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ANALYSIS OF GENDER DISCRIMINATION WITH RESPECT TO THE SOCIO-ECONOMIC PERSPECTIVE

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ABSTRACT
Gender discrimination is a social phenomenon by preventing women from the participation of the economic, social and political life. Main research questions of this study are; firstly is there any gender discrimination within European Union (EU) countries considering three groups of economic development level, and secondly, what are the effects of economic development on gender discrimination? In the study, first a cross-country multivariate-analysis-of-variance (ANOVA) is performed to compare socio-economic conditions of female and male population with respect to ten relevant gender discrimination indicators for the time period of 2005-2013. Second, a cross-country regression analysis is performed among the EU countries to observe that economic development has any explanatory power on gender discrimination indicator. Results show that in the euro area economic development evenly improves the status of both females and males. However, not depending on the economic development level there is a persistent and high level of gender pay-gap exists in the euro area for the period considered. □

Keywords: Gender discrimination, European Union, Economic development, Regression analysis, Multivariate analysis of variance

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SOSYO-EKONOMİK GÖSTERGELER ÇERÇEVESINDE CİNSİYET AYRIMCILIĞININ ANALİZİ

ÖZET
Cinsiyet ayrımcılığı, kadınların ekonomik, sosyal ve siyasal yaşama katılımını engelleyen sosyal bir olgudur. Çalışmanın temel araştırma soruları; bulundukları ekonomik gelişmişlik düzeyleri göz önünde bulundurularak, Avrupa Birliği (AB) ülkelerinde herhangi bir cinsiyet ayrımcılığı var mıdır? ve ekonomik gelişmenin cinsiyet ayrımcılığına etkileri nelerdir? Çalışmanın verisi 2005-20013 yıllarını kapsayan döneme aittir. Çalışmada önce, kadın ve erkek nüfusunun ekonomik koşulları cinsiyet ayrımcılığıyla ilintili dokuz göstergeye göre çok değişkenli varyans analizi (ANOVA) ile karşılaştırılmıştır. İkici olarak, ekonomik gelişmişliğin cinsiyet ayrımcılığı

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üzerindeki açıklama gücü regresyon analizi ile gözlenmiştir. Çalışma sonucu, ekonomik gelişmenin kadın ve erkeklerin statüsünü eşit bir şekilde geliştirdiğini göstermektedir. Buna rağmen ekonomik gelişmişlik seviyesinden bağımsız olarak, euro bölgesinde dikkate alınan dönemde daimi ve yüksek düzeyde cinsiyete dayalı ücret eşitsizliği mevcuttur.
Anahtar Kelimeler: Cinsiyet ayrımcılığı, Avrupa Birliği, Ekonomik gelişme, Regresyon analizi, Çok değişkenli varyans analizi

Introduction

Gender discrimination is a social phenomenon, preventing women from the participation of the economic, social, and political life of the society. Discrimination and lack of societal understanding about women's issues such as violence against women make it difficult for them to become successful in the workplace (Gilroy, 2014). In many societies, women are generally encouraged to perform gender related activities by parents and society (Eagly and Wood, 1999). Additionally, in the industrial societies, many factors forced women to enter the work force in which women's roles did not change in home and helped women to realize their capability to perform other tasks than housework and child care. Industrialization has led to the emergence of new opportunities for women and created social awareness that enabled women not only to fight for better working rights or wages, but also for equality. Consequently traditional gender norms have been affected by the time and women have encouraged to increase their competencies and to achieve new goals in terms of education, disseminating the women agencies, having careers and prestige including high status and male dominated occupations (Wood and Eagly, 2013) and especially gaining equal pay with the men.

As a result of changes in societies and given support to gender equality with both "Universal Declaration of Human Rights" in 1948 and "European Convention on Human Rights" which is drafted in 1950 and forced in 1953 had eroded the gender inequality. In 2001, European Council adopted a set of commonly agreed and defined indicators for social inclusion. These indicators play a central role in monitoring the performance of member and candidate states in making progress towards EU objectives, and represent a major step in the forward development of EU social policy (Atkinson et al., 2004). In this policy path, EU countries and candidate members have adapted their legislation to EU standards to mate and execute the directives. In particular, some of the directives relating to the implementation of the equal opportunities and equal treatment of men and women are the main efforts to ensure the fully equality in practice (Foubert, 2011). EU is constantly checking the changes in gender roles through the legislation because gender equality is an important factor in understanding the gender roles in the formation of adjustment processes of state laws aiming to incorporate EU directives.

Gender equality has not only improved women's rights including the life and work conditions, but it has also significantly contributed to economic growth and social welfare. Gender equality has promoted the women's engagement in the economy. Thereby, all of society has got benefits when people change or rearrange the gender roles in home, workplace and school in terms of gender equality. Furthermore, equality between men and women is necessary to achieve the EU's objective of economic growth, employment, social cohesion and competitiveness (European Commission,

2013). In all this perspectives, EU directives are ultimately evaluated as a social leverage for the human development in the society and countries.

Although cultural differences varying from country to country play an important role in this disparity on the male-female division in societies it is important to observe and improve gender discrimination because of the relation with other economic and social attitudes of the country. Over the years, a number of studies have been devoted to discrimination against women by considering different measures as indicators. Wage inequality, education and illiteracy, employment and employment rate, occupational gender wage gap by low/high skill occupation, economic equality, health equality and empowerment in parliament are some of the values considered and investigated in literature (Kabeer and Natali, 2013). Seguino and Grown (2006) stated that economic crisis and globalization have forced women for seeking employment to earn supplement income for their family. Therefore, in agriculturally-oriented developing economies, seasonal job opportunities or contract works are not sufficient to fulfill the characteristics of equality and sustainable improvement in women's employment status.

Kabeer and Natali (2013) have focused on the relationship between economic growth and gender equality, and highlighted the reverse relationship between growth and gender discrimination. Ghani et al. (2013) has investigated the particular role of women in Indian manufacturing sector, over the period 1994-2005. In the early 1990s, they observed consistent gender-based employment, which accounts for approximately 99 percent and 80 percent of total manufacturing employment in India for the organized and unorganized sectors, respectively. In 1994, female-owned businesses comprised 9 percent of total manufacturing employment. This contribution of female entrepreneurship grew tremendously in a relatively short time period and reached 19 percent by 2005.

The aim of this study is to investigate and explore the social and economic forms of gender discrimination in the euro zone. Countries are separated into three different groups according to economic levels, and aforementioned ten soci-economic discrimination indicators for the time period of 2005-2013.

As the empirical strategy, first we performed the multivariate statistical technique (ANOVA test) in an attempt to determine and explore whether females and males show statistically significant differences within the three groups of EU countries with respect to socio-economic indicators considered. Comparison is also made among the three groups of countries. Secondly, a cross-country regression analysis was employed for the time period of 2005-2013, in order to observe whether the economic development which is measured by Gross Domestic Product (GDP) per capita in Purchasing Power Parity (PPP) terms has any explanatory power on ten relevant gender discrimination indicators.

1. Basic socio-economic indicators' effects in gender discrimination

Women have certainly increased their presence and status in the workforce with treaties signed by the countries. Despite these impressive strides toward gender equality, there remain disparities in the experiences of women and men in both workplace and home. Women have still lower wages and greater household duties than men. As Haslam and Ryan (2008) pointed out, the gender composition in work force especially in

management is very different than 20 years ago although gender inequalities have continued. On the other side, the study of Fetterolf and Eagly (2011) reflects women's tradeoffs between satisfying their employment goals and relationship goals with their children. They examined young, unmarried and high well educated women's expectations and emotional perceptions about gender equality in their future careers and marriages. This study shows that women appeared to understand the existing gender inequality in domestic and paid labor, and expected this inequality to continue in their future marriages.

The status of women in societies is evaluated through various socio economic indicators. Unemployment rate is among these indicators and defined as a measure which shows what percentage of human resource of a country has not been employed in a given period. Unemployment rate differs in its effect for various groups with different attributes such as skill, age and gender (Blanchard, 2006). In the economic perspective high women unemployment rate implies that the country has not made full use of whole human resource capabilities and lacks the women labor force participation. Concurrently, unemployment is used as an indicator to measure the competitiveness of countries. The study of Aydın (2015) has revealed the relationship between women's employment and competitiveness for G7 countries. This study finds out the mutual relationship in which female labor force participation has positive effect on competitiveness and competitiveness has positive effect on female labor force participation. Moreover, Abbas et al. (2011) has investigated gender discrimination and its affect on employees' productivity and performance in Pakistani industry. The results show strong association between gender discrimination and employee productivity. On the other side, unemployment will cause a slower improvement of the EU's growth potential and longer time needed to achieve the EU targets. Working in conjunction with the gender discrimination, EU's headline targets in 2020 is to increase female employment in both quantitative and qualitative terms and to raise the overall employment rate for women to 62.5 percent (Report on Progress, 2010). However, high women employment rate alone cannot be considered as a gender equality indicator.

Education is another most powerful instrument in developing a democratic society and improving the economic growth, social capital and ability as well as in eradicating the discrimination against women. For a long time it has been viewed as a core factor in human being development since it boosts people's self-confidence, makes finding better jobs possible, promotes engaging in public debate and politics, and ensures active demands for health care, social security and other issues from government (Human Development Report, 2013). In this sense, its beneficial effects are considered in terms of both monetary and non monetary returns. On monetary side, it ensures improving productivity in business and/or in self employed occupations and increased earnings in labor markets. On non monetary side, it provides healthy life for her family, efficiency in home production, conscious child-rearing and political awareness (Duraisamy, 2002). Although numerous countries have almost reached their goal of eliminating gender disparity in primary school education, gender discrimination still continuous to be an issue in education for some countries and requires attention. Balaev (2014) has showed the economic and social effects of education and presented dramatic statistical result for 2011. According to this study, approximately six million young people between 18 and 24 years old, had not finished upper secondary education and were not in education and

training. 54.8 percent of these early-school leavers are unemployed; their unemployment rate is twice as high as the overall youth unemployment rate in Europe

As another gender disparity indicator, gender pay gap has a negative and direct impact on discrimination. In EU28 countries, mean earnings in Euro for the year 2010 is 20.372 for women and 22.047 for men in industry, construction and services sector. This gap has been increased in the professional occupations from 34.996 to 55.225 for annual earnings in euro for the same year and same sectors. In the same study, it is observed that the gap is narrowed for clerical support workers. Consequently, gender pay gap is another dimension of discrimination and reflects the barriers for women to participate to social life and to have a successful career.

Poverty status for men and women is also a gender characteristic in determining gender disparity. Struggle against to the poverty ensures economic, social and territorial cohesion, and improves social inclusion (European Commission, 2014) for the individuals. The poverty gap is used to measure the economic hardship faced by women relative to men (Elmelech and Lu, 2004). Although people at risk of poverty rates declined substantially for both men and women during the years, as of 2012 it still exists with the rates of 25.8 for females, and 23.8 for males in EU28 countries. These rates are seemed far away from the declared EU's target which is 9.0 for females and 10.0 for males for 2012 (within the European database). While some of EU countries, such as Iceland and Norway, have narrowed the poverty gap to the EU's target with the rate 12.6 and 13.0 respectively, some of other EU countries such as Bulgaria and Romania have far exceeded the target rate determined by EU with the rate 50.9 and 42.6, respectively. This heterogeneous formation across Europe constitutes one of the factors which make women economically more vulnerable.

Higher life expectancy in EU countries, has not only suggested that the greater numbers of individuals are reaching old age but also they are living a healthy life alone and participating to the labor force at a higher rate. These developments led to adopt a measure of health expectancy to the set of monitoring indicators in Europe under the name of healthy life years. This is the first indicator for health in EU and includes information about disability. Jagger et al. (2008) have investigated inequalities in life expectancies and healthy life years in the EU25 countries for 2005 and they have pointed the potential increases in the proportion of older people in the labor force. In a more legislative framework, The Lisbon strategy announced by the European Council in 2001, pointed out the target of 50 percent for the employment rate for older workers (aged 55–64 years) by 2010 (Jagger et al., 2008) whereas it only reached 46.2 percent on total employment rate in 2010. In this perspective, healthy life years target is another important issue yet in need of improvement for an economy in which lower health care costs and higher the productivity of senior people coexist in an ageing continent.

Lifelong learning can be considered as another indicator for gender disparity. Lifelong learning is a continuing process for building of skills and knowledge throughout the life span of an individual. With the lifelong learning strategy of European Commission, it is aimed to improve individuals' knowledge and skills, keeping them mentally fit and potentially more employable. More specifically objectives of lifelong learning programme are to reinforce social cohesion, personal fulfillment, gender equality, understanding and respecting to the human rights and democracy, and to promote the creativity, competitiveness, employability and the

growth of the entrepreneurial spirit (Lifelong Learning Programme, 2006). Lifelong learning not only strengthens social inclusion, active citizenship and personal development but also competitiveness and employability in the economy (Laal and Salamati, 2012). Additionally, lifelong learning contributes to the formation of the aggressive competition in the international environment, thereby many companies in both private and public sector try to identify and modify their lifelong learning strategies for their sustainability (Akkoyun and Erkan, 2014). The last but not the least, in the national level, it helps for solving the problems of unemployment, compatibility, adaptability and interoperability within working life, and the problems of stability and sustainability in economy. Within modern society, people have the need of upgrading their skills and training in both their work and private life, because of the globalization and the growth of the fast-changing knowledge economy (Laal and Laal, 2012), and also they have the need of developing the quality of lifelong learning.

Long term unemployment is a social phenomenon, which prevents individuals from the participation of the economic, social and political life of the society. Lengthy unemployment eradicates individual's self-esteem and depresses individual both economically and emotionally. More importantly, as the unemployment period lengthens, it causes the individual to be discouraged and loose all the hope regarding his/her future. Furthermore, these effects generally will be amplified for women, especially where sufficient measures against gender equality do not exist, affecting the immediate family; especially children adversely and hence have lasting adverse effects on the larger society.

2. Sample and variable selection

2.1. The Sample

In the study, the sample set is categorized into two groups as male and female. EU countries are also classified into three groups (advanced EU economies. other advanced EU economies and developing EU economies) with respect to the economic development level by considering IMF-World Economic Outlook Database October 2013 report. Table 1 gives the sample countries with available data.

Table 1 Selected EU countries and classification into groups

Advanced EU economies	Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherland, Austria, Portugal, Finland, United King., Sweden, Norway (EU15+Norway)
Other advanced EU economies	Czech Rep., Estonia, Cyprus, Malta, Slovakia and Iceland
Developing EU economies	Bulgaria, Latvia, Lithuania, Hungary, Poland, Romania, Croatia

2.2. Variables (Indicators)

In the study, data were obtained from EUROSTAT database, and cover nine relevant socio-economic indicators as well as GDP per capita in PPP of EU countries for the time period of 2005-2013. The indicators are long-term unemployment, early leavers from education, tertiary educational attainment, gender pay gap, people at risk-of-poverty after social transfers, risk-of-poverty at work, life-long learning, healthy life years at birth, EU material deprivation rate and mean equalized income

In this study we have observed some positive discrimination against women with respect to some indicators and negative discrimination for others in the preliminary investigation of the data set. We take the differences of indicators in order to reveal the degree of discrimination against women. For example, difference of material deprivation by country groups is shown in Figure 1.

Difference of material deprivations are calculated by subtracting the percentage material deprivations rate of male population from females. Hence, the negative percentages represent the degree of negative discrimination against women while positive percentages represent positive discrimination against women. Negative discrimination fluctuated especially in the year 2008 and 2009, may be due to the global economic crisis. However, after the year 2010, no discrimination is observed with respect to material deprivation rate.

Dash lines in the figures, from Figure 2 to Figure 8 are within the same meaning of Figure 1. Their labels are not displayed in the remaining figures to take the less space in this article.

Figure 2 indicates that on the average most negative discrimination against female population exists in advanced economies, and the least negative discrimination exists in developing nations over the past nine years with respect to mean equilavised income. The indicator is calculated by subtracting the equivalised income of male population from females. Hence, negative value represents degree of negative discrimination against women. After 2008 crisis, most negative discrimination occurs in advanced economies. Negative discrimination level approaches to zero level in developing economies after the year 2009, while high negative discrimination persists over the years in advanced economies and other advanced economies.

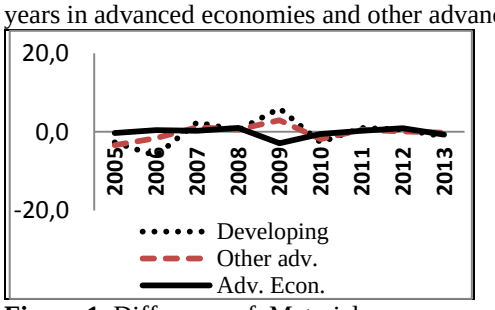

Figure 1. Difference of Material Deprivation Rate (male-female)

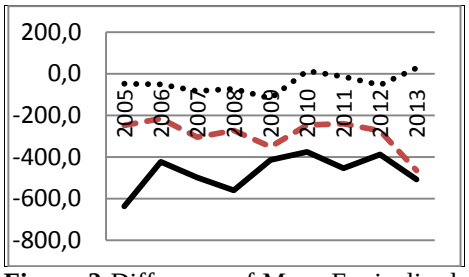

Figure 2 Difference of Mean Equivalised Income Level (female-male)

Figure 3 shows the differences of percentage of risk of poverty of male population from females. Hence, negative percentages represent degree of negative discrimination

against women in percentage. Figure 3 indicates that advanced economies have the least discrimination on risk of poverty for female population. Other two groups, developing and other advanced ones, have a similar level of discrimination with respect to this indicator. After the 2008 crisis, female population in developing and other advanced economies were more negatively affected than the females in advanced economies with respect to poverty of female population.

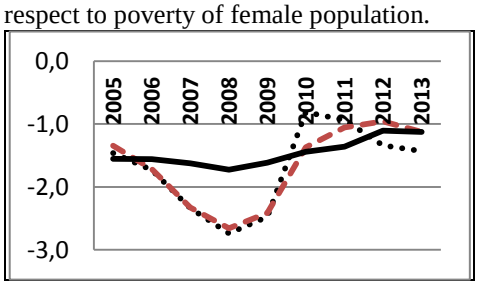

Figure 3 Percentage Difference of People at Risk of Poverty (male-female)

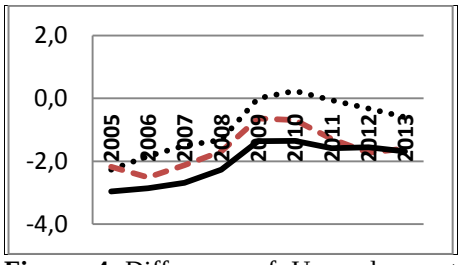

Figure 4 Difference of Unemployment Rate (male-female)

Figure 4 shows difference of unemployment rate indicating that the most negative discrimination exists in advanced economies, and the least negative discrimination exists in developing nations over the past nine years. This indicator is calculated by subtracting the percentage of male population from females.

Figure 5 indicates that there is a high level and persistent discrimination in the pay gap in all of the EU nations over the past seven years. Relatively high pay gap is observed in advanced and other advanced economies over the years.

Figure 6 indicates percentage differences of early leaver from education; the least positive discrimination exists in developing economies, and the most positive discrimination exists in other advanced economies over the past nine years. The indicator is calculated by subtracting the percentage of female population from males. Hence, it represents degree of positive discrimination against women in percentage. In other words female populations are relatively at good position when compared to males with respect to this indicator.

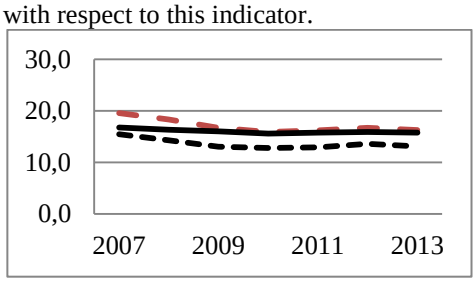

Figure 5 Gender Pay Gap

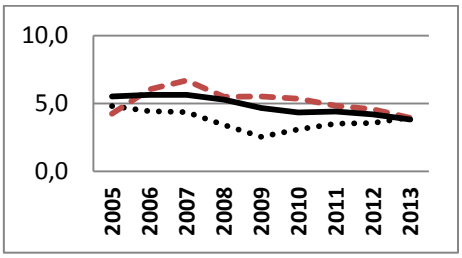

Figure 6 Percentage Differences of Early Leaver From Education (female-male)

Figure 7 indicates differences of healthy life years. The indicator is calculated by subtracting the life of male population from females. It represents degree of positive discrimination against women in percentage. In other words female populations are relatively at good position (have more healthy life when compared to males with respect

to this indicator). Least positive discrimination exists in advanced economies, and the most positive discrimination exists in developing nations over the past nine years.

Figure 8 shows that discrimination tends to converge to very low level of 0.5 percent for the group of three countries for the female. In 2003, the indicator of 'in-work poverty risk' was added to the European portfolio of social indicators. Its adoption acknowledges that while being in employment appears to be the best prevention against the risk of poverty. The 'in-work poverty risk' is measured as the rate of poverty risk among individuals who are 'in-work', meaning individuals who were employed.

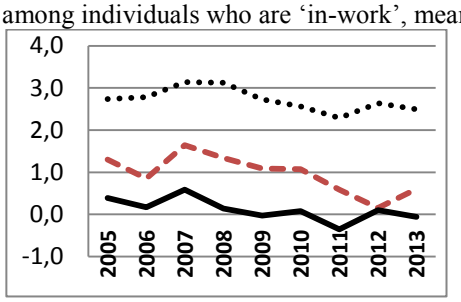

Figure 7 Differences of Healthy Life Years (female-male)

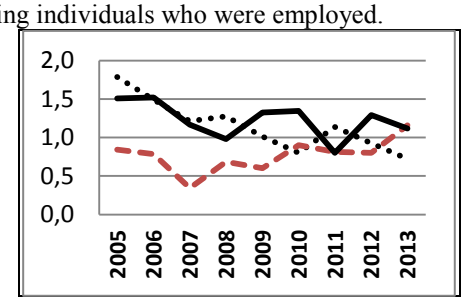

Figure 8 Percentage Differences of in Work Risk of Poverty (male- female)

When tertiary education completed and lifelong learning is considered, positive discrimination is observed against females in all of the EU nations and it tends to increase over the time. Lifelong learning which of the most positive discrimination exists in advanced and other advanced economies, while the least positive discrimination exists in developing nations over the past nine years.

3. Methodology

3.1. The ANOVA Test

ANOVA is a well known multivariate statistical technique and objective of this analysis is to determine whether females and males shows statistically significant differences within the three groups of EU countries with respect to socio-economic indicators considered. Comparison is also made among the three groups of nations. The test statistics of the analysis for each of the indicator and three groups of nations is given in Table 2. The significant values of F statistics in the last column of the Table 2 indicate that there is no difference between females and males at 1 percent significance level. This result implies that there is no gender discrimination within the three separate groups of EU countries for the year 2013.

Table 2 Comparing male and female population within EU countries for the year 2013*

	Female		**Male**		**ANOVA test results**	
Developing Economies	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**F**	**Sig.**
Deprivation	41.27	11.02	39.23	11.10	.119	.736
Mean eq. inc. in PPS	8529.95	2074.38	8515.00	2088.15	.000	.989
Risk poverty	19.75	3.18	18.45	2.32	.756	.402
Unemployment	11.16	3.01	10.61	2.84	.120	.735
Early_leaver	8.01	5.22	11.06	4.62	1.334	.271
Healthy life in years	61.10	3.19	58.20	2.58	3.478	.087
Risk_poverty at work	8.84	3.11	9.88	4.11	.283	.604
Life_long	4.01	2.36	3.29	1.35	.502	.492
Tertiary education	41.74	12.89	27.84	7.49	6.084	.030
Other Advanced Economies						
Deprivation	16.78	8.48	17.23	9.86	.01	.923
Mean eq. inc. in PPS	17855.25	6492.21	18247.50	6598.72	.014	.906
Risk poverty	13.85	3.80	12.56	3.18	.54	.474
Unemployment	8.98	4.28	7.45	4.04	.537	.476
Early_leaver	8.83	5.91	13.60	7.59	1.97	.182
Healthy life in years	62.70	7.12	62.21	7.74	.018	.897
Risk_poverty at work	5.93	2.47	6.75	1.85	.573	.462
Life_long	13.55	8.60	11.00	6.53	.446	.515
Tertiary education	45.01	12.49	31.24	7.59	7.107	.018
Advanced Economies						
Deprivation	14.09	8.73	13.40	7.35	.055	.816
Mean eq. inc. in PPS	20443.82	4320.06	20951.56	4577.86	.098	.757
Risk poverty	15.95	3.25	14.82	3.25	.903	.350
Unemployment	11.27	7.90	9.59	6.18	.424	.520
Early_leaver	9.29	4.05	13.11	5.88	4.303	.047
Healthy life in years	63.21	3.96	63.27	3.53	.002	.967
Risk_poverty at work	6.79	2.63	7.91	3.23	1.074	.309
Life_long	16.04	10.47	12.75	6.51	1.066	.311
Tertiary education	45.27	10.18	35.84	8.58	7.533	.010

*Pay gap doesn't included in the analysis because it cannot divided into groups as female and male.

On the other side, as can be observed in the last column of Table 3, deprivation rate, mean equalized income in PPS, risk of poverty, pay gap and GDP per capita in PPP shows significant difference when the female population is compared among the three groups of EU countries.

For example mean deprivation rate is very high (41.27) for the developing economies when compared to the other advanced economies (16.78) and advanced economies (14.09). In contrary pay gap rate is low (13.61) for the developing economies when compared to the other advanced economies (16.97) and advanced economies (16.02). However, no significant differences are observed with respect to the early leaver, healthy life in years, risk of poverty at work and tertiary education.

Table 3 Comparing female population within the group of countries in year 2013

	Developing Econ.		**Other Adv. Econ.**		**Advanced Econ.**		**ANOVA test esults**	
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**F**	**Sig.**
Deprivation	41.27	11.02	16.78	8.48	14.09	3.73	21.92	.000
Mean eq. inc. in PPS	8529.95	2074.38	17855.25	6492.21	20443.82	4320.06	15.91	.000
Risk poverty	19.75	3.18	13.85	3.80	15.95	3.25	5.81	.008
Unemployment	11.16	3.01	8.98	4.28	11.27	7.90	0.38	.685
Pay_gap	13.61	4.10	16.97	8.16	16.02	5.14	9.04	.000
Early_leaver	8.01	5.22	8.83	5.91	9.29	4.05	0.16	.850
Healthy life in years	61.10	3.19	62.70	7.12	63.21	3.96	0.45	.640
Risk poverty at work	8.84	3.11	5.93	2.47	6.79	2.63	2.30	.120
Life_long	4.01	2.36	13.55	8.60	16.04	10.47	4.53	.020
Tertiary education	41.74	12.89	45.01	12.49	45.27	10.18	0.24	.786
GDP per capt PPP	62.57	9.29	98.88	39.53	120.67	43.55	5.74	.008

3.2. Cross-country regression analysis

In this section a cross-country regression analysis was performed for the time period of 2005-2013 in order to observe that economic development level which is measured by Gross Domestic Product (GDP) per capita in Purchasing Power Parity (PPP) have any explanatory power on 10 relevant gender discrimination indicators. GDP per capita in

PPS is expressed as an index. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa. GDP per capita in PPS eliminates the differences in price levels between countries allowing meaningful volume comparisons of GDP among the countries. GDP per capita in PPP is one of the primary indicator of a country's economic performance and especially useful when comparing one country to another. Economic growth, increase in productivity and some other dynamics leads to increase in GDP per capita in PPP for a country.

In the regression analysis, GDP per capita in PPP is considered as explanatory variable and each of the individual relevant indicator as dependent variable, since it can be expected that level of that indicator could be explained by the economic development level. In regression analysis, standardized coefficients are calculated because the variables are measured in different units of measurements; that is healthy life measured in years, mean equalized income in PPS is measured in Euro, while other variables are measured in percentages. Standardized coefficients also can be used to unfold and compare the effects of the independent variable on the dependent variable, and refer to how many standard deviations a dependent variable will change, per standard deviation change in the independent variable (GDP per capita in PPP).

Table 4 gives the results of the regression analysis. Second column of Table 4 indicates gender as Female (F) and Male (M), in third column adjusted R square values which indicate explanatory power of the GDP per capita in PPP for the corresponding indicator. Fourth, fifth, sixth, seventh and eighth columns gives the F statistics of the models, significant value of F, standard coefficients of the models, t statistics of the coefficients and corresponding significance values of t statistics respectively.

Table 4 Results of the regression analysis

		Statistics of the Models			Statistics of standard coeff.		
Indicators	**Gender**	**Adj. R^2**	**F Stat.**	**Sig.**	**Coef.**	**t stat.**	**Sig.**
Deprivation	**F**	.510	285.67	.000	-.718	-16.90	.000
	M	.511	281.93	.000	-.716	16.99	.000
Mean eq. income	**F**	.780	9852.89	.000	.883	30.87	.000
	M	.783	968.90	.000	.885	31.13	.000
Risk poverty	**F**	.182	61.03	.000	-.431	-7.81	.000
	M	.195	66.28	.000	-.445	-8.14	.000
Unemployment	**F**	.149	47.98	.000	-.39	-6.93	.000
	M	.166	54.54	.000	-.41	-7.39	.000
Early_leaver	**F**	-	.750	.387	-	-	-
	M	-	.001	.972	-	-	-
Healthy_life	**F**	.087	26.59	.000	.300	5.16	.000
	M	.190	64.14	.000	.439	8.00	.000
Risk_poverty at wor	**F**	.035	1084	.001	-.197	-3.3	.001
	M	.060	18.11	.000	-.252	-4.26	.000
Life_long	**F**	.187	62.79	.000	.436	7.92	.000
	M	.283	107.32	.000	.535	10.36	.000
Tertiary education	**F**	.160	52.27	.000	.404	7.23	.000
	M	.363	154.5	.000	.605	12.43	.000
Pay_gap	-	-	.470	.493	-	-	-

Coefficients of GDP per capita in PPP with respect to the mean equalized income in PPS are .883 and .885 for females and males respectively. That is the most significant effects observed. This means that as expected, economic development level evenly improves the status of both females and males with respect to the mean equalized income in PPS. Again coefficients with respect to the material deprivation rate are -.718 and -.716 for females and males respectively. The increase in GDP per capita in PPP leads to significantly decrease in material deprivation rate approximately equally likely for females and males (vice versa). However, when the risk of poverty at work rate considered coefficients are -.197 and -.252 for females and males respectively; the

increase in GDP per capita in PPP decreases risk of poverty at work, but not equally for females which is less than the males. When the early leaver from education and gender pay gap considered, we have not found any relation with the economic development level.

Last column of Table 5 gives the impact of one standard deviation change in GDP per capita in PPP over the indicators. Mean and standard deviation of GDP per capita in PPP for EU countries is given in the last row.

Table 5 Impact of one standard deviation increase in GDP on the indicators

Indicators	**Gender**	**Coef.**	**Mean**	**Sdt.Dev.**	**Impact of GDP**
Deprivation	**F**	-.718	20.87	14.96	-10.74
	M	-.716	20.69	15	-10.74
Mean eq. income	**F**	.883	15956.46	6710.16	5925.07
	M	.885	16272.80	6959.60	6159.25
Risk poverty	**F**	-.431	16.399	4.0807	-1.76
	M	-.445	14.83	4	-1.78
Unemployment	**F**	-.39	8.72	4.32	-1.68
	M	-.41	7.10	4.11	-1.69
Healthy_life	**F**	.300	62.45	4.74	1.42
	M	.439	61.44	5.18	2.27
Risk_poverty at work	**F**	-.197	6.96	2.85	-0.56
	M	-.252	8.06	3.39	-0.85
Life_long	**F**	.436	11.66	9.35	4.08
	M	.535	9.14	6.52	3.49
Tertiary education	**F**	.404	38.03	12.23	4.94
	M	.605	29.12	9.63	5.83
GDP per capita in PPP			100.89	43.56	

As stated before standardized coefficients also can be used to unfold and compare the effects of the independent variable on the dependent variable, and refer to how many standard deviations a dependent variable will change, per standard deviation change in the independent variable. For example, one standard deviation (43.56) increase in GDP per capita in PPP would lead to decrease -10.74 percent (-0.718*14.96=-10.74) deprivation rates for both males and females. It also improves the mean equivalized income in PPS by 5925.07 and 6159.25 for females and males respectively; the difference of improvement is in favor of male population by 234.17 units.

4. Conclusions and implications

General results of the study indicate that there is no gender discrimination within the three separate groups of EU countries for 2013. However, when the groups of countries are compared, significant differences are observed with respect to deprivation rate, mean equalized income in PPS, risk of poverty, pay gap and GDP per capita in PPP for the female population. For the developing economies deprivation rate is very high whereas pay gap rate is low when compared to the other advanced economies and

advanced economies. On the contrary, no significant differences are observed with respect to the early leaver, healthy life in years, risk of poverty at work and tertiary education.

Results of the regression analysis reveal that the economic development level significantly improves the status of the female population. As expected, the most significant effect observed is economic development level, measured in terms of the mean equalized income in PPS, evenly improves the status of both females and males. The increase in GDP per capita in PPP leads to a significant decrease in material deprivation rate approximately equally likely for females and males (vice versa). However, when the rate of risk of poverty at work is considered, the increase in GDP per capita in PPP causes a higher decrease the risk of poverty at work for males with regard to females. However, gender pay gap, an important indicator, is still persistent in the Euro-zone for the period considered.

When the early leaver from education and gender pay gap considered, we have not found any relation with the economic development level.

Finally we can conclude that EU policies have helped to improve the status of women, and reduced gender inequality. However, this does not mean that inequality has vanished. EU continues to fight with poverty and early school leaving. By 2020 EU aims reducing the rates of early school leaving to below 10 percent and reaching to at least 20 million fewer people in or at risk of poverty and social exclusion. EU should develop policies, regulations and economic sanctions in order to overcome gender pay gap which is still persistent in the euro zone.

Equality between men and women is necessary to achieve the EU's objective of economic growth, employment, social cohesion and competitiveness (European Commission, 2013). Some of EU directives are about of new policies which must be developed in the candidate countries to reduce the overall gender inequality by redirecting resources to help women in education, business careers and public life. Ultimately it is evaluated as a social leverage for the human development in the society and countries. Therefore, gender equality in the countries is continuously measured with different attitudes and methods.

Hence, it can be expected that exploration of the social and economic forms of gender discrimination in the EU will contribute the current literature by providing new information to decision makers in developing social and economic policies, regulations and sanctions to overcome gender discrimination in the EU.

References

Abbas, Q., Hameed, A. and Waheed, A. (2011). Gender discrimination & its effect on employee performance/productivity. *International Journal of Humanities and Social Science*, 1:15 (Special Issue – October), 170-176.

Akkoyun, Y. and Erkan, T.M. (2014). Lifelong learning case study from Turkish public sector: business process management in social security operations. *Procedia - Social and Behavioral Sciences*, 116, 1154-1159.

Atkinson, A. B., Marlier, E. and Nolan, B. (2004). Indicators and targets for social inclusion in the European Union. *JCMS*, 42: 1, 47-75.

Aydın, F. F. (2015). Women's labor participation rates and competitiveness in the G7 countries. *The Sakarya Journal of Economics / Sakarya İktisat Dergisi*, 3, 30-43.

Balaev, M. (2014). Improving models of democracy: the example of lagged effects of economic development, education and gender equality. *Social Science Research*, 46, 169-183.

Blanchard, O. (2006). European unemployment: the evolution of facts and ideas. *Economic Policy*, January, Printed in Great Britain, 5-59,

Duraisamy, P. (2002). Changes in returns to education in India, 1983–94: by gender, age-cohort and location. *Economics of Education Review*, 21, 609-622.

Eagly, A. H. and Wood, W. (1999). The origins of sex differences in human behavior: evolved dispositions versus social roles. *American Psychologist*, 54, 408-423.

Eagly, A. H. and Carli, L. L. (2003). The female leadership advantage: an evaluation of the evidence. *The Leadership Quarterly*, 14, 807-834.

Elmelech, Y. and Lu, H. H. (2004). Race, ethnicity. and the gender poverty gap. *Social Science Research*, 33, 158-182.

European Commission. (2013). Tackling the Gender Pay Gap in the European Union. Retrieved from http://ec.europa.eu/justice/gender-quality/files/gender_pay_gap/130422_gpg_brochure_en.pdf , (4.5.2014).

European Commission. (2014). Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth, *Annexes 1 to 3*, Retrieved from http://ec.europa.eu/europe2020/documents/documents-and-reports/index_en.htm , (1.7.2014).

Fetterolf, J. C. and Eagly, A.H. (2011). Do young women expect gender equality in their future lives? An answer from a possible selves experiment. *Sex Roles*, 6, 83-93.

Foubert, P. (2011). Equal pay for men and women in europe anno 2011: the gender pay gap on the retreat?. *European Gender Equality Law Review*, 1, http://ec.europa.eu/justice/gender-equality/files/ egelr__2011-1_en.pdf , (1.7.2014).

Ghani, E., Kerr, W.R. and O'Connell, S.D. (2013). Political reservations and women's entrepreneurship in India. *World Bank-Policy Research Working Paper*, 6307, 1-34.

Gilroy, H. (2014). Economic solvency in the context of violence against women: a concept analysis. *Health and Social Care in the Community*, Accepted for publication 7 January 2014.

Haslam, S.A. and Ryan M.K. (2008). The road to the glass cliff: differences in the perceived suitability of men and women for leadership positions in succeeding and failing organizations. *The Leadership Quarterly*, 19, 530-546.

Jagger, C., Gillies, C., Moscone, F. Cambois, E. Oyen, H.V., Nusselder, N., Robine, J.M. and the Ehleis Team. (2008). Inequalities in healthy life years in the 25 countries of the European Union in 2005: a cross-national meta-regression analysis. *Lancet*, 372: 20/27, 2121-2131.

Kabeer, N. and Natali, L. (2013). Gender equality and economic growth: is there a win-win?. *IDS Working Papers*, 2013: 417, 1-58.

Laal, M. and Laal, A. (2012). Lifelong learning; elements. *Procedia - Social and Behavioral Sciences*, 47, 1562-1566.

Laal, M. and Salamati, P. (2012). Lifelong learning; why do we need It?. *Procedia - Social and Behavioral Sciences*, 31, 399-403.

Lifelong Learning Programme. (2006). Lifelong learning programme-general call for proposals 2011-2013. *Strategic Priorities*, 1-43.

Report on Progress. (2010). Report on progress on equality between women and man in 2010. *The Gender Balance in Business Leadership*.

Wood, W. and Eagly, A. H. (2013). Biology or culture alone cannot account for human sex differences and similarities. *Psychological Inquiry*, 24: 241-247.