Culture, Religiosity and Female Labor Supply

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Main question

- Do gender identities affect labor market decisions of women?
- What about in Turkey?
- How can we show it using data?
- More questions will arise.
  - How are gender identities formed?
  - What are the marginal effects?
  - How can they be transformed?

What about the title of the paper?

Culture

Beliefs and preferences that vary systematically across groups of individuals separated by space or time (Fernández, 2010).

Customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation (Guiso et al., 2006).

Religiosity

Intensity of religious beliefs (Guiso et al, 2003).

Religious vs. conservative?

What does the literature say?

- Various researchers find significant effects of culture (gender identity) on economic (labor market) outcomes in a variety of settings.
- One strand of the literature says that culture/ gender identity is transmitted from one generation to the next.
  - Vella (1994)
  - Farre and Vella (2007)
  - Fernandez and Fogli (2009), Blau et al. (2013)

How do they do it?

- **Epidemiological Approach:**
  Culture is learned, shared, portable and transmitted.
  Fernández (2008)
- Exploit the "portability" of culture!
- Concentrate on migrants: they come from different cultures, but share the same institutional set-up today.
- If culture is transmitted from one generation to the next, socialization ensures that culture/ gender roles will persist.

Empirical evidence

- Social capital in financial development (Guiso et al., 2004b), living arrangements (Giuliano, 2007), effects of trust on economic growth (Algan and Cahuc, 2010)

  On female labor supply

- Gender gap in labor force participation in US (Antecol, 2000)
- Examine the work and fertility behavior of second-generation American women (Fernandez and Fogli, 2009)
- Fertility, education, and labor supply of second-generation women in US (Blau et al., 2013)

The effects of culture on FLS in Turkey

Objective: Quantify the effects of culture on female labor force participation in Turkey

- Female labor force participation rates are very low in Turkey (30.2%). OECD
- Determinants such as age, education, marital status, number and composition of children, etc. cannot explain female LS sufficiently.

Can we apply the epidemiological approach?

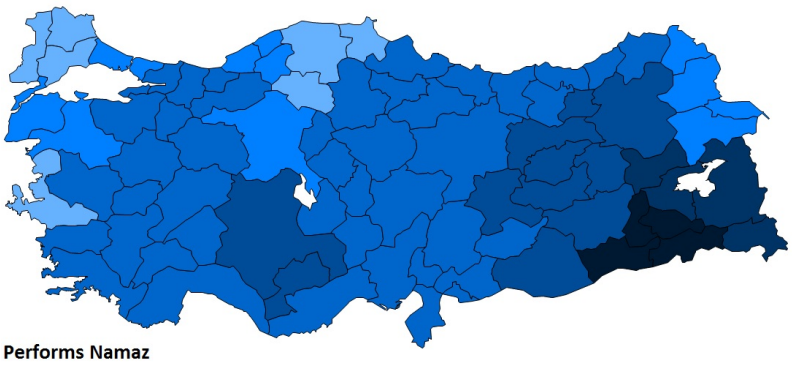
- Significant internal migration in the past couple of decades.

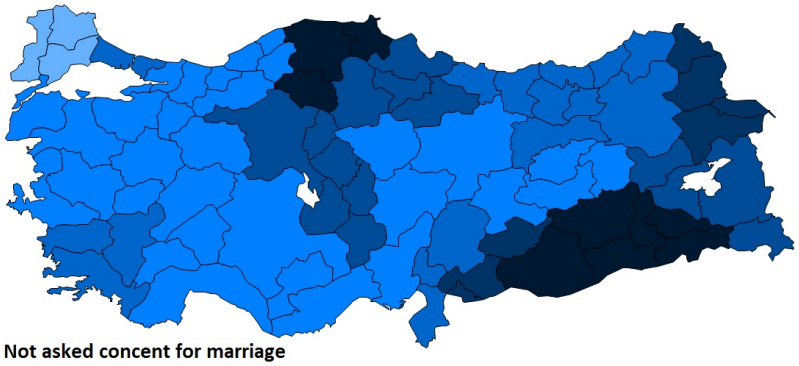
Period	1975-1980	1980-1985	1985-1990	1990-2000
Population	38,395,730	44,078,033	49,986,117	60,752,995
Internal Migration	3,584,421	3,819,910	5,402,690	6,692,263
	9.3%	8.7%	10.8%	11.0%
Inter-Provincial Migration	2,700,977	2,885,873	4,065,173	4,788,193
	7.0%	6.5%	8.1%	7.9%

Source: Kocaman (2008)

- Regional differences are acute and persistent.
- Cultural differences exist.

Cultural Differences





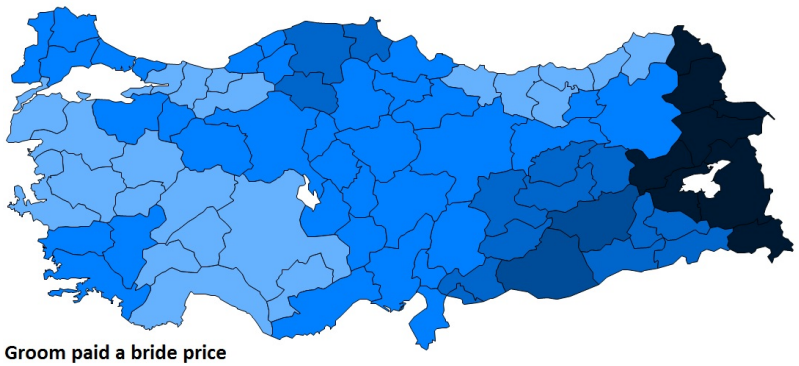


Figure: Share of women

more..

The model

$$LFP_{ip} = \beta_0 + \beta_1 X_{ip} + \beta_2 Z_i + \beta_3 W_p + \beta_4 V_r + \epsilon_{ip} \qquad (1)$$

- X_{ip}: Personal characteristics of individual i living in province p
- Institutional set-up
  - W_p: at province of residence
  - V_r: at the regional level
- Z_i: Individual i's "culture"
  (beliefs and preferences/ attitudes towards work/ gender roles)

The model

$$LFP_{ip} = \beta_0 + \beta_1 X_{ip} + \beta_2 Z_i + \beta_3 W_p + \beta_4 V_r + \epsilon_{ip}$$

- Here are a couple of problems with this estimation:
  - Z_i is not observable
  - Z_i and ϵ_{ip} are possibly correlated
  - LFP_{ip} probably affects Z_i
- What can we use to circumvent some of these issues?

How to model culture?

- Gender identity is constructed by inherited attitudes and contemporaneous environments (Bisin and Verdier, 2001; Benabou and Tirole, 2006).
- If there is intergenerational transmission, Z_{it} is at least partially determined by Z_{it-1}.
- Previous generation's labor market outcomes probably summarizes their attitudes towards women's work.
- Use ER_{1970} as a proxy for Z_{i2008}
  - is correlated with the cultural attitudes in 2008
  - affects LFP_{2008} only through its effects on cultural attitudes

Previous generation's employment patterns as a proxy

- Previous generation's employment patterns are correlated with the cultural background.
- This is likely to be transmitted intergenerationally and it results in systematic variations in participation decision.

$$LFP_{ip} = \gamma_0 + \gamma_1 X_{ip} + \gamma_2 ER_{1970} + \gamma_3 W_p + \gamma_4 V_r + \upsilon_{ip}$$

Main assumption: Previous generation's employment level affects current generation's labor supply behavior only through its effects on culture.

Data

Main data set: Demographic Health Survey (DHS) of Turkey 2008
→ labor supply & migration history

- Ever-married women sample
- aged 15 to 49
- urban
- Migrant: province of birth and of current residence differ

⇒ **1,633 women**

Data

Current institutional set-up:

- Regional unemployment rates & employment share of service sector (HLFS 2008)

Culture proxy:

- Employment rates in 1970 come from the 1970 Census, provincial data.

Culture on female labor supply

		(1)	(2)	(3)	(4)	(5)
PROXY	Female ER_{1970}	0.089***	0.050***	0.051***	0.047***	0.043***
INDIVIDUAL	Current age	0.175***	0.163***	0.164***	0.166***	0.151***
AND	Age squared	-0.003***	-0.002***	-0.002***	-0.002***	-0.002**
HOUSEHOLD	Age at migration	-0.009*	-0.006	-0.006	-0.006	-0.005
CHARACTERISTICS	Schooling		0.173***	0.166***	0.165**	0.139**
	Schooling squared		-0.032***	-0.032***	-0.033***	-0.029**
	Schooling cubed		0.002***	0.002***	0.002***	0.002***
	Number of children ≤ 5		-0.197***	-0.192**	-0.190**	-0.173**
	Wealth index			0.145*	0.127*	0.096
	Wealth index squared			-0.114**	-0.113**	-0.094*
PARENTAL	Mother literate				0.184**	0.184**
HUMAN CAPITAL	Father literate				-0.055	-0.119
CONTROLS FOR	Share of services					0.015**
CURRENT INS.	UR_{2008}					-0.010
SETUP	Region dummies					✓
	Constant	-3.748***	-3.849***	-3.832***	-3.876***	-4.275***
	Observations	1,633	1,633	1,633	1,633	1,633
	Pseudo R^2	0.0388	0.160	0.163	0.165	0.187

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Culture on female labor supply

		(5)	(6)	(7)
PROXY	Female ER_{1970}	0.043***	0.043**	
	Male ER_{1970c}		0.000	
	GAP_{1970a}			0.014**
INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS	Current age	0.151***	0.151***	0.149***
	Age squared	-0.002**	-0.002**	-0.002**
	Age at migration	-0.005	-0.005	-0.005
	Schooling	0.139**	0.139**	0.142**
	Schooling squared	-0.029**	-0.029**	-0.028**
	Schooling cubed	0.002***	0.002***	0.002***
	Number of children ≤ 5	-0.173**	-0.172**	-0.183**
	Wealth index	0.096	0.096	0.088
	Wealth index squared	-0.094*	-0.094*	-0.086
PARENTAL HUMAN CAPITAL	Mother literate	0.184**	0.184**	0.210**
	Father literate	-0.119	-0.119	-0.117
CONTROLS FOR CURRENT INS. SETUP	Share of services	0.015**	0.015**	0.015**
	UR_{2008}	-0.010	-0.010	-0.010
	Region dummies	✓	✓	✓
	Constant	-4.275***	-4.277***	-2.875**
	Observations	1,633	1,633	1,633
	Pseudo R^2	0.187	0.187	0.185

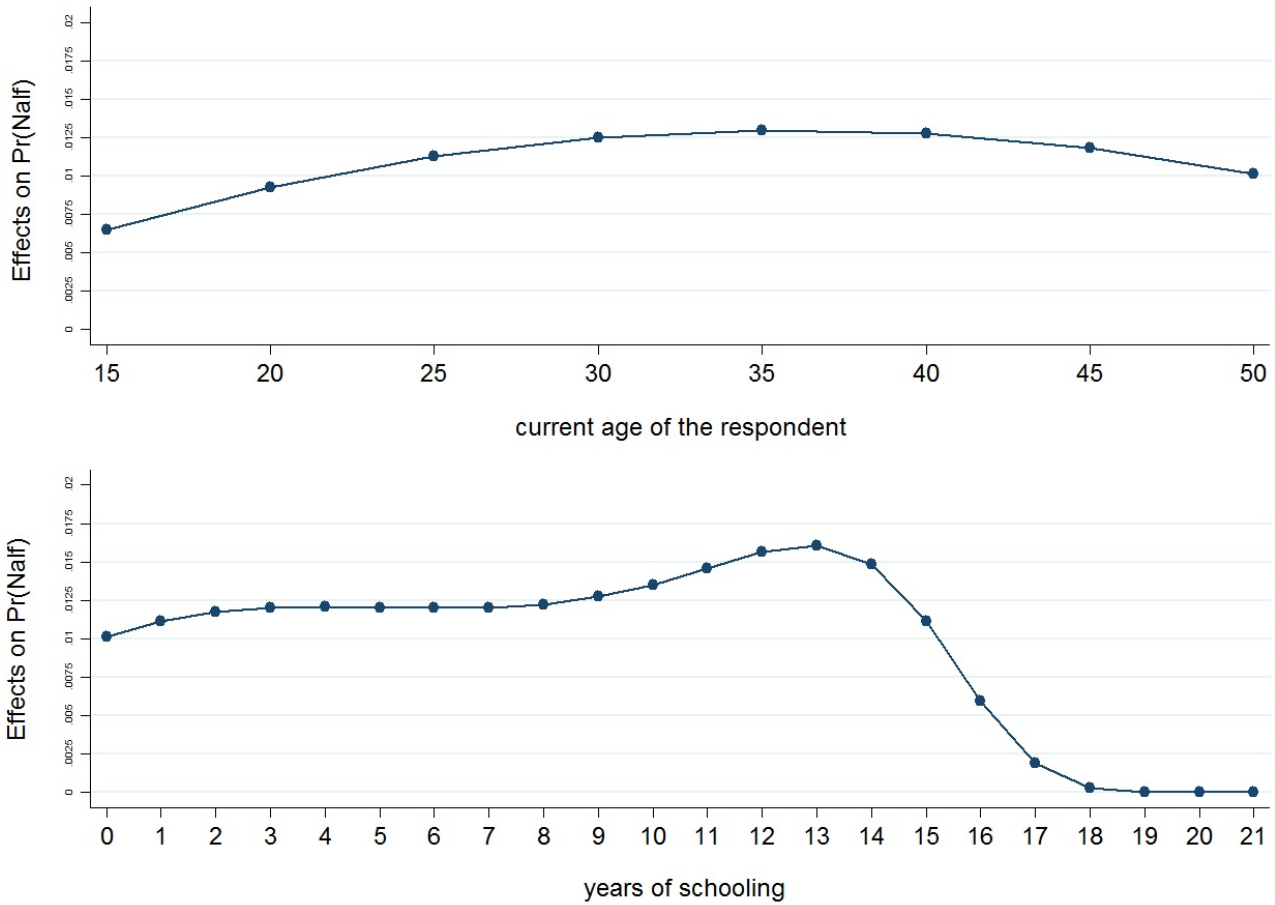
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Marginal effects

	(5)
Female ER_{1970}	0.012***
Current age	0.002
Age at migration	-0.001
Schooling	0.028***
#children under 5	-0.047**
Wealth index	-0.004
Mother literate	0.051**
Father literate	-0.033
Share of services	0.004**
UR_{2008}	-0.003
Regional dummies	✓
Observations	1,633
Pseudo R^2	0.187

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

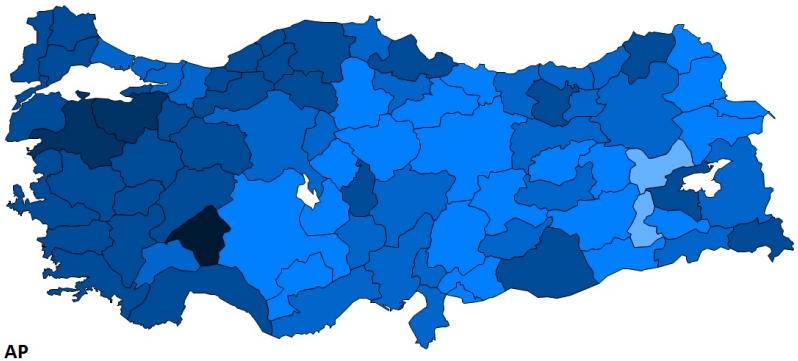
Figure: Marginal effect of ER_{1970}

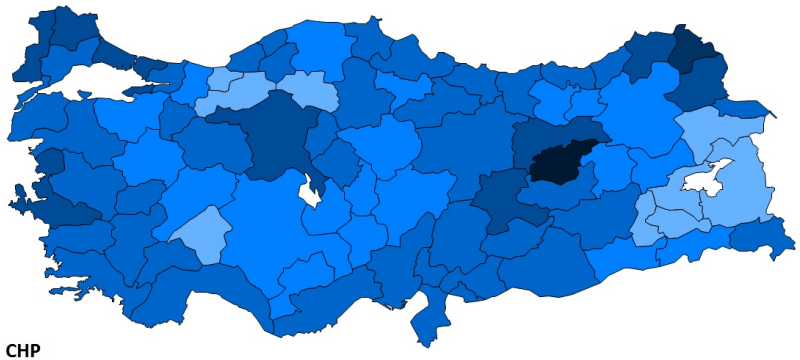


Religiosity

- Guiso et al. (2003) show
  Individuals who practice more:
  $\Longrightarrow$ a more conservative view of family life
  $\Longrightarrow$ a less favorable attitude towards women's work
- Electoral votes in the 1973 elections in a migrant woman's province of origin
- AP, CHP and MSP

Votes





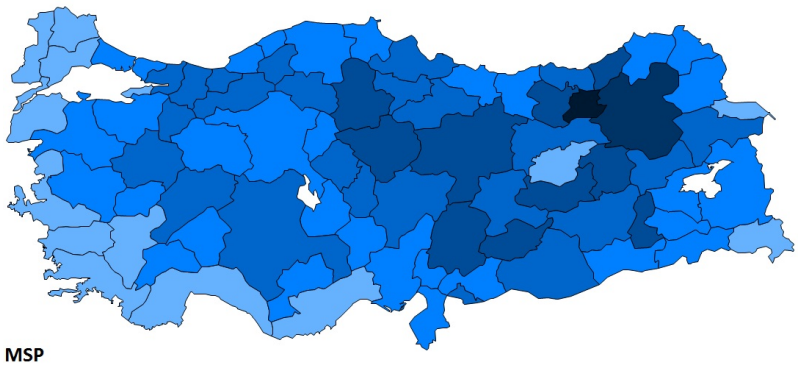


Figure: Vote share in 1973 Elections

namaz..

Estimation Results

		(5)	(8)	(9)
	Female ER_{1970}	0.043***		0.034*
	MSP		-0.013**	-0.012**
	CHP		0.004	0.003
	AP		0.002	0.000
INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS	Current Age	0.152***	0.152***	0.153***
	Age squared	-0.002**	-0.002**	-0.002**
	Age at migration	-0.005	-0.004	-0.005
	Schooling	0.138**	0.138**	0.135**
	Schooling squared	-0.028**	-0.028**	-0.029**
	Schooling cubed	0.002***	0.002***	0.002***
	Number of children under 5	-0.172**	-0.173**	-0.171**
	Wealth index	0.096	0.105	0.100
	Wealth index squared	-0.094*	-0.097*	-0.100*
PARENTAL HUMAN CAPITAL	Mother literate	0.184**	0.183**	0.171*
	Father literate	-0.118	-0.108	-0.116
CONTROLS FOR CURRENT INS. SETUP	Share of services	0.015**	0.016**	0.015**
	UR_{2008}	-0.010	-0.013	-0.012
	Region dummies	✓	✓	✓
	Constant	-4.283***	-4.114***	-4.172***
	Observations	1,633	1,633	1,633
	Pseudo R^2	0.187	0.188	0.190

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table: Marginal Effects

	(5)	(8)	(9)
Female ER_{1970}	0.012***		0.009*
MSP		-0.004***	-0.003**
CHP		0.001	0.001
AP		0.001	0.000
Current age	0.002	0.002	0.002
Age at migration	-0.001	-0.001	-0.001
Schooling	0.028***	0.028***	0.027***
Number of children 5 and under	-0.047**	-0.048**	-0.047**
Wealth index	-0.004	-0.002	-0.004
Mother literate	0.051**	0.051**	0.047*
Father literate	-0.033	-0.030	-0.032
Share of services	0.004**	0.004**	0.004**
UR_{2008}	-0.003	-0.004	-0.003
Regional dummies	✓	✓	✓
Observations	1633	1633	1633
Pseudo R^2	0.187	0.188	0.19

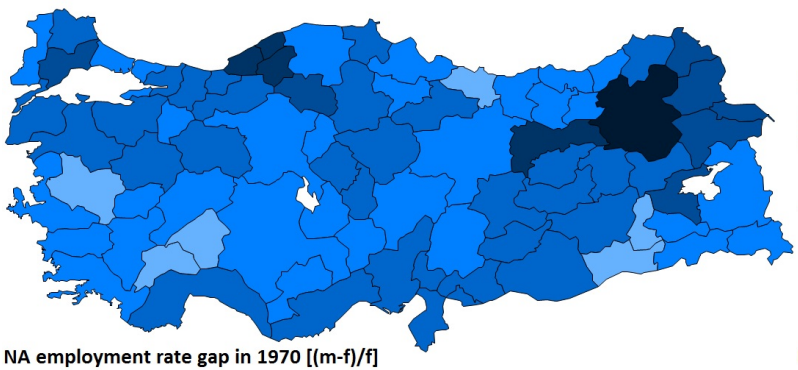
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Summary of Findings

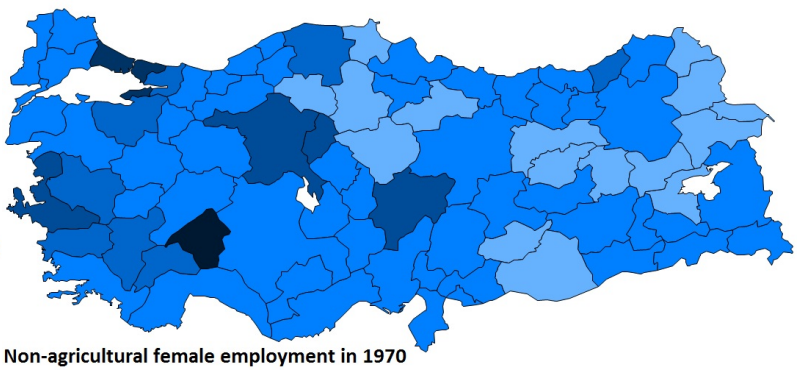
- Female employment rates in province of origin in 1970 affect migrants' behavior in 2008.
- Male employment rates do not!
- Share of party votes also pick up an effect. We call it religiosity, but it requires more work.
- Marginal effect indicate that a 1 pp increase in female employment in 1970, increases the probability that a woman will participate in the labor force by 1.2 pp.
- Other important factors are child care responsibilities, education and parental human capital.

THANK YOU!

Cultural Differences

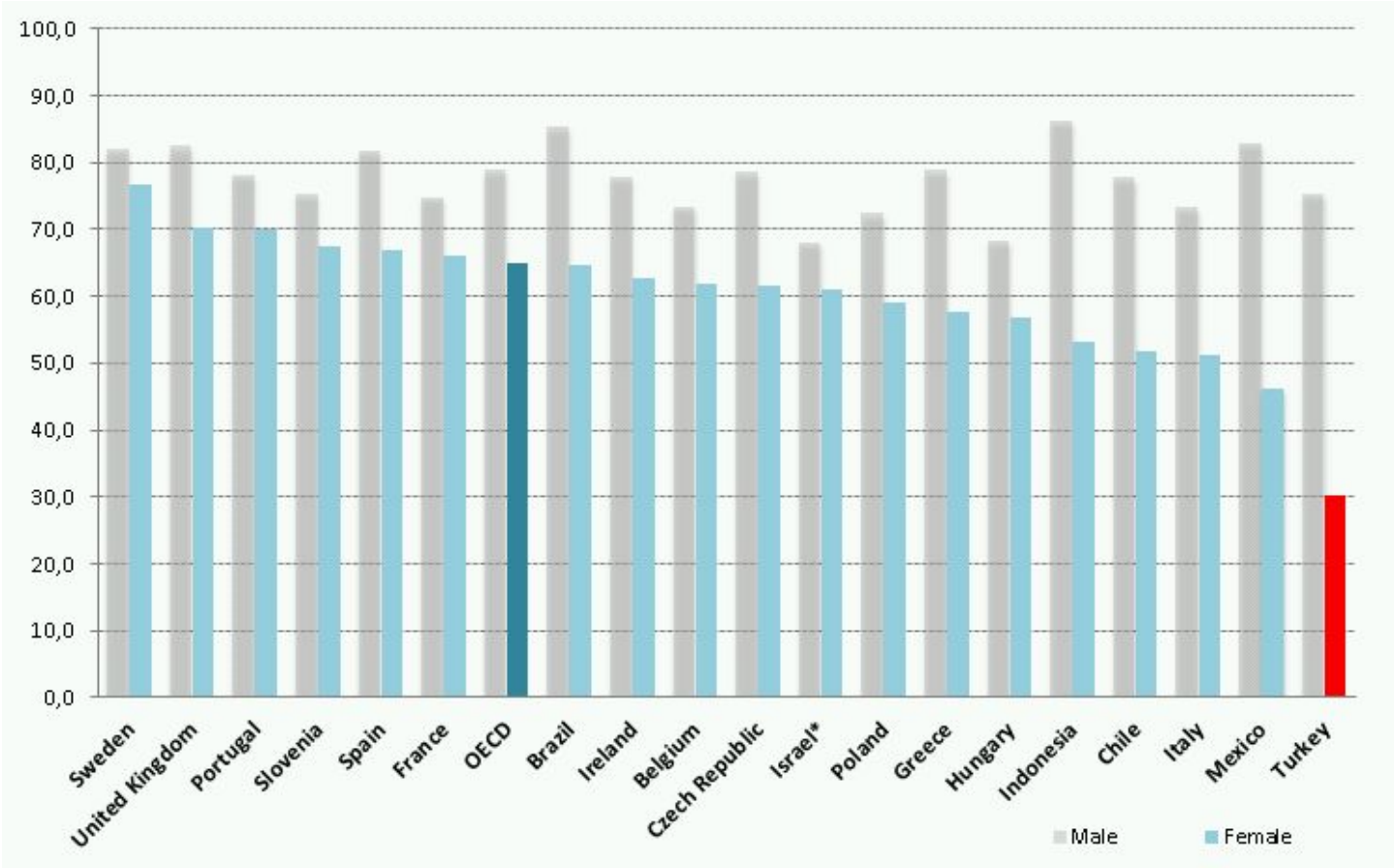


NA employment rate gap in 1970 [(m-f)/f]



Non-agricultural female employment in 1970

Why Turkey?



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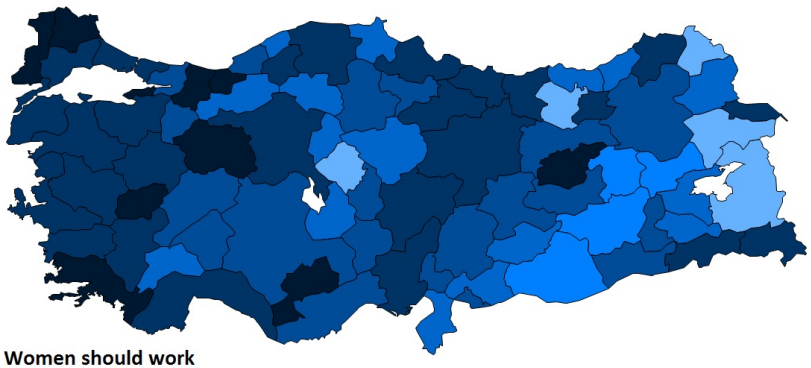
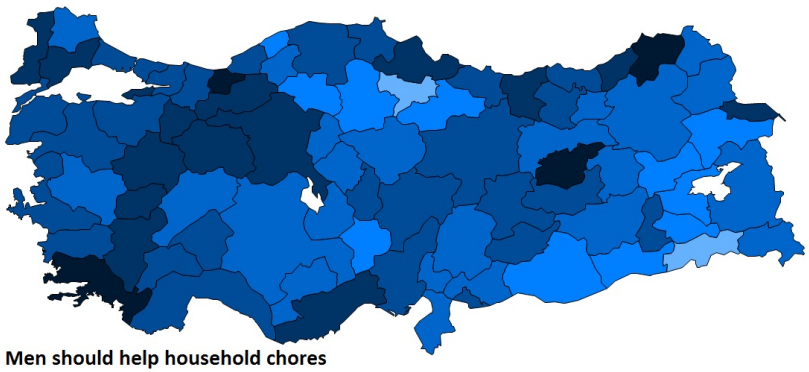
Cultural Differences



Women should work



Men should help household chores

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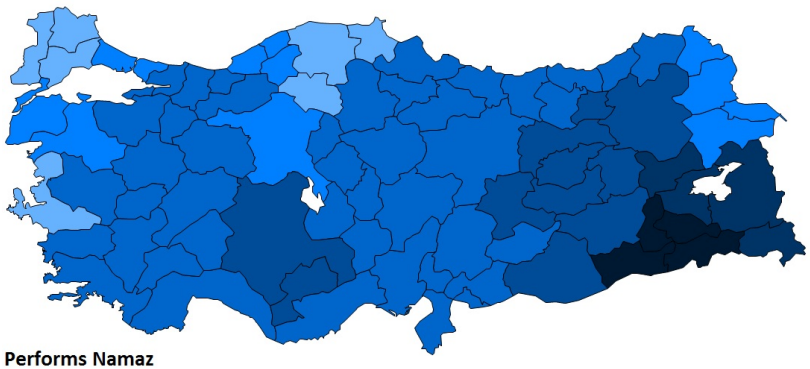
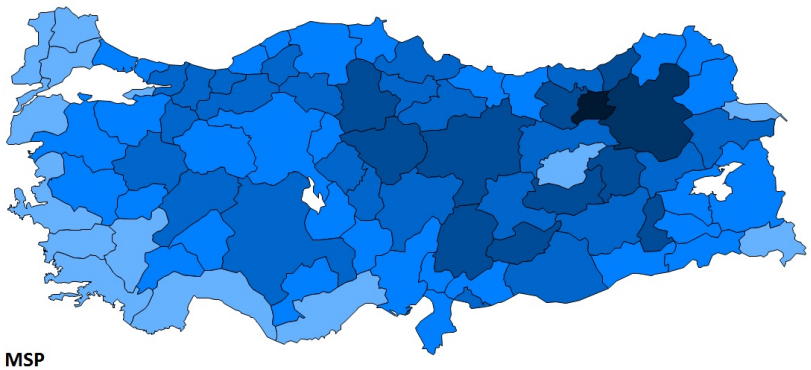
Cultural Differences



Performs Namaz



MSP

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Descriptive statistics

	Migrants		Non-migrants		Total		HLFS
	level	share	level	share	level	share	share
Non-agricultural LFPR	499	28.4%	774	21.2%	1,273	23.5%	18.2%
Age							
Aged 15-19	46	2.6%	110	3.0%	156	2.9%	2.1%
Aged 20-24	186	10.6%	491	13.5%	677	12.5%	10.2%
Aged 25-29	378	21.5%	668	18.3%	1,046	19.3%	19.4%
Aged 30-34	334	19.0%	719	19.7%	1,053	19.5%	19.5%
Aged 35-39	320	18.2%	656	18.0%	976	18.0%	18.1%
Aged 40-44	255	14.5%	553	15.2%	808	14.9%	16.4%
Aged 45-49	240	13.6%	452	12.4%	692	12.8%	14.2%
Total	1,759	100%	3,649	100%	5,408	100%	100%
Education							
Non-graduates	259	14.7%	565	15.5%	824	15.2%	14.6%
Primary school	836	47.5%	1,952	53.5%	2,788	51.6%	50.3%
Secondary school	170	9.7%	344	9.4%	514	9.5%	10.0%
High school	287	16.3%	584	16.0%	871	16.1%	16.9%
University or more	207	11.8%	204	5.6%	411	7.6%	8.2%
Total	1,759	100%	3,649	100%	5,408	100%	100%
Children under 5							
None	952	54.1%	1,893	51.9%	2,845	52.6%	64.7%
One	587	33.4%	1,225	33.6%	1,812	33.5%	28.9%
Two	182	10.3%	438	12.0%	620	11.5%	5.9%
Three	32	1.8%	89	2.4%	121	2.2%	0.5%
Four	6	0.3%	1	0.0%	7	0.1%	0.0%
Five or more	0	0.0%	3	0.1%	3	0.1%	0.0%
Total	1,759	100%	3,649	100%	5,408	100%	100%

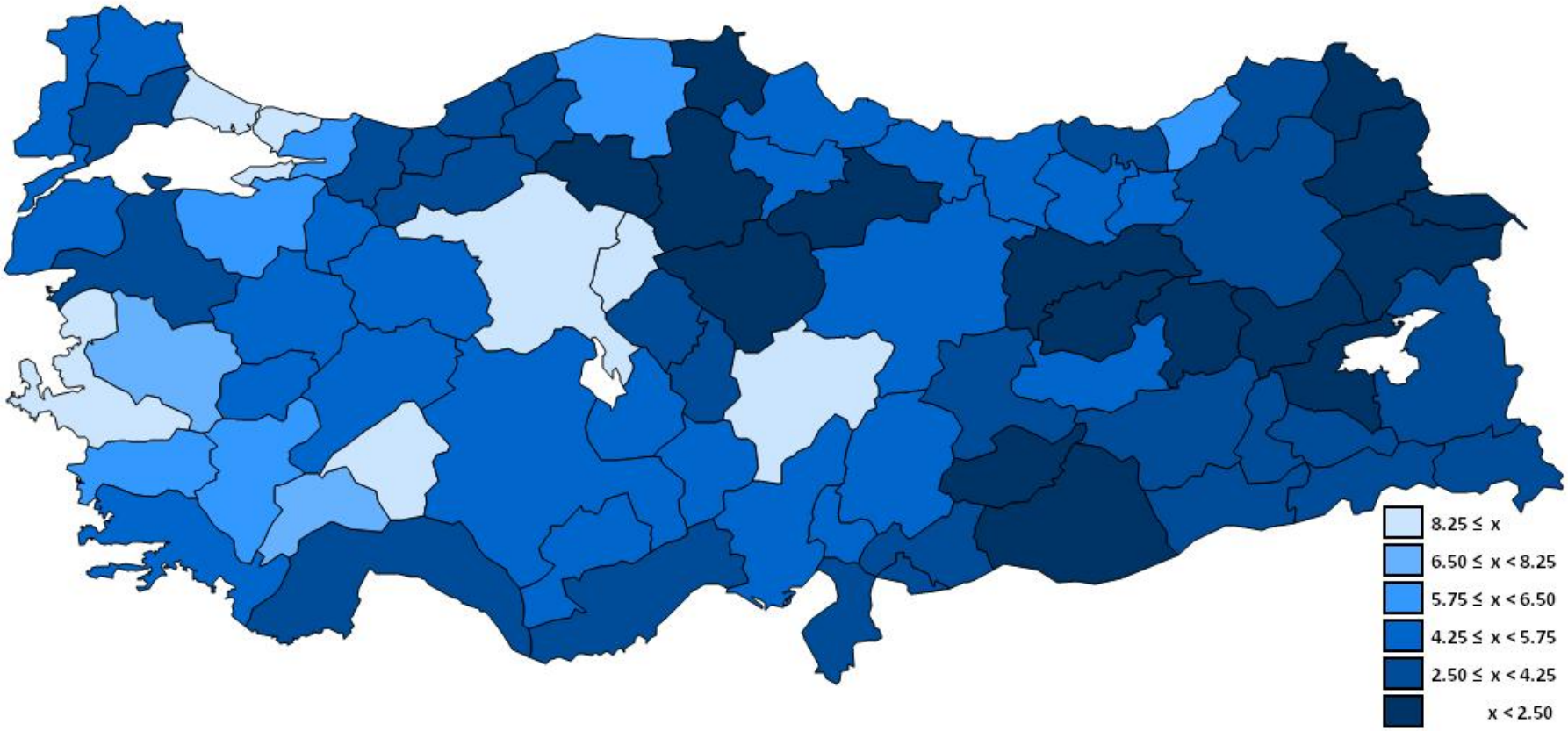
Source:TDHS 2008, HLFS 2008

Descriptive statistics

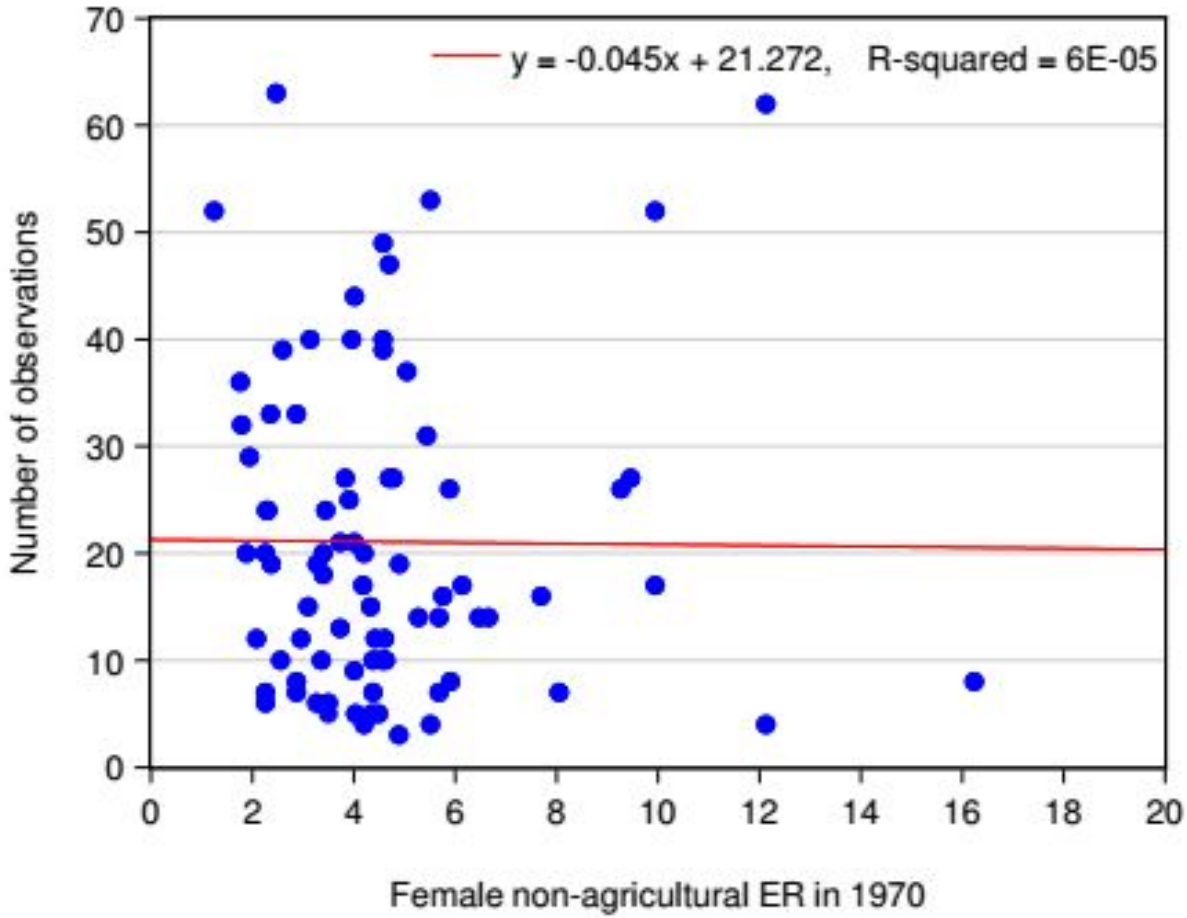
	Migrants		Non-migrants		Total		HLFS
	level	share	level	share	level	share	share
Wealth index							
Poorest	123	7.0%	403	11.0%	526	9.7%	**
Poorer	287	16.3%	851	23.3%	1,138	21.0%	**
Middle	419	23.8%	878	24.1%	1,297	24.0%	**
Richer	485	27.6%	817	22.4%	1,302	24.1%	**
Richest	445	25.3%	700	19.2%	1,145	21.2%	**
Total	1,759	100%	3,649	100%	5,408	100%	**
Mother literate	771	43.8%	1,480	40.6%	2,251	41.6%	**
Father literate	1,425	81.0%	2,908	79.7%	4,333	80.1%	**
Region							
Istanbul	307	17.5%	148	4.1%	455	8.4%	25.6%
West Marmara	86	4.9%	194	5.3%	280	5.2%	3.5%
Aegean	163	9.3%	188	5.2%	351	6.5%	12.8%
East Marmara	224	12.7%	206	5.6%	430	8.0%	11.0%
West Anatolia	127	7.2%	283	7.8%	410	7.6%	11.7%
Mediterranean	212	12.1%	466	12.8%	678	12.5%	12.0%
Central Anatolia	98	5.6%	279	7.6%	377	7.0%	4.4%
West Black Sea	115	6.5%	320	8.8%	435	8.0%	4.8%
East Black Sea	73	4.2%	228	6.2%	301	5.6%	1.7%
Northeast Anatolia	67	3.8%	369	10.1%	436	8.1%	1.7%
Central East Anatolia	93	5.3%	325	8.9%	418	7.7%	3.0%
Southeast Anatolia	194	11.0%	643	17.6%	837	15.5%	7.8%
Total	1,759	100%	3,649	100%	5,408	100%	100%

Source:TDHS 2008, HLFS 2008

Female non-agricultural ER by province, 1970



Number of observations and Female ER in 1970



Drawbacks of studying migrants

- Migrants may be subject to many shocks
- Behavior may require incentives
- Migrants may not be representative
- Assimilation

$\Rightarrow$ All introduce a bias towards insignificance!