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Türkiye'de Kadın İşgücüne Olan Talep: GMM Örneği

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Öz: Bu çalışmada, işgücü piyasası ile ev içi sorumluluk ve çocuk bakımı arasında tercih yapmak zorunda kalan; bu bakımdan ev içi üretime, ücretsiz aile işçiliğine ve informal sektöre yönelen kadınların bölgesel bazda işgücünde olmalarına yönelik talep faktörleri incelenmektedir. Çalışma yaşamında kadınların toplumsal önyargılardan ve aile yapılarından etkilenmesi üzerinde de durulmuştur. Aynı zamanda ülkemizde toplumsal olarak kadınların ev içindeki emekleri görünmez ve değersizdir. Gerek ekonomik gerekse sosyal anlamda erkeklerle aynı çalışma koşullarına ve esnek çalışma saatlerine sahip olmayan, zaman zaman cinsiyet ayrımcılığına maruz kalabilen kadınlara yönelik talep analiz edilmiştir. Bu analizde eğitim düzeyleri, medeni durumları, yaş seviyeleri, sosyo-ekonomik faktörler ve ekonomide ki etkinlik oranları üzerine Genelleştirilmiş Momentler Yöntemi kullanılarak; 1990-2009 arasını kapsayan panel veri seti ile 5 farklı regresyon yapılmıştır. Bu modeller neticesinde, ücretler arasındaki farklılığın, işsizlik oranının, doğurganlık oranının, erkeklerin işgücünde yer almalarının, kadınların yaşları arasındaki uçurumların ve eğitim seviyesindeki artışın kadın işgücüne olan talep üzerinde etkisi olduğu söylenebilir.

Anahtar Kelimeler: Kadın işgücü, eğitim, sosyo-ekonomik faktörler, tarihte kadın emeği, GMM Modeli.

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Female Labor Force Participation in Turkey: GMM Evidence

Abstract: In this study, demand factors of being as an unpaid family worker and informal sector directed women in the workforce, who have to choose between the labor market and in home responsibility, child care, are examined. It is emphasised that women in working life are also affected by social prejudices and family structures. At the same time, socially, works of housewives are invisible and worthless in our country. Demand has been analysed for women who are not both economically and socially free from the same working conditions and flexible working hours as men, and who may occasionally be exposed to gender discrimination. In this analysis, 5 different regressions were made using the Generalised Moments Method on educational levels, marital status, age levels, socioeconomic factors and efficiency rates in the economy where the panel data set was arranged to cover the 1990-2009 period. As a result of those models, it can be said that the difference in wages, unemployment rate, fertility rate, male labor force participation in the labor force, gaps between women's ages and the increase in education level are the effects on the demand for the female workforce.

Key Words: Female Employment, Education, Socioeconomic Factors, Female Labor Force in History, GMM Model.

1. Introduction

Women in Turkey have always been actively involved in productive, entrepreneurial and economic activities since the days of the past, especially in the days when the Republic was founded. Along with the historical development, at the end of both economic and social changes, the economic activities of women have changed. With the Industrial Revolution, which made 18. century was gone down in the history, Demand for the female workforce has increased in the organised labor market as a result of the need for more mechanisation and experienced labor. With the First World War, being men in the front line have increased women's demands on the workforce even more, and women have begun to take part in the manufacturing sector. In the aftermath of the great depression that occurred in 1973, transition to the post-Fordist production from Fordist production model –which predicts non-fixed working times and using work partition effectively- has given more advantages to the women workers. By using the advantages of the flexible production system, they are able to take part in the labor force without disturbing their family and social responsibilities.

Despite globalization's expansion of international markets, the availability of flexible working hours, and the fact that product diversification creates a competitive environment, the benefits it brings are not evenly shared among countries, causing unregistered activities in the labor force, and the wage differentials are positive in women but not at the expected level. Especially in Turkey, women have been pushed to the informal sectors more and have had to choose between accepting and/or not working at more difficult conditions with low wages. As a result, some women have withdrawn from the workforce. One of the underlying reasons for this is the sociocultural and sex-oriented work-sharing between men and women in our country. With the reforms made after the founding of the Republic of Turkey,

women who actively started to take part in the labor force decreased their share in the labor force over time. In addition to lack of experience with urbanization and low educational level, the role of the job market, family pressure, marital status of the woman, child factor - particularly having young children - high family income, gender discrimination in the workplace and working hours, away from the workforce or prompted to work as unpaid family workers. From this point of view, working or hiring has different meaning between men and women. The labor market is dominated by men, whose working hours and conditions are regulated by men. Women have been forced to make more effort to be in this market.

Some of the women who work as unpaid family workers have switched to the informal sector and some women have started to work in paid jobs as a result of changes in demand. Even though the working conditions, the responsibilities within the household, the discrimination in the workplace (promotion, seniority) and the competition are concentrated on some profession groups, Economic disadvantages living in the country ensure that women are also in the labor force.

Regarding the demand-side analysis of female labor force participation in the labor force, it is seen that women's marital status, education level, unemployment and wage rates, male labor force participation in the workforce, women's age, having children and domestic economic conditions are the most important factors affecting female labor force participation. The Applied Generalized Moments Method (GMM) supports this finding in the results obtained from the econometric analysis.

Approximately 42.1% or 1.45 billion of the employees were women above 3 billion worldwide in 2015. Only 20.3% of these women work in the industrial sector. The proportion of men working in the same sector is 27.4%. The sector in which women work most is the agriculture and increasingly demanding service sector. Because in 2015, 40.9% of men were employed in the service sector while 48.3% of all women employees were

worked in the service sector. The global disparity between in-dustrial employment in women and men is run across in all countries. (ILO, 2016)

The biggest sex-based discrimination against women in the workforce is occupational discrimination. Women who can not find jobs in the formal labor market are oriented to the informal sector. In the informal sector, however, male employees either own their own workplaces or are employers. Women are also often employed as unpaid family workers in the informal sector (ILO, 2016). In developing countries such as Bangladesh, Ethio-pia, Greece, Indonesia, Pakistan, Syria, Thailand and Turkey, The difference in the total employment of the self-employed or employer men and women are proportionally over 20%. (Elder and others, 2003: 453).

This study has focused on the factors that affect the regional women's workforce in general and aimed to reveal how women behave in general with the influence of these factors in Turkey, which is in the category of developing countries. With this rese-arch, the aim is to have/provide an "opinion" as a result of so-cio-cultural and traditional values which are important factors in female labor force participation in the labor market.

2. Factors Affecting Demand for Female Labor

The desire for the female workforce is the centre of many comp-lex theories of gender stratification that have emerged in recent years. Although this situation is different from a theorisation to the other, theoreticians have the same opinion regarding the aggregate demand for the female workforce, which is one of the most effective determinants of economic power, and the most important of which is the economic power that determines the positions of women and men in the workforce, such as gender inequality.

Describing gender stratification, the demand for this female work force, the theorists: 1. The task of being done solely or in

general by women, causing to gender discrimination in society, 2. The importance of these tasks for women changes over time and with external factors such as technology among societies the task of women as a result of time, 3. It assumes that these changes give women autonomy in the face of political, economic, ideological and demographic areas, or they throw women into the secondary plan. (Cotter and Others, 1998: 3).

Differential economic resource control of women and men who change from macro (state) to micro (family) is one of the most important factors in gender stratification, although it is not the only factor. Because women can not gain economic power at a micro level, but instead participate in the workforce and reduce male dominance at the macro level (Blumberg, 1984: 28). Without economic power, women have the power to make limited decisions about households and fertility. In communities engaged in hunting or horticultural work, female labor force participation is referred to as "productive work" in communities and makes a difference in the status of women, while the position of women engaged in agriculture in more advanced societies is excluded from this "productive work". At the same time, the female labor force is an indispensable element in all societies; Not only women's abilities but also the demands on women's workforce have an important influence on the supply of labor that determines the inequality or stratification among the sexes (Blumberg, 1978: 101).

The distinction in the labor market has a very old history. Nevertheless, the debates on the theory of economics are not much on this issue. One of the important reasons for this is that Neoclassical theory, which sees discrimination as separation from a paradox or rules, is quite effective. On the condition that the fully competitive market prevails, real wages are equal to the marginal product or marginal productivity of labor and those who have the same productivity (at least in the long run) receive the same wage independently of gender, race and age. Another reason of neglection of discrimination is that the theory of development depends on economic and social move-

ments. In other words, in an environment where there is no anti-discrimination movement or where socioeconomic problems are the most important problems (high unemployment and inflation), economics theory or political theory does not want to deal with a subject such as discrimination. Civil Rights and Women's Liberation Movements, which developed in the years of the 1960s and 1970s, have set the issue of discrimination in the forefront. The theory of discrimination in the labor market is therefore not only related to the economy, but also to the political economy (Schmid, 1994).

The gender-based distinction appears to have emerged in two ways; Direct discrimination is that behaving to any women in a more negative and/or less positive than behaving to men because of her gender. Indirect discrimination is the behaviours or rules seem like equal between the genders, which create discriminatory effects on women at later stages. There are many examples of direct discrimination in working life, such as not hiring women to work for certain positions and titles, not getting a step up and promotions, and humiliating sexual abuse of women. Indirect discrimination, on the other hand, comes at the end of a desire to give help to a woman who is in need of help in any particular context (Acar and Others, 1999).

Developed and underdeveloped every country research the discrimination of profession in the labor market. The discrimination can be in the form of concentration of men and women in different professions and sectors (horizontal distinction), as well as in the same profession and sectors (vertical distinction) by sex. The definitions of "women's work" and "male work", which are called horizontal decomposition of the professions, first in the choice of profession, then in recruitment and continuing have negative effects on the entire working life(Jacobsen, 2007). Car repair, CEO, mastery, inspector, especially civil engineer, chauffeur and financial consulting are generally regarded as a male business. On the other side, nursing, librarianship,

secretarial, hairdressing and teaching are perceived as women's affairs and affect women when they make profession choices.

The fact that women are concentrated in occupations that are identified with them, that they take place in lower levels even if they enter the same professions as men, that they can not or made not step up to the upper levels and that they can not participate in decision-making and management units, and can't have any voice in the unions, cause them to become insignificant in all areas open to progress. Their secondary existence in the society has caused them to be defined as "noncompetitive and uncompetitive groups". Therefore, the labor market is treated as "divided and cascaded" markets (Vogell, 2003).

Gender disparities are decreasing when women have a high level of production in society and/or have no placements in the environment in which they work. As the demand for the female workforce increases, the gender stratification decreases if the female labor supply is low. Supply of female labor is not a critical value to increase the status of women compared to men. In order to reduce gender disparities, the most important thing is to increase the demand for the female workforce within the productive working environment. For example, there may be a high level of female labor supply in order to contribute to productive work in society, but if the workforce is not needed for community continuity, they have kept away from the productive working environment and/or there is no change in their statutes. In this regard, the demand for the female workforce in key production roles is necessary to reduce gender discrimination, and the female labor supply alone is not sufficient to increase the status of women. Together, the low level of female labor supply and the high demand for female labor are the most effective means for women to increase their level of status in society and become active in the labor force as compared to men (Chafetz, 1984).

3. Female Labor Force Participation Rate

Female labor force participation has changed radically over the past 100 years. It is thought that this increase in female labor force participation is actually due to the change in demand for the female workforce. However, the literature is limited in this respect. Because the increase in the labor force participation rate of women is due to both demand and supply factors. Women, according to education, preferences, gender roles and domestic responsibilities, increase their participation rates due to the increase in demand for the services they offer to the market due to many reasons such as child care. During periods of stagnation, decreasing wages, with rising unemployment rates, reduce people's desire to find the job. On the other hand, when the economy is developing, the opposite situation is encountered. Moreover, the labor supply that regulates the changes in labor demand is not so sudden but is caused by delays in labor supply. For example, those who are out of the labor force are hurt by the inexperience of work and the blunting of their talents, or they tend to raise children with the capital they make for home life. If women are not working and are involved in house work with their children at home, they are exposed to high social costs because they spend time at home instead of working. The impact of the need for human capital and social values; Causes changes in the labor market behaviours in the individuals, in the groups and especially in the women.

The reasons underlying the women's inability to join the labor force are grouped into factual and judicial. Factual reasons are the high unemployment rate in the country, the low wages of women, the lack of education and skills of women, and the inadequate welfare of nurseries; Judicial reasons are that the woman defines herself within the family and with maternity/paternity, to work in this role and identifying out of home life belong to men and the house as a place belong to women (Demirel and Others, 1999).

According to Fernandez (2007), women are faced with the cultural and economic obstacles that prevent them from joining the labor market. The economic obstacle is primarily concerned with the deterioration of working conditions (high probability of working in the informal economy, low salaries, lack of affordable childcare services, long working hours, etc.), while cultural barriers are particularly related to the role of women in childcare, related social / family demands. Indeed, family pressure from parents is an important constraint on the employment of low-educated women. Increasing labor through increased labor demands will increase the effectiveness of social interaction and work experience.

According to OECD data (2016), Turkey is ranked as the 'worst-case' country in the 30 OECD countries with female labor force participation rate of 27.5%. At the same time, the share of women in employment in EU countries is 65.6% in EU15 and 69.4% in EU25, according to 2015 data. Participation rates in labor force decreased both in general and in 2016 among men and women in Turkey. While the labor force participation rate was determined as 49.2% according to the annual results of the 2016 household labor force survey, the labor force participation rate in Turkey was 44.7% in January 2017 period. According to 2017 results, the labor force participation rate in men was 78.3%, while it was determined as 67.6% in January 2017 period results. In females, the same proportions were realised as 26.8% and 25.9%, respectively. In urban areas, the labor force participation rate was 41.4% and in rural areas, it was 47.3% (Tüik, 2017).

4. Female Employment in Workforce in Turkey

The economic and social disadvantages within the country have allowed women to be actively involved in the workforce. In Turkey, women enter the labor market and try to carry out the jobs they take responsibility for in their working lives, as well as fulfil the tasks they undertake at home. This situation, however, has led to an increase in demand for women, especi-

ally in certain occupational groups. In some professions such as teaching, clerical, nursing, tailoring, the demand for female workforce has increased. In this process, which has also caused re-emergence in professional groups, women have begun to enter the public sphere (Giddens, 2000: 338).

After the establishment of the Republic of Turkey, with the reforms in education, women have started to take part in working life (Doğramacı, 1992: 106). The inadequacy of economic conditions put forward the woman as the cheap labor and gender-related work sharing suffer from erosion (Somersan and Others, 2004: 355). In the United Nations' 2004 development report, the labor force participation rate of women is 88th among 177 countries and 19th among developing countries. Turkey lagged behind in terms of women's status and income distribution (UNDP, 2016). However, from 2000 onwards, an increase in female labor force participation has been observed, creating opportunities for women to facilitate family and business life, and providing child care facilities. But the increase of these opportunities did not increase the demand for women in the workplace. Because sex discrimination based on social recruitment has not changed, the equal wage policy applied to women has not been implemented and obstacles have been added to stop women's advances on pregnancy and equal work-share is not done (Ereş, 2006: 47).

It is possible to examine the development of women's employment in Turkey in two ways: the first is the urbanisation process in Turkey. The second is that sectors that are pioneering in the globalisation process are sectors that are not in competition with other countries. When each is examined separately, the urbanisation process has reduced female participation in the workforce, and women who have migrated from rural areas into urban areas have either started to work as housewives or have participated in informal employment. Nevertheless, women do not need to work because they do not need a family in economic terms. However, the environment in which women's

employment is the highest in Turkey is also the upper socio-economic groups. In the lower levels, although the family needs additional working income, it is not very warm for women to participate in the working life because of social and traditional values. A woman can only able to work in jobs where her husband or her family allows (Atauz and Others, 1998**).**

Although female employment is not on the expected percentage in our country, the proportion of highly educated women in the professions required technical education is almost equal to many western countries where the female labor force is high (Kandiyoti, 1982). However, this group is the socioeconomic group mentioned above, and the high level of education in women is an important factor in participation in the workforce. However, this group is the socioeconomic group mentioned above and the high level of education in women is an important factor in participation in the workforce.

In fact, it is possible to examine the employment of women in Turkey in three groups. Rural women working in the agricultural sector as unpaid family workers; Low-paid, uneducated or very poorly educated women and professional, highly educated women in jobs that require more labor in cities. Women in all three groups are discriminated against in the working life through sex-discrimination of labor in the society. Women working in rural areas mostly as unpaid the highest group of employment in the agriculture sector. In this respect, they face problems such as unpaid work, lack of security, inadequate working conditions (İlkkaracan, 1998:3). Employment is also high among women with a high level of education as professionals. This group is the group with the best working conditions (both social security and wages). The only problem this group faces is that male managers, referred as glass ceilings, do not allow female employees to step up, not reward their successes or to be harassed in the workplace (Şenel, 1998, İlkkaracan, 1998: 4).

5. Data and Methodology

In the course of determining the econometric analysis of the study, the definition of the independent variables and undetermination of the regional data of some of the variables related to the econometric analysis tests were used instead of the common data for the whole country rather than the econometric model, so the econometric model was used for analysis in the included variables.

Econometric estimates have been made in this section in order to investigate the determinants of female labor force participation decisions in seven regions of Turkey. An approach that takes into account socio-demographic and economic characteristics of women and family structures has been followed. The data used are from the National Statistical Institute of Turkey (1923-2007) and the 2008-2009 Statistical Yearbooks of the World Bank (WB), the United Nations Development Program (UNDP), the Organization for Economic Development and Co-operation (OECD), the International Labor Organization Funds (UNICEF) published in Turkey by the periodic statistics.

Regression models are designed to allow econometric analysis for seven regions of the country. The annual distributions of the data are used in the analysis. Due to the limitations arising from the non-existence of data for the pre-1990 period, the panel data set was arranged to cover the 1990-2009 period. In the econometric model, the proportional values of the variables are used as a measure of the demand for the female workforce.

Generally, economic analyses are performed using dynamic panel data method. The dynamic panel data models are estimated with the Generalised Moments Method (GMM) to remove the flaws that may arise from unobserved features. In addition, the Generalised Moments Method in the dynamic panel analysis eliminates biased results due to concurrency, internalism and neglected variables in empirical studies (Arellano and Bover, 1995; Arellano and Bond, 1991; Sargan, 1958).

The variables used in the model consist of some of the variables used by Özer and Biçerli (2003), Furukawa and Inui (2003), Tansel (2002), Smith and Ward (1985) as well as additional variables reflecting macro economic and socioeconomic conditions at the same time. The method applied in the models and the data used are the greatest differences between each other. In the work of the authors mentioned above, Panel Data analysis was applied and the set of variables was constrained. In this thesis, a more comprehensive data set that can generate different variables with GMM method is applied. The linear econometric model is as follows:

$$KKO_{it} = \gamma_1 KKO_{i,t-1}, + \gamma_2 CKIO_{i,t} + \gamma_3 BOSO_{i,t} + \gamma_4 EVO_{i,t} + \gamma_5 DOG_{i,t} + \Gamma_6 UO_{i,t} + \gamma_7 IO_{i,t} + \gamma_8$$

$$RGSYH_{i,t} + \gamma_9 EKO_{i,t} + + \gamma_{10} YAS_{i,t}$$

5.1 Variables

It focuses on the participants who are traditionally employed in work on the subject of the workforce and which is created by the sum of job seekers. Here, too, first, women in the labor market are distinguished from women who do not seek jobs when they can. Depending on the suitability of the data set, those who are not looking for a job (housewife, the student, retired, seasonal employee, those who can not work due to illness, etc.) and women who are not looking for work for family or personal reasons are considered "discouraged employees" other than the workforce.

The position of the woman in the family is considered together with the marital status, the fertility rate, the age of the woman, the husband's labor force participation rate and the household size. The economic environment is related to factors such as the number of workers in the family, wages, the annual total household income level, possession of the living quarters, the cost of living in the household, ongoing debt or instalment.

The following table (Table 1) describes the set of explanatory variables and the expected signs of the variables in the light of previous studies in the literature. The definitions of the variables included in the equation estimates are also given below. The effects of the factors determining the dependent variable "female labor force participation in the labor market" have been tried to be estimated with the Generalised Moments Method. The instruments used in this analysis are the lagged differenced dependent variable to avoid the correlation with the error term.

Table 1. Expected Signs of Descriptive Variables

Female labor force participation rate	KKO (+)
Age	AGE (+)*
Marital Status	
Married	EVO (-)
Divorced	BOSO(+)
Literacy Status	OKYO (+)
Husband's labor force participation rate	EKO (-)
Fertility rate	DOG (+)
Annual Wage rate	UO (+)
Unemployment rate	IO (-)
Gross domestic growth rate	RGSYH (+)
Percentage of women who are discouraged	CKIO (-)

*The signs in parentheses indicate the expected direction of the activity.

5.2 GMM Results

As the dependent variable female labor force participation has been accepted as available 5 models. These models were analysed separately with the Generalised Moments Method. These are; all the women that affects the main factors (real GDP, labor force participation rates of men, wage rate, unemployment rate and literacy rate), married women rate effect, divorced women rate effects, the fertility rate effect, the effect of labor force participation of women discouraged, the pension rate effect, at a young age that women rate effect (15-24 age range), the proportion of women in middle age effect (25-34), middle age women over rate effect (35-54 age range), the effect of the proportion of older women (55+ women), the proportion of women are primary school graduates effects, secondary school graduate women rate effect, the effect and the proportion of women high school graduates, university graduates are women subsample rate effects.

5.2.1 General Effect of macroeconomic Variables on female labor force participation rate

It is the first model that predicts women's participation in the workforce. The real GDP, which is included in the regression from the candidate variables mentioned in Table 2, is estimated on the basis of unemployment, male labor force participation rate, wage rate and salary rate. These variables appear to have a statistically significant effect on female labor force participation in the workforce and are significant variables when taking into account the likelihoods of the models.

Table 2. GMM, model 1

The dependent variab-
le: KKO

Method: GMM

Transformation: Vertical Deviations

Variable	Coefficient	Std.Deviation	t-Statistic	Possibility
KKO(-1)	0.493509	0.04118	11,983	0.0000
OKYO	0.565697	0.01903	29,719	0.0000
RGSYH	0.038848	0.00168	23,100	0.0000
EKO	0.037365	0.02441	15,309	0.0000
UO	-1.174.480	0.05359	-21,918	0.0000
IO	-0.010286	0.00437	-23,534	0.0000
Instrument degree		42,00000		
Sargan Test*		0.185316		

*sargan Ho: The instruments used are valid.

Although all the variables give statistically meaningful results, the sign in the wages is the opposite of what is expected. The economic activities of women - from childbearing to agricultu-ral subsistence to household subsistence - are not underestima-ted or not measured in the officially calculated GDP. If non-market livelihoods are not turned into money over time, it is possible to see a decrease in real GDP growth rate as a result.

As the economies of developing countries develop due to scale and classification, many uncalculated or non-cash production activities - unofficially implemented in households - enter the market and are not included in the GDP measurement. The economic activities of women who work as unpaid family workers in our country are also ignored in this way and are not included in the calculation. Against this limitation, the increase in real GDP makes female labor force participation attractive. In fact, other underlying reasons for this are social regulations such as social security, pensions, and health services. This is financed by Pay as you go (PAYG), which is often used by older people. For example, participation in the workforce affects the workforce and new entrants often tend to pay jobs. This is possible after regulations on wage rates. In addition, the labor force increases economic growth and increases government revenues. From this point of view, female labor force participation in the workforce contributes to the development of financial sustainability. As a result, the demand for the female workforce is increasing.

Participation in the workforce is expected to be inversely proportional to the rate of unemployment because high unemployment rates discourage people and see that the likelihood of individuals finding jobs is lower. The effect of wages - because it dominates the economy - can also be affected by this change in unemployment. The fact that the workplace is private ownership is not registered in the social security institution or it works on the jobs requiring physical force and it has a negative effect on the wages. This is why the pay rate is negative to the contrary.

A positive relationship is expected between female literacy rate and their participation in the workforce. Because women's investment to the education increases their human capital. In this respect, education of women can be added externally, not internally. Women who know how to work in the sector invest more in education. This increases the demand for the female workforce and reduces the fertility rate. Although there is little

to say about between personal attitudes and behavioural diffe-rences, in contrast to men's education levels at various stages of modernization, it is aimed at increasing the level of women's education. As modernization progresses, educational and occupational opportunities increase, the traditional role of women in the family diminishes, and general positions of women develop. However, traditional social structures are changing over time, providing women with important opportunities and encouraging them to work in the workforce. The role of education is important. Although the limited employment opportunities, low wages earned by women workers and income prevent investment in the education of women in their families in rural areas, the education of women in general increases the effect of negative economic development on their own situation to the labor market.

Education increases the opportunity cost of economic activity and has a positive impact on people's job seeking and process. More educated women are expected to pay higher salaries than low-educated women and are more actively involved in the labor market, as people's expectations are determined by the level of education. These expectations motivate women to learn and learn more and increase their participation in the workforce during their lifetime.

In addition, instruments (instrumental variables used) must be valid in order for the model to be consistent with the likelihood and signs in the prediction made by the model. In the context of the Sargan Test to test the validity of instrumental variables, depending on the following hypothesis:

H_0: no correlation

H_1: correlation available

p-value is 0.185316 . As 0.85316 < 5.99, it was accepted as H_0. Used instruments are valid and there is no auto correlation.

5.2.2 The effect of fertility rate on female labor force participation

When the change in female labor force participation rate was examined, the values reached in Table 3 analysed with model 2 are as follows.

Table 3. GMM, model 2

The dependent variable: KKO

Method: GMM

Transformation: Vertical Deviations

Variable	Coefficient	Std.Deviation	t-Statistic	Possibility
KKO(-1)	0.502748	0.06756	7,4412	0.0000
OKYO	0.493712	0.03529	13,9912	0.0000
RGSYH	0.039795	0.00741	5,3695	0.0000
EKO	-0.097165	0.05222	-18,6075	0.0000
UO	1.306537	0.10799	12,0987	0.0000
IO	-0.015346	0.00575	-26,6770	0.0000
EVO	0.008106	0.00736	11,0104	0.0000
BOSO	0.086062	0.08451	10,1834	0.0000
DOG	-0.436755	0.11442	-3,8170	0.0000

Instrument degree		45,00000	
Sargan Test*		0.138036	

*sargan Ho: The instruments used are valid.

From the perspective of the fertility rate, it is determined that there is an important and significant effect on female labor force

participation. Where fertility rates are high, women are less likely to participate in the workforce because they are more preoccupied with child care and in-house responsibilities. However, there is an inconsistency between these two variables. It is possible to say that countries with a high birth rate have fewer demands on the female labor force.

Economic growth increases the demand for the experienced and educated female workforce and provides a rational distribution of professional roles. Although the fertility rate imposes limitations on the demand for women, the Female labor force participation increases productivity and refuses to reduce the fertility rate. However, rapid population growth has a negative impact on economic growth. In developed countries, generally educated women reduce marriage ages and reduce population growth and reduce child-rearing demands. Thus, education prevents population growth by reducing the fertility rate of women. Women's education, on the other hand, has a stronger negative impact on fertility than men's education. There is, however, conceptually an individual-level educational relationship between women and labor force participation and fertility rates. Because education gives women experience and knowledge, allows them to change their behaviour and appearance, allows them to work in paid jobs instead of working for free, and makes it easier for them to limit the number of children they look or see.

At this time in our country, in both rural and urban areas, families are unable to meet the high education that many children need to be in the labor market. In fact, educated families, which are required to be mentioned here, are more supportive of the education and success of their children. Because low-educated parents often have little or no knowledge of what to do when they send them to the school.

The aim of the study is to influence the current fertility rate and the purpose of giving birth is the working behaviour. This leads

to an inverse relationship between the two variables, and in the long run, there is an inverse correlation between them. Nevertheless, the family-work role reconciliation policies that are tried to be implemented are meant to help disappearance of the survival of choice between them.

Female literacy rate is also statistically significant. There is a positive relationship between the wage rate and participation and the marriage rate positively affects participation. In fact, married women are expected to reduce child responsibilities and reduce their participation in the workforce. Considering that the family has low and middle income, the costs that come with the child alone make women want to be in the workforce. Since married women do not need intensive care for elder children, their participation is again positive. The fertility rate is inversely correlated. The most important reason for this is the increasing number of children, increasing the responsibility of the woman, making it difficult to participate in the workforce and lowering the demand for the female workforce.

In the Sargan Test, which measures the validity of instrument variables, the p-value is 0.13836. 0.108036 <5.99 H_0 was accepted. The instruments used in the model are valid and there is no auto correlation.

5.2.3 Impact of discouraged female labor force participation rate to the workforce

The unemployment rate is higher than reflected unemployment rate when these people who are discouraged giving up their job because they can not find a job when they want to work participate in the unemployment rate. The dismayed worker effect is that women in the labor market are seen as a a buffer for the male workforce. In economic times, when the economy is stagnant, employers who want to maximise or replace their profits substitute female employees who can work cheaper male workers to lower their costs. This, in turn, provides women workers with new work opportunities and places. In situa-

tions where welfare is rising, there is an increase in female employment. Women whose education level is lower than that of men during periods of recession do not join the labor market with unemployment (Humphrey, 1988). In short, the limited availability of opportunities encourages many women who are discouraged to leave the workforce.

In that case, the discouraged workers are actually a candidate for conjuncture fluctuations in participation in the workforce. The participation rate is increasing when it is difficult to find work, and it is decreasing when job finding is easy. Thus, according to the condition of the conjuncture, people can join and leave the labor force. Labor market programs can prevent a shift in the labor force participation rate, depending on the discouraged workers. Because programs are generally prepared and implemented as anti-conjuncture.

It is a model that estimates how discouraged women in all age groups affect their wage and unemployment rate and their participation in the workforce. As a result of the estimation made with the candidate variables included in the model; All women have a statistically significant effect on the labor force participation and are significant variables according to the model.

Table 4. GMM, model 3

The dependent variable:
KKO

Method: GMM

Transformation: Vertical Deviations

Variable	Coefficient	Std.Deviation	t-Statistic	Possibi-lity
KKO(-1)	0.477031	0.25432	18,7575	0.0000
OKYO	0.460621	0.11386	4,4553	0.0000
RGSYH	0.040630	0.01221	33,2733	0.0000
EKO	-0.012231	0.14325	-8,5388	0.0000
UO	1.222.358	0.29179	4,1892	0.0000
IO	-0.018554	0.00807	-2,3000	0.0000
EVO	0.009460	0.00811	11,6685	0.0000
BOSO	0.144493	0.20812	6,9427	0.0000
DOG	-0.526060	0.50029	-10,5151	0.0000
CKIO	-0.118179	0.09317	-12,6842	0.0000

Instrument degree		46,00000		
Sargan Test*		0.161187		

*sargan Ho: The instruments used are valid.

According to the estimation results of Model 5, participation in the workforce is decreasing for women who are discouraged. When the model is examined, the increase in unemployment

rate is negative for female labor force participation, as the increase in the proportion of discouraged women is directly proportional to the unemployment rate. Indeed, participation in the female labor market due to the total employment situation shows that the majority of women constitute the majority. Depending on the results obtained from the model, it is possible to observe that the discouraged worker effect actually removes women from the market who are prepared to return to the labor market in the period of periodic recovery. At the same time, the factors that cause women to move away from the workforce today - even if the impact of these factors diminish in the future - can cause women to lose their courage and withdraw from the workforce. This is because there are always cultural factors that do not allow the full-time work of the woman due to family affairs, have health problems that will prevent her work, can not cooperate with her work and social life together. If the increase in wages and the demand for the female workforce is proportional, it encourages female labor force participationin the labor market.

In the Sargan Test for the validity of instrument variables, the p-value is 0.116117. Here 0.161187 <5.99 and H_0 was accepted. The instruments used in the model are valid and there is no auto correlation.

5.2.4 The effect of the marriage rate on female labor force participation rate

The equation in Model 1 is reported as Table 5 and Model 4 when the regression is performed by adding the marriage rate of women.

Table 5. GMM, model 4

The dependent variable: KKO

Method: GMM

Transformation: Vertical Deviations

Variable	Coefficient	Std.Deviation	t-Statistic	Possibility
KKO(-1)	0.489272	0.06040	8,1006	0.0000
OKYO	0.569739	0.02266	25,1465	0.0000
RGSYH	0.038166	0.00199	19,2245	0.0000
EKO	-0.036679	0.03173	-11,5598	0.0000
UO	1.206.381	0.04990	24,1752	0.0000
IO	-0.011705	0.00434	-26,9894	0.0000
EVO	0.006403	0.00522	12,2615	0.0000

Instrument degree

Sargan Test*   0.1746111

*sargan Ho: The instruments used are valid.

Female literacy rate is statistically significant. As the male labor force participation rate increases, the female labor force participation decreases. This shows that the increase in the share of man in the labor force affects female participation in the

workforce negatively. While real GDP and the marriage rate of women have a positive effect on women's labor force participation, The increase in unemployment rate is adversely affecting. From a wider perspective, marital responsibility for married women decreases their participation in the workforce by increasing the amount of work to be done at home. However, this is even more unlikely for low-income women who do not have family members or children who can not send their children. Children's presence can increase female labor force participation in two ways. Having children can increase the need for both parents and women to pay. On the other hand, children's age is an important factor in female labor force participation in the workforce. Since children need less responsibility as their age progresses, they will contribute positively to female labor force participation. Since married women do not need intensive care for elder children, participation is expected to be positively affected. The pay rate is an important factor affecting participation and the increase in pay increases female labor force participation as expected in the model. The unemployment rate is the same as the previous model and is negative.

In the Sargan Test, which measures the validity of instrument variables, the p-value is 0.1746111. 0.1746111 <5.99[1] H_0 was accepted. The instruments used in the model are valid and there is no auto correlation.

5.2.5 The effect of the divorce rate on female labor force participation rate

The results obtained when these variables were regressed were reported in Table 6 and Model 5, as to how female labor force participation in the workforce was affected by real GDP, literacy, marriage, divorce, unemployment and wage rates.

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[1] Two degress of freedom with 5% is used as critical value in the Sargan Test.

Table 6. GMM, model 5

The dependent variable: KKO				

Method: GMM

Transformation: Vertical Deviations

Variable	Coefficient	Std.Deviation	t-Statistic	Possibility
KKO(-1)	0.493429	0.08136	6,0646	0.0000
OKYO	0.549816	0.04257	12,9162	0.0000
RGSYH	0.040484	0.00766	5,2841	0.0000
EKO	-0.044765	0.05057	-8,8525	0.0000
UO	-1.286.797	0.10999	-11,6992	0.0000
IO	-0.011664	0.00592	-19,6894	0.0000
EVO	0.005911	0.00642	9,2028	0.0000
BOSO	0.131274	0.10467	12,5413	0.0000

Instrument degree	44,00000
Sargan Test*	0.147232

*sargan Ho: The instruments used are valid.

Estimation results indicate that participation in the labor force will decrease the unemployment rate, pointing out that it will increase with real GDP, but will decrease with the increase in wages. The findings of divorce and marriage are meaningful.

Although all variables used in the regression give statistically meaningful results, the sign in the wages is the opposite of what is expected.

Divorced women need to work to meet both their individual and family needs, and divorced women of all ages are more likely to work. It is possible to say that the marriage rate for the literacy rate is a limited working sector. The situation here is somewhat different. Because divorced women have more Money demand than married women, they do not have the chance to choose more sectors. The advantage to being educated is that they can be promoted or wage increases in the long run. However, women who are particularly child-bearing and living in the countryside are less fortunate in this regard. This is because of the flexibility and favourable working conditions of the working hours, which are preferential to the wage of the child-bearing women. This is particularly important for women who have children between 0-6 years of age. In the rural area, environmental and familial factors are different from this situation and the divorced woman's work is not welcomed by the elders in some areas. It is possible to see many women are made to work with their families as unpaid family workers. As a result, if they are divorced, even women educated or uneducated, they can not be participated in the workforce, because of some external factors.

In the Sargan Test, which measures the validity of the instrument variables, the p-value is 0.147232. 0.147232 <5.99 H_0 was accepted. The instruments used in the model are valid and there is no auto correlation.

Conclusion and Reccomendation

The increase in female labor force participation in the workforce is an important development not only in the world but also in our country as observed. Reducing labor costs and ease of working hours, one of the advantages of "flexing" the transition to a post-Fordist production system in all developed and develo-

ping countries, has increased the demand for the female workforce in both production and labor markets. One of the most significant changes observed in recent years is the increasing presence of women in the workforce, indicating that women with important tasks such as household responsibilities and childcare that are not considered as economic activities and do not pass the statistics are at the production stages being tried to be elasticated. However, female labor force participation in the workforce can also vary within themselves. Because men have a continuing participation in the labor market, female labor force participation in the workforce is more discrete and uncertain. Family responsibilities are withdrawn from the short-term workforce or are completely separated by many factors, such as child care, community values, socioeconomic level, education level and working conditions. Therefore, the flexible working system is more attractive to women, which can increase their marginal productivity.

When the differences in the employment of women in the job market are examined, it is lower than male labor force participation rates despite the increase in women's labor market. Because the majority of women work in the agricultural sector or in the home as unpaid family workers. Another important factor affecting the demand for the female workforce is occurring from the division of occupations as men and women. Women tend to focus on the "women" professions that are usually categorised for them, which in turn increases competition within them. Women who are able to benefit from the flexibility of globalisation have the negative consequences, especially on educated women, that they can not be promoted to senior positions or management positions. Each such additional problem can cause women to move away from the labor market.

In this study for the Turkish economy, the clear and expected results of the women labor force claiming that women take part in the labor market. When we compare Turkey with developed countries in general, it can be said that the increase in the demand for female labor force has a positive effect on female la-

bor force participation due to the increase in education level, the decrease in wage differentials, the nationwide unemployment rate, fertility rate, male labor force participation in labor force and differences in women's ages. However, in the informal sector women with low and precarious and uninsured work should be registered as household workers and those working in the household and agriculture sectors as unpaid family workers. Thus, women can be activated in all sectors and their economic activity, productivity, work and economic efficiency can be increased.

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