Determinants of female (in) activity on labour market in Macedonia: A comparative perspective with a group of Mediterranean and South-Eastern Europe countries.

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Abstract

Female participation in the labour market is very important for the economic and social growth of the countries. Many studies show that economically active females have an important role reducing poverty by assuring welfare of the households. Female participation in the labour market is also important for women's relative economic and social status compared to men and for their economic empowerment (Patimo et al, 2015).

The aim of this research is to investigate the determinants which have influence over female participation in the labour market, in the context of the traditional literature and studies in this area, but also to add a new approach by including the effect of the overall cultural context on a woman's decision whether to supply her labour. The latter is a major contribution of the paper to the current knowledge. The methodology is based on previous research by Contreras and Plaza (2010). Moreover, a comparative perspective is added by considering countries in the South-East Europe (SEE), Mediterranean countries and Macedonia. We found that the cultural context is an important determinant of the females' labour market activity which is important in designing government support and policies for promoting females' activity.

Keywords: Female participation; Labour market;Ssouth-east Europe; Macedonia.

Introduction

The economy is using more of productive potential of the country if there are more females in the labour market (Woman at work, 2016). Female participation in the labour market is also important for women's relative economic and social status compared to men and for their economic empowerment (Patimo et al, 2015). In the last several years females' participation in the labour market has changed its pattern which resulted with many studies on the gender aspects of employment. Researchers in this topic have found large differences in female activity and employment patterns across the world and across developed countries. In 1960s two main theories have emerged in order to investigate female labour supply: the "work leisure choice theory" of Mincer and the "theory of allocation of time" of Mincer by Becker. The neoclassical model known as the Work-Leisure Choice model assumes that individuals are rational in their decisions about how much time they will work and how much time they will dedicate to leisure. If leisure is considered as a "normal good" and that more leisure leads to less work and less income, then the decision is based simply on profit maximization; to work when it is financially most profitable relative to the female's time consumed as leisure. Since the choice is made on profit maximization from work then higher potential wage will increase attractiveness of the work and leisure becomes less attractive. From this relationship two effects arise: the substitution and income effects. The substitution effect means that higher wages stimulate higher participation in the labour market, in other words individuals will substitute work for leisure . On the other hand, the income effect implies that higher wages increase the demand for leisure, as individuals earn more income which can allow them to have more leisure time i.e. work less (Heckman, 2015). The model of Mincer expands the relationship between the income and female labour force participation by adding two new features. First this author established that female choice is not the choice between leisure and paid work, but it is a choice between leisure, paid and unpaid work. The decision of the family will depend on several factors: partner's income, income of the female, whether household can purchase appliances to relive the burden of the unpaid job at home, desires for market goods and leisure (Matilla-Wiro, 1999)

Becker considered households to be producers and consumers in the same time. According to Becker (1965) by combining input of goods and time, working towards the optimization of cost and maximizing the utility function under the constraints on resourses, households produce commodities. Resources are the total income of the household while prices for produced goods are measured by the sum of the costs of the goods and time spent for production. Becker's theory states that individuals in the

household make rational and informed decisions regarding labour market participation by comparing their value of their time and the value of the time spent on household duties. Becker (1991) generalized the household production theory in order to analyze marriage, divorce, number of children, division of household responsibilities and other non-material behavior with the theory that was originally developed to investigate material behavior. In this generalization, production of goods within the household is most efficient if members of the household specialize in home or market production, or at least to some level. According to Becker (1991) the division of labour between members of the household is determined by biological differences, different experiences and different investments in human capital among the family members. However, it is rational for females to specialize in home production since they have a biological advantage over males for childrearing. Becker recognizes socialization as a factor for different labour division within the household but justifies this with biological difference of males and females, and rational decision of the parents to socialize their children to these biologically predetermined gender roles. According to Mattila-Wiro (1999), Becker believes that the patriarch is the main decision maker that allocates the labour time of other members of the household.

Neoclassical theory is criticized on multiple levels. Over-simplification of the reality, poor interaction between problems, economic theory and policies formulated to address those problems are some of the issues in the critiques. Matilla-Wiro (1999) argues that the theory becomes useless if there is no contact with actual events which would eventually lead to policy recommendations which are not relevant. Becker's rejection of joint production is considered to be one of the major shortcomings of his work (Pollak, 2002, Jankiewicz, 2015).

Besides these theories, researchers have tried to provide possible explanations for such differences in female participation rates across the world. The focus of the studies is on different sets of factors that may affect the female's decision to participate in the labour force. Those can be grouped into: i) individual factors (age of a woman, education, marital status, number and age of children, etc.), ii) household-related factors (employment of the spouse, education of the spouse, household income, etc.), iii) Macro-factors which stem from the level of development of a country, the growth of the economy, overall unemployment rate, etc. Besides the standard socio-economic approach there are other perspectives from which it is possible to interpret female labour force participation. These perspectives include social and cultural aspects of the population (Fortin, 2005; Contreras and Plaza, 2010; Blau et al, 2013,Camussi, 2013; Hosney, 2016). However, most of the studies explore the gender employment and wage gap by focusing on the data of single country only and fail to capture different cultural attitudes toward participation of females in the labour market (Cipollone et al, 2014). An integrated approach which includes multiple variables related to family and individual social context along with economic settings can reveal which items have a major influence on female labour force participation. The aim of

this study is to examine the factors that have an influence on females' participation in the labour markets of the South and South-Eastern European countries, with a focus on the cultural context and its impact on the females labour supply decisions. The main contribution of our study is therefore twofold: i) we provide a comparative analysis of female labour supply in a set of countries, and ii) we add an additional set factors, to the traditional ones, that are related to the cultural context.

This paper is organized as follows. After a brief review of the current knowledge on the factors affecting females' supply to meet the aim of this paper we provide critical overview on the labour market in Macedonia and selected countries from South and South Eastern Europe and empirically assess the main determinants of female inactivity by using data from Macedonia and selected countries from South and South-Eastern Europe. The final section concludes the paper.

Current knowledge on the factors affecting females' labour supply

In the second half of 20th century many industrial countries experienced increase in the labor supply. This shift in the labour force is considered as one of the most interesting facts of contemporary economics and stimulated an extensive debate. Increasing female labour market activity has been at the forefront of those discussions and debates. For instance, Cipollone and D'Ippoliti (2011) claim that the observed increases in the overall labour supply can be explained by increase in females'a activity and employment rates in that period. However, even if that explanation is to be accepted, researchers were and are still occupied with the factors that affect females' decision whether to enter the labour market or not, as well as the changes which happened among those factors that caused the large shift of females' labour supply. This section will provide an overview and findings from the relevant literature worldwide about main determinants which have influence of the female labour force participation. Culture and its influence on female labor market participation are analyzed as well.

Macroeconomic factors

The level of economic development is found to have a nonlinear relationship with female labour market participation (Tam, 2011; Olivetti, 2013; Tsani et al, 2013, Verick 2014; Patimo et al., 2015). The basic argument of the authors of the U-shaped relationship is that when the country is not developed females participate in the labour market out of necessity. When the country begins to develop above certain level, economic activity shifts from agriculture to industry in which males have greater benefit than females. Ozrekek (2013) states that when the unemployment rate is high, female workers are discouraged and they are not willing to participate in the labour market.

Individual factors

According to the neoclassical theory, a higher level of education of the female leads to higher female labour market participation rate which is confirmed by several authors (Contreras and Plaza, 2010; Liu and Noback, 2010). On the other side, Verick (2014) argues that the relationship between the education and female labour participation is more U-shaped than linear. This author explains that the most uneducated females participate mostly in informal economy while females with secondary education can afford to stay out of the labour market. Increasing the level of education increases labour market participation rates.

Age is considered to have strong impact on female labour market participation rate. Authors usually include age-squared as a variable in order to capture the non-linear relationship between the age and female participation rate. Participation of the females in the labour market increases when females are younger, decreases with the choice to have children and afterwards when they are back in the labour market the participation rate is highest (Fitzenberger et al. 2004; Vlasblom and Schippers, 2004; Contreras and Plaza 2010).

Marital status is found to have negative influence on female labour market participation (Contreras and Plaza, 2010; Daviogly and Kirdar, 2010; Hosney, 2016).

Part-time work is often seen as a possibility for a woman to contribute in the household income without compromising responsibilities towards family (Jaumotte, 2003). Euwals (2001) and Pena-Boquete (2016) agree that flexible working hours are important for female labour market participation and when there is a low possibility of part-time work or flexible working time arrangements then females who want to work fewer hours have higher prospects to leave the labour market.

Household characteristics

Participation of the females on the labour market is negatively associated with the presence of young children in the household (Chevalier and Viitanen 2002; Vlasblom and Schippers 2004; Contreras and Plaza 2010). Chevalier and Viitanen (2002) examine the causality between female participation in the labour force and the childcare facilities. They have found that lack of childcare facilities have negative influence on female labour force participation. On the other side, other authors analyzing 26 low middle income countries didn't find a relationship between number of children in the household and female labour force participation (Agüero and Marks 2008; Khadim and Akram 2013;Mujahid 2014;). Household income is also examined as factor that has influence in the female labour force participation, but the results are inconclusive. Mojsoska-Blazevski et al (2017) explaines that the effect on household income

and wealth on female labour force participation is non-monotonic i.e. until a certain level of household income is accomplished substitution effect prevails, and then income effect dominates.

Culture

According to Patimo (2015) none of these socio-economic and demographic factors have been able to capture the high variance of participation rates across countries. The idea that culture matters is not new, but investigations of the cultural impact on the economy were absent in research. Camussi (2013) explains that in the past the role of culture has not been examined because of its broad definition and lack of appropriate data and empirical methodologies. In recent years authors have found that low participation rates of the females on the labour market is more evident in the traditional societies (societies in which males are breadwinners and major decision makers regarding employment while females have the primary role of mothers and in general secondary earners) (Contreras and Plaza, 2010; Adekeye, 2011; Camussi, 2013; Patimo, 2015; Hosney, 2016). In addition to this, Fortin (2015) have found that the increase of the female participation rate on the labour market can be explained by changing social norms and beliefs of the younger individuals towards gender roles within the households. Culture is an important part of female participation in the labour market but the most challenging part is to establish the causal relationship between social norms and beliefs and female labour market participation.

The assumption that culture has an impact on female labour market participation is challenged by Seguino (2007) who argues that female labour force participation does affect social gender attitudes but with a time lag. On the other side Contreras and Plaza (2010) argue that it takes more time to change cultural attitudes about females labour force participation than for attitudes to change labour force participation and therefore female labour market participation is partially determined by social norms and beliefs. Those are two opposite views of direction of causality of culture and labour market participation of females and each of these views deals with different time frame. According to these authors education plays an additional indirect role in female labour force participation by reducing the level of machismo in societies.

Activity rates: International comparison

In the second half of 20th century many industrial countries experienced an increase in the labor supply. This shift in the labour force is considered as the most interesting facts of contemporary economics and stimulated an extensive debate. Cippollone and D'Ipoliti (2011) explained that increase in participation rates is due to increase in females' activity in that period. The average for EU-28 has increased from 67.6% in 2008 to 72% in 2017. According to Patimo et al. (2015) evolution of female activity in the labour market is in line with Lisbon Strategy, which aims to increase overall European Union employment rate. As shown in Table 1, from selected countries from Western Balkan only Serbia,

Montenegro and Albania have increased participation rates in the period 2008-2017. Macedonia holds same participation rate of 55.1%, while decreases in participation rates are evident in Kosovo and Bosnia and Herzegovina. From selected South-Mediterranean countries, in Greece, Portugal and Spain participation rates decreased in the period between 2008-2017, while Italy experienced an increase in the participation rate by 0.7 percentage points. Gender gap in participation rates is widest Kosovo; 39.7 p.p. in 2008, and 35.5 p.p. in 2017.The lowest gender participation gap is evident in Portugal, 10.4 p.p.

Table 1: Participation rates: International comparison and gender gap

| Country | Year | Participation rate in % | | | |
		Total	Male	Female	Gender gap
	2008	53,2	61,5	45,7	15,8
Albania	2017	58,3	66,8	49,8	17
	2008	43,4	56	31,4	24,6
Bosnia and Herzegovina	2017	42,6	53,3	32,4	20,9
	2008	46	65,8	26,1	39,7
Kosovo	2017	34,1	51,8	16,3	35,5
	2008	55,1	67,6	42,7	24,9
Macedonia	2017	55,1	67,7	42,7	25
	2008	51,5	60,4	43,4	17
Serbia	2017	54	62,2	46,3	15,9
	2008	51,9	60,4	43,9	16,5
Montenegro	2017	54,7	62,2	47,5	14,7
	2008	53	64,2	42,4	21,8
Greece	2017	52,1	60	44,7	15,3
	2008	49,1	60,4	38,7	21,7
Italy	2017	49,8	52,8	40,9	11,9
	2008	59,4	68,7	50,4	18,3
Spain	2017	58,1	63,9	52,6	11,3
	2008	62	68,9	55,8	13,1
Portugal	2017	59	64,5	54,1	10,4

Source: Authors own presentation based on data from ILO for 2008 and 2017

Figure 1 is in line with the predictions of the theory related to the relationship between age and labour force participation. This pattern is present in all observed countries, although with some

differences in terms of the age at which the declining path of activity starts. Analyzing the structure and dynamics of females' activity by age groups (Figure 1), in Greece and Spain participation rates increase between age groups 15-19 to 24-29 (30-34 for Portugal, 35-38 for Serbia and for Macedonia and Albania 40-44). After that, participation rates in all countries decrease. Portugal holds highest participation rate for females aged 64+.

Figure 1: Participation rates by age group
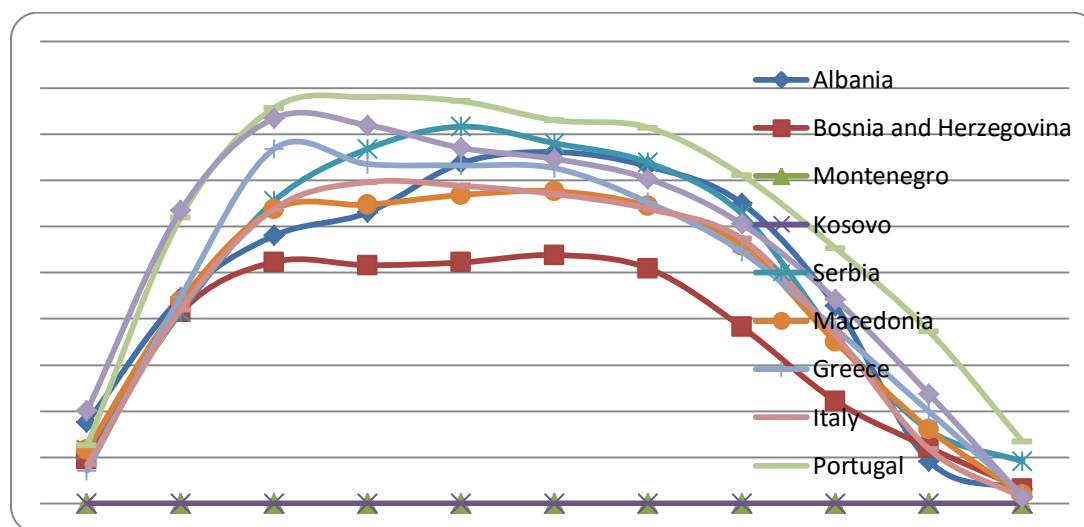
Source: Authors own presentation of the data from ILO 2008

According to Shultz (1991), the rise of the female labour force participation in the 21st Century was related to the higher relative investment in human capital of females compared to males. Furthermore, women with a higher level of education attained tend to devote more time to the labor market activities like employment or job searches (Pattimo, 2015). Figure 2 presents female participation rates with respect to the highest level of education attained in a comparative perspective. Country differences are observed in all three levels of education especially for "completed primary education or less." In 2008, the lowest participation rate is observed in females from Kosovo with completed primary education or less, only 3.2% while it is the highest in Portugal, 50.4%. A similar situation is evident when females with finished secondary education are analyzed. For females with finished tertiary education or above, Bosnia and Herzegovina has the highest participation rate at 85.5%. 17.7% of the females in Macedonia with primary education participate in the labour market, 62.4% with secondary education and 81.7% with tertiary education or above.

Figure 2: Female participation rates with respect to educational level
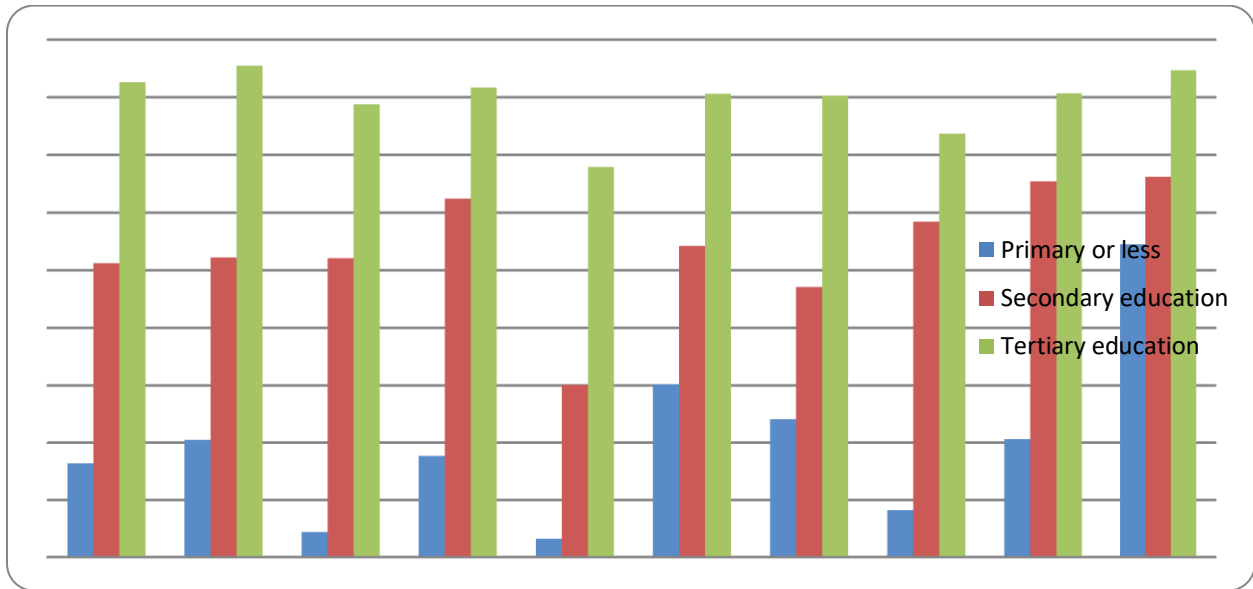
Source: Authors own presentation of the data from ILO 2008

In a summary, the brief overview of the labour market in Macedonia and selected countries from Western Balkan and South-Mediterranean countries were consistent with findings from the literature review. Females with higher levels of education tend to participate significantly more than females that completed primary education or less. Participation rates for females in the age groups 30-34, 35-39, and 40-44 are highest for almost all countries. In 2008, there was a significant gender participation gap,; the gap waswidest in Kosovo and narrowest in Portugal.

Methodology and Data

To meet the aims of this research we will use data from the European Value Survey EVS). The EVS is a large-scale, cross-national, and longitudinal survey research program on basic human values. It provides insights into the ideas, beliefs, preferences, attitudes, values and opinions of citizens all over Europe.

We use an integrated dataset from EVS for Albania, Kosovo, Bosnia and Herzegovina, Montenegro, Macedonia, Greece, Italy, Spain and Portugal from 2008. A new set of data from 2014 was expected to be released at the end of 2017 but because of the partial funding it is not released for countries from the Western Balkans. We compare a set of countries from the Western Balkans (Albania, Kosovo, Montenegro, Macedonia, Serbia and Bosnia and Herzegovina) which are not members of European Union with a group of South Mediterranean countries-members of European Union (Greece, Italy, Spain and Portugal). Section 2 of the paper revealed that these two groups of countries share similarities towards

activity of the females in the labour market, while this section reveals similarities towards cultural norms and beliefs of the females in these two sets of countries. We regress the dependent variable (dummy variable 1=active female, 0=inactive female in the labour market) on a set of variables grouped into: i) individual factors (age of a woman, education, marital status, number and age of children, etc.), ii) household-related factors (employment of the spouse, education of the spouse, household income, etc,) based on the findings of the literature review.

The econometric specification is as follows: $P(Y_i=1)=\alpha+\beta A_i+\gamma B_i+\delta C_i+\mu_i$,

where Y_i takes a value of 1 if the female participate in the labour market and 0 otherwise, A is a matrix of individual factors as variable, B is a matrix of household characteristics, and C is a matrix that represents cultural and values-related variables.

To explain how culture influences female labour force participation, we will follow the model of Contreras and Plaza (2010). These authors argue that economic models are not taking into account cultural variables and their influence on female labour market participation. In order to examine the influence of the culture, they have developed the Female Perception of Machista Cultural Context (FPMCC) Index, which measures whether female has internalized machista cultural values or not, and Female Conservative Index, which measures whether female possess conservative cultural values towards family, marriage and children.

Female Perception of Machista Cultural Context Index identifies whether a female demonstrates a tendency to approve or disapprove the machista cultural aspects and behaviors consistent with a machista view. Table 1 shows how Female Perception of Machista Cultural Context Index is built within the available data set from EVS. This variable assigns value of one when the woman surveyed is at least in agreement with statements one, and is at least in disagreement with statement two and three. Otherwise, the variable takes a value of zero.

Table 2: Female Perception of Machista Cultural Context (FPMCC) Index

	Agree/Moderately agree	Disagree/Moderately disagree
v161 A job is alright but what most women really want is a home and children	X	
v164 Both the husband and wife should contribute to household income		X

V166 Men should take as much responsibility as women for the home and children		**X**

Source: Based on Contreras and Plaza, 2010.

The Female Conservative Index has value of 1 (one) if a female tend to agree with statement one and disagree with statements two and three. Otherwise it has value of 0 (zero).

Table 3: Female Conservative Index

	Agree/Moderately agree/approve	**Disagree/Moderately disagree/Disapprove**
V148 If someone says a child needs a home with both a father and a mother to grow up happily, would you tend to agree or disagree?	**X**	
V151 If a woman wants to have a child as a single parent, but she doesn't want to have a stable relationship with a man, do you approve or disapprove?		**X**
V155 It is alright for two people to live together without getting married		**X**

Source: Based on Contreras and Plaza, 2010.

Variables used in this research are presented in Table 4 .

Table 4: Description of variables

| **Activity of the female in the labour market**	**1=active** **0=no active**
Set of countries	1=Macedonia, Albania, Kosovo, Serbia, Montenegro, Bosnia and Herzegovina 0=Greece, Italy, Spain, Portugal

Age of the female	Continuous variable
Age squared	Continuous variable
Marital status	1=married
	0=otherwise
Level of education of the female	Edu1: 1=primary or less, 0 otherwise
	Edu2:1=completed secondary education, 0=otherwise
	Edu3: 1=tertiary education or higher, 0=otherwise
Number of children	Discrete variable
Presence of children in the household	1=yes; 0=otherwise
Educational level of the spouse	EduP1: 1=primary or less, 0 otherwise
	EduP2:1=completed secondary education, 0=otherwise
	EduP3: 1=tertiary education or higher, 0=otherwise
Activity of the spouse on the labour market	1=active
	0=not active
Female Perception of Machista Cultural Context (FPMCC) Index	1=female have internalized machista cultural values
	0=otherwise
Female Conservative Index	1=female have conservative cultural values
	0=otherwise

Tables from A1 to A7 (in appendix A) present in detail descriptive statistics of the sample.

Figure 3 presents share of a particular country in the sample. Macedonia has the smallest share at8.1%, while the largest share of females in the sample is held by Portugal at 11.5%.

Figure 3: Share of countries in the sample
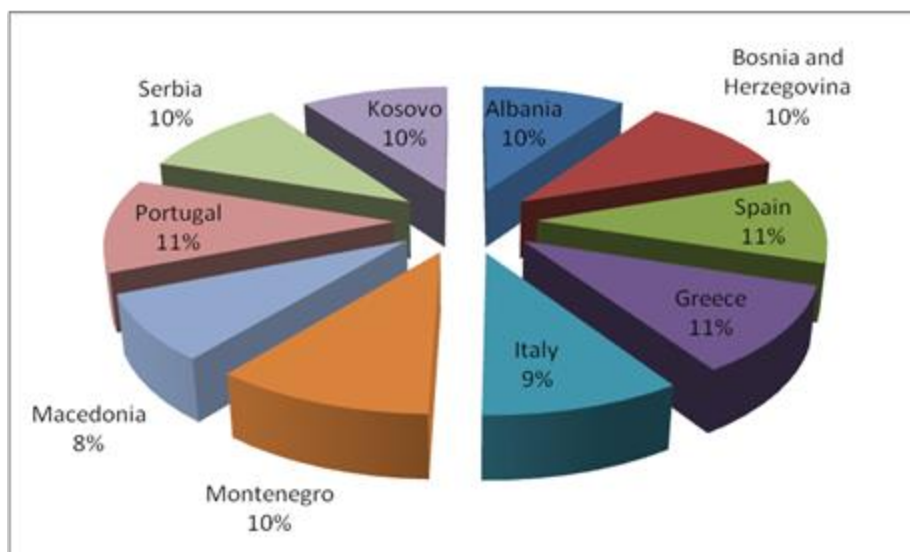
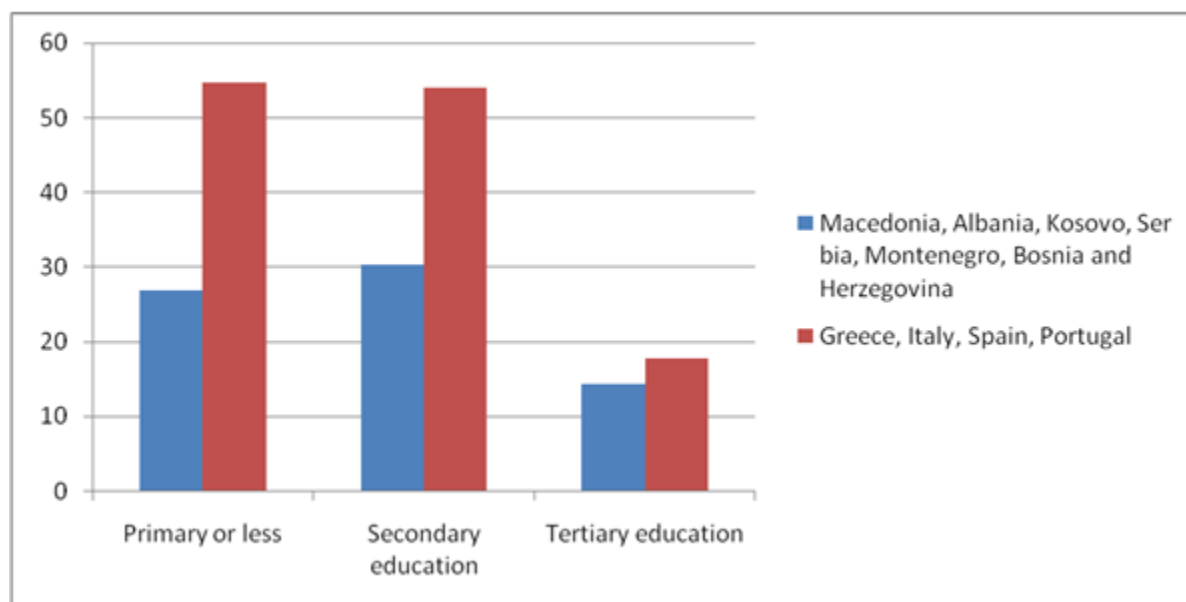*Source: Authors own calculations based on data from EVS*

Analyzing as set of countries, 57.8% of the females in the sample are from selected countries from the Western Balkan, while 42.2% are from selected South Mediterranean countries. The average age in this sample is 46.16 years with a standard deviation of 17,81 years. The average number of children per female is 1.53 with a standard deviation of 1.47. 57% of the females in the sample reported that they are active in the labour market, 55.8% are married, 50.1% live with children in the household. 38.6% of the reported highest level of education of primary or less, 44% finished secondary education and 16.4% have university diploma or above. 42.8% reported that their spouses are active in the labour market. 38.9% of the females in the sample have conservative cultural values, while 1.1% of the females in the sample reported that they have internalized machista cultural values. Figure 4 presents differences in highest level of education attained with respect to different set of countries.

With respect to the set of countries 62.64% of the females from the selected countries from Western Balkan reported activity on the labour market, 56.25% are married, 55.47% are living with children.

On the other hand, 30.32% of females from South Mediterranean group of countries reported that they finished secondary education against 54.00% of the females from selected countries from Western Balkan. When it comes to finished tertiary education, percentages are similar: 14.46% of the females from the South Mediterranean group of countries and 17.89% of the selected countries from Western Balkan have finished tertiary education or above. Similarities within two groups of countries are observed with cultural indexes as well. 1.34% of the females from South Mediterranean group of countries reported internalized machista cultural values against 0.96% of the females from selected Western Balkan countries. Similar, 37.28% of the females from South Mediterranean group of countries and 40.04% of

the females from selected Western Balkan countries revealed conservative values toward family, marriage and children.

Figure 4: Highest level of education attained with respect to the two groups of countries.

Source: Authors own calculations based on data from EVS

Results

Results from performed binary logistic regression are presented in Appendix B. In order to test whether cultural norms and beliefs have influence on female labour market participation, first we run the regression on the set of individual and household characteristics to which we add the cultural variables. This allows us to check stability of the parameters.

The first model explained 41.0% (Nagelkerke R^2) of the variance in activity of the female on the labour market and correctly classified 76.2 % of cases. In other words, the model has relatively high explanatory power of female activity. Below we present the main findings of the econometric analysis.

Unlike other studies (Chevalier and Viitanen 2002; Vlasblom and Schippers 2004; Contreras and Plaza 2010) where the presence of the children in the household is negatively correlated with female activity in the labour market, in this model that variable is not significant. One possible explanation for such result is that the questionnaire from EVS does not specify whether children are young (less than 5 years). However, number of children of the females is found to be statistically significant and it is negatively associated with activity of the female, where an increasing number of children will reduce likelihood of being active on the labour market by 0.88, other things being equal.

Females from selected Western Balkan countries are 1.15 times more likely to be active on the labour market than females from South Mediterranean group of countries, other things being equal. The evidence suggests that increasing age is associated with an increased likelihood of activity in the labour market by 1.35 times. We were able to capture non-linearity of this variable i.e. we find evidence of an inverted U-shape relationship between age and activity, which is in line with results from other researchers presented in literature review. From the regression, the likelihood of the activity increases with age until female is 37.5 years old. Afterwards, activity declines. Females with finished tertiary level of education or above are 3.039 times more likely to participate in the labour market than females with finished primary education or less, other things being equal.

In line with other findings in the literature (Contreras and Plaza, 2010; Daviogly and Kirdar, 2010; Hosney, 2016), marriage is negatively associated with female activity in the labour market. Married females are 0.639 time less likely to participate in the labour market, other things being equal. Contreras and Plaza (2010) explain that females tend to be secondary workers and their decision whether to participate in the labour market depends on the presence of the husband. The educational background of the spouse also has an influence on female labour force participation. Females whose spouses have completed tertiary education are 1.301 times more likely to participate in the labour market than females whose spouses have primary education or less, other things being equal. If female's spouse is active on the labour market then females are 1.6 times more likely to participate in the labour market, compared with females whose spouses are not active in the labour market, other things being equal.

Adding cultural variables (see Appendix C) to the regression revealed that females with conservative values and norms are much less likely to participate in the labour market. In particular, females who demonstrate conservative values are 0.8 times less likely to participate in the labour market than females who do not demonstrate cultural values and norms, other things being equal. Opposite to the findings from Contreras and Plaza (2010), we have found that female female perception of machista cultural context index is not statistically significant.

Conclusion

The aim of this research is to examine the factors that affects female's activity in the labour market in a set of countries which are believed to share a similar culture despite the geographical and economic development differences. Apart from the standard factors used in this type of literature, like individual characteristics of the female and characteristics of the household, we add cultural attitudes about gender and women's roles as a factor that may affect female labour force participation. The first group consists of countries from Western Balkan which are not members of European Union and are at lower level of economic development, whereas the second group is consisted of four countries from South-

Mediterranean. Following the method developed by Contreras and Plaza (2010) we measure cultural attitudes through two indexes. First, the Female Perception of Machista Cultural Context Index, which measures whether female has internalized machista cultural values or not, and the Female Conservative Index which measures whether female possesses conservative culture values towards family, marriage and children.

We found that more educated women have higher activity in the labour market. Results from age of the female and participation indicate an inverted "U"-shaped relationship, meaning older females are more active in the labour market but with decreasing rates. Number of children is negatively associated with females labour force participation as well as her marital status. The main variable of our interest that is the culture shows a significant effect on females' activity. In particular, those women who demonstrate conservative cultural attitudes are less likely to participate in the labour market and the difference in participation is relatively high. On the contrary, we found Female Perception of Machista Cultural Context Index not to have a significant impact on females' participation in the labour market.

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Appendix A

Table A1: Percentage of females form selected countries in the sample

c_abrv		
	Frequency	Percent

Valid		Frequency	Percent
	AL	750	9,5
	BA	804	10,1
	ES	840	10,6
	GR	848	10,7
	IT	750	9,5
	ME	825	10,4
	MK	640	8,1
	PT	910	11,5
	RS	789	9,9
	RS-KM	775	9,8
	Total	7932	100,0

Table A2: Share of females in the two set of countries

SET_COUNTRIES			
		Frequency	Percent
Valid	0	3348	42,2
	1	4583	57,8
	Total	7931	100,0
Missing	System	1	,0
Total		7932	100,0

Table A3: Percentage of active females

		Frequency	Percent
Valid	0	3412	43,0
	1	4519	57,0
	Total	7931	100,0
Missing	System	1	,0
Total		7932	100,0

Table A4: Percentage of married females

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3506	44,2	44,2	44,2

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	4425	55,8	55,8	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

Table A5: Percentage of female who live with children

		Frequency	Percent	Valid Percent	Cumulative Percent
	0	3931	49,6	49,6	49,9
	1	3971	50,1	50,1	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

Table A6: Reported highest level of education

EDU1: primary or less

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4866	61,3	61,4	61,4
	1	3065	38,6	38,6	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

EDU2: finished secondary education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4441	56,0	56,0	56,0
	1	3490	44,0	44,0	100,0

		Frequency	Percent	Valid Percent	Cumulative Percent
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

EDU3: tertiary education or above

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	6627	83,5	83,6	83,6
	1	1304	16,4	16,4	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

Table A6: Share of females with active spouses in the labour market

ACTIVITY_P

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4533	57,1	57,2	57,2
	1	3398	42,8	42,8	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

Table A7: Share of females with conservative cultural values

Female culture index

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4848	61,1	61,1	61,1
	1	3083	38,9	38,9	100,0
	Total	7931	100,0	100,0	
Missing	System	1	,0		
Total		7932	100,0		

Table A7: Descriptive statistics with respect to the set of countries

set od countries	Activity		Marital status		Living with children	
	0	1	0	1	0	1
0	50,78	49,22	44,83	55,17	57,05	42,68
1	37,36	62,64	43,75	56,25	44,10	55,47

set od countries	EDU1		EDU2		EDU3	
	0	1	0	1	0	1
0	45,34	54,66	69,68	30,32	85,54	14,46
1	73,05	26,95	46,00	54,00	82,11	17,89

set od countries	EDUP1		EDUP2		EDUP3		Activity_P	
	0	1	0	1	0	1	0	1
0	67,65	32,35	83,78	16,22	92,35	7,65	61,95	38,05
1	87,28	12,72	66,14	33,86	89,48	10,52	53,65	46,35

set od countries	FMPCC		Female Culture I	
	0	1	0	1
0	98,66	1,34	62,72	37,28
1	99,04	0,96	59,96	40,04

Appendix B

Binary logistic regression on a set of individual and house hold charactersitics

Table B1:   Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	2889,640	11	,000

Block	2889,640	11	,000
Model	2889,640	11	,000

Table B2: **Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	7950,041[a]	,305	,410

a. Estimation terminated at iteration number 6 because
parameter estimates changed by less than ,001.

Table B3: **Classification Table[a]**

		Predicted		
		ACTIVITY		Percentage
Observed		0	1	Correct
Step 1 ACTIVITY 0		2035	1377	59,6
1		510	4009	88,7
Overall Percentage				76,2

a. The cut value is ,500

Table B4: **Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	SET_COUNTRIES	,139	,060	5,333	1	,021	1,149
	age	,300	,014	483,818	1	,000	1,350
	AgeSQ	-,004)	,000	579,006	1	,000	,996
	No_CHILDREN	-,130)	,029	20,016	1	,000	,878
	LIVING_with_CHILDREN	,069	,073	,874	1	,350	1,071
	EDU2	,116	,071	2,725	1	,099	1,123
	EDU3	1,112	,104	114,846	1	,000	3,039
	EDUP2	,220	,086	6,569	1	,010	1,246
	EDUP3	,264	,125	4,410	1	,036	1,301

ACTIVITY_P	,483	,091	28,366	1	,000	1,621
MARITALSTATUS	-,447)	,100	19,892	1	,000	,639
Constant	-4,800)	,259	343,798	1	,000	,008

a. Variable(s) entered on step 1: SET_COUNTRIES, age, AgeSQ, No_CHILDREN, LIVING_with_CHILDREN, EDU2, EDU3, EDUP2, EDUP3, ACTIVITY_P, MARITALSTATUS.

Binary logistic regression on a set of individual and household characteristics with added cultural indexes

Table C1:   Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	2894,814	13	,000
	Block	2894,814	13	,000
	Model	2894,814	13	,000

Table C2:   Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	7944,867[a]	,306	,410

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001.

Table C3:   Classification Table[a]

			Predicted		
			ACTIVITY		Percentage
	Observed		0	1	Correct
Step 1	ACTIVITY	0	2042	1370	59,8
		1	511	4008	88,7
	Overall Percentage				76,3

Table C3: Classification Table[a]

	Observed	Predicted		
		ACTIVITY		Percentage
		0	1	Correct
Step 1	ACTIVITY 0	2042	1370	59,8
	1	511	4008	88,7
	Overall Percentage			76,3

a. The cut value is ,500

Table C4: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	SET_COUNTRIES	,151	,060	6,261	1	,012	1,163
	age	,299	,014	479,703	1	,000	1,349
	AgeSQ	-,004)	,000	573,590	1	,000	,996
	No_CHILDREN	-,127)	,029	18,990	1	,000	,881
	LIVING_with_CHILDREN	,066	,073	,821	1	,365	1,069
	EDU2	,108	,071	2,344	1	,126	1,114
	EDU3	1,099	,104	112,014	1	,000	3,001
	EDUP2	,215	,086	6,260	1	,012	1,240
	EDUP3	,255	,125	4,141	1	,042	1,291
	ACTIVITY_P	,483	,091	28,265	1	,000	1,621
	MARITALSTATUS	-,433)	,101	18,476	1	,000	,649
	Femalecultureindex	-,122)	,058	4,451	1	,035	,885
	FMPCC_index	-,203)	,273	,554	1	,457	,816
	Constant	-4,749)	,260	334,057	1	,000	,009

a. Variable(s) entered on step 1: SET_COUNTRIES, age, AgeSQ, No_CHILDREN, LIVING_with_CHILDREN, EDU2, EDU3, EDUP2, EDUP3, ACTIVITY_P, MARITALSTATUS, Femalecultureindex, FMPCC_index.