



journal of management and economics research



Cilt/Volume: 21 Sayı/Issue: 4 Aralık/December 2023 ss. /pp. 319-332 E. Mirza http://dx.doi.org/10.11611/yead.1364682

YASAL ÇERÇEVENİN KADIN GİRİŞİMCİLİĞİ ÜZERİNDEKİ ETKİSİ: PANEL VERİ ANALİZİ

Lect. Emel MİRZA (Ph.D.)*

ÖZET

Kadınların serbest meslek sahibi olması hem kadınların işgücüne katılımını hem de girişimcilikteki çeşitliliği artırmanın bir yolu olabilir. Kadınların ve erkeklerin serbest mesleği tercih etmelerinde farklılıklara neden olan bireysel özellikleri açıklayan birçok çalışma olmasına rağmen, kadın girişimcilik oranlarının ülkeler arasında neden önemli biçimde farklılık gösterdiğini açıklayan çalışmalar nispeten azdır. Dolayısıyla bu çalışmanın amacı, Dünya Bankası'nın 112 ülke verilerini ve dinamik panel veri modelini kullanarak, kadın girişimcilik oranlarının ülkeler arasında değişiklik göstermesine sebep olabilecek sosyo-kültürel, yasal ve ekonomik koşulları araştırmaktır. Bu modelin tahminine dayalı sonuçlar, daha önce araştırılan faktörlerin yanı sıra, kadın girişimcilik oranlarının artırılması açısından yasal çerçevenin önemini ortaya koymaktadır. İş firsatları açısından kadın-erkek arasındaki yasal eşitliğe yaklaşan ülkelerde kadın girişimcilerin oranının daha yüksek olduğu anlaşılmaktadır.

Anahtar Kelimeler: Girişimcilik, Cinsiyet, Yasal Eşitlik, Ülkeler Arası

JEL Kodları: J21 J71 K40

THE IMPACT OF LEGAL FRAMEWORK ON FEMALE ENTREPRENEURSHIP: A PANEL DATA ANALYSIS

ABSTRACT

Female self-employment can be both a way of increasing female labor force participation and diversity in entrepreneurship. While there are many studies explaining the individual characteristics causing differences in women and men choosing self-employment, studies explaining substantial variation of female entrepreneurship rate between countries are relatively few. Therefore, the objective of this study is to investigate the socio-cultural, legal and economic conditions of the countries that can lead female entrepreneurship rates vary by using World Bank data on 112 countries and dynamic panel data model. Results based on the estimation of this model denotes the importance of legal framework in

Araştırma Makalesi/Research Article

^{*} Selçuk Üniversitesi, İİBF, E-mail: emel.mirza@selcuk.edu.tr

Makale Geçmişi/Article History

Başvuru Tarihi / Date of Application: 1 Ekim / October 2023Düzeltme Tarihi / Revision Date: 25 Kasım/ November 2023Kabul Tarihi / Acceptance Date: 12 Aralık / December 2023

terms of increasing female entrepreneurship rates alongside the determinants previously searched. The countries reaching closer to legal equality between women and men in terms of business opportunities have higher share of female entrepreneurs.

Keywords: Entrepreneurship, Gender, Legal Equality, Cross Country

JEL Codes: J21 J71 K40

1. INTRODUCTION

Female labor force participation rate varies across countries and the reasons of this variation are analyzed in several studies (Izgi, 2022; Lechman & Kaur, 2015; Lv & Yang, 2018; Tasseven, 2017; Yildirim & Akinci, 2021). Similarly, determinants of entrepreneurship and its varying levels in different countries is an intriguing subject in the literature. However, studies explaining substantial variation of female entrepreneurship between countries are relatively few. Since many studies (Cuberes et al., 2019; Faria et al., 2021; Georgellis & Wall, 2005; Patrick et al., 2016) show that there are important differences between men and women in entering self-employment, it is necessary to investigate which factors are significant in explaining country level differences in female self-employment. Self-employment can be both a way of increasing female labor force participation and diversity in entrepreneurship. According to the results of the previous studies, female entrepreneurship can be beneficial for development of the economy by increasing diversity, employment and welfare (Acs, Desai, & Hessels, 2008). Despite this, there still exists a gap between the rate of female and male entrepreneurs (Verheul et al., 2006). Therefore, this study investigates the reasons of country-level variations in two measures of female entrepreneurship rate, namely the share of women in the total number of self-employed and the share of women in the total number of employers, focusing on country level factors. Furthermore, the role of legal equality between men and women and rule of law as a measure of law enforcement on the female entrepreneurship ratios are specifically tested in this study.

For this aim, we analyze the main correlates of female entrepreneurship ratio for an extensive cross country panel data set, by using aggregate databases from World Bank. The extent of the panel is determined by data availability. In this paper, firstly, I present a review of the literature with special emphasis on papers analyzing gender differences in entrepreneurship and propose a list of likely determinants for female entrepreneurship rate based on this review. Then, I formulate the hypothesis to be tested. In the third part, the data is described for our sample. The empirical strategy of the paper and the results of the regression analysis are given in the fourth part. Last part discusses these results and concludes.

2. LITERATURE REVIEW ON ENTREPRENEURSHIP AND GENDER DIFFERENCES

"The economics literature on the role of entrepreneurship is dominated by the influence of three scholars—Schumpeter, Kirzner and Knight" (Freytag & Thurik, 2007:119). Following them, a study <u>Yönetim ve Ekonomi Araştırmaları Dergisi / Journal of Management and Economics Research</u> 320 field on self-employment decisions has been developed. A large empirical literature investigated the factors that lead people to choose self-employment at individual level. These studies show that individual characteristics and capabilities, previous working experiences, marital status and family relations and liquidity constraints are the main determinants of the self-employment choice. See Evans & Jovanovic, (1989); Evans & Leighton, (1989) and Blanchflower & Oswald, (1998) for reference.

While insights of the occupational choice models have been widely explained in these micro level studies, relatively few studies have tried to explore the macro-level factors on entrepreneurship rates across countries. As Freytag & Thurik (2007) state, the environment in which business is conducted plays a crucial role in determining entrepreneurial activities in a country. For example, some legal regulations on labor may facilitate starting business in some countries or some of them may hinder business activities. Following this line of thought, Bjornskov & Foss, (2008) try to explain the differences in the level of entrepreneurship across countries by different practices of economic policy and institutional framework and find that entrepreneurial activity is negatively associated with the size of government and positively correlated with sound money. Grosanu et al. (2015) using panel data analysis clarified various characteristics of quality of government could have on business environment and entrepreneurship at country level. Accordingly, they detect Regulation Quality, Control of Corruption and Legal Origin (French vs. Other) as the most influential governance characteristics on business environment (Grosanu et al., 2015). Similarly, multilevel analysis of European regions by Kara & Peterson, (2019) shows a significant negative relationship between country-level labor market regulations (strictness) and entrepreneurship rates, a negative relationship between Individualism (vs. Collectivism) and entrepreneurship rates, and a negative relationship between regional unemployment and entrepreneurship rates across 186 European regions in 20 countries. Arango et al., (2015) also provide support for the existence of the relationship between entrepreneurship/self-employment and unemployment, but they remark that this relation changes depending on the value of the deviation between the observed and natural rates of unemployment.

In addition to the microeconomics literature explaining individuals' entrepreneurial choices, there is a branch investigating the impact of gender differences in this choice. Georgellis & Wall (2005) explains the gender differences in self-employment. Koellinger et al. (2013) accounts for women's lower propensity to start businesses in explaining gender gap in entrepreneurship. Patrick et al., (2016) focuses on employment choices of women and find differences between the factors affecting married and unmarried women. Hayduk & Williams (2019) investigates the role of risk attitudes and show that the difference in risk tolerance between men and women is the main determinant of the gender gap in self-employment. Fleche et al. (2021) starting with the hypothesis that better access to capital for women may reduce the gender entrepreneurial gap, their findings show that liquidity constraints do affect female self-employment supporting this hypothesis. Ferrin (2023) finds that individual resources play an

important role in explaining women's propensity to become entrepreneurs and high levels of unemployment in economic crisis have led more women to become self-employed out of necessity.

While the micro level studies mentioned above evaluate self-employment choice in terms of gender specific characteristics, most of the cross-country analysis of entrepreneurship do not distinguish between male and female entrepreneurs. According to Cuberes et al. (2019), gender gaps in entrepreneurship exist at significant extent in many countries, these gaps vary significantly across countries, and they cause large output losses at the macroeconomic level. Nevertheless, only a couple of studies investigate the factors affecting female entrepreneurship rates or gender gap in entrepreneurship at macro level. Since promoting entrepreneurship among women may have positive employment and development outcomes for an economy, it will be reasonable to detect the country level factors that are influential on the female entrepreneurship ratio.

One of the most comprehensive studies on the male and female entrepreneurship at country level is Verheul et al. (2006). Their findings indicate that female and male entrepreneurial activity rates are generally determined by the same factors but for some other factors like unemployment and life satisfaction, they find a differential impact on female and male entrepreneurship. They also show that factors affecting the number of women entrepreneurs and the share of women entrepreneurs in a country can be different from each other. This reminds us that it is important to distinguish between the measures of female entrepreneurship. Similarly using different measures of entrepreneurship and aggregate data of 40 European countries, Cuberes et al., (2019) show that men are more likely to be entrepreneurs, employers, and self-employed relative to women consistent with the estimated gender gap. According to Salis & Flegl (2021), such gap can vary depending on the country and on its socio-cultural, legal and economic conditions among others. Their results indicate that the most influential factor is the Human Development index, meaning that the more developed a country is, the lower the gender gap in the entrepreneurship is. Brush et al. (2017), using a macro-level approach, examines men's and women's entrepreneurial activity separately and find that factors like gender parity in economic participation, educational attainment and political empowerment have different effects on them. The results imply that policies promoting equal participation in the economy are likely to be effective in diminishing gender gaps in entrepreneurship. Another study undertaking a cross-country analysis is Dutta & Mallick (2018) and it points out that the female entrepreneurship rate is negatively affected by the fertility rate. However, it stresses that greater tertiary enrollment of women and higher economic participation of women can reduce this negative impact of fertility rate. On the other hand, several studies find a positive association between female self-employment and fertility rate and findings of Noseleit, (2014) prove that the likelihood of becoming self-employed for women increases with the number of children in the household. Another determinant of female entrepreneurship in the literature is women political empowerment. Goltz et al. (2015) analyze the relationship of women's political participation and a country's rule of law with female entrepreneurship. They find that women's political empowerment has a positive significant effect on women's rate of entrepreneurship moderated by country's rule of law using data of 53 countries included in their study. In contrary, Vracheva & Stoyneva (2020)'s results suggest that women's political participation widens the entrepreneurship gender gap, but equality in economic participation closes it.

From this review, we can identify the main macro level factors determining female entrepreneurship ratio across countries as fertility rate, unemployment, educational attainment, economic participation and political empowerment of women. However, the direction of the relationship for these factors is not clear since there are controversial results in the literature. Urbanization is a factor positively affecting female labor force participation (Lv & Yang, 2018; Tripathi, 2023) and business opportunities so it can be beneficial to add the ratio of urban population to this list. Rule of law by reflecting the level of enforcement for the laws and regulations which also determines business development including individuals' propensity to start businesses is a variable likely to be correlated with female entrepreneurship (Goltz et al., 2015). Among the indices measuring legal equality between men and women, there is an index in World Bank WDI database named Women Business and the Law (WBL) Index which take values from 1 to 100 with 100 representing the highest possible score. The index measures how laws and regulations affect women's economic opportunity and tracks progress toward legal equality between men and women in 190 economies (World bank, 2023). Therefore, this index is also included in correlation and regression analysis as a possible determinant of varying female entrepreneurship level across countries. The aim of this study is to test the hypothesis that degree of legal equality has a significant effect on the share of female entrepreneurs relative to men beside other macro level determinants.

3. DATA

Before describing the statistical properties of the data in our sample, it is essential to clarify the definition and the formulation of the dependent variable, namely female entrepreneurship rate. In the literature using country level data, different measures of female entrepreneurship are used. One of them is the share of women in active female labor force who are actively engaged in the starting or managing a business (Verheul et al., (2006); Dutta & Mallick, (2018)). This measure shows the rate of entrepreneurship among women. This measure can be a result of women preference on being self-employed as well as the necessity on women to participate in workforce in the form of self-employment. Another proxy for female entrepreneurship is the share of female entrepreneurs in total number of entrepreneurs. According to Verheul et al. (2006), this variable may be interpreted as a measure of entrepreneurial diversity, as it depicts the ratio of women in a country's total stock of entrepreneurs. The last measure is gender parity in entrepreneurship i.e. the percentage of female entrepreneurs in female labor force, divided by the equivalent percentage of male entrepreneurs (Vracheva & Stoyneva, 2020). These aforementioned studies use GEM data but this restricts the number of countries significantly. On

the other hand, Cuberes et al., (2019) using ILO data proxies the gender gap in entrepreneurship by two different measures namely gender gap in employers and gender gap in self-employed. Similarly, in order to broaden the scope of the study in terms of the number of countries included, I utilize the WDI and World Bank Gender Statistics database and identify two dependent variables. First one is the share of women in total number of self-employed and the second one is the share of women in total number of self-employed and the second one is the share of women in total number of self-employed and the second one is the share of women in total number of employers. I calculate the following dependent variables

feselfemp = selfemployed women/total number of self employed feemployer = female employers/total number of employers

In table 1, summary statistics for our female entrepreneurship measures are shown for a panel of 189 countries during the years of 1991-2021. While on average, women constitute only 38% of total self-employed, for some points in our panel, this rate is less than 1% and for some it is greater than 50%. This implies a high degree of variance for both within and between countries. In terms of the share of women employers, average rate is even lower as 22.6%.

Dependent	Definition	Mean	Std	Min	Max
Variable		(%)	Deviation		
feselfemp	The share of women in total number of self-employed	37.87	12.37	0.89	62.80
feemployer	The share of women in total number of employers	22.60	10.14	0.54	69.25
wlawindex	WBL Index	59.70	18.62	17.50	100.00
ruleoflaw	Rule of Law Score	0.04	0.99	-2.07	2.12
fertility	Total Fertility Rate	2.75	1.50	0.83	7.65
tertiary	Tertiary Enrollment rate of women	44.82	32.50	0.17	152
ftomlfpr	Ratio of female to male labor force participation rate	68.58	20.59	12.76	106.69
feparliament	Percentage of women in the parliament	20.36	12.07	0	63.75
unemp	Unemployment rate	7.17	4.50	0.14	27.47
growth	Per capita GDP growth (annual)	3.62	4.32	-26.33	34.50
urbanpop	Percentage of urban population in the country	23.07	13.99	2.61	100

Table 1: Descriptive statistics

Women Business and Law Index as a measure of legal equality between men and women is the specifically examined predictor in this study. Control variables are Rule of Law, per capita GDP growth (annual), unemployment rate, percentage of urban population, fertility rate, female tertiary enrollment rate as an indicator of educational attainment, female to male labor force participation rate as a proxy for economic participation of women and the percentage of women parliamentarians as a measure of women political empowerment. All independent variables and control variables are also taken from

World Bank databases. The maximum number of countries data available for all variables is 112. The years in which data is available varies across countries (from 1 to 25).

4. EMPIRICAL STRATEGY

With their contribution to the diversity of entrepreneurship, female entrepreneurs can play a crucial role in economies (Verheul et al., 2006). Our hypothesis is that providing legal equality between men and women increase the ratio of female entrepreneurs and so increase the diversity of entrepreneurship. In order to test this hypothesis, we begin with correlation analysis, and then we estimate the following regressions

 $feselfemp_{it} = \beta_0 + \beta_1 feselfemp_{it-1} + \beta_2 wlawindex_{it} + \beta_3 ruleoflaw_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta_4 inter_{it} + \beta$ $\sum_{j=1}^{J} \alpha_j X_{jit} + \beta_5 \gamma_i + \beta_6 \theta_t + \epsilon_{it}....(1)$

 $feemployer_{it} = \partial_0 + \partial_1 feselfemp_{i\,t-1} + \partial_2 w law index_{it} + \partial_3 rule of law_{it} + + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_{it} + \partial_4 inter_$ $\sum_{j=1}^{J} \delta_j X_{jit} + \partial_5 \gamma_i + \partial_6 \theta_t + \varepsilon_{it}$ (2)

where $feselfemp_{it}$ and $feemployer_{it}$ are measures of female entrepreneurship ratio in country i and year t. One year lagged values of dependent variables ($feselfemp_{it-1}$ and $feselfemp_{it-1}$) show the persistence in the ratio of female entrepreneurship and in this way, we can estimate a linear dynamic panel data (DPD) model. wlawindexit refers to Women Business and Law Index score of country i over time t which is the independent variable we want to examine. I also add an interaction term (inter_{it}) which shows the moderating effect of Rule of Law on the impact of WBL index. In this way, we can see whether these two indices about the legal system strengthen each other impact on female entrepreneurship or not. The coefficient of WBL index, β_2 captures the direct impact of WBL index on female entrepreneurship and expected sign of β_2 is positive. β_4 on the other hand, measures the indirect effect of WBL index. It displays for given levels of rule of law, how degree of legal equality impacts female entrepreneurship rates. X_{iit} is the vector of control variables which includes per capita GDP growth (growth_{it}), unemployment (unemp_{it}), percentage of urban population (urbanpop_{it}), fertility rate (fertility_{it}), tertiary enrollment of women (tertiary_{it}), ratio of female to male labor force participation rate (ftmlfpr), percentage of women in the parliament (feparliament_{it}) for county i over time t. γ_i denotes the country fixed effect, θ_t displays the time specific effect and ϵ_{it} is the random error term. Since some factors like legal origin, cultural and social capital of the country, which do not change with time in short term, can also affect female entrepreneurship rates across countries, it is convenient to start analysis with fixed effect estimation after correlation analysis.

4.1. Correlation Analysis

In Table 2, the pairwise correlation coefficients of the main variables are reported. We see that the correlation between two measures of female entrepreneurship is high (0.64) so we expect the <u>Yönetim ve Ekonomi Araştırmaları Dergisi / Journal of Management and Economics Research</u> Cilt/Volume: 21 Sayı/Issue: 4 Aralık/December 2023 ss. /pp. 319-332 E. Mirza <u>http://dx.doi.org/10.11611/yead.1364682</u>

determinants of them to be similar. Our variable of interest "Women business and law index" is significantly correlated with both of the dependent variables and the sign is positive as we expect. Table 3 shows that all of the control variables are significantly correlated with measures of female entrepreneurship. However, we see that Women business and law index has also very high correlation with some of the control variables like fertility rate, tertiary enrollment, ratio of female to male LFPR and Percentage of women parliamentarians.

	1	2	3	4	5	6	7	8	9	10	11
1. Share of women in self employed	1										
2.Share of women in employers	0.64*	1									
3.Women business and law index	0.18*	0.32*	1								
4.Rule of Law	-0.33*	0.04*	0.45*	1							
5.Ratio of Female LFPR to Male LFPR	0.70*	0.71*	0.46*	0.15*	1						
6.Percent of women in parliament	0.04*	0.14*	0.54*	0.20*	0.25*	1					
7.Fertility rate	0.34*	0.06*	-0.64*	-0.57*	0.01	-0.22*	1				
8.Tertiary enrollment rate (female)	-0.31*	0.09*	0.63*	0.58*	0.16*	0.33*	-0.65*	1			
9.Per capita GDP growth	0.01	-0.04*	-0.08*	-0.13*	-0.05*	-0.05*	0.08*	-0.17*	1		
10.Unemploy ment Rate	-0.09*	-0.07*	-0.03	-0.03*	-0.21*	-0.002	-0.14*	0.05*	-0.06*	1	
11.Percentage of urban population	-0.30*	-0.13*	0.17*	0.37*	-0.06*	-0.08*	-0.39*	0.35*	0.01	0.03*	1

Table 2: Correlation Matrix

*Denotes significance at 1% level.

4.2. Regression Analysis

Fixed effect and system GMM estimation results are both depicted in Table 4. According to fixed effect estimation, Women Business and Law Index (WBL) is positive significant for both measures of female entrepreneurship ratio. Coefficient is greater for the ratio of female employers. Since WBL measures the legal differences on access to economic opportunities between men and women, this result implies that as legal equality between men and women are realized in terms of business opportunities, female entrepreneurship rate rises. Similarly, Rule of law has a positive significant effect on female self-employment. Rule of law could offset the negative effect of some of the factors on women's entry into entrepreneurship (Goltz et al., 2015) and so positively associated with ratio of female entrepreneurship.

<u>Yönetim ve Ekonomi Araştırmaları Dergisi / Journal of Management and Economics Research</u> Cilt/Volume: 21 Sayı/Issue: 4 Aralık/December 2023 ss. /pp. 319-332 E. Mirza <u>http://dx.doi.org/10.11611/yead.1364682</u>

However, the coefficient of interaction term has a negative sign. This may denote that WBL index has a larger impact on female entrepreneurship where Rule of Law is negative and WBL index is less effective on female entrepreneurship when Rule of Law is high.

	Fixed	Effect	System GMM		
	(1)	(2)	(1)	(2)	
Women business and law index	0.0858***	0.135***	0.0269**	-0.0235	
	(0.0108)	(0.0159)	(0.00912)	(0.0160)	
Rule of Law	1.547*	1.810	1.057	1.902	
	(0.662)	(0.975)	(0.604)	-1.104	
Interaction between WBL index and Rule of Law	-0.0251**	-0.0214	-0.0343***	-0.0395**	
	(0.00924)	(0.0136)	(0.00779)	(0.0133)	
Fertility rate	-1.527***	2.171***	0.0200	0.912***	
	(0.217)	(0.320)	(0.190)	(0.221)	
Tertiary Enrollment Rate (female)	-0.0312***	0.0392***	-0.0200***	0.0151	
	(0.00629)	(0.00927)	(0.00543)	(0.00957)	
Ratio of Female to Male LFPR	0.505***	0.279***	0.186***	0.108***	
	(0.0174)	(0.0257)	(0.0134)	(0.0208)	
Percent of women in parliament	-0.0294*	0.0617***	-0.00318	-0.000152	
	(0.0118)	(0.0174)	(0.00909)	(0.0144)	
Per capita GDP Growth	0.0154	0.00489	0.00542	-0.00618	
	(0.0144)	(0.0212)	(0.00795)	(0.0132)	
Unemployment Rate	-0.151***	0.0959**	-0.0376	-0.0431	
	(0.0246)	(0.0362)	(0.0200)	(0.0329)	
Percentage of Urban Population	0.187***	0.115*	0.103***	0.300***	
	(0.0390)	(0.0575)	(0.0153)	(0.0311)	
L.feselfemp			0.619***		
			(0.0195)		
L.feemployer				0.524***	
				(0.0229)	
Constant	1.843	-17.41***	-1.334	-4.578*	
	(1.6941)	(2.4962)	(1.296)	(1.956)	
Observations	1647	1647	1647	1647	
Number of countries	112	112	112	112	
R-squared	0.34	0.52			
In Eq (1) dependent variable is share o women in total # of employers. Time F	f women in total # of Fixed effects are inclu	self-employed and ir ided. Standard errors	n Eq(2) dependent vari in parentheses.	able is the share of	

Table 3: Fixed Effect and System GMM Estimates

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

The ratio of female LFPR to male LFPR and the percentage of urban population significantly increase both female self-employment ratio and ratio of female employers. As Brush et al. (2017) states, in economies where women have equal economic participation level with men, they are equally likely to be starting businesses and so being employers. Similarly, urbanization is a significant factor help finding business opportunities for women (Tripathi, 2023). However, it seems that unemployment's *Yönetim ve Ekonomi Araştırmaları Dergisi / Journal of Management and Economics Research* 327

negative effect dominates for women on self-employment. According to Verheul et al. (2006:157), at the macro level, there is a negative association between unemployment and entrepreneurship, as unemployment can be an indication of a depression in the economy. Tertiary enrollment of women by increasing their probability to find a salaried job can reduce the ratio of self-employment for women. Percentage of women in parliament also has a negative significant effect on the ratio of female self-employed according to fixed effect results. This can be explained by greater female political participation may influence female entrepreneurship rate negatively when women are not perceived as equal to males in society as indicated in Vracheva & Stoyneva (2020).

While unemployment, percentage of women in the parliament and tertiary enrollment of female have a significant negative effect on female self-employment ratio, they affect the ratio of female employers positively. Self-employment includes own account workers or solo self-employed. On the other hand, employers are both the owner of the firm and manager of the employees, and most of them operate in the SME-sector (van Stel et al., 2014). Therefore, tertiary enrollment rate and political empowerment of women have positive significant relation to the ratio of female employers as opposed to the self-employment case. This implies that the educational attainment and political empowerment of women enhance the chance of being employer for women rather than being solo self-employed.

If the female entrepreneurship ratio is persistent, the results obtained from the static model could be biased. To take into account the dynamic effects, we further apply the dynamic panel data to study the impact of legal equality on female entrepreneurship by using system GMM estimator (Arellano & Bover, 1995) (Blundell & Bond, 1998). In the system GMM specification, the lagged dependent variables are included as one of the explanatory variables. The results can be seen in the Table 3, System GMM estimates part. It shows that both of the lagged dependent variables are positive and significant. This means female entrepreneurship is strongly affected by its previous value. Our variable of interest, WBL index is still positive and significant at 5% level for the ratio of self-employed women. This result indicates the importance of providing legal equality between men and women for increasing female entrepreneurship rates in a country.

5. DISCUSSION AND CONCLUSION

Results of this study, in terms of control variables are generally consistent with the findings of the previous studies. To summarize, economic participation of women positively affects the both measures of female entrepreneurship. In the countries which has high female labor force participation rate relative to that of male, the share of women in entrepreneurial activities is also higher. Fertility rate has a negative effect on female self-employment (Dutta & Mallick, 2018) but positive effect on the ratio of female employers supporting the previous findings (Mishra et al., 2010; Noseleit, 2014). This means that higher fertility rates cause more women to choose entrepreneurship in the form of being employer. This may stem from that having employees may provide a more flexible work schedule to balance family

and carrier. Similarly, educational attainment seems negatively associated with female self-employment but this association turns out to be positive for the share of female employers. Verifying previous studies (Vracheva & Stoyneva, 2020; Brush et al., 2017), closing the gender gap in political participation might not be sufficient to close the gender gap in entrepreneurship as this variable seem to be negatively associated with female self-employment ratio. However, by examining the influence of this factor on the share of women employers, I find that with higher political empowerment of women, ratio of women employers tends be higher across countries. Higher unemployment rate as a sign of depression and decrease in business opportunities in the economy generally has a negative effect on female entrepreneurship. Urbanization appears as a factor increasing female entrepreneurship in all specifications in this study.

In terms of legal framework of the country, WBL index emerge as a significant predictor of female entrepreneurship. Even Rule of Law is added as a control variable measuring tightness of the laws' enforcement, higher scores in WBL index means higher female entrepreneurship rates across countries. This result signifies the role of providing legal equality between women and men on improving female entrepreneurship rates. Only as far as women have equal access to business opportunities by legal framework, they can have equal probability to start a business.

This study demonstrates the importance of legal framework on the female entrepreneurship rate, beside other macro level factors. Countries adopting the policy of increasing female labor force participation or diversity in entrepreneurship, should also consider the legal framework on business opportunities to provide equality for men and women.

REFERENCES

- Acs, Z.J., S. Desai and J. Hessels. 2008. Entrepreneurship, economic development and institutions. Small Business Economics, 31(3), 219–234.
- Arango, M. C., de Aguilera, E. C. R., Moya, A. A. G., & Garrido, J. I. (2015). How Sensitive Is The Business Ownership Rate To Unemployment Fluctuations? Evidence Of Asymmetries In A Panel Of 23 Oecd Countries [Article]. Revista De Economia Mundial(41), 81-101.
- Arellano, M., & Bover, O. (1995). Another Look At The Instrumental Variable Estimation Of Error-Components Models. Journal of Econometrics, 68(1), 29-51. https://doi.org/10.1016/0304-4076(94)01642-d
- Bjornskov, C., & Foss, N. J. (2008). Economic freedom and entrepreneurial activity: Some crosscountry evidence [Article]. Public Choice, 134(3-4), 307-328. https://doi.org/10.1007/s11127-007-9229-y
- Blanchflower, D. G., & Oswald, A. J. (1998). What makes an entrepreneur? [Article]. Journal of Labor Economics, 16(1), 26-60. https://doi.org/10.1086/209881 Yönetim ve Ekonomi Araştırmaları Dergisi / Journal of Management and Economics Research

- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115-143. https://doi.org/10.1016/s0304-4076(98)00009-8
- Brush, C., Ali, A., Kelley, D., & Greene, P. (2017). The influence of human capital factors and context on women's entrepreneurship: Which matters more?. *Journal of Business Venturing Insights*, 8, 105-113.
- Cuberes, D., Priyanka, S., & Teignier, M. (2019). The determinants of entrepreneurship gender gaps: A cross-country analysis [Article]. *Review of Development Economics*, 23(1), 72-101. https://doi.org/10.1111/rode.12537
- Dutta, N., & Mallick, S. (2018). Enabling Women Entrepreneurs: Exploring Factors That Mitigate the Negative Impact of Fertility Rates on Female Entrepreneurship [Article]. *Kyklos*, 71(3), 402-432. https://doi.org/10.1111/kykl.12175
- Evans, D. S., & Jovanovic, B. (1989). An Estimated Model Of Entrepreneurial Choice Under Liquidity
 Constraints [Article]. *Journal of Political Economy*, 97(4), 808-827.
 https://doi.org/10.1086/261629
- Evans, D. S., & Leighton, L. S. (1989). Some Empirical Aspects of Entrepreneurship [Note]. *American Economic Review*, 79(3), 519-535.
- Faria, J. R., Cuestas, J. C., Gil-Alana, L., & Mourelle, E. (2021). Self-employment by gender in the EU: convergence and clusters [Article]. *Empirica*, 48(3), 717-741. https://doi.org/10.1007/s10663-020-09494-2
- Freytag, A., & Thurik, R. (2007). Entrepreneurship and its determinants in a cross-country setting [Article]. Journal of Evolutionary Economics, 17(2), 117-131. https://doi.org/10.1007/s00191-006-0044-2
- Georgellis, Y., & Wall, H. J. (2005). Gender Differences in Self-Employment [Article]. *International Review of Applied Economics*, *19*(3), 321-342. https://doi.org/10.1080/02692170500119854
- Goltz, S., Buche, M. W., & Pathak, S. (2015). Political Empowerment, Rule of Law, and Women's Entry into Entrepreneurship [Article]. *Journal of Small Business Management*, 53(3), 605-626. https://doi.org/10.1111/jsbm.12177
- Grosanu, A., Bota-Avram, C., Rachisan, P. R., Vesselinov, R., & Tiron-Tudor, A. (2015). The Influence Of Country-Level Governance On Business Environment And Entrepreneurship: A Global Perspective [Article]. *Amfiteatru Economic*, 17(38), 60-75.
- Izgi, B. B. (2022). Determinants of FLFP in BSEC Countries: Evidence from Panel Data [Article]. Journal of Applied Economics and Business Research, 12(2), 98-110.

- Kara, A., & Peterson, M. F. (2019). The Relationship Between Formal and Informal Institutions and Entrepreneurship Rates Across European Regions [Article]. *International Review of Entrepreneurship*, 17(4), 463-493, Article 1616.
- Lechman, E., & Kaur, H. (2015). Economic Growth And Female Labor Force Participation Verifying The U-Feminization Hypothesis. New Evidence For 162 Countries Over The Period 1990-2012 [Article]. *Economics & Sociology*, 8(1), 246-257. https://doi.org/10.14254/2071-789x.2015/8-1/19
- Lv, Z. K., & Yang, R. D. (2018). Does women's participation in politics increase female labor participation? Evidence from panel data analysis. *Economics Letters*, 170, 35-38. https://doi.org/10.1016/j.econlet.2018.05.013
- Mishra, V., Nielsen, I., & Smyth, R. (2010). On the relationship between female labour force participation and fertility in G7 countries: evidence from panel cointegration and Granger causality [Article]. *Empirical Economics*, 38(2), 361-372. https://doi.org/10.1007/s00181-009-0270-1
- Noseleit, F. (2014). Female self-employment and children. *Small Business Economics*, 43(3), 549-569. https://doi.org/10.1007/s11187-014-9570-8
- Patrick, C., Stephens, H., & Weinstein, A. (2016). Where are all the self-employed women? Push and pull factors influencing female labor market decisions [Article]. *Small Business Economics*, 46(3), 365-390. https://doi.org/10.1007/s11187-015-9697-2
- Salis, G., & Flegl, M. (2021). Cross-Cultural Analysis of Gender Gap in Entrepreneurship [Article]. *Changing Societies & Personalities*, 5(1), 83-102. https://doi.org/10.15826/csp.2021.5.1.123
- Tasseven, O. (2017). The Relationship Between Economic Development and Female Labor Force Participation Rate: A Panel Data Analysis. In U. Hacioglu & H. Dincer (Eds.), *Global Financial Crisis and Its Ramifications on Capital Markets: Opportunities and Threats in Volatile Economic Conditions* (pp. 555-568). Springer International Publishing Ag. https://doi.org/10.1007/978-3-319-47021-4_38
- Tripathi, S. (2023). Do cities favor female entrepreneurs? Evidence from India [Article]. *Cities*, *139*, 17, Article 104404. https://doi.org/10.1016/j.cities.2023.104404
- van Stel, A., Wennekers, S., & Scholman, G. (2014). Solo self-employed versus employer entrepreneurs: determinants and macro-economic effects in OECD countries [Article]. *Eurasian Business Review*, 4(1), 107-136. https://doi.org/10.1007/s40821-014-0003-z
- Verheul, I., Van Stel, A., & Thurik, R. (2006). Explaining female and male entrepreneurship at the country level [Article; Proceedings Paper]. *Entrepreneurship and Regional Development*, 18(2), 151-183. https://doi.org/10.1080/08985620500532053

- Vracheva, V., & Stoyneva, I. (2020). Does gender equality bridge or buffer the entrepreneurship gender gap? A cross-country investigation [Article]. *International Journal of Entrepreneurial Behavior & Research*, 26(8), 1827-1844. https://doi.org/10.1108/ijebr-03-2020-0144
- Yildirim, D. C., & Akinci, H. (2021). The dynamic relationships between the female labour force and the economic growth [Article]. *Journal of Economic Studies*, 48(8), 1512-1527. https://doi.org/10.1108/jes-05-2020-0227

World Bank. 2023. Women, Business and the Law 2023. Washington, DC: World Bank

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.

Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: The author declared that this study has received no financial support.

Acknowledgement: -