072*** (0.011)	1.229*** (0.022)	1.130*** (0.014)	1.211*** (0.030)
nchild4*female	0.520*** (0.012)	0.520*** (0.012)	0.472*** (0.046)	0.685*** (0.021)	0.518*** (0.015)
nchild11*female	0.760*** (0.012)	0.760*** (0.012)	0.666*** (0.049)	0.955** (0.020)	0.808*** (0.020)
Urban	1.012 (0.017)	1.012 (0.017)	1.241*** (0.046)	0.257*** (0.005)	0.156*** (0.006)
urban*female	1.043 (0.029)	1.043 (0.029)	0.625*** (0.078)	1.347*** (0.044)	0.506*** (0.020)
N	383970				
chi2	140000				
R squared	0.319				

* p<0.10; ** p<0.05; *** p<0.001

Interpretations of coefficients in Table A1

The coefficients on explanatory variables, which are calculated as $\exp(\hat{\beta})$, represent the impact of a percentage increase in continuous explanatory variables and a 0/1 increase in dummy variables on the relative risk ratio/odd ratio (the odds of choosing each employment outcome to the base category of inactive/unemployed), so that a coefficient of one for a given employment outcome means that increasing the corresponding explanatory variable has no relative impact on choosing that employment outcome relative to the base category. A significant coefficient greater than 1 for a labor market outcome means that the explanatory variable increases the odds of having that labor outcome over being inactive or unemployed.

In addition to female dummy variable which is equal to 1 if individual is female and 0 if individual is male, we include interactions of female with education, marital status, number of children and urban variables in order to measure the differential effects of these variables for females versus males. When there are interaction terms of female with other explanatory variables such as education and marital status, the coefficients on education, marital status represent the effects of these variables on the odds of becoming an employer/OAW/paid employee/unpaid family worker for *males*. If female=0 then the interaction terms become zero as well as the female dummy, hence the coefficients on education, marital status, urban variables represent the effects of these variables on the odds of becoming an employer, OAW etc., for males.

To find the effect of education, marital status, urban on the probability of being an employer for females, we need to consider coefficients on these variables as well as those on interaction terms. To find the effect of gender on the probability of being an employer for individuals with different education, marital status, number of children, urban characteristics, we need to consider the coefficient on female and the corresponding interaction terms.

The odds ratio on female dummy variable is 0.187 in the employer column. This means that the odds of a female with less than primary school education becoming an employer is 81.3 percent lower than the odds of a similar male becoming an employer. We compute 81.3 percent by subtracting 0.187 from 1. This is computed when interaction terms with female are zero. In other words, it is computed for a female/male, who has never been married, has no children, has less than primary school education and lives in a rural area.

The odds of a never married/no children/rural female with *primary education* being an employer is 90 percent lower than the odds of a similar male whereas the odds of a never married/no children/rural female with *university education* being an employer is 35 percent lower than the odds of a similar male. The multiplication of the odds ratio of female with interaction term female*primary (female*university) results in 0.10 (0.65) which is the odds ratio of never married/no children/rural female with primary (university) education compared to a similar male. Subtracting this number from 1 gives us the decrease in odds of becoming an employer due to being female for a never married/no children/rural individual with primary (university) degree.

The odds of an urban, never married and no children female with primary school degree becoming an employer is 94 percent lower than the odds of a similar male while the odds of an urban, never married and no children female with a university degree becoming an employer is 60 percent lower than the odds of a similar male.

A university education increases the odds of a male becoming an employer by 8 folds whereas it increases the odds of a female becoming an employer by 29 folds over being inactive/unemployed compared to less than primary school education. We find the effect of university education on the odds of a female being an employer by multiplying the odds ratio on university education with the odds ratio on the interaction term of university with female: $8.385 * 3.458 = 29$

Table A2. Characteristics of unemployed. Logistic Model

Data: HLFS 2012. Sample: Unemployed (looking for work)

Dependent Variable:	1 if looking for work as employer, 0 if as employee	
	(1)	(2)
Female	0.541 (0.487)	0.498*** (0.057)
Age	1.152*** (0.037)	1.152*** (0.037)
age squared	0.998*** 0.000	0.998*** 0.000
Primary	1.453 (0.399)	1.431 (0.370)
Junior	2.328*** (0.672)	2.333*** (0.632)
High	2.557*** (0.751)	2.857*** (0.768)
vocational high	2.885*** (0.873)	2.919*** (0.814)
university	2.938*** (0.884)	3.274*** (0.894)
primary*female	1.001 (0.797)	
junior*female	1.059 (0.863)	
high*female	1.717 (1.367)	
vocationalhigh*female	1.262 (1.030)	
university*female	1.673 (1.326)	
Married	1.043 (0.185)	1.116 (0.168)
Divorced	0.796 (0.281)	1.018 (0.252)
Widow	0.000*** 0.000	0.604 (0.444)
married*female	1.330 (0.378)	
divorced*female	1.867 (0.901)	
widow*female	4.33e+05*** (344000.000)	
nchild4 (no. of children, ages 0-4)	1.203* (0.114)	1.170* (0.104)
nchild11	1.028	1.027

(no. of children, ages 5-11)	(0.079)	(0.072)
nchild4*female	0.777 (0.197)	
nchild11*female	0.949 (0.168)	
Urban	1.516** (0.252)	1.392** (0.214)
urban*female	0.635 (0.234)	
Worked	1.538 (0.458)	1.458* (0.299)
worked*female	0.877 (0.375)	
N	16137	16137
chi2	4609.23	215.29
R squared	0.05	0.05