

Online Appendix for

# Public Sector Employment and Voter Turnout

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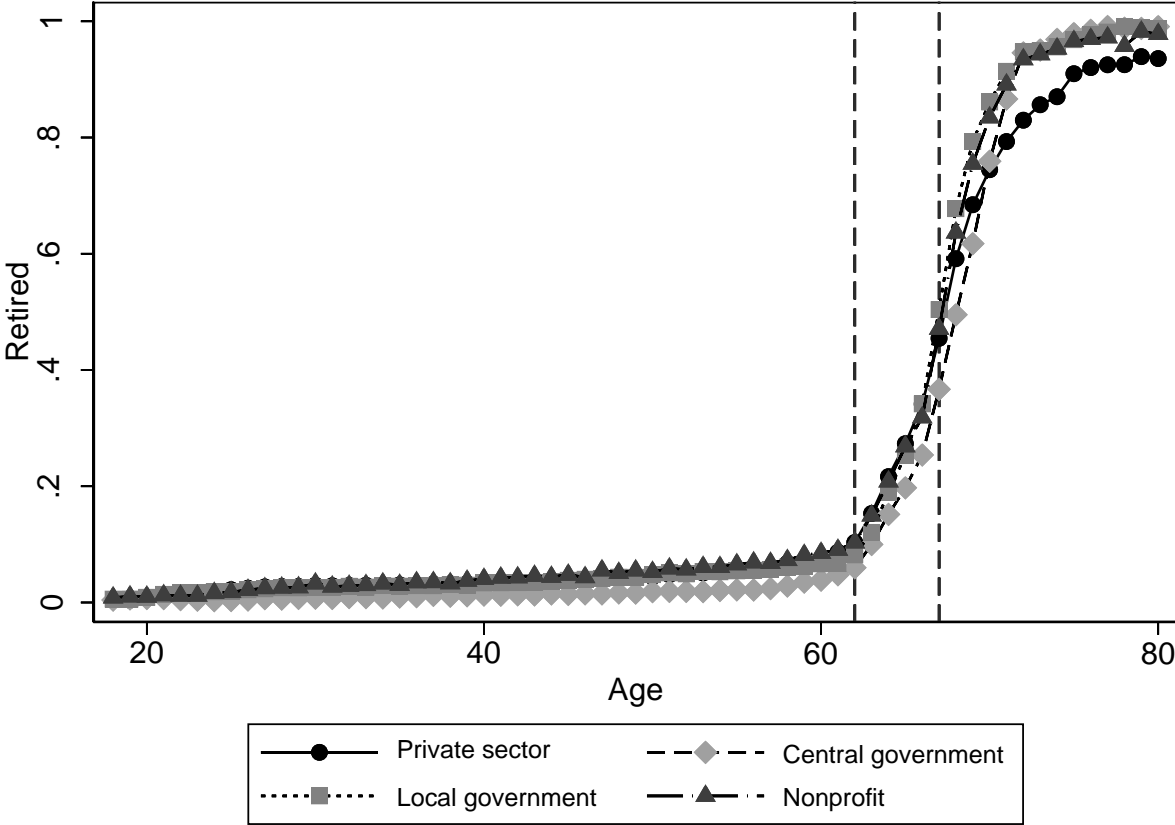
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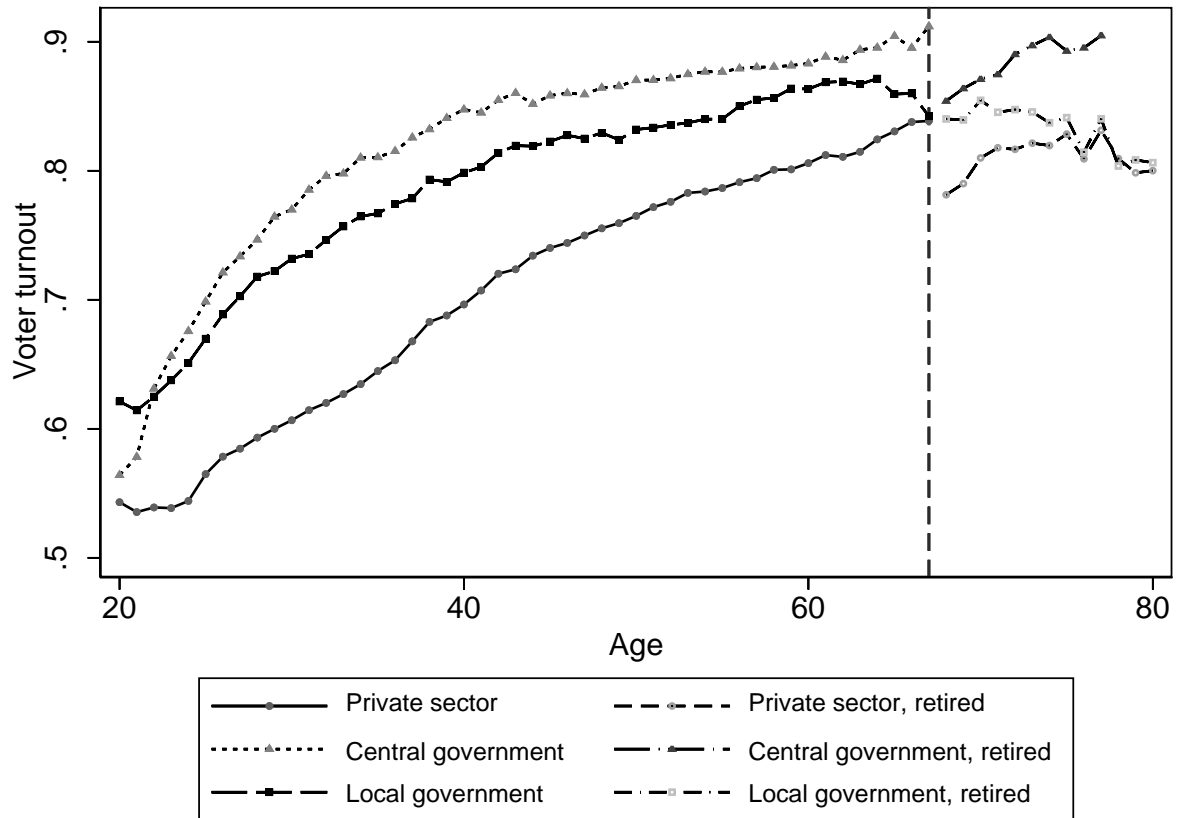
**A: Descriptive statistics and auxiliary regression results**

Figure A1. Share of retirees by age



Notes. The diagram shows the retired share of the electorate. Retirement is defined by receiving more than 50% of the income by taxable government transfers, that is pensions from the social security system, pensions from the employer, unemployment benefits and related social security benefits. Income is defined as work income, capital income and government transfers.

Figure A2. Voter turnout before and after retirement



Notes. The graph displays rates of voter turnout for the employees and retirees. Retirees are defined as persons aged 67 or more who also receive more than 90% for their income from social security/old-age pensions and social security benefits, and (active) employees are defined as persons aged less than 67 who receive less than 10% of their income from social security/old-age pensions (cf. Figure OA2).

Table A1. Sample characteristics

Election year	Size of electorate	Sample			
		Statistics Norway		Dataset	
		Individuals	Municipalities	Individuals	Municipalities
2013	3 643 600	1 008 500	15	947 066	15
2015	4 016 624	1 715 200	27	1 636 405	27
2017	3 756 400	3 263 700	255	3 212 106	255
2019	4 202 016	4 129 910	356	4 030 483	356

Notes. The table presents the number of eligible individuals in each election year (far left columns), and the number of individuals covered by Statistics Norway and included in our dataset. The number of eligible citizens is larger in local elections since voting in national elections requires citizenship, while some groups of immigrants and Nordic citizens can vote in local elections. Our dataset includes marginally fewer individuals than documented by Statistics Norway (94-98% of available data). This is because we include full-count municipalities only, which avoids potential bias introduced by overweighting the immigrant population in the remaining municipalities.

Table A2. Voter turnout and work sector

Sector classification	Election years			
	2013	2015	2017	2019
No occupation	0.751 308870	0.573 600497	0.737 1261284	0.601 1608624
Private sector	0.820 398505	0.590 652761	0.794 1194349	0.619 1390816
Central government	0.908 97944	0.747 148278	0.895 251305	0.782 266430
Local government	0.871 105304	0.713 179154	0.861 417875	0.748 433131
Non-profit sector	0.906 27420	0.750 42698	0.883 65547	0.783 62978
<b>Total</b>	<b>0.815 938043</b>	<b>0.616 1623388</b>	<b>0.790 30190360</b>	<b>0.704 3761979</b>

Notes. The table shows voter turnout in the 2013 and 2017 national elections and the 2015 and 2019 local elections, conditional on occupational sector. The table also shows number of observations with register data on voter turnout.

Table A3. Shifts in institutional sector

	Election years				Total
	2013	2015	2017	2019	
No shifts	708119	1269102	2596049	3098417	7671687
	79.05	80.72	84.27	85.47	83.62
Shifts	187676	303158	484654	526883	1502371
	20.95	19.28	15.73	14.53	16.38
Total	895795	1572260	3080703	3625300	9174058
	100.00	100.00	100.00	100.00	100.00

Notes. The table shows the share of the electorate who shifted institutional sector in the last two years. The table includes persons who shifted across institutional sectors. The data includes only observations for which we have information about turnout.

Table A4. Voter turnout and work location

Work in the residential municipality:	Sector classification				
	No occupation	Private sector	Central government	Local government	Non-profit sector
No	0.590	0.585	0.745	0.707	0.742
	2057344	815874	136808	144559	32710
Yes	0.649	0.626	0.781	0.748	0.782
	151777	1227703	277900	467726	72966
Total	2209121	2043577	414708	612285	105676

Notes. The table shows voter turnout in the 2013-2019 elections, conditional on occupational sector and work location within or outside the residential municipality.

Table A5. Voter turnout, employment sector and workplace location

VARIABLES	(1) All	(2) All	(3) Local	(4) Local	(5) National	(6) National
Not Working	-0.0116** (0.0036)	-0.0224*** (0.0023)	-0.0131** (0.0044)	-0.0230*** (0.0035)	-0.0179*** (0.00462)	-0.0240*** (0.0035)
Central government	-0.0075** (0.0023)	-0.0093*** (0.0024)	0.0063* (0.0024)	-0.0013 (0.0035)	0.00369 (0.00206)	0.0015 (0.0048)
Local government	0.0074*** (0.0016)	-0.0072** (0.0025)	0.0195*** (0.0025)	-0.0076* (0.0037)	0.0157*** (0.00263)	-0.0001 (0.0075)
Nonprofit	0.0048 (0.0026)	-0.0090** (0.0030)	0.0145*** (0.0031)	-0.0105* (0.0049)	0.0121*** (0.00242)	0.0099 (0.0067)
Home		0.0319*** (0.0027)		0.0310*** (0.0040)		0.0262*** (0.0045)
Central government * Home		0.00073 (0.0045)		0.0088* (0.0041)		0.0014 (0.0054)
Local government * Home		0.0158*** (0.0043)		0.0319*** (0.0033)		0.0182** (0.0068)
Nonprofit * Home		0.0173*** (0.0040)		0.0309*** (0.0052)		0.00049 (0.0073)
Observations	9,030,036	9,030,036	3,188,880	3,188,880	1,855,600	1,855,600
R-squared	0.699	0.699	0.763	0.763	0.750	0.750
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Municipality-year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes. The table displays estimates of occupational sector on individual level voter turnout using linear probability models. Private sectoremployees are defined as reference category, and the table shows the estimated effects of shifting from private sector to not working, employment in central government, in local government and in the non-profit sector. Home is a dummy variable equal 0 when the individual works outside the residential municipality, and equal 1 when (s)he works in the residential municipality. Column (1) and (2) use all available data, while columns (3) and (4) focus on local election years (2015 and 2019) and columns (5) and (6) focus on national election years (2013 and 2017). All models include individual fixed effects, municipality-year fixed effects and education levels. The standard errors (in parentheses) are robust standard errors clustered on municipalities. Significance levels: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05.

Table A6. Voter turnout, employment sector and workplace location (controls)

VARIABLES	(1) All	(2) All
Not Working	-0.072*** (0.0029)	-0.0489*** (0.0033)
Central government	-0.042*** (0.0013)	0.0486*** (0.0023)
Local government	0.046*** (0.0015)	0.0358*** (0.0022)
Nonprofit	0.0055*** (0.0016)	0.0058*** (0.0044)
Home	-	0.0373*** (0.0035)
Central government * Home	-	0.0244*** (0.0052)
Local government * Home	-	0.0433*** (0.0033)
Nonprofit * Home	-	0.0304*** (0.0062)
Age	0.005*** (0.0002)	0.004*** (0.0002)
Gender (1 if female)	0.016*** (0.0007)	0.014*** (0.0007)
Education G	-0.164*** (0.0075)	-0.165*** (0.0074)
Education I	-0.192*** (0.0258)	-0.193*** (0.0261)
Education U	0.069*** (0.002)	0.070*** (0.002)
Education V	-0.049*** (0.003)	-0.046*** (0.003)
First generation immigrants	-0.245*** (0.0039)	-0.245*** (0.0040)
Persons born in Norway with two foreign-born parents	-0.154*** (0.0029)	-0.154*** (0.0029)
Foreign-born with one parent born in Norway	-0.071*** (0.0038)	-0.071*** (0.0038)
Born in Norway with one foreign-born parent	-0.027*** (0.0021)	-0.027*** (0.0021)
Born abroad with both parents born in Norway	-0.016*** (0.0023)	-0.016*** (0.0023)
Observations	9,802,841	9,802,841
R-squared	0.129	0.130
Individual FE	No	No
Municipality-year FE	Yes	Yes

Notes. The table displays estimates of occupational sector on individual level voter turnout using linear probability models. The standard errors (in parentheses) are robust standard errors clustered on municipalities. Significance levels: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05. For further details, see note Table A4.





Table A7. Voter turnout, employment sector, and retirement

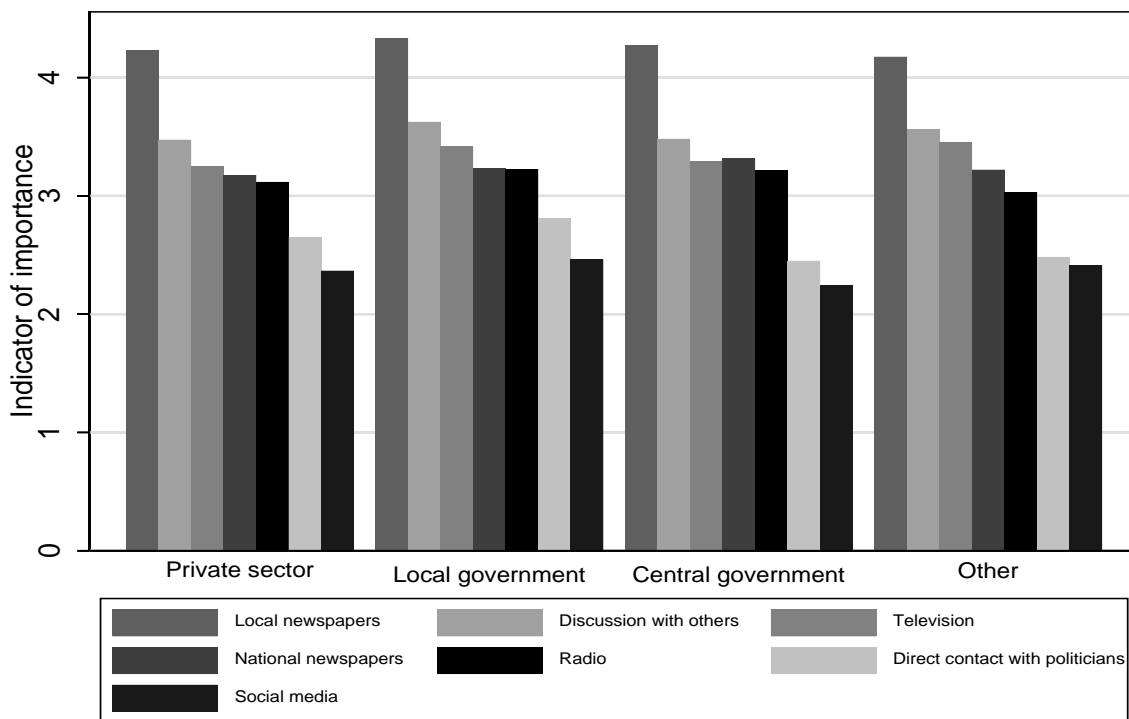
Central Government	-0.00849*
	(0.00382)
Local Government	0.0177***
	(0.00166)
Non-profit sector	0.00563
	(0.00287)
Retired	0.0164
	(0.0158)
Central Government*Retired	0.0359
	(0.0308)
Local Government*Retired	-0.0805***
	(0.0237)
Non-Profit Sector*Retired	-0.0199
	(0.0270)
Observations	4,344,465
R-squared	0.687
Individual fixed effects	Yes
Municipality-year fixed effects	Yes

Notes. The table display estimates of occupational sector on individual level voter turnout using linear probability models. The sample includes persons currently or previously employed. For retirees, institutional sector is defined by the earlier employment sector in the years 2011, 2013, 2015 and 2017. Retirees are defined as a dummy variable (=1) if the individual is aged 67 or more and receives more than 90% of their income from social security or old-age pensions. Active employees (=0) are defined by age less than 67 and that they receive less than 10% for the income from social security or old-age pensions. The standard errors (in parentheses) are robust standard errors clustered on municipalities. Significance levels: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05.

## B: Importance of information sources

One might argue that local public employees' superior information about local policies drives their higher election turnout (for evidence on the positive relation between information and electoral participation, see, for instance, Lassen 2005). We therefore evaluated whether public employees are less reliant on information from mass media using data from the 2003, 2007, 2011 and 2015 Norwegian Local Election Surveys. Respondents indicate the importance of several information sources with respect to political issues in their home municipality (coded 1 "Not important" to 5 "Very important"). Figure B1 displays the findings conditional on respondents' employment sector, and shows that public employees are *not* different from other voters. They regard the importance of news media, discussions with others and direct contact with elected politicians on par with others.

Figure B1. The importance of information sources



Notes. The diagram displays the perceived importance of information sources on local government politics using data from the Local Election Surveys in 2003, 2007, 2011 and 2015 (N=8492). The respondents were asked: «What is the importance on the listed information sources with respect to political issues in your local government?» (In Norwegian: Hvor viktig vil du si at følgende kilder er for deg personlig når det gjelder å få informasjon om politiske spørsmål i din kommune?) The responses were coded from 1 (Not important) to 5 (Very important). The graph displays average scores for different information sources conditional on sectorial affiliation:

## C: Occupation-specific voter turnout and party support

Does the unequal voter turnout across occupational groups affect left-wing parties' vote share? This section displays the results from a back-of-the-envelope assessment combining Statistics Norway individual-level register data on eligible voters, voter turnout and institutional sector with information on party preferences from the Norwegian Citizen Survey. Let  $g$  indicate occupation-based groups within the electorate. Then we can define  $ShareElectorate_{it}^g$  as the share of group  $g$  in the electorate at time  $t$  in jurisdiction  $i$ , and  $RatioTurnout_{it}^g$  as the turnout of group  $g$  relative to the overall turnout in jurisdiction  $i$  at time  $t$ . Group  $g$ 's share among voters is  $ShareElectorate_{it}^g \cdot RatioTurnout_{it}^g$ . Defining  $ShareLeft_{it}^g$  as the share of group  $g$  that votes for left-wing political parties, we can write  $ShareLeft_{it}$  – i.e. the share of the electorate voting for left-wing political parties – as:

$$ShareLeft_{it} = \sum_{g=1}^5 ShareElectorate_{it}^g \cdot RatioTurnout_{it}^g \cdot ShareLeft_{it}^g \quad (1)$$

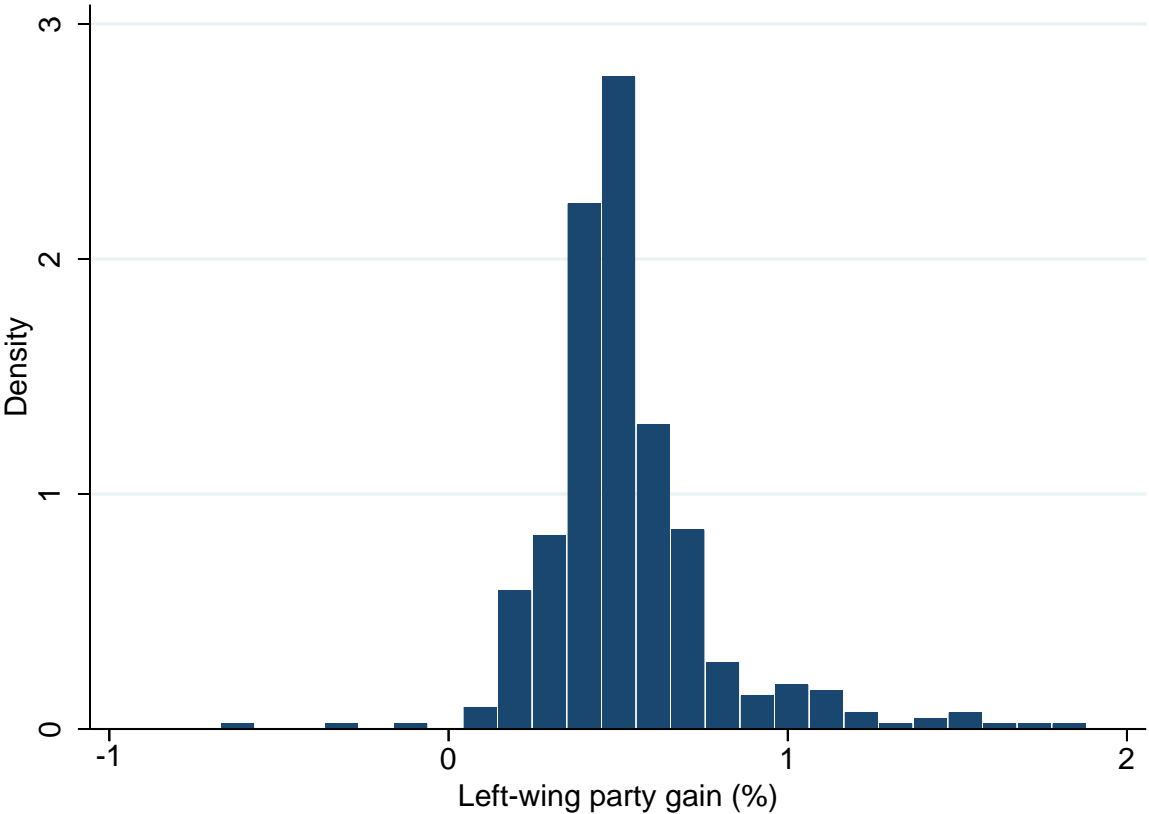
While we can observe the two first terms in our dataset for the occupation groups distinguished in the main text, we do not observe group-specific party preferences. We therefore estimate  $ShareLeft_{it}^g$  using survey data. The Norwegian Citizen Survey shows that support for left-wing parties in the 2015 local elections stood at 36% of private sector employees (N=2907), 55% of public sector employees (N=2307), 45% of not-for-profit employees (N=60), and 44% of non-employed respondents (N=1025).<sup>1</sup> This allows using equation (1) to estimate: a) the share of voters supporting left-wing parties *given current differences in voter turnout across occupational groups*, and b) the share of voters supporting left-wing parties *under full turnout for all groups* (i.e.  $RatioTurnout_{it}^g = 1$ ). The difference between both results can be interpreted as an estimate of left-wing parties' vote gain due to higher turnout among public sector employees.

Figure C1 displays the results applied to the 2019 Norwegian local elections. This shows that left-wing parties generally gain from unequal voter turnout across occupational groups. Yet, this gain in vote share remains below one percentage point in the vast majority of Norwegian municipalities.

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<sup>1</sup> For documentation, see [https://www.nsd.no/nsddata/serier/innbyggerundersokelsen\\_eng.html](https://www.nsd.no/nsddata/serier/innbyggerundersokelsen_eng.html)

Figure C1. Left-wing vote gain from unequal voter turnout across occupational groups



Note: The histogram shows municipality-level estimates of left-wing parties' gain from *not* having full turnout in the 2019 local elections in all occupational groups (see text for calculation details).