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Societal Aging and Attitudes towards Women in the Labor Market: Evidence from European Countries

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Abstract

This paper examines the relationship between societal aging and attitudes toward women in the labor market. We hypothesize that, up to a certain point, these attitudes are more favorable as societies grow ”older”. In these societies, people may better recognize that an increase in female labor force participation can help mitigate the challenges that societal aging imposes on the welfare state. To test this hypothesis, we conduct a multilevel analysis of individuals from 25 European OECD countries between 2004 and 2017, using the Old Age Dependency Ratio (OADR) as a proxy for societal aging and gender-related questions from the European Social Survey (ESS). Our findings reveal a hump-shaped relationship between societal aging and attitudes towards women in the labor market. In the early stages of demographic change, particularly in countries with a rising OADR, positive attitudes can be attributed to the recognition that an aging population necessitates a larger working-age population, making women a logical resource for expansion, thus fostering more favorable norms. However, as societal aging progresses further, conservative views associated with older populations begin to dominate, leading to a deterioration in gender norms.

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1 Introduction

Societal aging means that the older population becomes a proportionally larger fraction of the total population. This phenomenon has been the main demographic challenge for most of today's industrialized countries since the 1960s and is predicted to remain pertinent (Lutz et al., 2008; United Nations and Social Affairs, 2015).

Since longevity has increased and fertility has fallen, the size of the retired population in absolute terms and relative to the working-age population has increased. These developments challenge key elements of the welfare state. To address these challenges, proposals for expanding the workforce are on the table, for example, through a higher female participation rate in the workforce (Council of Economic Advisors, 2019). Political decision-makers will find their implementation easier in societies where attitudes in the population towards the role of women in the labor market are more positive (Gavresi et al., 2023). However, what determines these attitudes?

This paper examines the role of "societal" aging, as opposed to "individual" aging, in shaping attitudes towards women in the workforce. Individual aging refers to the physiological and psychological changes individuals undergo as they age. In contrast, societal aging refers to the demographic shift in a population's age distribution toward older age groups. The key question is how this societal aging impacts individual attitudes towards women's participation in the labor force.

Even though women aged 18–65 outnumber men in most countries (UN population statistics), their representation in the labor market remains unequal, and societal attitudes toward the participation of women in the labor force do not reflect their numerical superiority. Research on societal aging and gender norms is limited, often addressing only the link indirectly through female labor force participation. Acemoglu and Restrepo (2020) discuss the relationship between female labor participation and demographic change without extending it to norms. The United Nations Economic Commission for Europe (UNECE) highlights that without gender- and age-responsive reforms, aging women may face disadvantages. Maestas et al. (2016) and Bloom et al. (2011) explore how aging demographics influence labor markets and gender dynamics. Kuhn et al. (2022) provides insights into evolving gender norms, suggesting their potential impact on economic outcomes for older individuals. Our research paper contributes to the existing literature by empirically exploring the link between societal aging and gender norms.

We hypothesize that the relationship between population aging and gender norms is mediated by female labor market participation. This hypothesis is supported by the specific gender norms we analyze in this paper, namely those concerning women's participation in the workforce. In countries with lower Old Age Dependency Ratios (OADR), as the OADR increases, we observe an improvement in attitudes toward female labor market participation. We attribute this positive shift to the pressures of an aging population and the necessity of addressing these demographic challenges. As the working-age population needs to expand to support a growing elderly population, integrating women into the labor force becomes a practical, if not necessary, solution. However, as the OADR rises and the population's median age increases, more conservative views associated with older populations start to dominate, resulting in a shift in gender norms. (Wilson, 2001; Stack and Kposowa, 2007; Fortin, 2017).

To test our conjecture, we conduct a multilevel analysis of individuals in 25 European OECD countries from 2004 to 2017. We use a country's Old Age Dependency Ratio (OADR), defined as the number of people aged 65 and older per 100 people of working age (15-64 years old), as a

proxy for societal aging. We rely on individual responses to questions about the standing of women in the labor market given in the European Social Survey (ESS) to proxy prevailing attitudes.

Our results identify a hump-shaped relationship between societal aging and the prevailing attitudes towards women in the labor market. Hence, as societies grow older these attitudes can first ameliorate. However, beyond a certain societal age threshold, societies may reach a turning point that leads to a shift in gender norms. For the entire sample, the hump attains a maximum at a critical OADR of around 20. To the left of this level, people express more positive views on the role of women in the labor market as the OADR, that is, the societal aging, increases. To its right, the initial pattern is reversed: an increasing OADR is associated with worse attitudes towards women in the labor market. This hump reflects the interplay between the need for a large working-age population on the one hand, and conservative views of older populations on the role of women in the labor market on the other hand.

2 Empirical Design and Data

We estimate the relationship between attitudes towards women in the labor market and societal population aging with the following equation:

$$G_{jit} = \beta_0 + \beta_1 \Omega_{it} + \beta_2 \Omega_{it}^2 + \beta_3 Z_{jit} + \beta_4 X_{it} + \beta_5 C_i + \beta_6 T_t + \varepsilon_{jit}.$$

Here, G_{jit} represents the attitude towards women in the labor market of individual j in country i at ESS round t. The societal aging is captured by the OADR at t, denoted by Ω_{it}, and its squared value, Ω_{it}^2. The latter allows for the identification of a non-linear relationship between societal population aging and individual attitudes towards women in the labor market.

The vector of controls, X_{it}, includes controls at the country level that vary over time such as the logarithm of income per capita. The vector Z_{jit} includes controls at the individual level that vary over time such as age and its squared term, gender, religiosity, marital status, presence of children or not, education, and source of income. The vector of fixed effects for the country, C_i, captures the unobserved heterogeneity at the country level, at least for time-invariant characteristics such as geography. The vector of year fixed effects, T_t, captures time-specific shocks. We denote the country and time-specific error term by ε_{jit}. Standard errors are clustered at the year level (ESS round) and the country level.

We use data from rounds 2, 4, 5, and 8 of the ESS, as the relevant questions are available only for those rounds, thus covering the period 2004 to 2017. We study a sample of 25 OECD countries including Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. For these countries, the full set of controls for our analysis is available.[1]

Table I has the relevant descriptive statistics.

In effect, as can be seen from Figure 1, Iceland and Ireland, with lower OADRs, have favorable attitudes towards women in the workplace, while Turkey, despite a low OADR, is less progressive. Scandinavian countries, with higher OADRs, maintain strong gender equality views. Luxembourg

[1] All countries in the sample completed their demographic transition. Thus, societal population aging is eventually bound to happen (Bloom et al. (2010)).

Table I: Descriptive Statistics.

VARIABLES	(1) Observations	(2) Mean	(3) Std.	(4) Min.	(5) Max.
Q1: Work vs Family	87,523	2.82	1.16	1	5
Q2: Biased Job Rights	112,750	3.57	1.24	1	5
Exp. OADR	112,750	24.65	5.07	9.00	35.16
Income Per Capita	112,750	35,543.02	20,193.76	7,466.63	94,728.53
Age	112,750	51.61	16.72	13	105
Female	112,750	0.54	0.49	0	1
Religiosity	112,750	0.63	0.48	0	1
Marital Status	112,750	2.06	1.63	1	5
Child	112,750	0.44	0.49	0	1
Education	112,750	3.05	1.36	1	6
Income Source	112,750	1.90	1.20	1	7

and Poland, though younger, are less progressive. Western Europe, including Belgium, France, and Spain, tends to be older and more conservative, with Italy and Portugal holding the most traditional views. Germany, the oldest country, shares similar attitudes with other Western European nations.

Our proxy for the prevailing attitudes towards women in the labor market in the country *i* comes from individual responses to the following ESS questions:

Q1: *A woman should be prepared to cut down on her paid work for the sake of her family* (available in rounds 2, 4, and 5).

Q2: *When jobs are scarce, men should have more right to a job than women* (available in rounds 2, 4, 5, and 8).

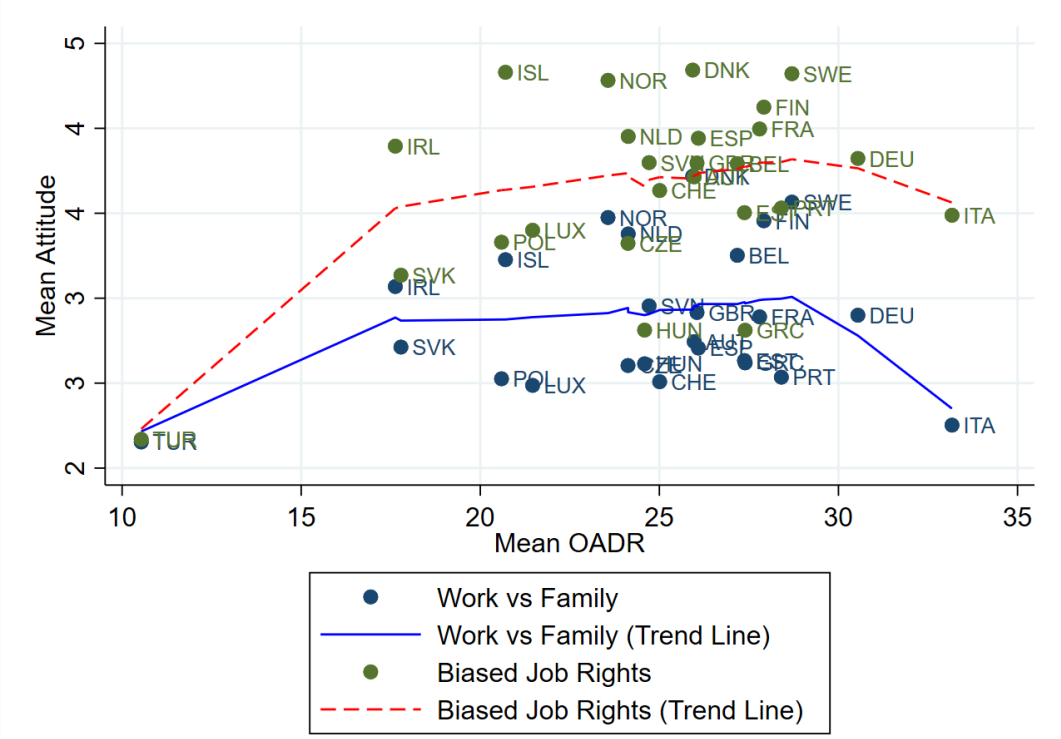
We interpret the answers to Q1 as expressing an attitude about whether women should be prepared to sacrifice career prospects in favor of their families (henceforth, Work vs Family Question). The answers are given on a scale from 1 to 5 where higher values indicate a disagreement with the statement, and hence a more favorable attitude towards women. The mean value for Q1 is 2.8.

In a similar vein, Q2 elicits a perceived hierarchy in the labor market (henceforth, the Biased Job Rights Question). Again, answers are given on a scale from 1 to 5 with higher values indicating a less dominant role for men relative to women. The mean value for Q2 is 3.57.

The mean responses to both questions suggest that negatively biased attitudes towards women in the labor market are present even in European countries that have made substantial progress toward female empowerment and gender equality.

[h]

Figure 1: Mean Attitudes vs. Mean OADR by Country



3 Results

As discussed earlier, Figure 1 plots (mean) attitudes against the OADR country-wise, by using dots to represent each country's position in the OADR - attitude space (mean values). The underlying trend in this Figure, suggests the presence of a non-linear relationship between the two variables. Motivated by the raw data we test for the presence of a non-linear relationship between societal aging and individual attitudes towards women in the labor market. Columns 1 and 2 of Table II show the respective findings. Here, all regressions include fixed effects for the year and country, as well as controls at the country and individual level.[2]

The estimated values of β_1 are strictly positive, whereas the estimated values of β_2 are strictly negative. Both are statistically significant. Hence, the relationship between societal aging and individual attitudes towards women in the labor market is hump-shaped. Moreover, there is a critical OADR, $\hat{\Omega} > 0$, at which the hump attains a maximum.[3]

The estimated $\hat{\Omega}$ lies roughly around 20-21. These estimates are in the range of the OADR values in our sample, i. e., there are several countries with OADR values lower and larger compared to $\hat{\Omega}$ (countries that are relatively younger include, e. g., Ireland, Poland, Slovakia, and Turkey,

[2]For the sake of space, we only present regression results that include the full set of controls featured in equation 1. Regression tables showing a gradual introduction of controls are available from the authors upon request.

[3]If $\Omega_{it} < \hat{\Omega}$, then in country i attitudes towards women in the labor market become more positive when the OADR increases a bit further. If $\Omega_{it} > \hat{\Omega}$, then in the country i these attitudes become more negative when the OADR increases further.

whereas older countries include Germany, France, and Sweden).

Table II: Societal Aging and Attitudes towards Women in the Labor Market.

Variables	(1)	(2)
	Attitudes towards Women in the Labor Market	
	Q1: Work vs Family	*Q2: Biased Job Rights*
OADR[I]	0.1743*	0.0808*
	(0.1000)	(0.0476)
OADR Sq.	-0.0042**	-0.0020**
	(0.0021)	(0.0009)
Ind. Age[II]	0.01***	0.01**
	(0.00)	(0.00)
Ind. Age Sq.	-0.00***	-0.00***
	(0.00)	(0.00)
Log Income	-0.51	-0.71**
	(0.48)	(0.27)
Critical OADR[III]	**20.57**	**20.39**
Ind. Controls[IV]	Yes	Yes
Countries (#)	25	25
Time Period[V]	2004-2011	2004-2017
Observations	87,127	112,971
R-squared	0.16	0.28

Notes: Table II establishes the hump-shaped relationship between societal aging and attitudes towards women in the labor market. All regressions feature fixed time and country effects.
I *OADR* is the *ratio of the population aged 65 and over to the population 15-64 stated as the number of dependents per 100 persons of working age*. **II** Individual controls account for the individual age to net out the individual age effect. **III** Turning point (at a critical threshold level of aging) beyond which attitudes towards women in the labor market become more positive (hump-shaped relationship). **IV** At the individual level, the analysis controls for individual age and its squared term, gender, education, marital status, living with children, religiosity, and source of income. **V** Q1 is asked in ESS rounds 2, 4, 5 (column 1); Q2 is asked in ESS rounds 2, 4, 5, and 8 (column 2); *** denotes statistical significance at 1% level, ** at the 5% level, and * at 10% significance level.

To interpret the coefficients at this critical value we obtain the marginal effects for each category (Table not reported). Interpreting the coefficients at this critical value we find that regarding Q1 (Column 1-Critical Value 20.573) changing the OADR by 1 unit (e.g., moving to the left of the peak from OADR 20.753 to OADR 19.753) the probability of remaining in Category 1 would decrease by approximately 4.38 percentage points, and the probability of remaining in Category 2

would also decrease by about 0.6 percentage points thus reflecting a shift in norms. For Categories 3, 4, and 5 the probability of remaining in each category would decrease by approx. 1.1, 2.25, and 1.63 percentage points correspondingly, also reflected a shift in norms. In line with the intuition behind our finding, a deviation (to the left or the right) from the peak point (which reflects the maximum value of norms) hints at a shift in norms. Similar results are obtained for Q2 with a peak point at OADR=20.394.[4]

4 Conclusion

Our study investigates whether an increase in the OADR, i.e., societal aging, is correlated with individual attitudes towards women in the labor market. The results reveal a hump-shaped relationship, suggesting that up to a certain threshold of the OADR, attitudes towards women in the workforce become increasingly positive as the OADR rises. However, beyond this threshold—which is the peak of the hump—further increases in the OADR are associated with more negative views. This pattern may reflect the tension between the demand for an expanding labor force and the conservative attitudes towards women prevalent in older populations.

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[4]Note that our results remain robust to exclude Turkey and Italy, which may seem like outliers, from the sample. Results from this robustness check are available from the authors upon request.

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