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# Booze and Women: Gendering Labor Market Outcomes of Secular Consumption Patterns in a Muslim Society\*

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## Abstract

Using information in the household consumption data as a signal of secularity, this study explores the effect of religion on female labor force participation (FLFP) in a Muslim-dominated country, Turkey. A household is categorized as secular if its members report that they consume goods that contradict conservative Islamic practices. This information is then used in FLFP estimations. The results show that living in a secular household has a positive and highly significant effect on the probability of labor market participation of married women in urban areas. Secularity is also associated with a reduced probability of unpaid work, which is the most widespread form of female employment in rural areas. For single women, most of whom are in the school-age, the estimations also provide weaker evidence regarding the positive effect of secularity on the probability of educational participation and paid work.

Keywords: Consumption, female labor force participation, religion.

JEL-codes: J16, Z12

## 1 Introduction

This paper examines the effect of religion on female labor force participation (FLFP). Various studies investigate the factors determining FLFP in countries with diverse religious compositions and development levels<sup>1</sup>; yet, the role of religious devoutness or of differences across faiths remains underexplored. One possible underlying reason is the lack of micro-level data which contains joint information on religious tendencies and other variables that affect participation. Data scarcity on religion is severe especially for those societies in which asking individuals about faith-based questions is a challenge. This study uses the information provided in the

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<sup>1</sup>Joumette (2003) and Pettit and Hooke (2005) provide multi-country analyses of FLFP in western/developed countries. For MENA region, see Moghadam (1998), and Spierings *et al.* (2010).

consumption data of a Muslim-dominated country, Turkey, to observe if a household consumes those goods that are considered as *haram* (prohibited) or *makruh* (disliked) according to the orthodox (Sunni) interpretations of Islam. Using information on consumption as a sign of secularity, this study asks if keeping a distance from conservative Sunni Islam practices affects the labor market participation of women.

It is commonly perceived that Islam prohibits consumption of alcoholic beverages and pork meat. Depending on the sect of Islam, further restrictions may apply and some common rules may be overlooked. For example, conservative Muslim families usually do not consume pet products as they abstain from feeding pets in their homes. Similarly, devout followers of the *Hanefi* sect, which is the most common branch of Sunni Islam in Turkey, consider the consumption of any seafood except for fish as *makruh*<sup>2</sup>. On the other hand, *Alevis* do not necessarily abstain from these products, as they have a more liberal approach to religious practices<sup>3</sup>. Thus, contradicting the widespread impression of Islam as a religion that imposes uniform rules for daily life, consumption patterns may vary substantially between religious and secular individuals as well as across different congregations.

Despite efforts in recent years at both the governmental and the municipal levels to limit production and sales of alcoholic beverages, these products have widely and legally been available in Turkey, especially in urban areas. Similarly, shellfish consumption, with its all varieties, is also common, mostly along the Aegean and Mediterranean coasts, in the greater Istanbul region, and even in the landlocked city of Ankara. Moreover, consumption of pet products increases as pet feeding becomes more common in urban areas. This diversity in consumption patterns reflects the secular lifestyle that a non-negligible fraction of the population pursues in Turkey.

The innovative empirical strategy proposed in this paper stems from the idea that the consumption data on “sinful” goods in the household surveys provide us with valuable information about a household’s secularity in a Muslim society. The use of consumption data serves as a proxy to micro-level information on religion, provided that purchases of religious or prohibited goods/services are recorded in the surveys. Faith-based consumption may include money spent on religious books/objects, livestock to sacrifice (as recorded in the Moroccan Household and Youth Survey of 2009-2010), or alcoholic drinks in Muslim-dominated societies

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<sup>2</sup>For a socio-anthropological account of seafood consumption and its relation with religion in Turkey, see Knudsen (2006).

<sup>3</sup>Statistics are not reliable as to the number of followers of each religious sect in Turkey. According to estimates, Alevis compose 10 to 25 percent of the total population of Turkey (See Erman & Göker, 2006: 99; and Shankland, 2003: 20).

(as recorded in Turkish Household surveys or Iraqi Household Socio-Economic Survey of 2007). While the current paper limits its scope to the effect of secularity on FLFP, its methodology can extend to any other micro-level research in which information on religiosity/secularity has an explanatory value.

Matching information on a household's secularity with individual characteristics has a unique advantage in those cases where men in the household influence women's participatory decisions. A fraction of the 15 to 25 percent of women who are out of the labor force in Turkey declare that their male relatives prevent them from working (Gündüz-Hoşgör and Smits, 2008; İlkaracan, 2012). It is also likely that a sizeable number of women who don't work would not even bother to ask "permission" of the males in the household or to think of working due to the traditional roles within their conservative environments. In such cases, the method proposed in this paper has a potential to perform better than the analyses based on data obtained from surveys conducted solely on individual women.

In another contribution, this paper deconstructs the effect of secularity on women's participatory decisions in the paid/unpaid work dichotomy<sup>4</sup>. The prevalence of unpaid female employment in agriculture is a documented dimension of the Turkish labor market. As a result, any factor that affects FLFP may have a different sign and a magnitude in urban and rural areas. Moreover, changes in FLFP within rural locations demand a cautious interpretation on normative grounds, since in many cases women's unpaid economic activities support the paid leisure of men, which is rarely the case in urban areas. The analyses carried out in this study show that household secularity -which is measured by declared consumption of *haram* and *makruh*- has a highly significant positive effect on the married women's labor-force participation in urban areas, where the majority of population is located and paid labor is employed. In contrast, the effect of secularity on FLFP in rural areas is negative due to lower incidences of unpaid female work within secular households in agriculture.

In a final contribution, this study explores the relationship between household secularity and educational participation for the single, younger group of women who are in the school age. The previous studies on the determinants of women's labor market participation in Turkey highlights the importance of education, especially higher education, more than any other personal characteristic (see Section 2.3). Results from this study provide evidence supporting the positive effect of secular consumption on educational participation. Yet, the robustness

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<sup>4</sup>A recent work by Spierings (2014) makes a similar contribution by analyzing the effect of Islam on alternative forms of women's employment. However, the author groups housewives and women involved in unpaid farm work in a single category, which is not the case in this study.

checks indicate that a part of this effect is attributable to the luxurious nature of secular goods in Turkey.

## **2 Religious Denominations, Devoutness, and FLFP: Previous Findings**

Previous studies considering the effect of religion on FLFP investigate the subject in two -not necessarily mutually exclusive- ways. Firstly, alternative denominations (or sects) may define different economic roles for women in social life. As the below summary shows, the situation of women in Islam stands as the most controversial issue in this stream of discussions. Alternatively, one may investigate the role of *religiosity* in the determination of FLFP, regardless of denominations. Studies using econometric methodology which are cited below tend to favor the idea that religiosity in general has a negative effect on FLFP. However, this section also cites a number of anthropological studies with findings that contradict the econometric evidence. Such research asserts involvement in religious networks and practices may function as prerequisites of women's economic participation at rural or community levels. Thus, a positive correlation between religious activities and labor market participation of women also stands as a probable social outcome. In connection with these discussions, the next section of the current study explores the aggregate effect of secularity on FLFP in rural Turkey.

In this section, I summarize and place into two categories the findings of previous studies that investigated the effect of religious denominations and religiosity on FLFP. The first group of studies investigates the causal link between religion and FLFP using cross-country data. A usual variable of interest in this group is an indicator of FLFP rate (either in absolute terms or as a ratio to male participation rate), while the ratio of each religion's followers -or a categorical variable showing each country's religious majority- are among explanatory variables. A second group analyzes individual-level data from certain countries or religious groups. This latter approach is advantageous, as it relies on higher number of observations, more detailed information on individual characteristics which affect FLFP, and indicators of religious preferences at the individual level.

### **2.1 Studies Using Aggregated Data**

In multi-country studies, the role of Islam in women's economic and/or political participation stands as the most contentious topic. Much of the controversy arises from the difficulties in

separating the effects of religion from other covariates, such as level of development, dependency in trade, or oil revenues in the determination of women's participation. The level of development affects FLFP mainly through shaping the production structure of an economy. Economic growth, in general, acts as a demand factor for labor, which might also increase female employment. However, certain industries which are associated with economic growth such as iron and steel works, construction, mining, etc. are highly male-dominated. Thus, depending on the sectoral distribution of industries, development may exert either a positive or a U-shaped affect on FLFP. Furthermore, the growth path of developing countries may differ from the industrialized ones, due to the pre-mature growth of the services sector in these countries. All these linkages between development level and FLFP complicates the identification of the effect of religion on FLFP. Early studies which address these issues include Marshall (1985), Pampel and Tanaka (1986), and Clark *et al.* (1991). Among them, Marshall (1985) and Clark *et al.* (1991) reach similar results, asserting that once cultural factors (measured by regional dummy variables) are included in the estimations, the magnitude and the significance of the effect of economic dependency diminishes. Both studies conclude that the low FLFP rates observed in Muslim-majority nations are not fully explained by the countries' modes of incorporation into the world system or their development levels. Pampel and Tanaka (1986) also stress that regional effects have explanatory power, but their effects do not reduce the role of economic development in the determination of female participation. They also highlight the U-shaped impact of development on participation rate.

Among the most influential authors on the issue of the relationship among development, Islam, and FLFP are Inglehart and Norris (2003). The authors connect Islamic culture and gender equality. However, in their analysis, culture functions as an endogenous variable through which the effect of an economy's structure is transmitted into gendered outcomes. Thus, they assert that the patriarchal culture prevailing in Muslim societies will change as these countries move to a post-industrial stage of development.

In contrast, Ross (2008) challenges this modernization approach of Inglehart and Norris, arguing that natural resources, more precisely oil, and not religion causes female participation to stand at its current low levels in the Middle East. Discovery and export of oil causes a country's real exchange rate to valuate (Dutch disease) which, in turn, causes a shift of the domestic production towards the non-tradables sector (e.g. construction), because either tradables become cheaper to import or the non-tradables have a higher elasticity of demand with respect to income. Traditionally, the female labor-force is concentrated in the tradables

sector, for which the demand decreases following the valuation of the exchange rate. Thus, natural-resource exports are not gender-neutral in terms of their effect on labor demand. Ross supports his arguments by running panel and cross-national regressions for 161 countries in which indicators of female economic and political participation are used as dependent variables. Among his explanatory variables are dummies for Middle Eastern and North African (MENA) countries and post-communist countries, the share of Muslims in each country, and a variable measuring per capita oil exports revenue. The oil coefficient is negative and highly significant in all estimations, indicating that oil exports have a “curse” on women’s participation in oil-exporting countries. The coefficient of Islam, on the other hand, is not statistically significant. Based on these findings, the author concludes that religion is not an explanatory factor of women’s low participation rates in Muslim-dominated countries.

Ross’ decision to include in the regressions both a variable for the fraction of Muslims in each country and a dummy for MENA countries might have driven the results for the effect of religion on female participation. By using a dummy for MENA countries, the author implicitly presumes that there is something peculiar to these countries that drives the impact of oil revenues on women’s participation, which has nothing to do with the religion. However, drawing a conclusion on the effect of Islam by taking 17 MENA countries as a “special case” might require some justification, a concern which is not addressed in the article.

A number of authors replicate Ross’ methodology to test his hypothesis, which holds the oil as the culprit of gender inequality in MENA countries. Among them, Haghghat-Sordellini (2009) confirms Ross’ contention regarding the negative effect of oil exports on the participation rates. However, even after accounting for the effect of oil revenues, the effect of the share of Muslim population in each country remains negatively significant. This latter conclusion does not replicate Ross’ findings. Haghghat-Sordellini (2009) points to patriarchy (measured by the religion’s role in state formation and the political role of women) as the main contributor for low levels of female participation in the Middle Eastern countries.

Spierings *et al.* (2009) produced another study which examines the relationships among Islam, development, and oil. The authors emphasize the drastic variations of FLFP across Muslim-dominated countries and explore the underlying reasons for them. Unlike the above-mentioned studies which suggest a negative (or non-existing) relation between oil exports and participation, the findings of Spierings *et al.* assert that the effect of oil exports on FLFP is actually positive, because of its impact on economic development. While addressing the positive effects of democracy and economic development on female participation, their findings

also indicate that participation rates decrease as states diverge from secularism.

Using country-level data, Bayanpourtehrani and Sylwester (2012) regress various female labor force participation indicators on the shares of each religion's followers (mainly Muslims, Hindus, Catholics, Protestants, and non-believers) in each country's population and other control variables. When the Muslim share of a population is used as the only explanatory variable, the authors conclude that Islam has a strong negative effect on FLFP. As a second step, the authors include regional dummies in the regressions following the above-mentioned methodology of Ross (2008). After controlling for regions, the coefficient of Islam becomes smaller and loses its significance. To further evaluate this finding, Bayanpourtehrani and Sylwester (2012) run the same regressions by excluding MENA countries from the sample. The results indicate a difference between MENA and other countries with regard to the effect of Islam on female participation. The coefficient of Islam remains significant for the MENA region, but becomes insignificant for the rest of the sample.

In summary, the previous literature reveals little agreement concerning the effect of religion on FLFP among studies that use aggregated data. The only observation agreed upon by all country-level studies concerns the lower levels of FLFP in the Muslim societies - particularly in the MENA region. However, the explanations with respect to the underlying reasons of lower FLFP levels strongly contradict with each other, especially regarding the role of religion as a contributing factor.

## 2.2 Studies Using Individual-Level Data

In addition to exploring the differences across religious denominations, micro-level studies investigate the effect of *religiosity* on FLFP. An early example of this latter group of studies is offered by Morgan and Scanzoni (1987). Based on the results of a questionnaire that they administer to 318 senior white female college students in the USA, the authors conclude that religious devotion significantly lowers students' future plans for paid work. In another example, Read (2004) explores the importance of both religious affiliation and devotion in workforce participation of Arab-American women in the United States. She concludes that while religiosity has a negative impact on participation in general, there is no significant difference between Christian and Muslim Arab women in their labor force participation. In their study of Jewish minority in the USA, Hartman & Hartman (1996) reach similar results regarding the negative effect of religiosity on women's economic activity. In the same vein, Spierings (2014) develops similar arguments regarding the effects of both religion (Islam) and

religiosity on women's employment. Moreover, Spierings challenges the aforementioned modernization approach of Inglehart by comparing women's employment decisions across Muslim populations and other affiliations in Nigeria and Indonesia. He asserts that traditionalism within all religious groups serves as a better explanatory factor than religious denomination when determining women's employment in these multi-religious countries.

Differences across Christian congregations with regard to their effects are also investigated by a number of studies. Among them, Murphy's study (1995) conducts separate analyses for single women and married couples in Ireland. Regarding single women, he finds that being a Catholic reduces the probability of labor-force participation 2.7 percentage points, compared to the Protestants and others. As a second step, the author estimates the effect of religion on the labor market status of both men and women in a multinomial logistic setting. He concludes that Catholicism lowers the probability of employment for both women and men, while the effect for the latter is much stronger. Similarly, Lehrer (1995) explores the effects of religious congregations on women's employment in the United States. Her study covers ecumenical Protestant, exclusivist Protestant, and Catholic families, as well as families with no religious affiliation. Other religious groups, such as Jews, Mormons, and Muslims are excluded. She explores not only the effect of women's religious preferences, but also the effect of inter-faith marriages on their employment status. The findings suggest that the effect of religious choice on employment varies depending on the existence of children under 6 years of age within the household. Among the cohort of families with younger children, Catholic women in homogamous marriages and Protestant women in inter-faith marriages have higher probabilities of employment compared to the Protestant women who are married to husbands of the same faith.

Inspired by Lehrer's work, Heineck (2004) investigates the effects of both religious affiliation and intensity on the probability of employment for the women in the German labor market. The results indicate substantial variations across religious affiliations and inter-faith marriages with regard to their effects on female employment. Regarding women in Muslim marriages, Heineck finds Islamic affiliation to have a strong negative effect on employment probability compared to both Catholicism and Protestantism. The author also suggests that, regardless of spousal faith, religious devoutness for Muslim women has a statistically significant negative effect on the odds of being employed compared to women of other affiliations.

Two other authors who study cross-religious differences and its effect on the status of the women's labor-market status are Amin and Alam (2008). Using survey data from Malaysia

for the years 1988 and 1989, Amin and Alam’s research analyzes the effects of religion on women’s employment and their choice between part-time and full-time work. Their results indicate significantly lower probabilities of work for married Muslim women compared to Buddhists and Hindus in rural areas and for single Muslim women compared to Buddhists in all areas. Additionally, in rural areas, married Hindu women have a higher likelihood of working full-time than the Muslim women.

In brief, micro-data research share common ground with country-level studies which predominantly conclude that Islamic affiliation has a decreasing effect on women’s employment. However, certain studies which distinguish religious denominations and religiosity such as Read (2004) and Spierings (2014) oppose this argument as they assert that the negative effect of religiosity on women’s employment remains valid regardless of denominations.

Contrary to the findings of micro-econometric studies regarding the negative effect of religiosity on women’s work, a number of anthropological studies conducted in Turkey suggest a positive relationship between pious practices and women’s economic activity in rural or conservative areas. Hart (2007) and Isik (2013) assert that, in smaller villages or religious urban communities, piety functions as a legitimizing tool for women’s economic engagement, which is normally not welcomed because of its association with longer hours spent outside home. Furthermore, according to the authors, piety emerges as a soothing apparatus against local inequalities that arise with the development of rural small-scale industries, such as carpet-weaving or olive oil production, in which female labor holds a substantial share. Similarly, Grünenfelder (2013), who benefit from narratives of educated Pakistani women working in rural development sector, suggest that these women feel social pressures to represent themselves as decent Muslims in order to signal that they are not morally inferior people. In all these cases, demonstrated religious acts function as legitimizing tools for women’s economic participation in rural areas. Depending on the prevalence of such cases, the aggregate effect of religiosity on women’s workforce participation may become obscure or even positive in agrarian settings.

### **2.3 FLFP in Turkey**

In 2009 and 2010, the World Bank and State Planning Organization of Turkey led a series of publications analyzing the long term trends and determinants of FLFP in Turkey. World Bank (2009) provides an extensive summary on both the findings of the background papers that contributed the project (i.e. Dayıoğlu and Kırdar, 2010; Uraz et al., 2010; and Taymaz, 2010)

and the other previous studies on the subject. All of these studies highlight two stylized facts about the Turkish case, namely, surprisingly low level of FLFP and its decreasing trend in long term. According to the International Labour Organization (ILO) statistics, FLFP in 2010 was 28%, which places Turkey at the lowest sixteenth among 188 countries in the dataset and lies well below the averages of EU (50%) and OECD (51%). Moreover, the level of FLFP in 2010 was already driven up by two independent external dynamics. Firstly, there was an “added-worker effect” as a result of the great recession. And secondly, Turkish government initiated a subsidy program in 2008 which aimed at fostering women’s and youngsters’ employment (see. Dayıođlu and Kırdar, 2010, p.11).

The decline in the FLFP rate over the past decades remains one of the most important concerns of the gender literature in Turkey. FLFP was as high as 35% in 1990. The above-mentioned studies highlight two driving factors behind the significant fall in women’s economic participation. Firstly, depending on the year, participation rates in rural areas has been 10 to 20 percentage points higher than the urban places. Massive migration from rural areas to the cities during this period caused the women to fall out of the labor force and resulted in a stagnation of FLFP rate in urban areas. The decline in the job-creating capacity of agriculture, where a great percentage of women in rural areas are employed, remains a second source behind the fall in the FLFP rate. Tansel (2002) as well as the above mentioned studies assert that women’s economic participation in Turkey falls as a result of the U-shaped relationship between industrialization/urbanization and FLFP.

A growing number of studies in recent years explores the role of patriarchy and conservatism in Turkey to explain the low and falling rates of female participation. Gündüz-Hoşgör and Smits (2008) conclude that women with traditional gender attitudes have lower probabilities of employment in formal jobs. In the same vein, Uraz *et al.* (2010) find that women whose marriages are arranged by their families have significantly lower participation rates in urban locations, but higher in the rural areas. Another study which considers cultural values in the analysis is provided by İlkkaracan (2012). The author considers both demand and supply side factors that affect women’s participation in the labor market. Concerning the supply side factors, she draws her findings from a survey conducted in a working-class region of Istanbul and asserts that conservative gender roles have a significant effect on the low levels of participation rates of urban women. Similarly, using data from the 2006 Household Structure Survey conducted by Turkish Statistical Institute (TURKSTAT), which contains information on conservative values and religiosity, Göksel (2013) shows that a wife’s share of

income within a family is negatively correlated with a household's patriarchal attitudes and religious devoutness.

Throughout these studies, the rural-urban dichotomy is a common issue when determining FLFP. Explanatory variables that affect participation in urban areas might lose their significance or have reversed effects in rural areas. The main underlying reason is the fact that the majority of women living in rural Turkey engage in unpaid labor (Dayıoğlu and Kırdar, 2010). Commonly, women in rural Turkey work in the fields while their husbands gather in their spare time and meet in the coffeehouses of the village<sup>5</sup>. Despite the women's efforts, their husbands remain the recipient of crop revenues. For this reason, the World Bank (2009:16) considers the falling rate of FLFP in rural areas to "not necessarily" be a "bad thing". The analysis carried through the following sections both reinforces the results reached in the previous literature on this rural/urban dichotomy and moves beyond it by investigating the effect of secularity on paid employment in both areas.

### 3 Data, Variables and Method

The data used in this study comes from the 2003 Household Survey, which was conducted by TURKSTAT. The survey consists of three sets of questionnaires, which include information on household consumption, household characteristics and wealth, as well as data on individual characteristics. This study benefits from the information from all three datasets. I choose to use the 2003 survey, as it is the only one -among all household surveys- which provides data at the NUTS1 and NUTS2 regional levels<sup>6</sup>. Controlling for the regional effects is of importance, as FLFP rates and the share of households with secular consumption patterns exhibit strong and similar regional patterns, as seen in Figure 1. Including regional effects in the analysis allows us to separate the effects of secular consumption from other driving factors behind FLFP, such as the distribution of industries and services across regions or other ethno-cultural influences that differs from one region to another<sup>7</sup>. Moreover, TURKSTAT set the

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<sup>5</sup>The following is a quote from a 24-year old married female villager from a very eastern province of Iğdır, who was interviewed in 1984 by Morvaridi (1992:579): "[...]men did not hoe because they knew it was hard work and therefore they preferred to let their women do it, while they played cards".

<sup>6</sup>NUTS (Nomenclature of territorial units for statistics) is the Eurostat's method of dividing up the EU's "economic" territories. For Turkey, NUTS1 and NUTS2 correspond to 12 regions and 26 subregions, respectively. For more information on NUTS classification see <[http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts\\_nomenclature/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction)>. Visited: 6 May 2014.

<sup>7</sup>See Gündüz-Hoşgör and Smits (2008) about the effect of ethnicity on FLFP and Tansel (2002) on the persistence of regional effects in Turkey.

sampling size for the 2003 survey at 25,920 households, which is exceptionally high compared to the surveys of other years.

### 3.1 Variables

The dependent variable used in study, FLFP, is a categorical one, taking the value one if the female in question is in the labor force at the time when the survey was conducted or zero otherwise. Being in the labor force means working (even for one hour) *paid* (for a pecuniary or a non-pecuniary income) or *unpaid* in the month of the survey or *searching for such a job*. In other words, labor force participants considered in this study include three groups of people, namely, paid workers, unpaid workers (who mostly work in family enterprises in agriculture) and the unemployed. Unpaid work does not cover domestic duties.

I define a household as “secular” if its members declare that they consume *any* alcoholic beverages, shellfish, or pet products<sup>8</sup>. I do not take into consideration the total amount of money spent on these goods; so even a single bottle of beer or a small amount of shrimps bought in the survey period signifies secularity. This definition has both its advantages and limitations. One limitation arises from the underreported amount of alcohol purchases. Total sales of alcoholic drinks in Turkey far exceed the consumption amount declared in the household surveys<sup>9</sup>. One probable reason behind this disparity is the social desirability bias in the answers. It is common in Turkey that people hesitate to pronounce publicly their consumption of alcohol. Especially in smaller locations, grocery stores that sell alcohol usually wrap and hence disguise the bottle. A second disparity arises as a result of the alcohol consumed in bars or restaurants, which are registered in different categories (such as restaurant services) in the survey. In any case, the inferences that I will draw in the next section using this consumption data will be downward biased, as part of the population which is not categorized as “secular” also includes households which consume alcohol but do not declare so in the survey. Fortunately, in the section on household characteristics, the survey contains another question that allows us to cross-check alcohol consumption. Specifically, the respondents are asked if there is any person within the household that has a “drinking habit”. Some households positively

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<sup>8</sup>In the 2003 questionnaire no household declares the consumption of pork meat. Pork meat is only available in certain supermarkets of the largest Turkish cities.

<sup>9</sup>The total estimated value of declared beer consumption in the survey is 50,400,000 liras which corresponds to 20,160,000 liters at the 2003 price of 1,25 lira per half-liter bottle. According to the data of the Tobacco and Alcohol Market Regulatory Authority of 2003, the total amount of beer sold in 2003 was actually 480 million liters, which is as 24 times as high the reported amount in the household survey. Data source: <[http://www.tapdk.gov.tr/alkol/istatistik/alkollu\\_icki\\_piyasa\\_arz\\_2003\\_2010.xls](http://www.tapdk.gov.tr/alkol/istatistik/alkollu_icki_piyasa_arz_2003_2010.xls)>. Reached: 03.04.2013

reply to this question even if household members do not declare spending money on alcoholic drinks in the consumption section of the survey. The opposite case also holds true, i.e. some households which consume alcohol reply to the question negatively. This latter discrepancy may arise if a household's members consume alcohol occasionally but refuse to define this behavior as habitual. In any case, asking questions on alcohol consumption in two different sections of the survey increases the quality of the data.

The measure of secularity used in this study also has a shortcoming due to its categorical nature, as it cannot account for the within-group variations regarding "intensity" of secularity. Despite this limitation, there is still one important advantage for using a categorical variable: In a setting where consumption of the "prohibited" goods is an explanatory, and FLFP is the dependent variable, the issue of two-way causality would emerge if the variable "secular" is defined as a continuous one. In such a case, a correlation between the two would indicate the effect of an additional person's employment within the household on total alcohol consumption, rather than measuring the effect of secularity on FLFP. The possibility of reverse causality ceases to be an issue when a categorical variable is used to measure secularity, as it is not reasonable to expect an abstainer family to begin drinking alcohol or to start feeding a dog after a female in the household finds a new job.

One possible objection to the way in which the paper defines secularity is that a household consuming these above-mentioned goods may still be religious if its members belong to another religion such as Christianity. Even if households fall into this category, the resulting measuring bias would still be negligible, as 99.9 percent of the people in Turkey declare themselves to be Muslims, according to the World Values Survey data of 2007. World Christian Database reports the same figure as 98.2 percent<sup>10</sup>.

Although it is not statistically documentable because of data unavailability, the way in which the term "secular" is defined in this study may also reflect differences between Sunni and Alevi practices to a certain extent. As mentioned in the Introduction, Alevis in Turkey differ from Sunnis substantially not only in the practice religion but also in their secular lifestyle. The list of *haram* goods or actions can be very lengthy in conservative Sunni practices such as alcohol, pork meat, and shellfish, as well as feeding pets at homes, drawing and sculpting human figures, dancing etc. For women, additional restrictions apply, including singing, laughing loudly, showing their hair in public. Moreover, in some cases, women are not allowed

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<sup>10</sup>I obtained these figures from the institutions' websites: <[www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)> and <[www.worldchristiandatabase.org](http://www.worldchristiandatabase.org)>. Reached: 28.03.2013.

to prey in Mosques unless there exists a designated area for them. On the contrary, most of these restrictions do not hold in Alevi practices<sup>11</sup>. Thus, the term “secular” refers both non-religious Sunnis and followers of any other non-orthodox sects.

### 3.2 Descriptive Statistics

Table 1 shows the fraction of households which consume any of the “secular” goods under study, namely, alcohol, shellfish and pet products. The reported consumption of pet supplies (2.7 percent in urban areas) and especially shellfish (0.14 percent in urban areas) are too low to allow separate estimations for each product group. A probable reason behind the low level of reported shellfish consumption is that shellfish is rarely prepared within Turkish homes, thus, consumption of shellfish is categorized under the heading of restaurant services. Additionally, Table 1 reports per capita disposable income, average number of children younger than 15 years of age per household, and household types, variables that are used in estimations found in the next section concerning women’s participation.

Table 1: Estimated Means for Household Characteristics

	Rural	Urban	Total
Consuming alcohol	0.0637	0.0948	0.0826
Consuming shellfish	0.0003	0.0014	0.0010
Buying pet products	0.0068	0.0266	0.0188
<i>Secular (any of the above three)</i>	0.0691	0.1163	0.0978
Per capita income (0 000 TL)	0.1664	0.2558	0.2207
# of children under 15	1.9825	1.4600	1.6650
Hhtype: Nuclear	0.5941	0.7224	0.6721
Hhtype: Large	0.3646	0.2190	0.2761
Hhtype: Single adult	0.0396	0.0527	0.0476
Hhtype: other	0.0017	0.0058	0.0042
<i>N</i>	34582	73032	107614
<i>N_pop</i>	27151784	42043781	69195565

In addition to household characteristics, results presented the next section include variables on individuals. Table 2 shows mean values of these variables as well as the percentage of women in the labor force. FLFP is 24 percentage points higher in the rural areas. However, according to the survey estimates, *76 percent of the working women between 15 and 64 years of age in rural areas work unpaid in the family enterprises* (small farms), as discussed in the previous section. *In urban areas, the same ratio is 10 percent, only.* Thus, any interpretation of FLFP

<sup>11</sup>For detailed information on the Alevis in Turkey, see Shankland (2003).

Table 2: Estimated Means of Individual Characteristics - (Women 15-64 y.o.)

	Rural	Urban	Total
FLFP	0.4349	0.1945	0.2852
paid	0.1018	0.1383	0.1245
Married	0.6891	0.6691	0.6766
Educ: primary or less	0.8989	0.7335	0.7959
Educ: secondary	0.0857	0.1979	0.1555
Educ: tertiary or more	0.0154	0.0686	0.0485
Age	34.7959	34.1267	34.3792
<i>N</i>	11243	25249	36492
<i>N_pop</i>	8887663	14663541	23551204

in rural Turkey calls for a cautious interpretation and additional analysis.

To provide the reader with a better picture of the distribution of the key variables of this study at the regional level, Figure 1 plots maps of the distributions of urban FLFP, urban per capita income, fraction of households with secular consumption patterns, and urbanization. Joint evaluation of FLFP with the urbanization map at the lower right corner shows that participation rates are rather low in the most urbanized cities of Turkey, such as Istanbul and Ankara. This observation is in line with the previous literature which describes the migration to cities as a driving factor behind falling FLFP rates in Turkey (see Section 2.3). Gündüz-Hoşgör and Smits (2008: 110-111) explain the high rates of FLFP in the North by the fact that husbands from this region usually work in the construction sector in the West, especially in Istanbul, while their wives run the family farm businesses.

The maps also show that the fraction of households with secular consumption patterns by regions as well as regional distribution of per capita urban income exhibit similar distributions as FLFP. Central and eastern parts of Turkey are poorer and contain fewer secular households. The common thread among these three distributions calls for controlling for income level when estimating the effect of secularity on FLFP.

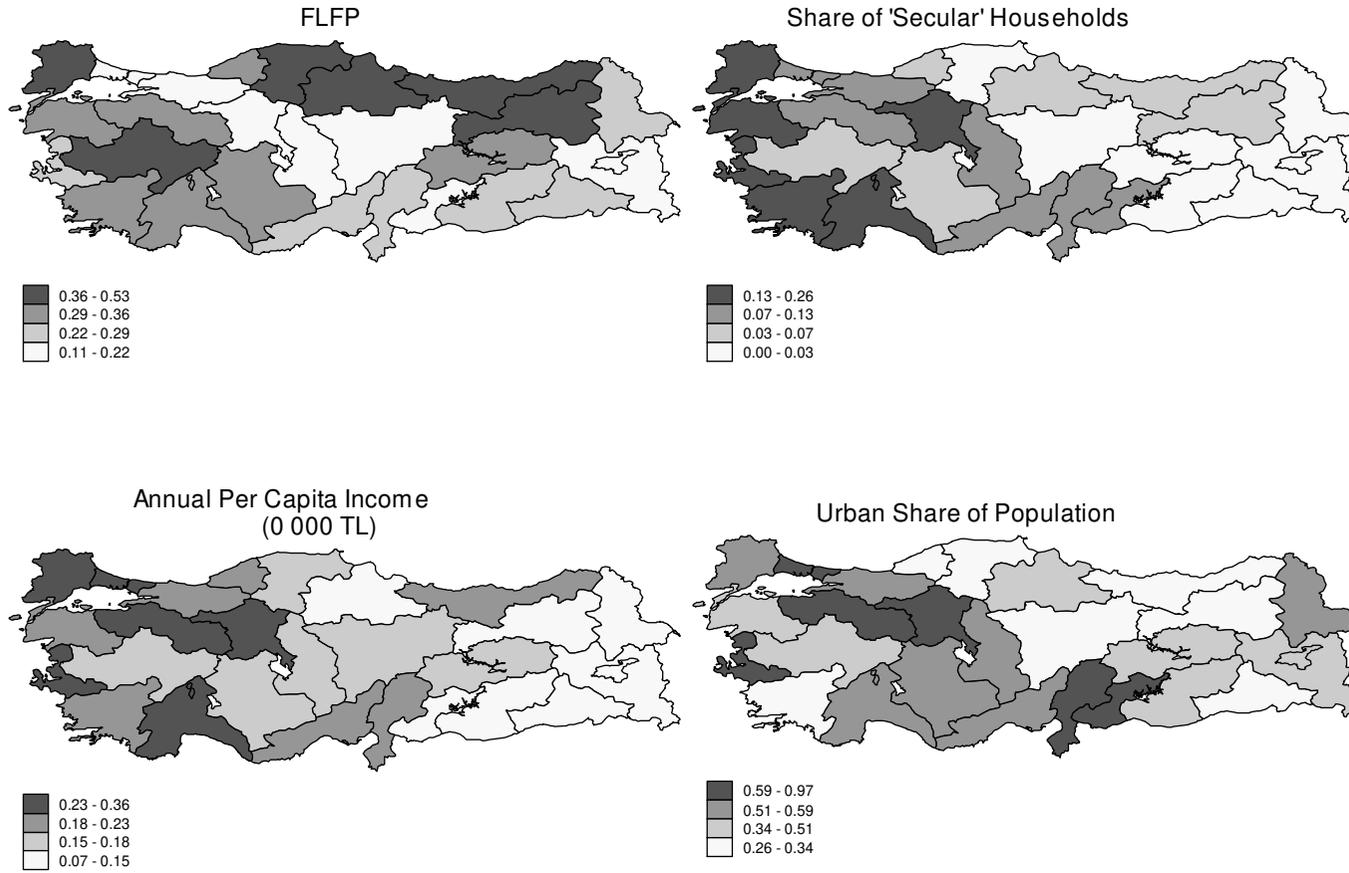


Figure 1: Descriptive statistics plotted over NUTS2 regions (2003).

### 3.3 Method

Following the common practice in the FLFP literature, I provide separate estimates for single and married women<sup>12</sup>. Single women are usually younger in age and thus in a position to choose between school and work. Moreover, a number of factors that affect participation, such as degree of education, might exert a much stronger effect on single women, as they are usually more flexible in their time use. Similarly, secularity would also affect singles and married women in varying degrees. As already noted in the Introduction, men tend to influence women’s participation decisions in conservative households. The male influence over women’s decisions, however, would depend upon the nature of the relationship. Traditionally, husbands’ conservativeness have a stronger effect on FLFP than that of fathers, as it is easier for the women to say “no” to the latter. The distinction is so sharp that, prior to an amendment to the civil law in 1990, married women were even officially required to have their husbands’ permission to work, a rule that never existed for fathers<sup>13</sup>. All of these factors favor running separate estimations for single and married women regarding their economic participation.

For the married group, I run typical logistic regressions in which the dependent variable is a dummy indicating labor force participation. This approach is not suitable for single women, most of whom make joint decisions on educational and labor force participation. For single women, I use a bivariate probit setting, which I borrow from child-labor literature (see Dayıođlu, 2005, among others) in which employment and schooling decisions are affected by one another.

The results presented in the next section show the average marginal effects of the regressors for each equation. An alternative approach would be to report the marginal effects at the mean values of the explanatory variables. In the estimations, the two methods surprisingly yield similar results. Nevertheless, I choose not to report marginal effects at means, as they lack any meaning in estimations which include binary explanatory variables (see Williams, 2012: 324).

In all of the settings, the main explanatory variable of interest is `secular`, which was defined in the previous section. The income variables I use, `faminc_perc`, and `non-wage inc.` are per capita income in the household (excluding the female in observation) and non-

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<sup>12</sup>For example, see the studies summarized in Killingsworth and Heckman (1986), Mincer’s seminal work (1962), as well as Murphy (1995), Lehrer (1995), Heineck (2004), Gonzales (2004), and Gündüz-Hoşgör and Smits (2008).

<sup>13</sup>For husbands’ influence over women’s workforce participation see also Ozyegin (2010), Chapter 2.

wage income of the female under observation, respectively. These two variables act as proxies for the reservation wage. The other explanatory variables are the number of children in the household who are younger than 15 years of age (**children**), **age** and its square; the type of household (i.e. “nuclear”, “patriarchal/large”, “one adult” or “people living together”), as well as educational and NUTS1-level regional dummies. The estimations for married women cover the age group of 15 to 64, while the same range is limited to 15 to 25 for singles.

## 4 Results

### 4.1 Married Women

Table 3 shows the estimated marginal effects of explanatory variables for married women living in urban areas in three different settings. Almost all of the coefficients in the third and largest setting, have the expected sign and significance. If per capita income in the household excluding the female in estimation increases 10,000 liras per annum<sup>14</sup> the probability of labor force participation decreases around 6 percentage points. The impact of an increase in non-wage income of the same size is around 2.8 percentage points. The impact of age on FLFP is also negative and significant at the margin (with a  $p$  value of 0.052).

Having a university degree means a 54 percentage point increase in the probability of participation, which is strikingly high compared to the effects of other determinants as well as the effect of education observed in previous studies for other countries. An extra child within the household reduces the participation rate around 2 percentage points. Living in a larger household has a positive effect on FLFP, as the sharing of domestic duties with other household members allows women to work outside of the home.

There are also significant variations across regions with regard to FLFP. Even after controlling for the other covariates, FLFP rates in Central Anatolia, Central East and South East remains 3 to 6 percent lower than the Istanbul region. By contrast, in the western regions of Turkey, urban FLFP is higher. The significant coefficients of regional effects are in-line the previous literature on the effects of cultural factors prevailing in these regions (Gündüz-Hoşgör and Smits, 2008; and Uraz *et al.*, 2010.)

The coefficient of our main variable of interest, **secular**, is highly significant and positive in all settings. Secularity may influence FLFP directly as well as indirectly through its effects on number of children, school attendance, household size, etc. The base model indicates that

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<sup>14</sup>This corresponds to \$6,700 approximately at the mean exchange rate of 2003.

Table 3: Logistic Estimations of FLFP in Urban Areas - Average Marginal Effects

	(I-Base Dif.)	II	III
secular	0.097*** (0.011)	0.038*** (0.010)	0.032*** (0.009)
faminc_perc		-0.060*** (0.015)	-0.058*** (0.015)
non-wage inc.		-0.286*** (0.038)	-0.279*** (0.037)
children		-0.024*** (0.003)	-0.019*** (0.003)
age/10		-0.004 (0.002)	-0.005 (0.002)
educ: secondary		0.077*** (0.010)	0.072*** (0.010)
educ: tertiary		0.541*** (0.023)	0.538*** (0.023)
HH type: large		0.029*** (0.009)	0.030*** (0.008)
West Marmara			0.043** (0.015)
Agean			0.029* (0.012)
East Marmara			0.029* (0.013)
West Anatolia			0.013 (0.011)
Mediterranean			0.034** (0.012)
Central Anatolia			-0.053*** (0.013)
West Black Sea			0.035* (0.018)
East Black Sea			0.112*** (0.020)
North-East			-0.007 (0.019)
Central-East			-0.029* (0.012)
South-East			-0.061*** (0.011)
<i>N</i>	16876	16876	17073

Standard errors in parentheses.

Covers married women between 15 and 64 years of age. Base HH type is 'nuclear'.

Base education category is primary school and less. Base region is Istanbul.

Estimations include squared values of income and age.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

living in a secular household means an almost 10 percentage point increase in the probability of labor force participation of married women. After controlling for income, number of children, age and education, and household type, the difference reduces to 3.8 percentage points. Adding regional effects narrows the gap only to a minor extent. This result shows that the direct effect of having a secular lifestyle on FLFP is 3.2 percentage points at the most conservative estimate and it is highly significant.

The variable coefficients reported in Table 4 concerning rural areas exhibit a different pattern than the previous table. The negative effect of family income on FLFP becomes much stronger. The number of children within the household doesn't affect FLFP significantly, most likely because of the larger nature of rural households allows for sharing of child raising duties among its members. The insignificant coefficient of **children** may also result from a number of women executing field work and child care duties simultaneously. The effect of age at its mean value is positive, indicating that younger married women in rural areas are more likely to undertake domestic duties. One puzzling result, however, is the lower participation rates among women who have secondary educations. A similar result was reached in Hoşgör and Smits (2008) and calls for more detailed investigation, including the nature of employment (i.e. paid/unpaid) at various education levels. Moreover, regional effects become much stronger in rural area estimations. Most importantly, the sign of **secular** is reversed and loses some of its significance as the estimations switch from urban to rural areas.

The problem with the estimates presented in Table 4 is that they fail to distinguish between paid and unpaid work. As stated in Section 3, the estimated share of women working unpaid in family enterprises is 76 percent in rural areas. It is not clear from these results whether the negative sign of **secular** is due to its effect on participation for unpaid or paid work. In order to identify the effect of secularity on paid work, Table 5 reports the estimation results with the same set of explanatory variables as the previous regressions, however, this time using the probability of paid employment of women as the dependent variable and combining both urban and rural areas. The added variable **urban** both catches the negative effect of urbanization on paid labor and allows us to report the marginal effects for urban and rural areas separately. This methodology, however, does not function as a perfect substitute to FLFP estimations, as it removes the unemployed women from regressions. Nevertheless, conducting separate estimations for paid work is still useful to interpret the effect of secularity in rural areas.

As reported in Table 5, when FLFP is substituted with the probability of paid employment as the dependent variable, the coefficient of **secular** becomes positive both in urban (column

Table 4: Logistic Estimations of FLFP in Rural Areas - Average Marginal Effects

	(I-Base Dif.)	II	III
secular	-0.063* (0.026)	-0.042 (0.026)	-0.048 (0.025)
faminc_perc		-0.219*** (0.040)	-0.182*** (0.038)
non-wage inc.		-0.108 (0.670)	-0.380 (0.584)
children		0.000 (0.005)	0.005 (0.005)
age/10		0.039*** (0.005)	0.033*** (0.005)
educ: secondary		-0.100** (0.033)	-0.094** (0.033)
educ: tertiary		0.413*** (0.039)	0.403*** (0.041)
HH type: large		0.172*** (0.015)	0.143*** (0.015)
West Marmara			0.295*** (0.038)
Agean			0.319*** (0.034)
East Marmara			0.185*** (0.046)
West Anatolia			0.211*** (0.043)
Mediterranean			0.318*** (0.034)
Central Anatolia			0.089 (0.048)
West Black Sea			0.478*** (0.023)
East Black Sea			0.417*** (0.029)
North-East			0.373*** (0.036)
Central-East			0.152** (0.053)
South-East			0.253*** (0.041)
<i>N</i>	7683	7683	7683

Standard errors in parentheses.

Covers married women between 15 and 64 years of age.

Base education category is primary school and less. Base region is Istanbul.

Estimations include squared values of income and age.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 5: Logistic Estimations of Paid Employment - Average Marginal Effects

	Average	At urban=0	At urban=1
urban	-0.028*** (0.005)	-0.028*** (0.005)	-0.028*** (0.005)
secular	0.019* (0.007)	0.017* (0.007)	0.022* (0.009)
faminc_perc	-0.071*** (0.016)	-0.064*** (0.014)	-0.081*** (0.018)
non-wage inc.	-0.232*** (0.030)	-0.212*** (0.028)	-0.266*** (0.035)
children	-0.009*** (0.002)	-0.008*** (0.002)	-0.010*** (0.003)
age/10	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
educ: secondary	0.079*** (0.010)	0.073*** (0.009)	0.090*** (0.011)
educ: tertiary	0.578*** (0.023)	0.561*** (0.023)	0.600*** (0.022)
HH type: large	-0.019*** (0.005)	-0.017*** (0.005)	-0.022*** (0.006)
West Marmara	-0.008 (0.010)	-0.007 (0.009)	-0.009 (0.011)
Agean	-0.000 (0.008)	-0.000 (0.008)	-0.000 (0.010)
East Marmara	0.018 (0.010)	0.016 (0.010)	0.021 (0.012)
West Anatolia	-0.016* (0.008)	-0.014* (0.007)	-0.018 (0.009)
Mediterranean	0.009 (0.009)	0.008 (0.008)	0.011 (0.010)
Central Anatolia	-0.064*** (0.007)	-0.058*** (0.006)	-0.073*** (0.009)
West Black Sea	-0.001 (0.010)	-0.001 (0.009)	-0.001 (0.011)
East Black Sea	0.044** (0.014)	0.040** (0.013)	0.050** (0.016)
North-East	-0.008 (0.014)	-0.008 (0.012)	-0.010 (0.016)
Central-East	-0.037*** (0.010)	-0.033*** (0.009)	-0.042*** (0.011)
South-East	-0.046*** (0.007)	-0.041*** (0.007)	-0.053*** (0.009)
<i>N</i>	24559	24559	24559

Standard errors in parentheses.

Covers married women between 15 and 64 years of age.

Base education category is primary school and less. Base region is Istanbul.

Estimations include squared values of income and age.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

II) and rural areas (column III). This switch in the sign of `secular` between FLFP and paid work estimations for the rural areas suggest that living in a secular household not only has a positive effect on women’s labor force participation for paid work but also a negative effect on the probability of unpaid work, which is the common form of female employment in agriculture.

The estimated positive effect of secularity on paid employment in rural areas also sheds light on the opposing evidence documented by the micro-econometric studies and anthropological research, both of which are discussed in Section 2.2. According to these results, the link between women’s paid employment and increased religious activity in certain rural areas (Hart, 2007; and Isik, 2013) does not represent the general behavior in agricultural households. In other words, despite the existence of certain communities which use piety as a legitimizing tool for women’s socially unwelcomed employment, the overall effect of keeping a distance with religiosity on women’s paid work remains positive in rural Turkey.

## 4.2 Single Women

For the group of 15 to 64 year-old *single* women, the estimated mean age is 18 years. At this age, reduced participation in the labor force could be favorable as long as it is associated with increased schooling. The change in the normative interpretation of younger women’s employment calls for an estimation methodology which takes into account joint decisions on participation in education and work. This section presents the results for paid work participation and schooling decisions in a bivariate probit setting. The reason behind the use of paid employment, instead of labor force participation, is to avoid “contamination” and subsequent ambiguity caused by the widespread incidence of unpaid work in rural areas, which was mentioned in the previous sub-section. Nevertheless, in alternative settings which I do not present here for the sake of brevity, I run similar estimations by choosing labor force participation as a probable outcome and reach similar results. In all settings, the observed primary effect of secularity is on schooling decisions, while the impact on employment (or LFP in general) remains limited at this age group.

As this section contains analyses about the effect of secularity on educational participation, I limit the age group under study from 15 to 25 years. The upper limit is arbitrary, however, choosing a different limit does not have an important effect on the results<sup>15</sup>. An estimated

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<sup>15</sup>Results for alternative settings are available from the author upon request.

99.7 percent of single women of this age group are categorized as “never married”. The remaining 0.3 percent includes those who are divorced, living separately, cohabiting, and who lost their husbands.

Table 6: Bivariate Probit Estimation of Participation

	paid=0, student=0	paid=1, student=0	paid=0, student=1	paid=1, student=1
urban	-0.142*** (0.014)	0.040*** (0.009)	0.089*** (0.012)	0.013*** (0.001)
secular	-0.085*** (0.019)	0.001 (0.012)	0.074*** (0.019)	0.010** (0.004)
faminc_perc	-0.085* (0.042)	-0.149*** (0.032)	0.241*** (0.032)	-0.008 (0.007)
non-wage inc	-0.812* (0.381)	-0.816*** (0.245)	1.637*** (0.356)	-0.008 (0.050)
children	0.030*** (0.005)	-0.001 (0.003)	-0.026*** (0.005)	-0.003*** (0.001)
age/10	0.780*** (0.026)	0.230*** (0.012)	-1.003*** (0.024)	-0.008 (0.004)
<i>N</i>	8523	8523	8523	8523

Standard errors in parentheses.

Covers single women between 15 and 25 years of age.

Explanatory variables include squared values of income and age as well as dummies on education and region, and HH type.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 6 provides the coefficients for `secular` and `urban` as well as the remaining continuous variables (`faminc_perc`, `non-wage inc.`, `children` and `age`) to observe how coefficient estimations behave. As one might expect, participation rates both in paid labor and education are significantly higher in urban areas (4 and 8.9 percentage points, respectively). Secularity reduces the probability of non-participation 8.5 percentage points; and its effect is also highly significant. 7.4 points of this reduction are associated with a significant increase in schooling. There is also a small, (1 percentage point) positive effect on dual participation in education and paid employment.

It is also important to note that a higher number of children under 15 in the household causes a significant reduction not only in labor force participation of married women (Table 3), but also in the probability of schooling of single women. Reduced schooling means *double jeopardy* for single women, as one of the most important determinants of FLFP in Turkey is education<sup>16</sup>.

<sup>16</sup>See the studies cited in Section 2.3 as well as the results on education provided in Table 3.

## 5 Secular or just luxury? Robustness checks

The excise tax on alcohol in Turkey, with \$6337.68 per hectoliter excluding the 18% VAT, is the third highest after Norway and Iceland among OECD countries<sup>17</sup>. Apart from their secular nature, alcoholic drinks in Turkey also stand as luxury products as a result of heavy taxation. Shellfish varieties are already among the most expensive foods in Turkey and the majority of pet products are rarely affordable for lower-income groups. This section explores if the inferences drawn in the previous sections, which were based mainly on consumption of alcoholic drinks but also to a lesser extent of shellfish and pet products, reflect the effect of secularity or instead just luxury consumption habits. The latter would be the case if female labor force (or educational) participation is affected by the propensity to consume of the households.

Table 7: Shares of HHs Consuming:

coffee	0.16
banana	0.23
dressing	0.19
icecream	0.17
<i>N</i>	107614

To test the extent of the effect of luxury consumption, I picked those foods and beverages which are deemed “secular” but at the same time luxurious as “placebo” goods for the regression settings of the previous section. Four products, namely coffee, ice cream, bananas, and salad dressings, are “safe” to consume in orthodox Sunni terms, yet are also affordable for a small share of households. (Table 7). In fact, the appropriateness of these goods as placebos in the previous section’s settings are questionable, as there would be a reverse causation from a female’s employment and changing consumption habits towards luxury goods within a household. In simpler terms, it would be reasonable to expect a female who was previously out of the labor market to begin buying some luxury products after gaining a job, which would hardly be the case for alcoholic consumption or pet products. Nevertheless, as Table 8 presents, the use of these products in FLFP or paid work estimates does not yield any significant results despite the possibility of reverse causation.

The first column in the table shows the results of urban FLFP regressions, while the dependent variable in the second column represents the probability of paid employment in

<sup>17</sup><<http://www.oecd.org/ctp/tax-policy/Table%205.3%20Taxation%20of%20alcoholic%20beverages.xls>>, reached: 28.11.2013

Table 8: Using Placebo Goods

	FLFP in Urban Areas	Paid Work in All Areas
coffee	0.005 (0.008)	0.002 (0.006)
banana	0.001 (0.007)	0.002 (0.005)
dressings	-0.008 (0.007)	-0.008 (0.005)
icecream	0.008 (0.007)	0.000 (0.005)
<i>N</i>	16876	24559

Standard errors in parentheses

Covers females between 15 and 64 years of age

The other explanatory variables are as same as Column (III) of Table 3.

all areas. None of the placebo products have significant coefficients for married women in either setting. These results reject the existence of a possible link between women's economic participation and households' taste for luxury goods.

Table 9: Bivariate Placebo Estimations Using Placebo Goods

	paid=0 student=0	paid=1 student=0	paid=0 student=1	paid=1 student=1
coffee	-0.037** (0.014)	0.003 (0.009)	0.030* (0.014)	0.004 (0.002)
banana	-0.049*** (0.015)	0.010 (0.010)	0.033* (0.014)	0.006** (0.002)
dressings	-0.030* (0.014)	-0.020* (0.008)	0.050*** (0.013)	0.001 (0.002)
icecream	-0.037** (0.014)	-0.005 (0.009)	0.039** (0.013)	0.003 (0.002)
<i>N</i>	8523	8523	8523	8523

Standard errors in parentheses.

Covers females between 15 and 25 years of age.

The other explanatory variables are as same as Table 6.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Unlike the results presented for married women, using placebo goods in the bivariate probit setting for the single women produces some significant results, as Table 9 shows. As in the case of the coefficient of **secular**, consumption of these products are associated with decreased non-participation (Column I) and increased schooling (Column III). Yet, coefficients of placebo products remain smaller in magnitude than of **secular**. These results may suggest

that part of the positive effect of secularity on educational participation may arise from the luxurious nature of alcohol, shellfish and pet products consumed in Turkey. If a girl's education is considered to be a "luxury good", as Cameron and Worswick (2001) suggest, a correlation between education and other luxury consumer goods becomes something expected. Nevertheless, the higher magnitude and significance level of `secular` compared to the placebo goods indicate that there is a combined effect of secularity and luxury for the case of consuming alcohol, shellfish, and pet products.

## 6 Conclusion

This study constitutes the first attempt to use consumption as a signal of household secularity. Three consumer products, alcoholic drinks, shellfish, and pet products are chosen as "secular" products, i.e. goods that contradict conservative Sunni consumption practices. This methodology is extendable to any society in which faith-related consumption patterns exist and helps to relax the data constraints on religious information at the micro-level. Another important advantage of this methodology is to match household secularity with individual outcomes, which is useful in cases where the former has an influence on the latter.

Using information provided in a household budget survey, in this study, I ask whether *haram* or *makruh* has any association with labor market and educational participation decisions of both married and single women in Turkey. My results reveal that living in a non-religious household has a significant and positive effect on the labor force participation of married women in urban areas. The observed effect in rural areas where women work unpaid as a custom is negative. Further analysis is carried out to show that secular consumption is associated with an increased probability of paid work for married women in all areas; thus, the negative impact apparent in agriculture remains as a favorable outcome. Providing separate results that consider the rural/urban divide contributes to solving the puzzle of unpaid agricultural work in a developing-country setting.

Joint estimations on the probability of single women's participation in paid employment and education also indicate a positive effect of secularity on schooling. However, the results from the robustness checks which use luxury but at the same time "not necessarily secular" placebo products imply that part of the effect on schooling may be a result of the correlation between two luxury consumption goods; i.e. alcoholic drinks and girls' education as a luxury consumption item. Yet, the smaller magnitude and the significance levels of the coefficients

of the placebo goods suggest that the estimated positive effect of the “secular” products on the probability of educational participation is not totally explained by their luxurious nature.

One limitation of this paper arises from the undeclared amount of alcohol consumption in the household surveys. Existence of households who consume alcohol but do not register this practice in the questionnaires causes a data contamination in the non-secular group, which results in a downward bias in the estimations. Therefore, the “real” effect of secularity on the women’s labor force and on educational participation is potentially much higher than the estimates provided in this study. As another shortcoming, it was not possible to investigate the effect of secularity on marriage decisions, because the data does not include information about pre-marriage characteristics of the households. Any future study accounting for this factor will give us a fuller understanding of the gendered effects of having a secular lifestyle.

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