

Conservatism and Female Labour Force Participation in Turkey

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Abstract

The aim of this paper is to investigate the main determinants of the participation decision of females in the labour force in Turkey. Turkey is a particularly important case as, unlike in many other countries, female labour force participation has shown a decreasing trend in the last 50 years. This paper aims to elaborate on the causes of this decrease. In addition to the main determinants found in previous literature, this paper adds a new variable that influences female labour force participation in Turkey: Conservatism and the role of traditional and social norms. An original proxy for conservatism is created by using a unique data set about perceptions. Four indices that might influence conservatism are formed: Tradition, social norms, men's decision power, and conservatism. The results are in accordance with the previous literature stating that urbanization, child care institutions and education level play an important role in the participation decision of women. However, these factors are not enough to explain the decline in female labour force participation. This paper presents a new concept by showing that social norms, tradition and men's higher bargaining power play a negative role in the probability of women working in urban areas, while they have the opposite influence in rural areas. Furthermore, this paper shows a new possible explanation for the link between urbanization and female labour force participation. Higher urbanization causes higher conservatism, which leads to lower female labour force participation.

Keywords: female labour force participation; gender; conservatism; Turkey

JEL code: J16, J21

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1 Introduction

This paper aims to determine the influence of conservatism on female labour force participation in Turkey. Turkey is chosen as it shows a particularly different trend than many other countries regarding female labour force participation (FLFP). Over the last 50 years, Turkey's FLFP has been decreasing.¹ Moreover, according to the Global Gender Gap Report 2009² Turkey has the 6th lowest global gender gap index and the 5th lowest rank in economic participation and opportunity for women.³ The only countries among the 130 in the sample that perform worse than Turkey are Saudi Arabia, Benin, Pakistan, Chad and Yemen. A closer look at the gender gap sub-indices shows that Turkey has the 10th lowest female labour force participation rate and the 12th lowest share of women in ministerial positions among 130 countries.⁴ Worst of all, Turkey has the lowest gender gap index ranking in the upper middle income group that it belongs to. It is important to elaborate on the reasons behind this fact in order to form future policies both for Turkey and for other developing countries that might end up having the same problem as Turkey. Furthermore, being a link between the East and the West both geopolitically and culturally, Turkey plays an important role in the region's economy and politics. Especially during the integration process of Turkey with European Union, it is essential to identify such problems and to propose possible solutions.

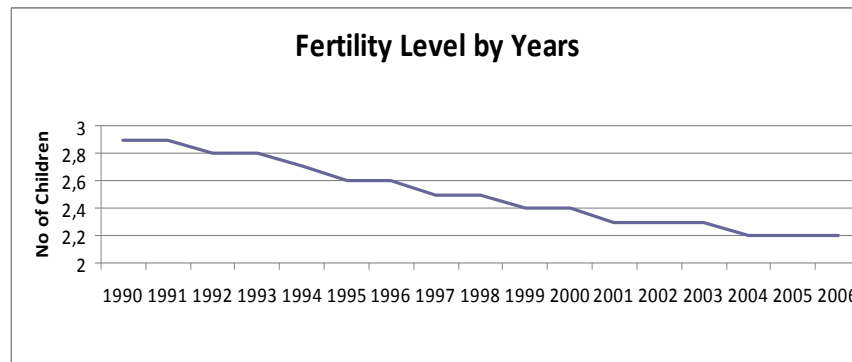


Figure 1

Figures 1 to 3 present the evolution of fertility, female education and female labour force participation rates, respectively. While the level of education increases, the fertility and female labour force participation rates decrease over time. Accordingly,

¹Fernandez and Fogli (2005)

²World Economic Forum (Geneva, Switzerland 2009)

³When gender gap index equals to one it means equality between males and females. In 2009 Iceland has the highest ranking with an index of 0.8276. The index value for Turkey is 0.5828.

⁴It is interesting to observe such a trend in Turkey, especially when we consider the fact that it was one of the first countries where women received their right to vote and to be voted (1930, 1934).

neither women’s education level nor fertility rate can be a factor in the decreasing trend in female labour force participation. In the appendix, some additional figures on percentage of working mothers by cohort and female labour force participation rates by year and education level can be seen.

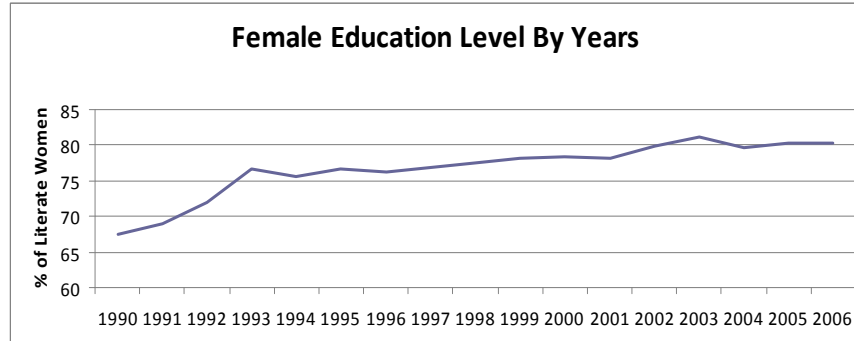


Figure 2

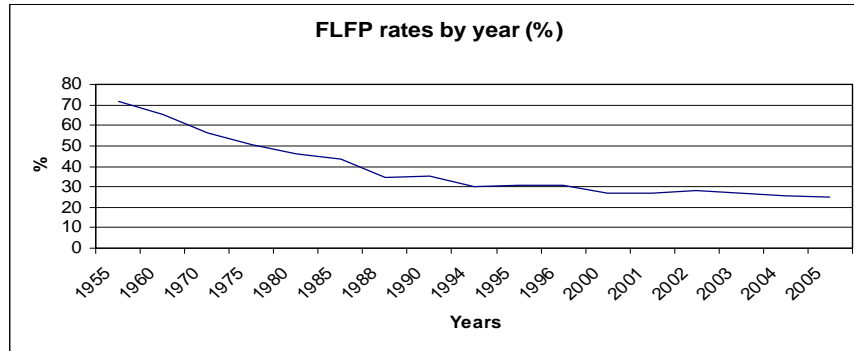


Figure 3

There is a huge literature on the subject of female labour force participation in an international framework. Tzannatos (1999) examines the level of and changes in female and male participation rates, employment segregation and female wages relative to those of male wages across the world economy. He finds sufficient evidence to support the view that labour markets in developing countries are transformed relatively quickly in the sense that gender differentials in employment and pay are narrowing much faster than they did in industrialised countries.

Blau and Kahn (2007) investigate married women’s labour supply from 1980 to 2000. They find a large rightward shift in their labour supply function for annual hours in the 1980s, with a little shift in the 1990s. There are also studies done on the female labour force participation rate in Turkey and some of them try to explain the decline observed in recent decades.⁵

⁵More information about these studies can be found in the next section.

In addition to the main determinants found in the previous literature, this paper adds a new variable that influences female labour force participation in Turkey: Conservatism and the role of tradition and social norms in Turkey. An original proxy for conservatism is created by using a unique data set about perceptions in Turkey. Three indices that might influence conservatism are formed: Tradition, social norms, and men's decision power. Then, these indices are combined to see the general influence of being conservative in social terms.

The idea of explaining economic outcomes by social norms, religion and tradition is not new in the literature. In the paper by Fernandez and Fogli (2009), they emphasise that Turkey is the only OECD country in which FLFP decreases over time, but this issue is not their main concern. They make use of a 1970 census and their sample consists of women born in the US but whose parents were born elsewhere. They use past FLFP and ancestral fertility rates as cultural proxies and find a positive and significant power of this proxy for decisions of members of the current generation about work and fertility. They claim that neither unobserved human capital nor networks are likely to be responsible for this causality.

Recently, there has been an increasing trend in the number of papers that combine sociology and economic outcomes. The economic literature is enriched by papers that investigate the relationship between religion and economic performance (Iannaccone, 1998; Noland, 2005; McCleary and Barro, 2006; Becker and Woessmann, 2009), intergenerational transmission of ethnic and religious traits (Bisin and Verdier, 2000), the relationship between social norms and female labour force participation (Hazan and Maoz, 2002; Vendrik, 2003; Fernandez and Fogli, 2004; Burda et al., 2007), the connection between culture and economic outcomes (Guiso et al., 2006; Giavazzi, 2009), and the correlation between culture and institutions (Greif, 1994; Tabellini, 2005). This paper combines such literature with the one on female labour force participation. To my knowledge, it is a first attempt in the forming of indices to explain conservatism in Turkey. Furthermore, the roots of conservatism are disentangled and it is possible to see whether being traditional or having stronger social norms has a higher influence on women's participation decision.

The outline of this paper is as follows: The next section is devoted to the literature review and discussion on female labour force participation in Turkey. In section 3, I give a brief explanation about conservatism in Turkey and in section 4, I describe the model. The data are explained in section 5 while section 6 presents the methodology and section 7 the estimation results. The final section 8 concludes.

2 Literature Review and Discussion on Female Labour Force Participation in Turkey

The recent literature on FLFP in Turkey categorises the main reasons of the decrease in FLFP into six groups. One of the main reasons that has been frequently emphasised is urbanisation (Ilkkaracan, 1998; Başlevent and Onaran, 2002). In Turkey, there has been a continuing migration from rural to urban areas since 1950s. There are many reasons for this phenomenon which are outside the scope of this paper, but it is mainly due to the lack of importance and support given to the agricultural sector in Turkey. A few decades ago, Turkey was an agricultural country, but with the increase of industrialisation the resources shifted from this sector to the industrial sector. The second reason discussed in the literature is availability and affordability of childcare institutions (Acar, 2008). Though I agree that it is an important aspect, I do not concur that it might explain the decreasing trend in FLFP. Childcare institutions have been improving in Turkey and one year of pre-school education was made compulsory a few years ago. Moreover, the fertility rate in Turkey has been decreasing.

Another factor that is claimed to be the reason for decreasing FLFP is the U-shaped characteristic of labour force participation (Çagatay and Özler, 1995; Tansel, 2002). Tansel (2002) explains this pattern as follows: “the participation of women in the labour force is higher when agriculture is the dominant form of the economic activity. With development, economic activity shifts from home based production to market based activities. Markets’ expansion and new innovations causes income to increase, hence decreases FLFP. Women may not be able to compete with men in the new sectors due to lack of education and due to tradition, culture and household responsibilities. Moreover, when the education level and real wages of women start to increase we pass to the upward sloping part of the U-shaped curve.” Turkey might be on the downward-sloping part of the curve, but as also emphasised by Tansel (2002), tradition and culture play an important role in this process and their importance is discussed in this paper. Furthermore, Ecevit (1998) claims that globalisation and liberalisation caused a decrease in FLFP by dismantling labour markets and by breaking all regulations in order to find cheap and unorganised labour.

Dayıoğlu (2000) and Ince and Demir (2006) indicate that the main reasons for the decline in female labour force participation are economic crises and the low education level of the female population. Figure 2 however presents the increasing level in female education in Turkey. It is true that the average female education level is still lower than the male one, but there is an increasing trend and it can therefore not be the sole reason for the decrease in FLFP. Economic crises are shocks to the economy and cause many people to become unemployed. Furthermore, during such shocks it is more difficult to find a job, especially for women. As Adamopoulos and Akyol (2009) emphasise, assuming leisure to have the same value for both men and women and taking into account the fact that women have a comparative advantage in

home production, it can be concluded that the elasticity of labour supply for women will be higher than for men, so women will react by changing their labour supply more readily than men in the event of economic shocks. Though I accept that they are important factors, this mechanism can explain only part of the decline in female labour force participation.⁶

Lastly, unequal division of labour at home is emphasised as a factor that discourages women from working (Moghadam, 1998; Ilkkaracan, 1998). They claim childbearing, early marriage and women being seen as only housewives are the main reasons for low FLFP in Turkey. This is in accordance with what this paper shows, that social norms are an important factor in the participation decision of women.

3 Conservatism in Turkey

It is generally agreed that conservatism in Turkey is on rise, but as it is a qualitative concept it is really difficult to prove it with numbers. In this section I will try to give some examples that show that there is an upward trend in Turkey in terms of conservatism.

In their book, Çarkoğlu and Kalaycıoğlu (2009) explain the rising tide of conservatism in Turkey and claim that religiosity plays a major role. Indeed, when the web page of The Presidency of Religious Affairs in Turkey is checked for the number of Qur'an courses and the number of students that follow these courses, one can observe the increasing trend. Figures 4 and 5 show the Qur'an courses and number of students in recent years, respectively.

Çarkoğlu and Kalaycıoğlu (2009) claim that the increasing trend in conservatism is caused by long-term socio-political modernisation, industrialisation, increased pace of social mobilisation, and contemporary regional turbulences due to the changes that have been taking place in the international system since the end of the Cold War. In the post-1980 era, Turkish society became increasingly more urban and relatively more affluent. At the same time Turkish people started to be highly sensitive to the uncertainties of socioeconomic and socio-political changes occurring in and around the country. In the empirical section of their book they show that almost 40% of the population of Turkey desires to go back to the “good old days” and turn back to the traditional social norms. In a survey they conducted in 2006, 51% of the respondents are clearly closer to being very conservative, and only about 22% remain closer to being not conservative at all. They also show that there is a shift from leftwing to rightwing in terms of politics.

⁶See results section

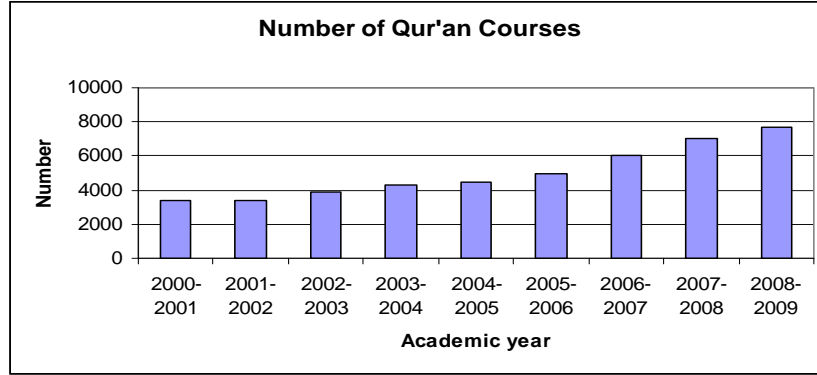


Figure 4

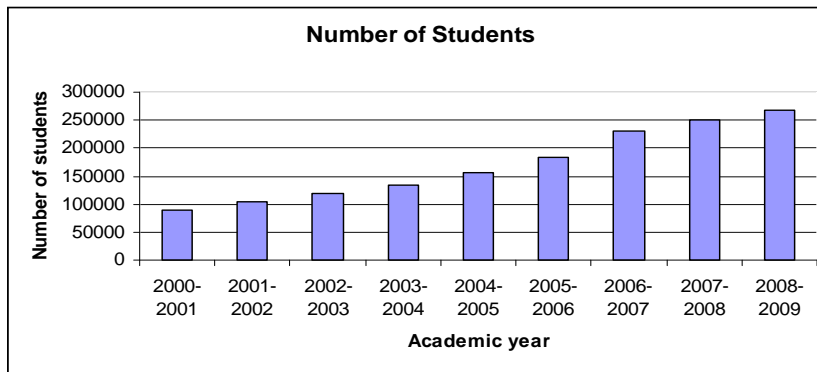


Figure 5

The aim of this paper is neither to prove the increasing trend in conservatism nor to determine the reasons behind this trend. It aims to investigate whether conservatism has any influence on the decreasing trend in FLFP or not. For this reason, I have only tried to give some brief explanation about the trend in conservatism in Turkey in this section and have suggested reasons for this fact.

4 Model

Except for some recent papers in the literature, labour market participation of women is assumed to depend on their evaluation of the market wage against their reservation wages. In this paper, on the other hand, it is assumed that women are not alone when they are making their decisions. The environment and the social norms in that environment also play a role in the decision-making process.

There are three links through which social norms and conservatism influence the participation decision of women. The first one is the education link. Up to a certain age, parents make the decisions about their children's educational attainment. For example, only the first 8 years of education are compulsory in Turkey at present. If parents decide not to invest in the education of their children after this compulsory

education period is over and do not send them to high school, then there is no way for these children to go to university even if they prefer to. Following Tansel (2002), in an another paper I show that there is a gender bias against girls in Turkey in educational investment (Göksel, 2010). If the social norms in a society are against females working and people believe that women should rather stay at home and take care of the house, then the girls living in such a society are less likely to have a high level of education and less likely to find a job in the future even if they want to.

The second link is through marriage. In conservative societies, women have less freedom to choose their partners. This also causes having less bargaining power in the household. In a sense, instead of their fathers, they have to obey their husbands after marriage. Fernandez *et al.*(2004) prove that the number of men being brought up in a family in which the mother worked as well has been a significant factor in the increase of female labour force participation. In a conservative society, a woman is unlikely to find such a husband, so her husband will most likely also have the same norms as her father. Having low bargaining power means women do not have any influence on the decision about fertility (Rasul, 2008) and having more children than they prefer also affects their participation decision.

The third link concerns the labour market. In a conservative society, having social norms against women working means employers set lower wage for females. Tansel (2005) states that this is indeed the case in the private sector in Turkey. As a result, returns to education for females are lower than they are for males and this strengthens the first link.

In this paper, married women are taken into consideration. The reason for this choice is to be able to observe all the above-mentioned links. Throughout this paper, conservatism is associated with the power of men to decide how women should act.

5 Data and Descriptive Statistics

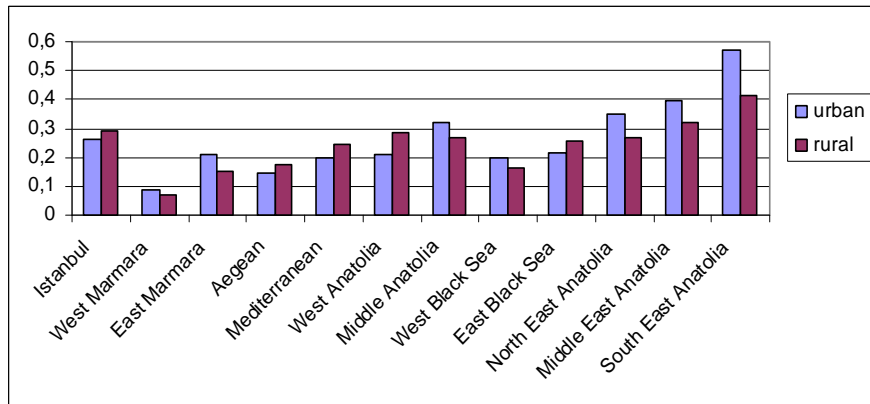
In this paper, I mainly use four datasets, all of which conducted by the State Institute of Statistics (SIS) of Turkey: the 1994 Household Budget Survey, the 2003 Household Budget Survey, the 2006 Household Labour Force Survey and the 2006 Household Structure Survey. The main reason for the use of the 2006 Household Labour Force Survey rather than the 2006 Household Budget Survey (HBS) is that the latter lacks information about regions. The 1994 HBS covers 118,540 individuals from 26,256 households. Likewise, there are 25,920 households consisting of 107,614 individuals in the 2003 HBS. The 2006 Household Labour Force Survey, on the other hand, covers 497,137 individuals from 129,527 households. In all these datasets, it is possible to find the necessary individual and household characteristics.

Unlike the previous literature mentioned in this paper, the 2006 Household Structure Survey, a unique data set about perceptions, is used. This survey is a product of joint research by the State Institute of Statistics of Turkey and the General Direc-

torate of Family and Social Studies on the household structure of Turkish families. This survey consists of more than a hundred questions about the household structure, perceptions and habits of Turkish families and, to my knowledge, this study is one of the first academic papers to use this survey. The details of the questions of this survey are explained further on in this paper.

Table 1 reports the descriptive statistics. In the table, education presents the number of years spent on education while daughters and sons are the number of girls and boys in the household, respectively. Grandmother is a dummy variable that takes the value one for the presence of a grandmother in the household. Loghusbandincome is the logarithm of the husband’s income while logwifeincome is the logarithm of the wife’s income. Husbands’ conservatism denotes the average response rate for the conservatism index given by males at the same cohort of the husband and live in the same region. On the other hand, husband’s conservatism exists only for the 2006 HSS and it is individualistic. Urban is a dummy variable that takes the value one if the population of the location is higher than 20,000. Working woman is a dummy that takes the value one if the woman is working. Whether a woman works or not does not depend only on an individual willingness to work but also on whether there are jobs available for her. For this reason, I formed another dummy variable that takes the value one if the woman is either working or in search for a job and zero otherwise. Distance to Istanbul shows the average distance between the biggest cities of a region and Istanbul.

In the 2006 HSS, the individuals are asked directly whether they think it is appropriate that women work or not. This variable is not used in the analysis as it is totally endogenous, but figure 6 presents the fraction of men who do not approve of women working. In most of the regions the percentage of men who are against women working is higher in urban areas than in rural areas. Moreover, the difference is higher for more conservative regions in east Anatolia. When the men that are against women working were asked for their reason for it, 63% of them replied that “The woman’s main duty is to take care of the children and do the domestic work”.



6. Percentage of men that answered negatively to the question "whether it is appropriate that women work or not" in 2006 HSS.

In addition to these datasets, the results of Turkey’s 1995, 2002 and 2007 general elections combined with the 2003 Voter Tendency Survey are used in order to form an index about the level of radicalism, which is used in the robustness section. The 2003 Voter Survey consists of 41 questions about the political beliefs and attitudes of individuals. The individuals that participated in this survey answered questions about the party they voted for in the last elections, their ideas about Turkey’s being a member of the European Union, their political position and so on. The reason why this survey is not used in the regression directly is the lack of individual and household characteristics.

6 Methodology

In this paper, different data sets are used in order to determine the main factors that influence whether women work or not. Each data set has some pros and cons and they are used in such a way as to complete each other. In this section I explain how I used each data set to form my final data set for the analysis.

6.1 2006 Family Structure Survey

Though the 2006 Household Structure Survey (HSS) is a unique data set about the perceptions of Turkish people, it unfortunately lacks one of the basic pieces of information needed in this paper: Whether the woman works or not. Luckily it contains information about the incomes of individuals. I am aware of the fact that having an income does not necessarily mean that the woman actually works. She might have inherited land or real estate and might be receiving rent. Still, I believe the proportion of women having such properties is not so high in Turkey. Furthermore, using only this data set would not provide information about the time variance because it is the product of the first survey done about family structure which is planned to be done every 5 years. In order to be able to observe the time trend, the information in this data set should be transferred to the other data sets that we have for previous years. The methodology for this is discussed later in this section but the analysis performed on the 2006 Household Structure Survey data is explained first.

In order to make use of the questions in the 2006 HSS, polychronic principal component analysis is used to form 3 different indices. The first index is called the tradition index and makes use of seven questions in the survey. The first question that is used for this index is about marriage age. The individuals are asked their age when they got married for the first time. I formed a dummy that takes the value one if the individual was under 19 years of age and zero otherwise. The other variables used for this index are whether they had the following traditional concepts or not:

Table 1: Descriptive Statistics

	2006 HSS	2006 LFS	Pooled Data
Age	43.5674 (0.1343)	42.5938 (0.0399)	42.0884 (13.0961)
Education	4.8081 (0.0384)	4.9383 (0.0118)	4.7979 (3.8606)
Sons	1.0140 (0.0107)	0.9647 (0.0031)	1.0141 (1.0528)
Daughters	0.8395 (0.0104)	0.8421 (0.0031)	0.8893 (1.0644)
Grandmother	0.0525 (0.0022)	0.0644 (0.0007)	0.0677 (0.2501)
LogHusbandIncome	6.3225 (0.6629)	6.4560 (0.0028)	6.7804 (0.9258)
Husbands' Conservatism	0.0051 (0.0056)	-0.0586 (0.0016)	-0.0521 (0.5198)
Urban	0.5779 (0.0049)	0.6814 (0.0014)	0.6870 (0.4637)
LogWifeIncome	6.2672 (0.0158)	6.2828 (0.0091)	6.3015 (0.1955)
Working Woman		0.1897 (0.0012)	0.2118 (0.4086)
Working+Unemployed Woman		0.2023 (0.4017)	0.2219 (0.4155)
Husband's Conservatism	-0.0773 (1.4909)		
Distance to Istanbul		677.80 (440.73)	699.76 (441.31)
N	10073	110266	157138

Source: Author's own calculations using 1994 HBS, 2003 HBS, 2006 LFS and 2006 HSS.

Arranged marriage, religious marriage, henna (kına) night⁷, religious ceremony, bride money⁸ and close-relative marriage. The more traditional the family, the higher the value the index takes.

The second index is about the decision power in the household. In the literature, it is usually assumed that it is proportional to the income the individual brings home and estimated accordingly. In the 2006 HSS, there is a question asking the participants who in the household makes the final decision regarding the following: choice of the house, choice of the house style, children, shopping, relations with relatives, relations with neighbours, holiday and fun. Higher values of this index mean that men have higher decision power in the household concerned.

The last index formed from the 2006 HSS is about social norms. While the previous two indices are at household level, this one is at an individual level. There are many questions about social norms in the 2006 survey, but a few of them are selected to form the index both according to their individual performance in the regression and also to the correlation matrix.⁹ Dummies are formed using the answers to the following questions: “Do you approve of close-relative marriage?”, “Is the wife not doing housework properly a sole reason for divorce?”, “Do you agree with the statement: The continuation of a generation is guaranteed only by a son?”, and “Do you agree with the statement: The best marriage age for a woman is between 15-19”. Each dummy takes the value one if the answer to the relevant question is positive and takes the value zero if it is negative. Using principle component analysis with these dummies a social norm index is formed, which has higher values for the individuals that have stronger social norms.

Lastly, an index of conservatism is formed using all the variables mentioned above to see the total influence of being conservative. This index provides us with a general idea of the effect of conservatism on FLFP, while we can disentangle which issues play more important roles in this process by looking at the previous ones.

As explained before in the HSS, we do not have any information about the working situation of women. Rather, we only have information regarding their income. For this reason, I use the logarithm of the woman’s income as the dependent variable for the analysis of this data set. Accordingly, the following OLS regression is run.

$$\text{LogFemaleIncome}_{ijk} = \alpha_0 + \alpha_1 X_i + \alpha_2 R_j + \alpha_3 I_{ik} + \varepsilon_{ijk} \quad (1)$$

where X is a vector of individual and household characteristics, R is the region dummies and I represents the indices.

⁷Traditionally (in Turkey, at least), henna night, or kına gecesi is a women’s party that usually takes place the night before the wedding. The bride’s closest friends and female family members gather to eat, dance, and sing. They put henna on their hands.

⁸According to traditions, the parents of the groom have to pay bride money to the parents of the bride. It might be cash as well as some animals or land. In return the bride brings a dowry to her new house.

⁹Choosing other combinations of the variables do not change the results significantly.

As this data set does not contain very reliable information about income and because I want to analyse not only the impact of the husband but also the impact of the environment on the woman’s decision to work, I use the following equation:

$$I_{ijkl} = \sum \alpha_{ijkl} / N_{ijkl} \quad (2)$$

where i, j, k and l represent sex, cohort, region, and urban respectively. Using this equation, I find the means of the indices and transfer the indices to the other datasets, e.g. all female people in cohort 25-30 years-old in region A in an urban area will have the same value for the index, which is the mean calculated using equation 2. Furthermore, using these mean indices will provide me with information about the environment that a woman is living in. I run the following OLS regression, this time with the mean of the indices that is calculated as described above.

$$\text{LogFemaleIncome}_{ijk} = \beta_0 + \beta_1 X_i + \beta_2 R_j + \beta_3 I_k + e_{ijk} \quad (3)$$

where X is a vector of individual and household characteristics, R is the region dummies¹⁰ and I represents the indices.

During the time period between 1994 and 2006 there were not any institutional or tax system changes in Turkey. I use the advantage of concentrating on only one country and unlike other papers in the literature that use panel data sets, I do not need to control for institutions and tax rates.¹¹

In table 2, the first column presents the results for the first regression without any region-fixed effects. In the second column I add the fixed effects, while the third column shows the results for the second regression with the mean indices. In the data set, the age is given between intervals so the median of the interval is taken when determining age. Sons and daughters are the number of the sons and daughters of the mother, respectively. Grandmother is a dummy that takes the value one in the case of a grandmother living within the household. In this dataset, it is also possible to make a distinction between whether this refers to the husband’s or the wife’s mother. In the dataset, income is also given in intervals. For all intervals except the last one, the median is taken; but the last interval is given as higher than 2501YTL. In order to find an appropriate representative for this interval, a quantile method is used as suggested in Ligon (1989) and the upper bound is found to be 2,953YTL. Urban is the dummy that takes the value one if the individual is living in the city. Logwifeincome and loghusbandincome are the logarithms of the woman’s and her husband’s income,

¹⁰Although the indices vary even within region there might be still some collinearity if the regions are used in the same way given in the data set. SIS uses 12 regional dummies, even though, in reality, Turkey has 7 geographic regions. SIS increased the number of regions by dividing some of them into parts to obtain a more detailed analysis. I recombine the split regions and use 7 regional dummies in order to be able to consider the region-fixed effects.

¹¹Giavazzi et al (2009).

respectively. For brevity's sake only the results for the conservatism index is shown in this table and the results are discussed in the next section.¹²

6.2 2006 Labour Force Survey

In the previous section, the results of the regressions are not interpreted as the 2006 HSS is unclear as to whether the mother is working or not, so the results might be misleading. Unlike the 2006 HSS, we find information about both wage and whether an individual is working or not in the 2006 LFS. Furthermore, it is also possible to see if the individual is unemployed and looking for a job. Using this information, a better variable for female labour force participation is formed, though the results do not differ much when the women who are unemployed are also counted.

The 2006 LFS is used to run three different OLS regressions separately for urban and rural areas¹³.

$$\text{LogFemaleIncome}_{ijkl} = \alpha_0 + \alpha_1 X_i + \alpha_2 R_j + \alpha_3 I_k + \alpha_4 D_l + \varepsilon_{ijkl} \quad (4)$$

$$\text{FemaleWork}_{ijkl} = \beta_0 + \beta_1 X_i + \beta_2 R_j + \beta_3 I_k + \beta_4 D_l + e_{ijkl} \quad (5)$$

$$\text{FemaleWorkorSearch}_{ijkl} = \gamma_0 + \gamma_1 X_i + \gamma_2 R_j + \gamma_3 I_k + \gamma_4 D_l + \mu_{ijkl} \quad (6)$$

where the definitions of X , R and I are same as before. The first one is the same regression as in the previous section in which I used the means of the indices. *FemaleWork* is a dummy variable that takes the value one if the wife is working and zero otherwise. On the other hand, *FemaleWorkorSearch* is another dummy that takes the value one if the wife is either working or looking for a job. The last regression takes into account the cases in which the wife is not working as a result of lack of job availability in the region. D shows the average distance between the biggest cities in the region and Istanbul.

The previous literature claims that urbanisation plays an important role in the decrease of female labour force participation, which is also one of the conclusions of this paper. In order to observe the differences between the urban and rural parts of Turkey, the regressions are run separately. I expect different results for urban and rural areas due to the difference in their way of living. In rural areas women traditionally work while this is not the case in cities.

¹²The results of for the other variables are available from the author.

¹³OLS is used to be able to interpret the results more easily. A robustness check is done by using probit estimation and tables 31 and 32 in appendix show that when the marginal influence in the probit estimation is considered, there is not a significant difference between OLS and probit results.

6.3 Pooled Data

The 1994 and 2003 Household Budget Surveys and the 2006 Labour Force Survey are combined to form the final data set that is used in the rest of the paper. I am aware of the fact that by this method, the values of the indices are assumed not to change over time, meaning that a 60-year-old woman in an urban part of region A in 2006 has the same perceptions as a 60-year-old woman in an urban part of region A in 1994. Moreover, there might be some endogeneity issues concerning this analysis. The indices might be endogenous to other variables and more importantly to the dependent variable itself. To deal with this problem, an instrumental variable (IV) approach is used. The altitude of the regions is used as an instrumental variable. The higher the place, the more difficult it is to reach it and the more closed it is to outside shocks and influence. So it can be assumed that the places that have a higher altitude are able to save their traditions more than others. Furthermore, from figure 6, one can observe that the percentage of men who are against women working is higher in the Eastern part of Turkey, which is also at a high altitude. It is also true that in high altitude places there might be fewer job opportunities but this is controlled for by the region-fixed effects and by the choice of the dependent variable as *FemaleWorkorSearch*. Furthermore, distance to Istanbul is also used as a geographic control factor. Besides, altitude is constant over time, so it is in accordance with the assumption mentioned above.¹⁴

7 Results

In this section, the results of the regressions are presented separately for the 2006 HSS, the 2006 LFS and the pooled data.

7.1 2006 Family Structure Survey

The aim of conducting a separate analysis within the 2006 HSS is to analyse whether there is any difference between using the individual indices and the mean of the indices according to sex, cohort and region or not. In case there is, it is beneficial to see in what way they differ. The first two columns in the table 2 present the results for the regression with an individual conservatism index for the husband, while the regression with the mean conservatism index is shown in the last two columns. Even columns include region dummies.

The table 2 shows that the new index that I created by taking the mean of the conservatism index according to sex, cohort and region, which from now on will be called ‘husbands’ conservatism’, has a higher and more significant influence than the

¹⁴Figure B.3 in Appendix presents the altitude of the regions in Turkey.

Table 2: OLS Regression Results for the 2006 HSS

LogFemaleIncome	I	II	III	IV
Age	0.0302 (0.0023)***	0.0297 (0.0023)***	0.0312 (0.0024)***	0.0292 (0.0026)***
Education	0.2079 (0.0107)***	0.2107 (0.0107)***	0.2087 (0.0106)***	0.2129 (0.0106)***
Sons	0.0717 (0.0272)***	0.0837 (0.0274)***	0.0767 (0.0274)***	0.0817 (0.0274)***
Daughters	0.0217 (0.0274)	0.0326 (0.0278)	0.0262 (0.0279)	0.0309 (0.0279)
LogHusbandIncome	-0.0628 (0.0475)	-0.0798 (0.0479)*	-0.0697 (0.0479)	-0.0783 (0.0479)
Mother of Wife	1.0856 (0.6687)	0.9825 (0.6551)	1.0883 (0.6746)	0.9879 (0.6582)
Mother of Husband	0.2621 (0.1539)*	0.2081 (0.1500)	0.2466 (0.1537)	0.2014 (0.1499)
Urban	-0.4498 (0.0592)***	-0.3845 (0.0593)***	-0.5070 (0.0690)***	-0.3594 (0.0879)***
Husband's Conservatism	-0.0325 (0.0192)*	-0.0269 (0.0166)*		
Husbands' Conservatism			-0.1353 (0.0653)**	-0.1317 (0.0621)**
Constant	-0.6468 (0.2990)**	-0.6087 (0.3201)*	-0.6214 (0.3011)**	-0.6108 (0.3208)*
Region Dummies	No	Yes	No	Yes
N	7043	7043	7043	7043
R ²	0.0867	0.1065	0.0869	0.1063

*Note: For empirical specification see Section 5.1 *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.*

individual one¹⁵. Another important result that can be concluded from the table is that urbanization plays a very high and negative role on female labour force participation. For this reason and for the other reasons that are discussed in the previous section, urban and rural areas will be analysed separately over the rest of the paper. In this section, the coefficients of the other variables are not interpreted as the 2006 HSS is unclear as to whether the female is working or not, so the results might be misleading.

7.2 2006 Labour Force Survey

As before, urban and rural areas are analysed separately and tables 3 and 4 present the results, respectively. In both tables, the first columns have the results for the regressions in which the logarithm of female income is used as the dependent variable. The dependent variable in the next columns is a dummy that takes the value one if the female is working and zero otherwise, while in the last columns the dependent variable is *FemaleWorkorSearch*.

For both rural and urban areas, the regression with the dependent variable *FemaleWorkorSearch* seems to have the higher explanatory power than the one with *FemaleWork*. On the other hand, the regression with *LogFemaleIncome* seems to be overestimating the result and more importantly these results might be driven by the wage differences between males and females or by the fact that females have some other kind of income rather than the wage. Both for these reasons and for the reason that it takes into account the lack of job opportunities, *FemaleWorkorSearch* will be used as the dependent variable over the rest of the paper. I did this analysis using only the 2006 LFS in order to choose the best dependent variable to use. Hence, the values of the coefficients are not interpreted here but the interpretation will be done in the next subsection with the final data set.

7.3 Pooled Data

This section presents the results of the analysis done with the final data set.

7.3.1 OLS Regression Results

The OLS regression results for urban and rural regions are presented in Table 5 and Table 6, respectively. In the tables, the first columns show the results without region-fixed effects. In the second columns and onwards, the region-fixed effects are introduced. In the first two columns, the results are for the regressions without any interactions and the rest of the columns demonstrate the results for regressions

¹⁵It is done for all indices, but for brevity's sake, I only show the results for conservatism index here. The results for other indices are available upon request.

[b]

Table 3: OLS Regression Results for the 2006 LFS (Urban)

URBAN	LogFemaleIncome	FemaleWork	FemaleWorkorSearch
Age	0.0156 (0.0013)***	0.0025 (0.0002)***	0.0019 (0.0002)***
Education	0.2689 (0.0043)***	0.0357 (0.0007)***	0.0386 (0.0007)***
Sons	0.0170 (0.0112)	0.0030 (0.0020)	0.0000 (0.0021)
Daughters	-0.0128 (0.0107)	-0.0024 (0.0019)	-0.0056 (0.0020)***
LogHusband- Income	-0.1056 (0.0226)***	-0.0317 (0.0039)***	-0.0418 (0.0040)***
Grandmother	0.1316 (0.0485)***	0.0284 (0.0087)***	0.0259 (0.0090)***
Husbands' Conservatism	-0.0101 (0.0058)*	-0.0816 (0.0148)***	-0.0526 (0.0154)***
Distance to Istanbul	0.0004 (0.0001)***	0.0001 (0.0000)***	0.0002 (0.0000)***
Constant	-1.1626 (0.2381)**	-0.1578 (0.0414)***	-0.1035 (0.0432)***
Region Dummies	Yes	Yes	Yes
N	32377	32377	32377
R ²	0.2115	0.2418	0.2514

*Note: For empirical specification see the previous section. *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.*

[b]

Table 4: OLS Results Results for the 2006 LFS (Rural)

RURAL	LogFemaleIncome	FemaleWork	FemaleWorkorSearch
Age	0.0214 (0.0021)***	0.0061 (0.0005)***	0.0056 (0.0005)***
Education	0.2322 (0.0095)***	0.0214 (0.0017)***	0.0236 (0.0017)***
Sons	-0.0116 (0.0165)	0.0112 (0.0043)***	0.0084 (0.0044)*
Daughters	0.0129 (0.0147)	0.0135 (0.0042)***	0.0112 (0.0042)**
LogHusband- Income	-0.1574 (0.0329)***	-0.0599 (0.0086)***	-0.0601 (0.0087)***
Grandmother	0.1410 (0.0665)**	0.1580 (0.0169)***	0.1542 (0.0170)***
Husbands' Conservatism	0.4009 (0.0984)***	0.0126 (0.0023)***	0.0122 (0.0036)***
Distance to Istanbul	-0.0003 (0.0002)*	0.0004 (0.0000)***	0.0004 (0.0000)***
Constant	0.8916 (0.3615)**	-0.3494 (0.0879)***	-0.3393 (0.0893)***
Region Dummies	Yes	Yes	Yes
N	8392	8392	8392
R ²	0.1680	0.2023	0.2028

*Note: For empirical specification see the previous section. *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.*

in which the indices are interacted with the level of education, age and income, respectively.

As expected, age, education and having a grandmother at home have a significant and positive influence on females' decisions to work in both urban and rural areas. The number of boys and girls has a negative and significant effect in urban areas while this effect becomes positive in rural areas, which is most probably due to the high cost of childcare institutions in urban areas. On the other hand, in rural areas in general, the elder siblings look after the younger ones. While the husband's income plays a negative role in whether women work in rural areas, it does have a positive influence in urban areas. In urban areas, having a high income also usually means a high education level and more highly educated people are presumably less reserved about women working. In rural areas, on the other hand, high income does not necessarily mean high education, wherefore the income effect prevails.

The most striking difference between urban and rural areas is the opposite influence of the indices. Conservatism influences the mothers' decision to work negatively in urban areas, while it has a positive effect in rural areas. At first glance, this might seem surprising but when the traditional way of life in rural areas in Turkey is taken into account, the underlying reason for this positive influence becomes clear. In rural areas, women traditionally work and the husbands in fact want them to work. They are seen as a workforce and that is one of the reasons for the existence of bride money. Women do not have any choice whether to work or not and the decision is made by the elder people in the family or their husbands. Because the parents of the bride are losing one of their labourers, they should be compensated accordingly. Investing in the bride, the husband presumably prefers her to work, so it is not surprising that women work more in more conservative rural areas. On the other hand, conservative people in urban areas do not want their wives to work. Of course, reasons such as lack of education and experience are factors that prevent women from finding a job in urban areas as well. However, when we look from a conservative point of view, there might be also some other reasons. Women in rural areas work on farms with other women and men are not involved or even if involved they are part of the family, whereas if those in cities decide to work, they will have to work with men in the same environment. The perceptions of conservative men also tend to change when they move to urban areas. Whilst still in rural areas, they prefer their wives to work but once in urban areas, they change their minds. The difference in the impact of conservatism on female labour force participation between the most conservative urban area in Turkey and the least conservative one is 10 percentage points, which is equivalent to the influence of almost three years of education. On the other hand, in rural areas this difference is 9 percentage points.

The year 1994 dummy takes positive and highly significant values both for urban and rural areas, and the value is much higher in rural areas than in urban areas. On the other hand year, the 2003 dummy has a negative influence on FLFP in urban

[b]

Table 5: Pooled Data OLS Regression Results (Urban)

URBAN	I	II	III	IV	V
Age	0.0013 (0.0001)***	0.0011 (0.0002)***	0.0011 (0.0002)***	0.0012 (0.0002)***	0.0011 (0.0002)***
Education	0.0336 (0.0005)***	0.0334 (0.0005)***	0.0338 (0.0005)***	0.0334 (0.0005)***	0.0334 (0.0005)***
Sons	-0.0041 (0.0015)***	-0.0032 (0.0015)**	-0.0032 (0.0015)**	-0.0031 (0.0015)**	-0.0032 (0.0015)**
Daughters	-0.0041 (0.0015)***	-0.0033 (0.0015)**	-0.0033 (0.0015)**	-0.0033 (0.0015)**	-0.0033 (0.0015)**
LogHusband- Income	0.0164 (0.0029)***	0.0192 (0.0029)***	0.0201 (0.0029)***	0.0192 (0.0029)***	0.0142 (0.0030)***
Grandmother	0.0369 (0.0070)***	0.0381 (0.0069)***	0.0379 (0.0069)***	0.0381 (0.0069)***	0.0382 (0.0069)***
Year 1994	0.0147 (0.0047)***	0.0181 (0.0047)***	0.0186 (0.0047)***	0.0180 (0.0047)***	0.0181 (0.0047)***
Year 2003	-0.0592 (0.0072)***	-0.0645 (0.0073)***	-0.0664 (0.0073)***	-0.0646 (0.0073)***	-0.0650 (0.0073)***
Husbands' Conservatism	-0.0772 (0.0056)***	-0.0514 (0.0092)***	-0.0702 (0.0114)***	-0.0667 (0.0186)***	-0.0651 (0.0311)**
Education*			0.0025 (0.0010)**		
Conservatism Age*				0.0003 (0.0003)	
Conservatism Income*					-0.0174 (0.0045)***
Distance to Istanbul	0.0000 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***
Constant	-0.2060 (0.0186)***	-0.3227 (0.0262)***	-0.3337 (0.0265)***	-0.3237 (0.0261)***	-0.2872 (0.0268)***
Region Dummies	No	Yes	Yes	Yes	Yes
N	57610	57610	57610	57610	57610
R ²	0.2384	0.2425	0.2426	0.2425	0.2426

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.

Figures in parentheses are robust standard errors. Dependent variable is *FemaleWorkorSearch*.

[b]

Table 6: Pooled Data OLS Regression Results (Rural)

RURAL	I	II	III	IV	V
Age	0.0070 (0.0004)***	0.0057 (0.0004)***	0.0057 (0.0004)***	0.0060 (0.0004)***	0.0056 (0.0004)***
Education	0.0213 (0.0014)	0.0208 (0.0014)***	0.0209 (0.0014)***	0.0205 (0.0014)***	0.0207 (0.0014)***
Sons	0.0002 (0.0034)	0.0073 (0.0034)***	0.0081 (0.0034)**	0.0091 (0.0034)***	0.0090 (0.0034)***
Daughters	0.0045 (0.0033)	0.0120 (0.0034)***	0.0130 (0.0034)***	0.0134 (0.0034)***	0.0135 (0.0034)***
LogHusband- Income	-0.0551 (0.0061)***	-0.0559 (0.0061)***	-0.0552 (0.0061)***	-0.0576 (0.0061)***	-0.0615 (0.0064)***
Grandmother	0.1735 (0.0138)***	0.1634 (0.0135)***	0.1642 (0.0135)***	0.1642 (0.0135)***	0.1639 (0.0135)***
Year 1994	0.1099 (0.0117)***	0.1230 (0.0119)***	0.1188 (0.0120)***	0.1136 (0.0119)***	0.1125 (0.0119)***
Year 2003	0.1263 (0.0170)***	0.1295 (0.0169)***	0.1292 (0.0170)***	0.1340 (0.0169)***	0.1349 (0.0169)***
Husbands' Conservatism	0.1264 (0.0087)***	0.0357 (0.0156)**	0.0357 (0.0159)**	0.0519 (0.0239)**	0.1425 (0.0496)***
Education*			-0.0061 (0.0013)***		
Conservatism Age*				-0.0015 (0.0005)***	
Conservatism Income*					0.0202 (0.0073)***
Distance to Istanbul	0.0001 (0.0000)***	0.0002 (0.0000)***	0.0002 (0.0000)***	0.0002 (0.0000)***	0.0002 (0.0000)***
Constant	0.1780 (0.0410)***	-0.0538 (0.0561)	0.1467 (0.0461)***	0.1353 (0.0467)***	0.1872 (0.0479)
Region Dummies	No	Yes	Yes	Yes	Yes
N	14939	14939	14939	14939	14939
R ²	0.1575	0.1839	0.1839	0.1800	0.1800

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.

Figures in parentheses are robust standard errors. Dependent variable is FemaleWorkorSearch.

Table 7: OLS Regression Results for Indices and Interaction Terms (Urban)

	Tradition	Decision	Male Norm	Conservatism
Index	-0.0375 (0.0086)***	-0.0032 (0.0056)	-0.0400 (0.0118)***	-0.0514 (0.0092)***
Index*Age	0.0014 (0.0004)***	-0.0001 (0.0003)	-0.0000 (0.0006)	0.0003 (0.0003)
Index*Education	0.0037 (0.0013)***	0.0056 (0.0010)***	0.0094 (0.0013)***	0.0025 (0.0010)**
Index*Income	-0.0326 (0.0061)***	-0.0171 (0.0053)***	-0.0146 (0.0083)*	-0.0174 (0.0045)***

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.

Figures in parentheses are robust standard errors. All other individual and household characteristics are controlled for as in table 7 but not shown here for simplicity as they have almost the same influence as in table 7.

areas, and the opposite is true for rural areas. The previous literature claims that the economic crises in Turkey were the main reasons for the decrease in labour force participation. I do not claim that they did not have any impact, but I do think that they were not the sole reason for the decline. Turkey had a crisis in 1994, but it also had another, more severe one in 2001. But the coefficient of the year 1994 dummy is positive for both urban and rural regions, meaning that in 1994, more women were working than in 2006. The year 2003 dummy's taking negative value for urban areas might be due to the crisis.

Though its impact is not very high, the distance to Istanbul variable takes positive and significant values for both urban and rural regions. Istanbul is the city that receives most of the migration in Turkey, being further from Istanbul makes the migration more costly. At the moment more than 1/7 of Turkey's population lives in Istanbul. Moreover, Istanbul is the city of culture¹⁶ and it is a very interactive and socially dynamic place. There are many foreigners living in Istanbul as well as many people have migrated there from rural areas. Being far away from Istanbul therefore also means being far away from these interactions and being more isolated from change.

In the last three columns of the tables, conservatism is interacted with age, education and husband's income. Interactions with age and education have the opposite influence of the sign that the index itself takes, while the interaction with income has the same sign. Interaction with age is not significant. Hence, higher education weakens the influence of conservatism, and higher income strengthens it.

Furthermore, when we analyse the disentangled version of the indices for urban

¹⁶Istanbul is the capital of culture in Europe in 2010.

Table 8: OLS Regression Results for Indices and Interaction Terms (Rural)

	Tradition	Decision	Male Norm	Conservatism
Index	0.0404 (0.0202)**	0.0294 (0.0142)**	0.1981 (0.0291)***	0.0357 (0.0156)**
Index*Age	-0.0002 (0.0008)	-0.0010 (0.0005)*	-0.0093 (0.0012)***	-0.0015 (0.0005)***
Index*Education	-0.0048 (0.0026)*	-0.0061 (0.0015)***	-0.0078 (0.0029)***	-0.0061 (0.0013)***
Index*Income	0.0244 (0.0124)**	0.0210 (0.0083)**	0.1121 (0.0206)***	0.0202 (0.0073)***

Note:, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.*

Figures in parentheses are robust standard errors. All other individual and household characteristics are controlled for as in table 8 but not shown here for simplicity as they have almost the same influence as in table 8.

areas, all indices take negative values, with male norm being the highest. On the other hand, tradition and male norm take positive values in rural areas, while decision does not have any significant influence.

Traditional urban regions have less female labour force participation however higher education and age weaken the negative influence. Men having more decision power does not seem to have a very high influence on women's decision whether to work or not. Likewise, having more men with more traditional perception of the status of women decreases the number of working women, but their having a higher education weakens the negative influence. Among the three indices, the highest negative impact comes from male norm. Calculating the impact of one standard deviation change of these quality variables on the dependent variable does not give enough information. For this reason, the differences between the extreme values are calculated. The difference in the impact of social norms on women working between the urban area with highest social norms in Turkey and the one with lowest social norms is 5.8 percentage points, which is equivalent to the influence of approximately 1.7 years of education. In the rural regions, on the other hand, all indices take positive values, male norm again having the highest influence.

7.3.2 IV Regression Results

Lastly, the results of the IV estimation are shown in tables 9 and 10, for urban and rural regions respectively. The results are in accordance with the OLS regression and altitude instruments the conservatism quite well. The IV estimation equations are exactly identified and the first stage regression has high explanatory power for both urban and rural regions, and the coefficient of altitude is highly significant. The

correlation between logarithm of altitude and the conservatism index is almost 25% for urban areas and more than 45% for rural areas. The correlations, especially for urban regions, are not very high and this leads to some efficiency loss using IV compared to OLS, but the correlations are not too low to cause a problem of weak instruments. Both equations pass the test of weak instruments, though the one for urban areas has a smaller F test value in the Wald test. The IV regression overestimates the coefficient of the conservatism index slightly in the urban case and by more than double in the rural case with respect to the OLS estimates. This may be due to the fact that in the conservatism index, there is also variation within the region while the altitude is the same for the whole region. Though the logarithm of altitude is not a perfect instrument, it is not weak either.

7.3.3 Comparison of the Results with Previous Literature

The results are not only in accordance with the previous literature, they also add some further information. Education is one of the most important determinants of women's decisions to work, not only because of its effect on finding a job but also because the negative impact of perceptions and conservatism decreases with education.

The existence of childcare institutions is another determinant. In this study, we observe this through the presence of a grandmother in the household. Previous studies claim the lack of childcare institutions is a main factor that causes the decrease in female labour force participation in Turkey. I agree that it is an important factor but there is an increasing trend in the number of childcare institutions in Turkey, wherefore this cannot explain the downward trend in female labour force participation by itself. Furthermore, pre-primary education was recently made obligatory as well. Even though childcare institutions and their cost play a role in women's decisions to work, this is not sufficient to explain the downward trend in female labour force participation.

This study once again shows that urbanisation is one of the reasons for the decrease in female labour force participation. There are two mechanisms behind it. Firstly, when women that were working on farms in rural areas migrate to cities they are no longer eligible to find a job as they are not educated for the jobs in the cities. Secondly, people also carry their beliefs with them. People in rural areas tend to be more traditional and to have more traditional perception of the status of women. With migration these are also transferred to urban areas. In their book, Çarkoğlu and Kalaycıoğlu (2009) claim that urbanization is one of the reasons of increasing trend in conservatism. This paper shows a new possible explanation for the link between urbanization and female labour force participation. Higher urbanization causes higher conservatism, which causes lower labour female force participation.

Another factor that the previous literature claims to be a reason for the decrease is the economic crises Turkey has faced over the recent decades. However, in this study it is shown that even if these have had some effect they cannot be the sole

[b]

Table 9: IV Estimation Results (Urban)

FemaleWorkorSearch (Urban)	OLS	1 st Stage	2 nd Stage
Altitude		0.0636 (0.0010)***	
Husbands' Conservatism	-0.0514 (0.0092)***		-0.0579 (0.0104)***
Age	0.0011 (0.0002)***	0.0054 (0.0001)***	0.0005 (0.0003)**
Education	0.0334 (0.0005)***	-0.0007 (0.0002)***	0.0333 (0.0005)***
Sons	-0.0032 (0.0015)**	-0.0035 (0.0006)***	-0.0025 (0.0017)
Daughters	-0.0033 (0.0015)**	-0.0028 (0.0006)***	-0.0026 (0.0016)
LogHusbandIncome	0.0192 (0.0029)***	-0.0089 (0.0010)***	0.0211 (0.0026)***
Grandmother	0.0381 (0.0069)***	-0.0128 (0.0025)***	0.0404 (0.0067)***
Year 1994	0.0181 (0.0047)***	0.0012 (0.0018)	0.0126 (0.0047)***
Year 2003	-0.0645 (0.0073)***	0.0098 (0.0025)***	-0.0684 (0.0066)*
Distance to Istanbul	0.0001 (0.0000)***	-0.0004 (0.0000)***	0.0002 (0.0000)***
Constant	-0.3227 (0.0262)***	1.3559 (0.0107)***	-0.5324 (0.0499)***
Region Dummies	Yes	Yes	Yes
N	57610	57610	57610
Centered R ²	0.2425	0.8064	0.2429
Partial R ² Excluded Instruments		0.0697	
F(1,57404) of Exc. Instruments		4297.44	

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.
 Figures in parentheses are robust standard errors.

[b]

Table 10: IV Estimation Results (Rural)

FemaleWorkerSearch (Rural)	OLS	1 st Stage	2 nd Stage
Altitude		0.1695 (0.0029) ^{***}	
Husbands' Conservatism	0.0357 (0.0156) ^{**}		0.0829 (0.0291) ^{***}
Age	0.0057 (0.0004) ^{***}	0.0083 (0.0002) ^{***}	0.0041 (0.0005) ^{***}
Education	0.0208 (0.0014) ^{***}	-0.0017 (0.0006) ^{***}	0.0203 (0.0013) ^{***}
Sons	0.0073 (0.0034) ^{***}	-0.0192 (0.0016) ^{***}	0.0122 (0.0036) ^{***}
Daughters	0.0120 (0.0034) ^{***}	-0.0212 (0.0015) ^{***}	0.0165 (0.0035) ^{***}
LogHusbandIncome	-0.0559 (0.0061) ^{***}	-0.0251 (0.0025) ^{***}	-0.0483 (0.0058) ^{***}
Grandmother	0.1634 (0.0135) ^{***}	0.0045 (0.0055)	0.1558 (0.0125) ^{***}
Year 1994	0.1230 (0.0119) ^{***}	-0.0174 (0.0052) ^{***}	0.0985 (0.0117) ^{***}
Year 2003	0.1295 (0.0169) ^{***}	0.0453 (0.0070) ^{***}	0.1131 (0.0160) ^{***}
Distance to Istanbul	0.0002 (0.0000) ^{***}	-0.0004 (0.0000) ^{***}	0.0004 (0.0000) ^{***}
Constant	-0.0538 (0.0561)	1.0220 (0.0297) ^{***}	-0.6391 (0.0954) ^{***}
Region Dummies	Yes	Yes	Yes
N	14939	14939	14939
Centered R ²	0.1839	0.8862	0.1905
Partial R ² Excluded Instruments		0.1853	
F(1,57404) of Exc. Instruments		3372.92	

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.
 Figures in parentheses are robust standard errors.

reason for the decrease.

8 Robustness

The first robustness check is to introduce also the standard error of the indices to the regression. I use the same methodology that I used to transfer the indices to the main data set. Using the 2006 HSS, I find the standard errors of the indices with respect to cohort, sex, region and whether they live in an urban area or not and I transfer them to the main data set, respectively. Here the aim is to see in addition to the environment whether the dispersion of beliefs within that environment plays any role in women’s working decision. One would expect this variable to have the opposite sign of the index variable. In case there exists a high dispersion in ideas of people within a region, the impact of environment will be less, as a person is more likely to find people that have closer beliefs to her.

Table 11 shows that even when the dispersion of beliefs are controlled for, the conservatism index remains significant except for the rural areas when the region-fixed effects are controlled for. In urban areas, having diverse beliefs does not play a significant role but it has the expected positive sign. Also, in rural areas the sign of standard error of husband’s conservatism is as expected. Only in the last column, where the region-fixed effects are controlled the conservatism index loses its significance. In rural areas, dispersion of beliefs plays a more important role than the conservatism itself.

As discussed in the methodology section, the indices can be formed only for the year 2006. Even when the indices are transferred to other data sets by making some assumptions, there is not any variation between the years. In order to have some time variation, I introduce two more variables using the general election results. Using the question in the Voter Tendency Survey “Where would you locate yourself on the political scale from 1 to 10, 10 being the most rightwing” and the answer they gave to the question asking the actual party they voted for, each political party is associated with a number on the scale by taking the weighted averages of the responses. Three groups are formed: Right, centre and left. The parties that are suited on the left side of the scale between numbers 1 and 4 are considered to be leftwing parties. The ones in the middle taking the values 5 and 6 are the centre ones, while the rightwing parties take values from 7 to 10. Of course, a party which has the value 7 is not as radical right as one that has the value 10, so the votes received by the different parties are multiplied by the unit distance they are from the centre. For example, the votes received by parties located at the values 3 and 8 are multiplied by 2, while the ones located at the values 1 and 10 are multiplied by 4.

All the surveys used in this paper only have information at the regional level, but the election results are at a district level. In order to take into account the fact that not all districts have the same importance in a region, each district is weighted with the number of deputies they have in parliament. The average votes for each party

[b]

Table 11: OLS Regression Results with Additional Variable (Std. Error of the Index)

	Urban		Rural	
Age	0.0013 (0.0002)***	0.0012 (0.0002)***	0.0074 (0.0004)***	0.0061 (0.0004)***
Education	0.0336 (0.0005)***	0.0334 (0.0005)***	0.0211 (0.0014)***	0.0208 (0.0014)***
Sons	-0.0042 (0.0015)***	-0.0034 (0.0015)**	0.0007 (0.0034)	0.0075 (0.0034)**
Daughters	-0.0043 (0.0015)***	-0.0035 (0.0015)**	0.0050 (0.0033)	0.0123 (0.0034)***
LogHusband- Income	0.0163 (0.0029)***	0.0188 (0.0029)***	-0.0533 (0.0061)***	-0.0553 (0.0061)***
Grandmother	0.0370 (0.0070)***	0.0380 (0.0069)***	0.1735 (0.0138)***	0.1625 (0.0135)***
Year 1994	0.0162 (0.0048)***	0.0203 (0.0048)***	0.1098 (0.0118)***	0.1229 (0.0119)***
Year 2003	-0.0596 (0.0072)***	-0.0648 (0.0073)***	0.1163 (0.0171)***	0.1259 (0.0169)***
Husbands' Conservatism	-0.0741 (0.0061)***	-0.0429 (0.0103)***	0.1115 (0.0092)***	0.0182 (0.0163)
Std. Err. of Husband's Con.	0.0591 (0.0420)	0.0896 (0.0466)	-0.5779 (0.1311)***	-0.5340 (0.1461)***
Distance to Istanbul	0.0000 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0002 (0.0000)***
Constant	-0.2011 (0.0188)***	-0.3209 (0.0262)***	0.2459 (0.0437)***	0.0051 (0.0580)
Region Dummies	No	Yes	No	Yes
N	57610	57610	14939	14939
R ²	0.2385	0.2425	0.1587	0.1847

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.
 Figures in parentheses are robust standard errors.

in each region are calculated accordingly. Subsequently, the parties are grouped as right, centre and left using the method described above. In the end, we have the percentage of rightwing, centre and leftwing parties for each region. Unfortunately, it is not possible to distinguish even further, so these variables remain as regional variables.¹⁷

Table 12 and table 13 show the results for urban and rural regions, respectively. In the last columns of the tables, I also introduce the standard error of husband's conservatism. Even when the political tendency variables are introduced the impact of the conservatism remains highly significant. But in urban areas, being in a region that has a high intensity of radical rightwing party supporters decreases female labour force participation more than being in a conservative region. As expected, radical leftwing does not have any influence on women working in urban areas. In rural areas, on the other hand, it is the opposite. Being in a radical leftwing region has a higher influence on female labour force participation than being in a conservative region in absolute terms. Different from urban regions, political tendency influences women working in the opposite direction of the conservatism index in rural regions. Being in a radical leftwing rural area decreases female labour force participation, which is not a big surprise. Left-oriented people would probably be against the fact that women do all the work in rural areas.

Lastly, the standard error of husband's conservatism is introduced and the conservatism index still remains significant for both urban and rural areas, though it loses some of the level of its significance for rural areas. In both regions, the conservatism index and standard error of conservatism index have opposite signs. In urban areas, radical right remains significant and positive and in rural areas radical left remains significant and negative also after controlling for the dispersion of beliefs.

9 Conclusion

This paper analysed the determinants of mothers' decisions to work and the impact of conservatism on this issue. Different data sets are used in order to determine the main factors that influence whether women work. Each data set has some pros and cons and they are used in such a way as to complete each other. To my knowledge, the 2006 Household Structure Survey, which is a unique data set about perceptions in Turkey, is used for the first time in an academic paper. Using this data set and polychronic principle component analysis, three indices and one index that combines all three are formed and these indices are later transformed into other data sets. The tradition index measures to which extent people sustain their traditional values and follow them. Men's higher decision power is measured by the decision index, which takes higher values in families where men make the final decision about family

¹⁷When forming the variables I am using 12 regions (including some sub-regions) as I used for the indices. In the regression I control for 7 regions (no sub-region, only main regions).

[b]

Table 12: OLS Estimation Results for Urban Areas with Additional Variables

FemaleWorkorSearch (Urban)	I	II	III
Husbands' Conservatism	-0.0728 (0.0061)***	-0.0438 (0.0093)***	-0.0306 (0.0105)***
Std. Err. of Husband's Conservatism			0.1244 (0.0477)***
Radical Right	-0.1077 (0.0134)***	-0.0515 (0.0180)***	-0.0541 (0.0181)***
Radical Left	-0.0057 (0.0177)	-0.0132 (0.0198)	-0.0222 (0.0201)
Age	0.0012 (0.0001)***	0.0011 (0.0002)***	0.0012 (0.0002)***
Education	0.0334 (0.0005)***	0.0333 (0.0005)***	0.0333 (0.0005)***
Sons	-0.0036 (0.0015)**	-0.0030 (0.0015)**	-0.0033 (0.0015)**
Daughters	-0.0039 (0.0015)***	-0.0032 (0.0015)**	-0.0035 (0.0015)**
LogHusbandIncome	0.0182 (0.0029)***	0.0198 (0.0029)***	0.0195 (0.0029)***
Grandmother	0.0380 (0.0070)***	0.0382 (0.0069)***	0.0381 (0.0069)***
Year 1994	0.0142 (0.0053)***	0.0186 (0.0054)***	0.0226 (0.0056)***
Year 2003	-0.0623 (0.0076)***	-0.0644 (0.0078)***	-0.0639 (0.0078)***
Distance from Istanbul	0.0000 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***
Constant	-0.1604 (0.0192)***	-0.2967 (0.0271)***	-0.2916 (0.0271)***
Region Dummies	No	Yes	Yes
N	57610	57610	57610
R ²	0.2396	0.2427	0.2428

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively.
 Figures in parentheses are robust standard errors.

[b]

Table 13: OLS Estimation Results for Rural Areas with Additional Variables

FemaleWorkorSearch (Rural)	I	II	III
Husbands' Conservatism	0.1223 (0.0089)***	0.0439 (0.0163)***	0.0309 (0.0173)*
Std. Err. of Husband's Conservatism			-0.3625 (0.1509)**
Radical Right	-0.0525 (0.0350)	-0.0303 (0.0507)	-0.0289 (0.0507)
Radical Left	-0.3072 (0.0442)	-0.1946 (0.0579)***	-0.1706 (0.0588)***
Age	0.0068 (0.0004)***	0.0057 (0.0004)***	0.0060 (0.0004)***
Education	0.0208 (0.0014)***	0.0207 (0.0014)***	0.0207 (0.0014)***
Sons	0.0022 (0.0034)	0.0077 (0.0034)**	0.0078 (0.0034)**
Daughters	0.0067 (0.0033)**	0.0124 (0.0034)***	0.0126 (0.0034)***
LogHusbandIncome	-0.0502 (0.0062)***	-0.0536 (0.0061)***	-0.0534 (0.0061)***
Grandmother	0.1684 (0.0138)***	0.1604 (0.0135)***	0.1602 (0.0135)***
Year 1994	0.1417 (0.0130)***	0.1419 (0.0138)***	0.0226 (0.0056)***
Year 2003	0.1549 (0.0180)***	0.1519 (0.0191)***	-0.0639 (0.0078)***
Distance to Istanbul	0.0001 (0.0000)***	0.0002 (0.0000)***	0.0002 (0.0000)***
Constant	0.2154 (0.0422)***	-0.0084 (0.0569)	0.0268 (0.0583)
Region Dummies	No	Yes	Yes
N	14939	14939	14939
R ²	0.1622	0.1856	0.1859

Note: *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.

issues. The last index is called the male norm index, which is calculated by taking into account the answers to some questions about perceptions in the data set. The conservatism index is formed by using polychronic principle component analysis, this time taking into account all the variables used to form the previous indices.

After all the indices have been transformed into a pooled data set which consists of three different data sets from different years, an instrumental variable approach is used to test the validity of the indices. Altitude is chosen as an instrument for conservatism. By using this instrument, endogeneity problems are prevented from still having significant results.

This chapter shows that social beliefs and behaviours also play an important role in women's decision to work. Women are not alone when they are making their decisions and the environments they live in affect their behaviour. Women that live in a conservative and traditional environment where men have a higher decision power and stronger social norms tend to stay at home, as expected by society, and become housewives. Moreover, the conservative environment that a woman lives in has a greater influence on her decision to work or not rather than how conservative her husband is. The difference in the impact of conservatism on female labour force participation between the most conservative urban area in Turkey and the least conservative one is 10 percentage points, which is equivalent to the influence of almost three years of education. On the other hand, in rural areas this difference is 9 percentage points.

Education plays an important role in women's decision to work through two channels. The first one is an already known fact that with higher education it is easier to find a job. The second one, shown in this chapter, is that a high education level weakens the influence of conservatism.

Urbanization is one of the most important reasons for the decline in female labour force participation, not only because of the lack of job opportunities for women in cities but also because conservative men's preferences differ between urban and rural areas. In their book, Çarkoğlu and Kalaycıoğlu (2009) claim that urbanization is one of the reasons of increasing trend in conservatism. This chapter shows another link: The link between conservatism and female labour force participation. Higher urbanization causes higher conservatism, which leads to lower female labour force participation.

If Turkey prefers to stop this decreasing trend and to encourage women to increase female labour force participation, it first has to give more importance to education, not only for children but for adults as well. Education does not only mean literacy here; the education system in Turkey should be reformed in such a way that will recognise women also as people that have equal powers and rights in the family.

Last but not the least, this paper shows that conservatism and social norms play a very important role in females' decision to work. The only way to improve this, again, is education. A nationwide education campaign for all inhabitants of the country might provide a good background to form a society purged of any backward ideas about women. Though I am aware that it is a kind of utopia, it cannot hurt to try.

10 Appendix

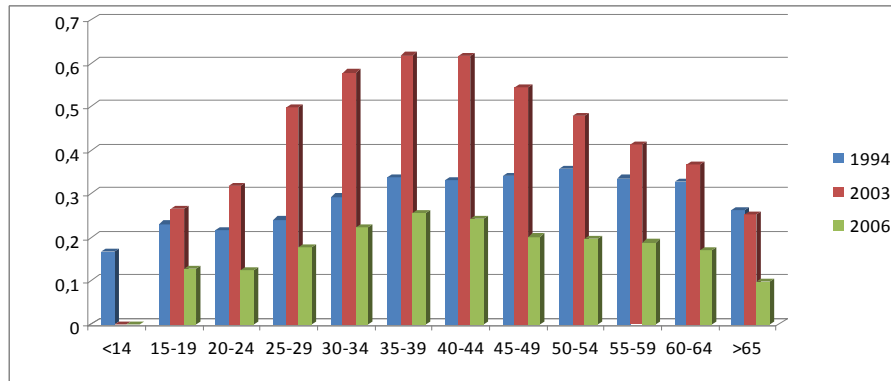


Figure B.1: Percentage of working mothers by cohort

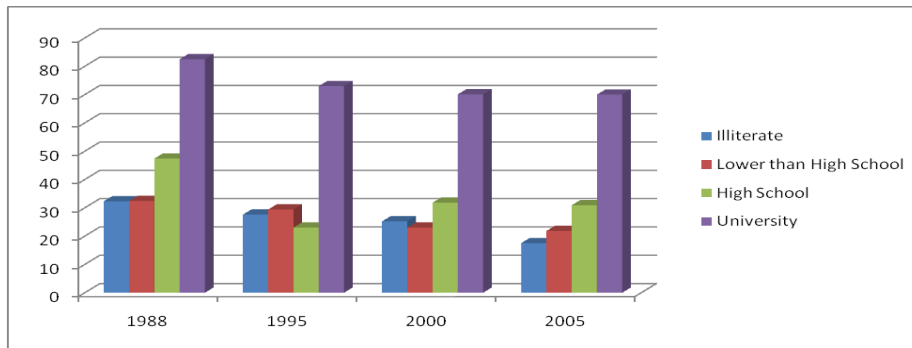


Figure B.2: LFP by year and education level



Figure B.3: Map of Turkey showing the altitude of the regions

[b]

Table 14: Comparison of OLS and Probit Results

	Urban		Rural	
	OLS	Probit	OLS	Probit
Age	0.0011 (0.0002)***	0.0006 (0.0002)***	0.0057 (0.0004)***	0.0060 (0.0004)***
Education	0.0334 (0.0005)***	0.0326 (0.0005)***	0.0208 (0.0014)***	0.0215 (0.0014)***
Sons	-0.0032 (0.0015)**	-0.0034 (0.0020)**	0.0073 (0.0034)***	0.0074 (0.0038)*
Daughters	-0.0033 (0.0015)**	-0.0037 (0.0019)**	0.0120 (0.0034)***	0.0129 (0.0037)***
LogHusband- Income	0.0192 (0.0029)***	0.0188 (0.0029)***	-0.0559 (0.0061)***	-0.0559 (0.0061)***
Grandmother	0.0381 (0.0069)***	0.0374 (0.0066)***	0.1634 (0.0135)***	0.01596 (0.0126)***
Year 1994	0.0181 (0.0047)***	0.0212 (0.0051)***	0.1230 (0.0119)***	0.1363 (0.0133)***
Year 2003	-0.0645 (0.0073)***	-0.0591 (0.0064)***	0.1295 (0.0169)***	0.1435 (0.0195)***
Husbands' Conservatism	-0.0514 (0.0092)***	-0.0754 (0.0121)***	0.0357 (0.0156)**	0.0323 (0.0166)*
Distance to Istanbul	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0002 (0.0000)***	0.0002 (0.0000)***
Constant	-0.3227 (0.0262)***		-0.0538 (0.0561)	
Region Dummies	Yes	Yes	Yes	Yes
N	57610	57610	14939	14939
R ²	0.2425		0.1839	
Pseudo R ²		0.2332		0.1704

*Note: For empirical specification see the methodology section *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.*

[b]

Table 15: Comparison of OLS and Probit Results

	Urban		Rural	
	OLS	Probit	OLS	Probit
Education*Conservatism	0.0025 (0.0010)**	0.0103 (0.0011)***	-0.0061 (0.0013)***	-0.0066 (0.0018)***
Age*Conservatism	0.0003 (0.0003)	-0.0002 (0.0006)	-0.0015 (0.0005)***	-0.0012 (0.0006)**
Income*Conservatism	-0.0174 (0.0045)***	-0.0124 (0.0070)*	0.0202 (0.0073)***	0.0307 (0.0089)***

*Note: For empirical specification see the methodology section. *, **, *** indicate statistical significance at the 10, 5 and 1%, respectively. Figures in parentheses are robust standard errors.*

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