

Li, Jianghong; Giebler, Heiko; Wetter, Rebecca; Kenyon Lair, Hannah; Ellingwood, Julia

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Unequal electoral participation: the negative effects of long work hours and unsociable work schedules in Europe

Jianghong Li

jianghong.li@wzb.eu
WZB Berlin Social Science Center,
Germany, Telethon KIDS Institute
and Curtin University, Australia

Heiko Giebler

heiko.giebler@wzb.eu
WZB Berlin Social Science Center
and Free University Berlin,
Germany

Rebecca Wetter

rebecca.wetter@wzb.eu WZB
Berlin Social Science Center,
Germany

Hannah Kenyon Lair

hannahkenyonlair@gmail.com
WZB Berlin Social Science
Center, Germany

Julia Ellingwood

julia.ellingwood@wzb.eu
WZB Berlin Social Science
Center, Germany

Abstract

Considering gender inequality in time as a resource for political participation and using Wave 5 of the European Social Survey data on 24 European countries, this study examines: (1) the relationship of both long working hours and unsociable work schedules to participation in national elections in Europe before or during 2010; (2) factors that may mediate this association; and (3) gender differences in this relationship and occupation-specific patterns. The findings show that both working more than 45 hours per week and working evenings, nights or weekends are associated with lower national electoral participation in women with both high and low occupational status. Among men with the lowest occupational status, working long hours is also linked to lower participation. These findings are robust against controlling for important confounders. Political interest seems to partially mediate the negative effect of unsociable work schedules on voting in women. Neither health nor social engagement plays a mediation role.

Keywords

long work hours, unsociable work schedules, electoral participation, gender, occupational status, Europe

Key messages

- Few studies have examined the effects of work conditions on electoral participation and gender differences.
- We find that long or unsociable work time and timing depress electoral participation in women and non-skilled men.
- We provide new insights on time as a resource for political participation and on gender and occupational inequality.
- Long work time and unsociable work timing are potentially detrimental to democracy. messages over and over again.

Introduction

Time resources are one important prerequisite for political participation (Brady et al, 1995). However, few studies have examined how labour market conditions affect time resources (Uppal and LaRochelle-Côté, 2012), and even less research has analysed gender-specific patterns (Stadelmann-Steffen and Koller, 2014). Two recent changes in work time and timing are noteworthy. In recent decades, along with increasing precarity and economic insecurity (Kalleberg, 2018), we have witnessed a rising trend in long working hours in much of the workforce. In developed countries, 23.4 per cent of men in formal employment and 31.6 per cent in informal employment work more than 48 hours per week, whereas about 8 per cent of women in both sectors work more than 48 hours per week (Messenger, 2018). In Europe 16 per cent of women worked 45 or fewer hours per week between 2005 and 2015 (Han et al, 2020). Work timing has also become more unsociable (for example, evenings, nights and weekends), unpredictable and precarious (for example, rotating, variable and on-call shifts) (McMenamin, 2007; Australian Bureau of Statistics, 2009), especially among lower socio-economic groups (Gracia et al, 2021) in the 24/7 economy (Presser, 2003). Within Europe, 19.6 per cent of the employees usually work evenings or nights and 26.3 per cent usually work on weekends (Eurostat, 2019).¹

These changes in work conditions raise concerns about their impact not only on workers' health, but also on their time resources for political engagement. To date, little research has examined the relationship of both long work hours and unsociable schedules to electoral participation, as well as gender- and occupation-specific patterns. This study fills in this gap using Wave 5 of the European Social Survey (ESS) data on 24 European countries.

Inspired by the conceptualisation of time as both a resource for family and child well-being (Brooks-Gunn et al, 1995; Li et al, 2014) and a resource for political participation (Brady et al, 1995), we raise the first question: is working long hours or unsociable schedules associated with lower electoral participation? Time allocation is gendered, and working women have fewer time resources than men due to the unequal share of unpaid work between men and women (Sayer, 2005). Not surprisingly, working unsociable schedules leads to greater work–family conflict for women than for men (Kalil et al, 2010; Maume and Sebastian, 2012; Taiji and Mills, 2020). Furthermore, women's mental health declines at a lower work-hour threshold than does men's (Dinh et al, 2017). Moreover, women attach greater importance to having adequate political knowledge as a prerequisite to voting than do men (Fox and Lawless, 2005; Ondercin and Jones-White, 2011). Thus, our second question is: does the association between work hours/schedules and electoral participation differ by gender?

Overwhelming evidence shows that long work hours (Bannai and Tamakoshi, 2014; Kivimäki et al, 2015) and unsociable work schedules (Moreno et al, 2019)

are detrimental to both workers' own and their families' health and well-being (Li et al, 2014). There is growing evidence that links poor health (Mattila et al, 2013; Burden et al, 2017), particularly poor mental health (Ojeda, 2015; Bernardi et al, 2022; Landwehr and Ojeda, 2021), and social connectedness to electoral participation (Zuckerman, 2005; Bhatti and Hansen, 2012; Mattila et al, 2013). Physical and mental strains associated with working long hours and unsociable schedules may also lower political interest (Newman et al, 2013) and reduce social engagement (Bartolini and Bilancini, 2011), particularly among workers with lower socio-economic status. This raises our third question: if working hours and schedules impact voting, do health, social engagement and political interest mediate this association? Time resources may interact with other participatory resources, including money and civic skills, which are influenced by occupation (Brady et al, 1995). This motivates our occupation-specific approach to testing the effects of work hours and schedules on electoral participation and gender differences in these effects.

We found that working long hours (more than 45 hours per week) or unsociable schedules (evenings, nights or weekends) indeed lowers electoral participation, mostly in women. Among men, working long hours was associated with lower participation only for those at the bottom of the occupational hierarchy. The gender difference remained after controlling for a wide range of potential confounders at individual and national levels. We also found that decreased political interest appears to partially mediate the negative effect of working unsociable schedules on voting among women in female-dominated occupations. Neither poor health nor reduced social engagement had a mediating effect on voting. This is likely due to the cross-sectional nature of the data, as decline in health may be a more slow-moving mechanism than political interest.

Our findings bear two important implications. Long working hours and unsociable work schedules are plausible barriers both for women and for men with the lowest occupational status to participate in democracy at the basic level. Long work hours and unsociable work schedules are not only damaging to both workers' and their families' health and well-being, as evidenced in ample studies, but also potentially detrimental to the sustainability of democracy in the 24/7 economy, with rising trends in economic insecurity and in unhealthy and precarious work hours and timing.

Relationship of long work hours and unsociable work schedules to political participation

In their resource model of political participation, Brady et al (1995) conceptualise time, money and civic skills as required resources for participation. These resources are influenced by a person's occupational status and can interact with or counterbalance one another. On the one hand, employment diminishes one's free time for participation. On the other hand, employment confers money and can help employees develop civic skills.²

Brady et al (1995) found that free time (average hours per day free) is positively associated with electoral participation. Working full-time reduces free time per day by six hours, and having a working spouse or pre-schoolers at home further reduces free time by about three hours per day (Brady et al, 1995). Uppal and LaRochelle-Côté (2012) show that working more than 40 hours per week was associated with a lower probability of voting in the Canadian national election in 2011, independent of

sociodemographic characteristics, labour market sector, industry type and occupation. However, the authors did not examine gender or occupation differences, nor the mechanisms underpinning this association.

Working long hours can deplete an individual's free time and mental capacities for gaining adequate political knowledge and following up on public issues, and, in turn, lead to political disengagement. By extension, working unsociable schedules (evenings, nights and weekends) can also deplete one's free time and availability for participation, as people working in evening/night schedules need to rest during the daytime. Further, women working such schedules must often sacrifice their rest in order to complete their unpaid housework and caregiving (Thompson, 2009; Lowson et al, 2013).

Money and civic skills may counterbalance time deficits, but the interplay between these resources hinges critically upon one's occupational status. Individuals located on the high end of the occupational hierarchy have demanding jobs and likely work long hours, but they also hold jobs with authoritative and supervisory power, which enables them to develop strong self-governing and participatory skills that can be transferred to political participation (Sobel, 1993; Brady et al, 1995). Moreover, high occupational status confers higher income. Thus, longer work hours (less free time) may be compensated with stronger participatory skills and more money, resulting in no effect on political participation among those with higher occupation status. Long work hours, however, likely depress participation among those located on the lower end of the occupational hierarchy, whose jobs confer less money and fewer opportunities for developing participation skills.

Mechanisms underpinning the impact of long work hours and unsociable work schedules on political participation

Long work hours and unsociable work schedules not only diminish a person's free time, but can also decrease other domains of resources for political participation, such as health. Working unsociable schedules is detrimental to workers' health (Kantermann et al, 2010; Moreno et al, 2019). Regular night shifts and rotating shifts disturb the body's circadian rhythms and alter physiological functions (Kantermann et al, 2010). There is consistent evidence linking working unsociable schedules to increased risk for cardiovascular diseases, gastrointestinal and metabolic disorders, and cancers (Moreno et al, 2019). Overwhelming evidence also shows that long working hours increase the risk for depression, anxiety, sleep problems, stroke and coronary heart disease (Bannai and Tamakoshi, 2014; Kivimäki et al, 2015). Mental health problems, such as stress or anxiety associated with economic insecurity, can take time and attention away from politics (Hassell and Settle, 2017; Marinova, 2022).

Mattila et al (2013) found that self-reported bad health depresses national electoral participation in 30 European countries. This effect is partly mediated by reduced social connectedness. Burden et al (2017) demonstrated that a person's cognitive functioning, physical health and emotional well-being had strong effects on voter turnout in 2008, 2010 and 2012 in the US state of Wisconsin. Increasing evidence shows that self-reported depression at clinical and subclinical levels decreases electoral participation by diminishing political efficacy, political interest and party identification (Ojeda, 2015; Bernardi et al, 2022; Landwehr and Ojeda, 2021). The aforementioned

empirical literature suggests that health may partially mediate the effect of working long hours and unsociable schedules on electoral turnout.

Political participation is a social act. Primary social networks, such as families and households, exert a strong influence on the likelihood that a citizen will turn out to vote (Nickerson, 2008; Bhatti and Hansen, 2012). An individual's decision about political participation is also influenced by the opinions, preferences and actions of people within their wider social networks, including friends, neighbours and co-workers (Zuckerman, 2005). Participation in social activities and meeting with friends, relatives and work colleagues have a positive effect on voting in national elections (Mattila et al, 2013). Bartolini and Bilancini (2011) show that civil engagement decreases when work hours increase. Stadelmann-Steffen et al (2010) found that full-time working women are less likely to participate in civic activities than women working part-time. This suggests that long work hours and unsociable work schedules may have an indirect negative effect on voting through decreased social engagement.

In a similar vein, working long hours and unsociable schedules can also depress electoral participation by lowering political interest. Time spent commuting to work depresses political participation by eroding political interest due to the increased psychological burden (Newman et al, 2013). While this study did not directly examine work time and timing, it suggests that such unfavourable work conditions may also deplete political interest via mental strains and weak social connectedness, which, in turn, may depress electoral participation.

To recapitulate, the aforementioned empirical literature on work–health and health–participation relationships suggests that poor health, lower social engagement and decreased political interest may mediate the impact of long hours and unsociable schedules on participation, contingent on occupational status. Individuals with high professional status (legislators, senior officials, managers, high-level professionals) tend to work long hours, but they likely work along with colleagues, which fosters political interest and social connectedness; whereas persons with lower-status occupations (services/retail, crafts/trades and agriculture/fishery) tend to work alone or with less contact with others on the job. Moreover, higher-status professionals working long hours may not experience a lower incidence of poor mental health because their jobs offer both higher monetary and non-monetary rewards (job satisfaction, job control and autonomy) (Pichler and Wallace, 2009). Increased risk for ill health due to working long hours or unsociable schedules may be mitigated by more financial resources, enabling access to preventive and curative healthcare among high-status professionals.

Gender differences in the work–health interface and in political participation

Several research strands suggest that the effect of work hours and schedules on participation is likely to differ by gender. Despite continuous increases in women's participation in the labour force, working women often remain the primary responsible individuals for unpaid housework and care provision, the so-called 'second shift' (Hochschild and Machung, 2012). Due to the double burden of paid and unpaid work, work time and timing have a larger negative impact on women than men. Maume and Sebastian (2012) found that working non-standard schedules disrupted women's capacity to fulfil their 'second shift', which, in turn, strained their

marriage among food retail workers in the US. Kalil et al (2010) reported similar findings based on data from the National Longitudinal Survey of Youth in the US: wives' fixed night shifts increased the risk of divorce over five years since marriage. Women working evenings/nights or weekends regularly reported significantly greater work–family conflict than their male counterparts in Europe (Taiji and Mills, 2020). In Germany, working full-time causes stress and strain among mothers but not among fathers (Li et al, 2020).

The harmful health effects of long work hours (Bannai and Tamakoshi, 2014; Kivimäki et al, 2015) are also gendered. In Australia, mental health starts to decline at the threshold of working 43.5 hours per week for men versus 38 hours per week for women (Dinh et al, 2017). This gender gap widens when unpaid care work in the home is taken into consideration: mental health declines at 39.5 work hours per week for men versus 32.3 hours per week for women.

Women sacrifice their free time for leisure activities and adequate sleep in order to do unpaid work (Craig, 2007; Stadelmann-Steffen and Oehrli, 2017; Thompson, 2009). This persists even when children enter school (Stadelmann-Steffen and Oehrli, 2017). Together, the empirical literature reviewed suggests that gender inequality in unpaid work is a plausible reason why work time and timing may have a larger negative impact on women's well-being and health compared with men, which, in turn, suggests a higher impact of work time and timing on women's political participation.

Our interest in gender differences in the effect of long work hours and unsociable work timing is also motivated by gender differences in political participation. Women tend to be more risk averse than men and perceive a higher level of political knowledge as a prerequisite for political participation, whereas men are willing to engage in political participation at a lower level of political knowledge (Ondercin and Jones-White, 2011). Relatedly, women hold themselves to a higher standard before running for an elected office than do men (Fox and Lawless, 2005; Lawless and Fox, 2005). It requires free time for a citizen to gain and maintain political knowledge, putting women at a disadvantage due to the double burdens of paid and unpaid work (Stadelmann-Steffen and Koller, 2014; Hochschild and Machung, 2012). Thus, time as a resource for political participation may matter more for women than for men.

The expected gender differences in the effect of working time and timing on political participation, as informed by the theoretical and empirical literature reviewed earlier, may again be occupation specific. This is because time may be compensated with other participatory resources, such as income and civic skills, which are influenced by one's occupation (Brady et al, 1995). Based on the logic of occupational stratification, one would expect that time deficits to be compensated by income and civic skills more for women in high professional positions than for their counterparts with lower occupational status, thus likely narrowing gender gaps in political participation among those in higher-status occupations. However, this depends on women's burden of unpaid work in the home. Stadelmann-Steffen and Koller (2014) found that women with high occupational status (for example, executives and supervisors) and unemployed women whose partners also hold high professional positions have the lowest electoral participation rates. Their study took place in Switzerland, where even highly educated women working full time still do the majority of unpaid work in the home. Thus, it seems that when unpaid work is gendered, women working full time and in high-status occupations face greater time deficits than women

working part time or in less demanding jobs. Hence, time constraints cannot be simply compensated by income and civic skills gained in higher-status jobs (Stadelmann-Steffen and Koller, 2014). This study underscores the complexity of how occupation-related resources may or may not compensate limited time resources for women, depending on partners' professional status and their share of unpaid work in the home. It also supports our argument presented from the onset that occupational status is an important context within which we ought to examine the effects of work time and timing on electoral participation, their gendered patterns and mechanisms.

Hypotheses

Based on the theoretical and empirical literature reviewed earlier, we test the following three hypotheses:

Hypothesis 1: Long work hours and unsociable work schedules are associated with a lower likelihood of voting in a national election.

These effects are more pronounced in lower-ranking occupations that confer less money and fewer civic skills as compensating resources for participation.

Hypothesis 2: Long work hours or unsociable work schedules have a larger negative effect on electoral participation for women than for men.

This gender difference is occupation specific and also depends on women's unpaid work load.

Hypothesis 3: Poor health, decreased social engagement and lower political interest partly mediate the negative effect of working long hours and unsociable schedules on electoral participation.

These mechanisms likely exist among individuals working in lower-ranking occupations.

Methods

Data

To test our hypotheses, we analyse the data from the Wave 5 of the ESS, which is the most recent wave to include questions on work schedules and three hypothesised mediators (health, social engagement and political interest) (ESS, 2018). Our analytical sample includes individuals who were eligible to vote at the time of the last national election and did paid work in the previous seven days (or were only temporarily away from their job) as their main activity. The sample omits Belgium due to its compulsory voting legislation, as well as Russia and Ukraine, whose political systems differ qualitatively from other countries included in the ESS. The remaining 24 countries still cover diverse national contexts: Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR),

Hungary (HU), Ireland (IE), Israel (IL), Lithuania (LT), Netherlands (NL), Norway (NO), Poland (PO), Portugal (PT), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SW), Switzerland (CH) and Great Britain (GB). Omitting missing cases for all variables of interest, the effective analytical sample size is 17,709 (48.5 per cent women). The original design and population weights for the ESS data sets are applied to all our analyses using totals and subsamples by gender and occupation as recommended (ESS, 2018; Kaminska, 2020). Weights improve the representativeness of our analytical sample, thereby increasing the reliability and generalisability of the results. Sample sizes and descriptive statistics for all variables are shown in Table S1 in the appendix. To allow for comparisons across predictors, we standardise all continuous measures by dividing these measures by two standard deviations (Gelman, 2008).

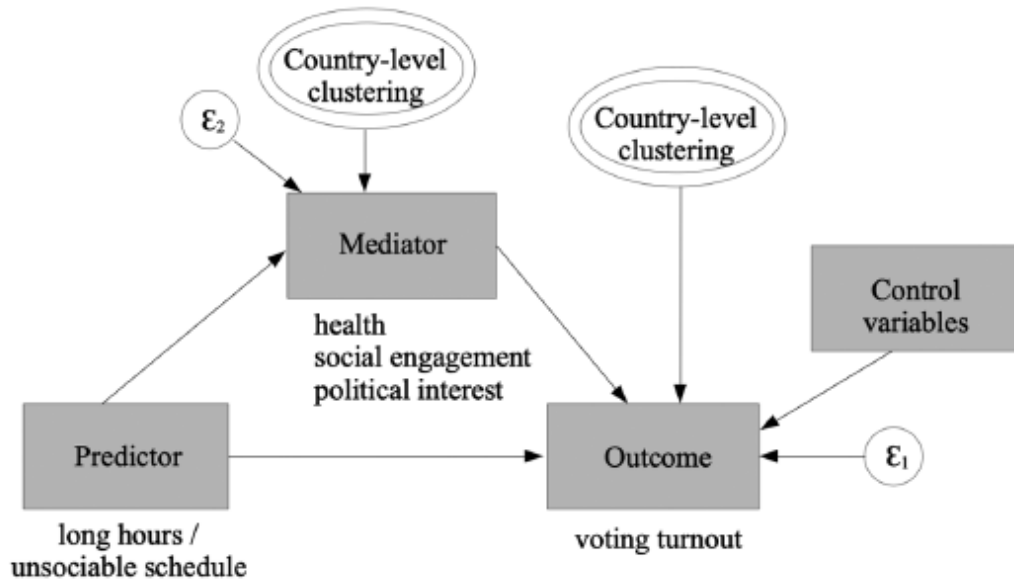
Measures

The dependent variable is whether the respondent voted in the most recent national election in their country (1 = yes). The main independent variables are long work hours and unsociable schedules, also coded as binary variables. We define people working more than 45 hours per week as working long hours, based on cross-national evidence of the negative health effects of long working hours, which are defined as between 40 to 48 hours per week (Spurgeon, 2003; Bannai and Tamakoshi, 2014; Kivimäki et al, 2015).³

We define an unsociable work schedule as working in the evening or night once a week or more often, or working on weekends once a month or more often. This cut-off reflects the minimum number of times within a work period (week or month) an individual works during an unsociable time (evening, night or weekend), beyond which this work schedule may be a regular event that likely impacts their life, health and social and political engagement. The two schedule types are combined into a single binary indicator because both types of work schedules likely diminish workers' opportunity to socialise with family members and friends who work standard daytime and weekdays. Hence, they both are unsociable work schedules. In socialising with others, a person can be informed by others or share with others their views on relevant political issues for a national election. This, in turn, can enhance one's motivation to vote.

To test Hypothesis 3, we examine three mediators: self-reported health, social engagement and political interest. Self-reported health is coded as 0 = very good or good versus 1 = fair, bad and very bad, as the latter three categories share similar risks for major diseases (Lorem et al, 2020). Social engagement is coded as 0 = meeting with friends, family and co-workers more than once a month (more socially engaged) versus 1 = meeting with friends, family and co-workers less than or up to once a month (less socially engaged). Political interest is coded as 1 = high and moderate versus 0 = low or none.

All our models control for both individual and country characteristics. Individual-level controls include age, educational attainment, marital/union status, having a child below age 14 and religion. We also control for closeness to a party and satisfaction with democracy because these are well-established determinants of electoral participation. We are interested in understanding whether work time and timing impact voting, over and above these established determinants of electoral turnout. Country-level controls include gross domestic product (GDP) per capita (2010) and the electoral system, including whether voting is only possible at a polling station, whether the election day is a Sunday or holiday, and whether the country uses a proportional



Note: Country-level clustering refers to the random intercepts. ϵ_1 and ϵ_2 denote error terms. Controls include individual-level characteristics (age, education, religiousness, having children at home, marital status, occupational status, satisfied with democracy, closeness to party) and country-level co-variables (per capita GDP, voting system features, and electoral system).

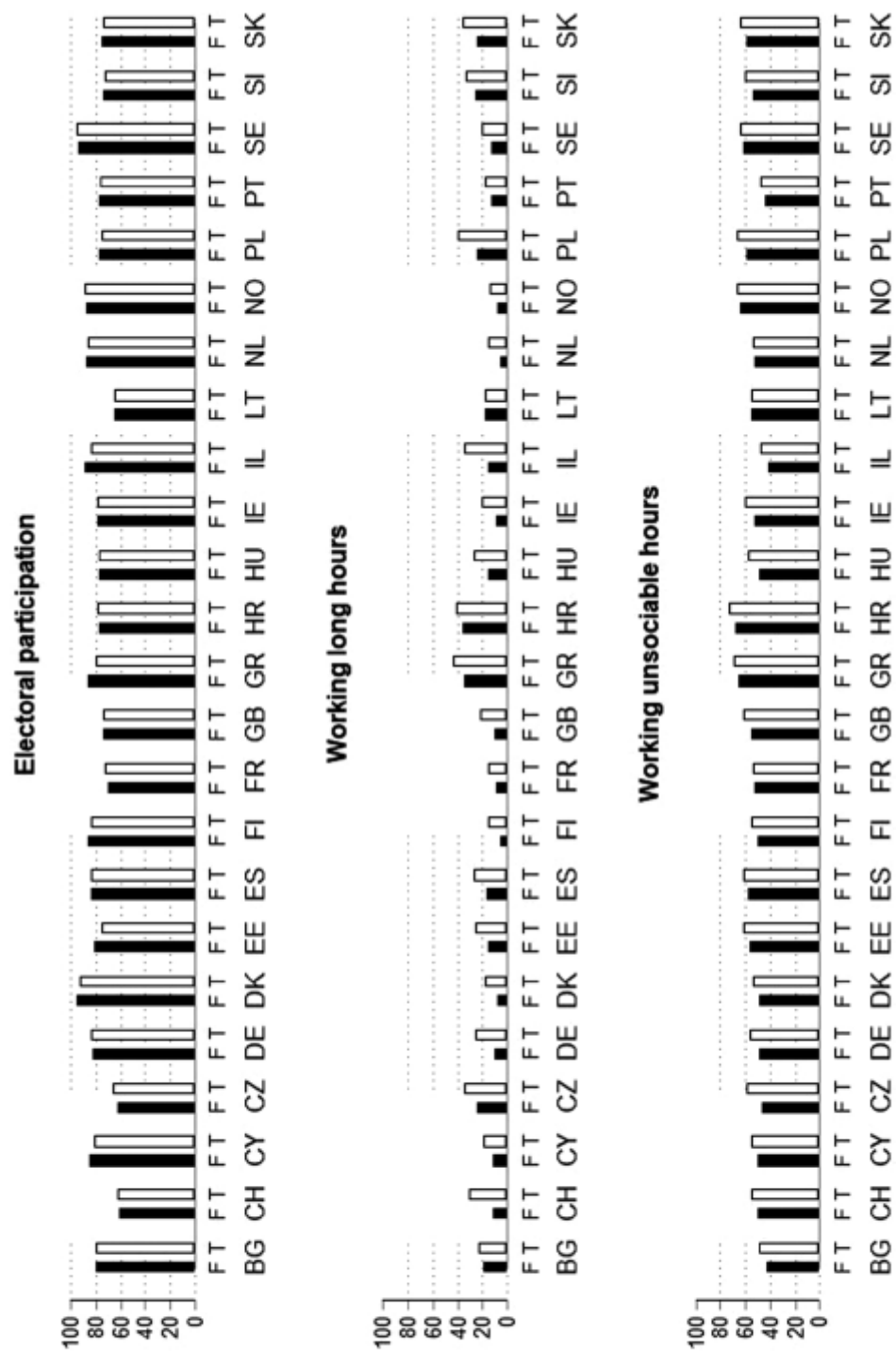
Figure 1: Conceptual diagram and overview of the GSEMs for testing the hypotheses

electoral system. The definitions of the control variables are provided in the appendix (see Table S1).

Analytical approach

All analyses are accomplished using Stata 16. As our data are hierarchical in nature (individuals nested within countries) and the dependent variable is binary, we would normally run a multilevel mixed-effects logistic regression with post-stratification weights.⁴ However, as we also aim to test the hypothesised mediators, we incorporate these features into a generalised structural equation model (GSEM) (see Figure 1). This approach allows us to estimate non-linear models while applying weights and controlling for the data structure in order to test for the direct effects of the independent variables and their indirect effects through the mediators on voting (see Hypotheses 1 and 3). To test Hypothesis 2 on gender differences and to show occupation-specific patterns of the differences, we stratify the analysis by gender and by occupation, with four groups: manager/professional/technician, clerical/service/sales, crafts/related trades/skilled agriculture/fishery and plant operators/assemblers/elementary workers.

Causal mediation analysis developed by Imai and colleagues (Imai et al, 2010; Tingley et al, 2014) cannot be applied to our estimation model, as both the outcome variable and mediators are non-continuous. Instead, we use the traditional approach to mediation developed by Baron and Kenny (1986) and Kenny (2013). We use the multiple-equation system underlying the GSEMs to test the direct and indirect effects of interest. While there are limitations to this approach (Imai et al, 2010), as it uses only information provided by the fitted model, Baron and Kenny's (1986) approach clearly has merit for our study, especially if the results show clear and theoretically



Note: Solid bars for women and hollow bars for men.

Figure 2: Frequencies of key variables by country and gender 2010

meaningful patterns, as shown in our results. Figure 1 provides an overview of our conceptual and analytical framework.

Our first (base) model includes the key predictors and all controls but not mediators. The second model includes the mediators, estimating all six mediations simultaneously by gender. We are well aware that comparing estimates between non-linear models is intricate (Mood, 2010). Hence, we mainly compare patterns and focus on average marginal effects and corresponding probability changes, which are less or not at all affected by effect sizes and unobserved heterogeneity.

Results

Prevalence of the dependent variable and main predictors by gender and country

Figure 2 shows visible cross-national variations in the percentage of working populations who voted in their last national election in or before 2010 across 24 European countries. The participation rate is the highest in Sweden, Denmark, Norway and The Netherlands (above 80 per cent), and the lowest in Switzerland (60 per cent). In five countries (Cyprus, Finland, Greece, Israel, Estonia) more women participated in their most recent election than men did.

Cross-country variations in working long hours are much more pronounced than those in electoral participation: in 10 countries (GR, HR, IL, PL, SK, SI, CH, CZ, EE, HU), 40 per cent or more of the workforce worked more than 45 hours per week in 2010. Working more than 45 hours per week is mainly a male phenomenon in Europe. The prevalence of working unsociable schedules also varies across the 24 countries, and in 12 countries, gender differences are pronounced (BG, CY, CZ, GB, GR, HR, HU, IE, IL, PL, SI, SK), with men being much more likely to work in the evening, at night or on weekends than are women. Despite these striking gender differences, a considerable proportion of employed women (13.3 per cent) work more than 45 hours per week, and 38.6 per cent often work in the evening, at night or on the weekend (see Table S1 in the appendix). This has implications for women's political participation because most working women also do unpaid work, which further reduces their free time for political participation. We turn next to the multivariate models for testing our hypotheses.

Effects of work hours and schedules on voting

Table 1 shows the coefficients for the main independent variables and mediators. The full regression models, which contain all covariates, are available in the appendix (see Table S3). The results show that long work hours and unsociable schedules have an overall significant negative effect on turnout for women. Moreover, this effect is more pronounced in two occupational groups: managerial/professional/ technician and clerical/service/sales. Women in clerical/service/sales and working long hours are less likely to vote than their counterparts who work fewer than 45 hours per week. Working long hours has a similar effect for women in agriculture/ fishery/craft, though the effect is not significant, possibly due to the small subsample ($N = 316$). Unsociable schedules are associated with lower electoral participation by women in both the managerial/professional/technician and clerical/service/ sales professions.

	(1)	(2)	(3)	(4)	(5)
Women	All occupations	Managers/ professionals/ technicians	Clerical/ Service and Sales	Agriculture, forest and fisheries/craft	Operators and assemblers
Long work hours	-0.20* [0.10]	0.02 [0.15]	-0.62*** [0.12]	-0.53 [0.56]	0.22 [0.33]
Unsociable work schedule	-0.28*** [0.08]	-0.41** [0.13]	-0.26*** [0.07]	0.41 [0.43]	-0.10 [0.25]
Poor health	-0.10 [0.15]	-0.02 [0.21]	-0.06 [0.15]	-0.82 [0.62]	-0.23 [0.20]
Low social engagement	-0.24 [0.15]	-0.10 [0.22]	-0.15 [0.13]	-0.76 [0.58]	-0.66*** [0.14]
Political interest	0.93*** [0.13]	0.95*** [0.12]	0.90* [0.37]	0.29 [0.33]	1.30*** [0.36]
Constant	-1.28 [0.69]	-1.77* [0.74]	-1.08 [0.76]	-2.27 [1.76]	-2.89*** [0.74]
<i>N</i>	8,595	4,251	3,038	316	990
Men	(1)	(2)	(3)	(4)	(5)
Long work hours	0.02 [0.05]	0.15 [0.08]	-0.07 [0.28]	0.26 [0.16]	-0.52** [0.18]
Unsociable work schedule	-0.14 [0.09]	-0.30 [0.21]	-0.33 [0.23]	0.07 [0.23]	-0.03 [0.15]
Poor health	-0.22* [0.10]	-0.05 [0.11]	-0.53* [0.24]	-0.31 [0.27]	-0.21 [0.34]
Low social engagement	-0.28*** [0.08]	-0.36*** [0.05]	-0.17 [0.37]	-0.17 [0.14]	-0.32 [0.20]
Political interest	0.81*** [0.12]	0.87*** [0.10]	0.74* [0.38]	0.76** [0.24]	0.89*** [0.10]
Constant	-1.17 [0.61]	-0.88 [0.81]	-0.50 [0.92]	-1.63* [0.82]	-0.78 [0.50]
<i>N</i>	9,114	3,922	1,342	2,065	1,785

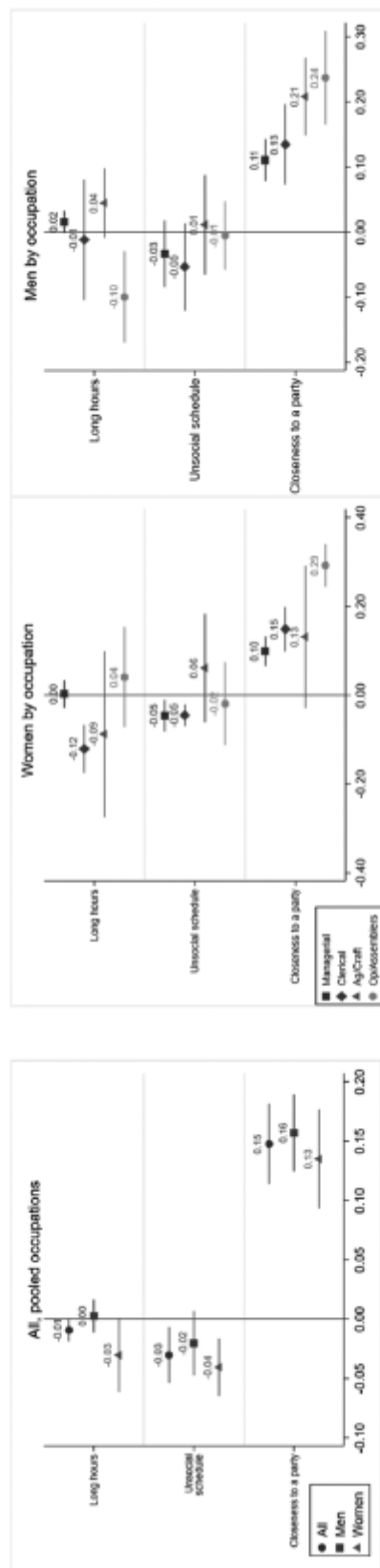
Notes: Standard errors in square brackets. All models include age, marital status, having a child under age 14, religion, education, party identification, GDP, proportional voting, voting restriction and Sunday. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 1: Effects of long working hours and unsociable schedules on voting in 2010 in

In contrast, long hours and unsociable schedules have no overall significant effect for men, though long work hours have a negative effect for men employed as operators/assemblers/elementary workers. We also tested gender interactions in the pooled sample and found occupation-specific gender interactions with long work hours (see Table S9 in the appendix). Gender differences in the effect of long work hours among clerical/service/sales workers and operators/assemblers are significant. The overall effect of unsociable schedules for all occupations combined also differs by gender, with marginal significance ($p < 0.10$). These findings lend support to Hypothesis 2 and our general expectation that the effects of the main independent variables are occupation specific.

To facilitate an easier interpretation of the coefficients for the main predictors and a comparison of these effects across models and across predictors, we calculated corresponding marginal effects and probability changes (see Figure 3). Among women in clerical/service/sales, working 45 hours or more per week reduces the probability of participation by 12 per cent ($p < 0.001$), an effect size almost as large as that of having high political interest or being close to a party (with a 15 per cent increase in the probability for both), which are two of the strongest determinants of voter turnout. Among women employed in both managerial/professional/technician and

Coefficient plots of marginal probability changes by men, women, and occupational class



Notes: Probability changes derived from models controlling for health, social engagement, political interest, age, marital status, having a child < age 14, religion, education, GDP, proportional voting, voting restriction and Sunday. When spikes intersect with 0.0, the coefficient is insignificant.

Figure 3: Marginal probability changes by gender and occupational class

clerical/service/sales groups, working unsociable schedules reduces the probability of participation by 5 per cent ($p < 0.01$) for both occupation clusters, which is one third of the effect size for the two well-known political determinants of participation. Among men working as operators/assemblers, working more than 45 hours per week reduces the probability of electoral participation by 10 per cent ($p < 0.01$).

Mediation effects

Following the approach to identifying mediation by Baron and Kenny (1986), we estimate: (1) the effect of working long and unsocial hours on the three mediators; (2) the effect of the mediators on electoral participation; and (3) the effect of our core independent variables on electoral participation, including mediators. While the third effect should become indistinguishable from zero or, at least, substantially smaller without mediators, the first two effects should be statistically significant as an indication of mediation. In the following, we present the mediation results for gender–occupation groups where there is a direct effect of the key predictors of turnout and either the second effect or the third effect is significant. The full mediation models are shown in Table S10 in the appendix.

Table 1 shows that political interest has a positive effect on voting for both men and women, whereas poor health and lower social engagement have a negative effect for mostly only men. While unsociable schedules are associated with poor health, neither bad health nor low social engagement mediate the negative effects of long hours and unsociable schedules on voting among women in the top two occupation groups: managers/professionals/technicians and clerical/service/sales (see Figures S2 and S3 in the appendix). In Figure 4, working unsociable schedules is negatively associated with political interest, which has a significant positive effect on voting among women in clerical/service/sales, indicating some mediation of the negative effect of unsociable schedules on voting. However, among female managers/professionals/technicians, unsociable schedules are not significantly associated with political interest, thus precluding

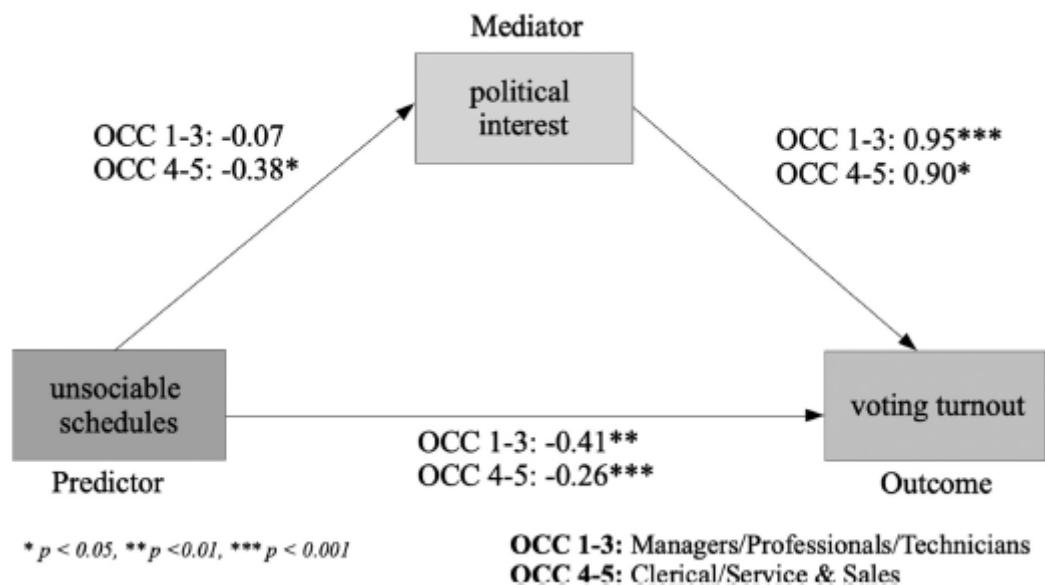


Figure 4: Effects of unsociable work schedule on voting via political interest for women

the mediation. For men working as operators/assemblers, working long hours reduces participation and political interest has a positive effect on voting, but long work hours bear a significant relationship with neither political interest nor poor health or low social engagement, thus, mediation effects are unlikely (see Table S10 in the appendix).

Robustness checks

The findings are robust against tests of several alternative model specifications with interactions between the mediators and the main predictors (see Tables S6 and S7 in the appendix) and work hours as a continuous measure (see Table S2 in the appendix). None of these results were significant. We also tested household income as a covariate (see Table S5 in the appendix) and alternative measures of health and social engagement.⁵ The results remain unchanged.

Discussion

Integrating perspectives from gender inequality in time resources for political participation, work–family and work–health nexuses, gender differences in political engagement, along with emerging research evidence on health as a determinant of political participation, we proposed three hypotheses: (1) working long hours or unsociable schedules depresses participation in national elections, particularly in low-status occupations; (2) this negative effect is stronger among women than among men, depending on one's location in the occupational hierarchy; (3) poor health, low social engagement and political interest mediate this effect to an important extent, mostly in those with low-status occupations. We tested these hypotheses using data from Wave 5 of the ESS in 2010. Our analysis covered a sufficiently large number of countries in Europe with diverse social, economic, cultural and political characteristics, and it employed the recommended weights at the individual and country levels. Thus, our findings provide robust and important insights for Europe.

The findings show that working long hours (more than 45 hours per week) or unsociable schedules (evenings, nights or weekends) was linked to a lower probability of electoral participation. This effect was larger for women than for men and significant for mostly only women. This gender difference was robust against controlling for a wide range of potential confounders at the individual and country levels. Our findings also reveal occupation-specific patterns: the negative effects of long work hours and unsociable schedules exist for women employed in the two occupation clusters, namely, manager/professional/technician and clerical/service/sales, a typically female-dominated sector. Among men, working long hours depresses participation in the bottom occupational group (operators/assemblers/elementary workers).

On the one hand, our results show that working long hours does not negatively impact participation among both men and women with the highest occupational status, a finding consistent with the expectation that less time may be compensated with more money and better civic skills. On the other hand, women occupying such high-level jobs are still disadvantaged when they work unsociable schedules, with a lower probability of participation than their counterparts working standard schedules. Among male managers/professionals/technicians, working unsociable schedules does not matter as much. This gendered effect resonates with, and provides some empirical support for, the notion of gendered time allocation and gender inequality in time

resources (Sayer, 2005) required for political participation. The finding corroborates previous evidence that, as a resource for political engagement, a person's free time is positively associated with the likelihood of their turnout in national and local elections (Brady et al, 1995). Furthermore, our findings reveal that it is not just *how much* time a person spends on gainful employment, but also *when* they devote time to employment, that matters for political participation.

The study reveals the gendered effect of work time and timing on electoral participation, a finding that is also consistent with and extends the existing literature on gender differences in political participation (Fox and Lawless, 2005; Lawless and Fox, 2005; Ondercin and Jones-White, 2011). Two explanations of the gender differences in the effect of work time/timing are plausible. First, when facing time constraints as a result of working long hours or unsociable schedules, women are more likely than men to forgo political participation because even well-educated and full-time-employed women are still burdened with unpaid work (Hochschild and Machung, 2012; Stadelmann-Steffen and Koller, 2014; Procher et al, 2018). While we have attempted to tease this out with limited data,⁶ further research is needed to formally test unpaid work as a mechanism linking work time/timing with political participation or as a moderator of this link, using more accurate measures of unpaid work (for example, actual number of hours per week devoted to unpaid caregiving, household and community work). Second, diminished free time due to working long hours or unsociable schedules may matter more for women than for men because women are, in general, more risk averse than are men and may restrain themselves from voting if they feel inadequately prepared or informed on political issues prior to the election.

We found that political interest appears to partially explain the negative effect of unsociable schedules on electoral participation among women in female-dominated sectors. This needs further investigation using longitudinal data because it is plausible that political interest also takes time to evolve or decline due to working long and unsociable hours. However, neither poor health nor reduced social engagement had a significant mediating effect on voting. The cross-sectional nature of the analysis and inadequacy of health and social engagement measures are admittedly the main limitations of this study. The self-reported health measures in the ESS may mask the mediating effect of specific health problems, such as depression, or mental fatigue and lack of mental capacity for politics.⁷

Despite these limitations, our study is the first to examine the effects of long working time and unsociable work timing on political participation. It shows that these work conditions have a negative impact on participation in democratic elections among women in both disadvantaged (female-dominated) occupations and high-level professional occupations. Among women in female-dominated occupations, the magnitude of the effect of working long hours is almost as large as that of political interest and party identification, two well-established political determinants of participation. This finding is concerning because long working hours and unsociable work schedules are becoming increasingly common in the 24/7 economy propelled by changes in technology, globalisation and the deregulation of labour and capital. It is also worrying because women are generally under-represented in high-level government offices. Our finding suggests that long working hours and unsociable work schedules are a plausible barrier for women to participate in democracy even at the basic level, namely, voting in a national election.

Finally, the negative effect of long work hours and unsociable schedules on political participation may still be underestimated in our analysis due to the cross-sectional nature of the data. Long work time and unsociable work timing could, in fact, be much more detrimental to political participation than our results have shown if the time span for working long hours and unsociable schedules is taken into consideration.

Conclusion

Our study extends the existing literature on time as a resource for political participation, on time-based gender inequality and on gender differences in political participation. It stimulates further research on a causal link between work time/timing and participation in democracy, as well as gender- and occupation-specific patterns. Our findings reveal that long work hours and unsociable schedules are not only damaging to workers' and their families' health and well-being, as evidenced in ample existing research, but also potentially detrimental to the sustainability of democracy in our new economy, with rising trends not only in economic insecurity, but also in long work hours and unpredictable and precarious work schedules.

Notes

1 Working unsociable schedules is even more common among parents with young children because parents either cannot afford institutional childcare or wish to maximise their time with children while undertaking the employment by 'shift' or 'tag-team' parenting (Hattery, 2001; Han, 2004; Barnett and Gareis, 2007; Wight et al, 2008).

2 Civil skills are communications and organisational capacities, and they are essential for political participation (Brady et al, 1995), as they enable citizens to communicate politically (Stadelmann-Steffen and Koller, 2014), and arguably influence political competence and democratic capacities, which are determined by the authority structure at the workplace (Phillips et al, 2010).

3 While some studies show that working 48 or more hours per week is linked with adverse mental and physical health outcomes (Kivimäki et al, 2015; Spurgeon, 2003), other studies show that workers' health starts to decline at a much lower threshold of 40 hours per week (Bannai and Tamakoshi, 2014). Therefore, we use a threshold of between 48 and 40 hours per week to define long work hours as more than 45 hours per week.

4 We do not assume that the effect of any of our predictors varies between countries. Consequently, a simple random-intercept model would be sufficient. This assumption is supported by calculating the inter-country correlations (ICC) for the overall sample (males and females). With a value of 0.06, the ICC is very small, suggesting that there is no substantial variation at the country level. In fact, given the low ICC, a multi-level approach might not even be necessary for our analysis. However, while not interpreting the hierarchical structure explicitly, controlling for country-level variation is sensible.

5 We tested alternative measures of subjective health (health being hampered) and the level of social engagement of the respondent compared to the respondent's peers. Neither of these indicators have a significant mediation effect on voting.

6 Our analysis so far controls for marital/union status and having a dependent child under age 14 as an attempt to partial out some of the gender difference in the effect

of working long hours and unsociable schedules. The double shifts of paid and unpaid work among women could be a reason why working time and timing reduce women's political participation but not men's in two occupation groups: managers/professionals/ technicians and clerical/service/sales. Yet, the gender difference

we have found is robust against this adjustment. We also examined whether or not the frequency of women providing care for a family member, doing household work or voluntary community services could explain the gendered effects on electoral participation. The gender differences remain even when this factor is controlled for in the analysis.

7 Such health problems may diminish an individual's odds of voting in a national election, especially if they persist over a period of time. Moreover, while self-reported health is strongly correlated with clinical measures of physical and mental illnesses (Lorem et al, 2020; Williams et al, 2017), it may still mask actual health problems, thus further limiting our ability to test it as a mediator. Similarly, the indicator of social engagement is likely subject to measurement error, as the question on social engagement or connectedness in the ESS data does not separate contact with colleagues from social contact outside work. It is plausible that individuals working long hours may still have close contact with colleagues, which may, in fact, increase the likelihood of political engagement, contingent upon colleagues' level of social and political engagement. The sheer act of casting a vote on a national election day does not require much personal resources, be it time, energy, health or social connectedness. However, the decision to vote for a party evolves from a process of becoming informed about the salient political issues of interest to a voter over time. It is in this process that good health, particularly adequate mental and cognitive capacity, and adequate social engagement likely facilitate political participation.

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Supplementary material and data availability

The appendix, the dataset and analysis codes are available at: https://figshare.com/projects/Unequal_electoral_participation_The_negative_effects_of_long_work_hours_and_unsociable_work_schedules_in_Europe/144321

Conflict of interest

The authors declare no conflict of interest and all authors have approved the submission the final draft of the manuscript to *European Journal of Politics and Gender*.

Author biographies

Jianghong Li is a senior researcher at the WZB Berlin Social Science Center, Germany, as well as an Honorary Research Associate at the Telethon Kids Institute, and an Adjunct Associate Professor at Curtin University, Australia. Her research focuses on the impact of parental employment on child and adolescent health and development.

Heiko Giebler is a research group leader in the Cluster of Excellence 'Contestations of the Liberal Script' at Free University Berlin, Germany, as well as a senior guest researcher at the WZB Berlin Social Science Center. His work mainly focuses on political behaviour, attitudes and survey methodology.

Rebecca Wetter is a research fellow at the WZB Berlin Social Science Center, Germany. She started working on this project as a research assistant before commencing her PhD. Her research interests are beliefs about inequality, social stratification, educational inequality, values and attitudes, and intercultural contact.

Hannah Kenyon Lair was a research assistant at the WZB Berlin Social Science Center; she received a BA in Sociology from Macalester College, Saint Paul, USA. Her research interests include cross-country comparative methodologies, economic sociology and new institutional sociology.

Julia Ellingwood serves as a research assistant at the WZB Berlin Social Science Center, Germany. She has a Master of Public Policy degree from the Hertie School in Berlin, Germany. Her research interests span social inequalities, education, 21st-century work, Indigenous rights and sovereignty, tech governance, and political representation.

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