

# Supplementary Material for “Exploring Their Options? Tracking How Voters Actually Use Voting Advice Applications”

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## A Additional Tables and Figures

In this section of the supplementary materials we present additional analyses with our data. First, we look at how self-reported motivations for using VAAs correspond to how voters interact with the VAA. Recall that 34 percent of users indicated checking whether their party agrees with them as their main reason to use the VAA. From Table A.1, we see that self-reported checkers are indeed the group that is most likely to check the party profile of their “own” party, with 60 percent of users doing that. However, the prevalence of checking is highly similar among those who want to learn about parties’ opinions and those who want to take an interesting test. Only the self-reported seekers are markedly less likely to open the profile of their pre-VAA party choice, at 43 percent likelihood.

**Table A.1.** The prevalence of opening the party profile of a user’s “own” party, by self-reported motivations for using a VAA.

Reason for use	Opened pre-vote party profile	Did not open pre-vote party	Total
Learn about parties’ opinions	58% (53% – 64%)	42% (36% – 47%)	100% (n=288)
Check if my party agrees with me	60% (55% – 65%)	40% (35% – 45%)	100% (n=344)
Find out who/what to vote for	43% (37% – 49%)	57% (51% – 63%)	100% (n=254)
Interesting test to reflect/discuss	58% (49% – 66%)	42% (34% – 51%)	100% (n=125)
All users	55% (51.9% – 58.1%)	45% (41.9% – 48.1%)	100% (n=1,011)

**Note:** Pearson’s  $\chi^2$  test  $p < 0.001$

Looking at the likelihood of opening more than one party profile we see that, self-reported checkers are the least likely to open more than one profile (cf. Table A.2). Interestingly users with each of the other self-reported motivations have virtually the same probability of being explorers that open more than one party profile at around 29-30 percent prevalence. Thus, those who seek to find out who to vote for are just as likely to open more than one party profile as those who explicitly want to learn about parties’ opinions. This squares well with the finding above that uncertain voters are among the most likely to explore multiple parties.

**Table A.2.** The prevalence of viewing only one vs. several party profiles for users with different self-reported motivations for using a VAA.

Reason for use	Opened one party profile	Opened several party profiles	Total
Learn about parties' opinions	70% (65% – 76%)	30% (24% – 35%)	100% (n=288)
Check if my party agrees with me	76% (71.6% – 80.7%)	24% (19.3% – 28.4%)	100% (n=344)
Find out who/what to vote for	71% (65% – 76%)	29% (24% – 35%)	100% (n=254)
Interesting test to reflect/discuss	70% (62% – 79%)	30% (21% – 38%)	100% (n=125)
All users	73% (69.7% – 75.3%)	27% (24.7% – 30.3%)	100% (n=1,011)

**Note:** Pearson's  $\chi^2$  test  $p=0.3$

Another interesting question is whether users explore the party they are recommended. Looking at all users, we again see a majority of 53 percent who opened the profile of the party they were recommended. However, this distribution is markedly different when comparing those who viewed only one party to those who explored multiple parties (Table 1). Among those viewing more than one party profile, almost four fifths explored the recommended party's positions. Overall, we see that voters to a significant extent open the details of the recommended party, but at the same time, we know that (at least) 47 percent of voters do not. Thus, about half of VAA users receive a recommendation that they do not further scrutinize.

**Table A.3.** Share of users opening the party profile of the recommended party

Group	Opened the recommended party profile	Did not open the recommended party	Total
Opened one party profile	44% (40.2% – 47.4%)	56% (52.6% – 59.8%)	100% (n=733)
Opened several party profiles	78% (73.6% – 83.3%)	22% (16.7% – 26.4%)	100% (n=278)
All users	53% (50.2% – 56.4%)	47% (43.6% – 49.8%)	100% (n=1,011)

**Note:** Pearson's  $\chi^2$  test  $p<0.001$

A related concern is whether users, when considering the detailed party profiles, were mainly interested in parties that were ideologically proximate to their initial vote intention or whether they ventured further “away” when considering their options. Specifically, it is likely that users are most likely to consider options that are in the same electoral “bloc” (left vs. right) as their initial vote intention. In Table A.4, we show the extent to which users ventured beyond their political bloc. Again, the behavior is shown separately for users who opened just one party profile and users who opened several party profiles. Note that

the table leaves out those respondents who did not have a specified vote intention before using the VAA. For all users, we see more than 9 out of 10 visit a party profile from their own electoral bloc. However, 19 percent of users viewed parties from both blocs, and 7.6 percent of users viewed only a party from the other bloc. In fact, 60 percent of the users who opened multiple party profiles viewed parties from both blocs.

**Table A.4.** Share of users opening the party profile of different types of parties.

Group	Opened parties from both blocs	Opened only party/parties from other bloc	Opened only party/parties from own bloc	Total
Opened one party profile	–	10% (7% – 12%)	90% (88% – 93%)	100% (n=555)
Opened several party profiles	60% (54% – 66%)	3% (1% – 5%)	37% (31% – 42%)	100% (n=252)
All users	19% (16% – 22%)	7% (6% – 9%)	74% (71% – 77%)	100% (n=807)

**Note:** Pearson's  $\chi^2$  test  $p<0.001$ .

Finally, many VAAs allow users to indicate which issues they find particularly important and weigh the voting advice accordingly. However, we know little about how many users engage with this option. The results in Table A.5 indicate that most do not. However, politically interested users are more likely to use salience weights than less interested ones.

**Table A.5.** The prevalence of salience weight usage vs. users' political interest.

How interested would you say you are in politics?	Did not use user salience weights	Used user salience weights	Total
Not at all interested	88% (82% – 95%)	12% (5% – 18%)	100% (n=95)
Not very interested	90% (86.6% – 93.1%)	10% (7% – 13%)	100% (n=336)
Somewhat interested	87% (83.5% – 90.0%)	13% (10% – 17%)	100% (n=416)
Very interested	77% (70% – 84%)	23% (16% – 30%)	100% (n=161)
All users	86% (84% – 89%)	14% (12% – 16%)	100% (n=1,008)

**Note:** Pearson's  $\chi^2$  test  $p=0.001$ .

**Table A.6.** Whether the respondent has used VAAs before vs. their political interest.

Political interest	Has used VAAs before	Has not used VAAs before	Total
Not at all interested	48% (37% – 58%)	52% (42% – 63%)	100% (n=90)
Not very interested	60% (55% – 66%)	40% (34% – 45%)	100% (n=316)
Somewhat interested	67% (63% – 72%)	33% (28% – 37%)	100% (n=406)
Very interested	66% (59% – 74%)	34% (26% – 41%)	100% (n=160)
All users	63% (60% – 66%)	37% (34% – 40%)	100% (n=972)

**Note:** \*This table only uses data from those users who knew if they had used VAAs before. Pearson's  $\chi^2$  test  $p=0.003$ .

**Table A.7.** Whether the respondent has used VAAs before vs. their vote certainty.

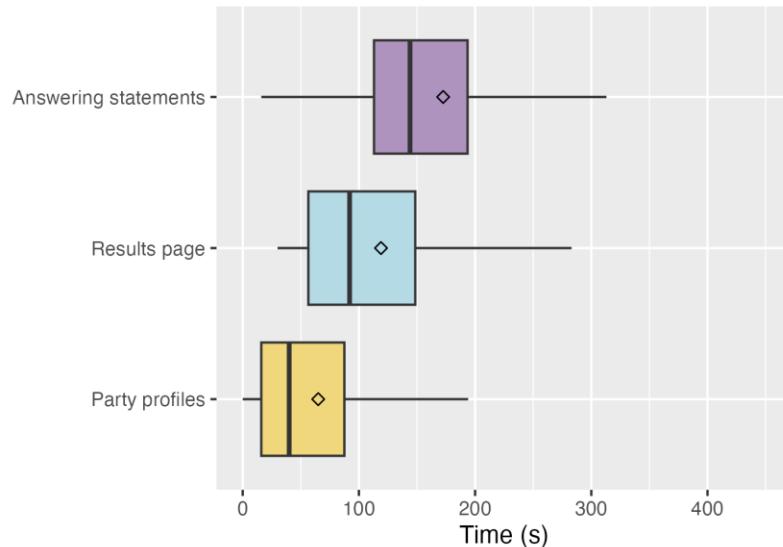
Pre-vote certainty	Has used VAAs before	Has not used VAAs before	Total
Undecided (No pre-vote party)	67% (59% – 75%)	33% (25% – 41%)	100% (n=141)
Not at all certain (Has a pre-vote party)	74% (65% – 83%)	26% (17% – 35%)	100% (n=96)
Quite certain (Has a pre-vote party)	66% (62% – 71%)	34% (29% – 39%)	100% (n=352)
Very certain (Has a pre-vote party)	57% (51% – 62%)	43% (38% – 49%)	100% (n=301)
All users*	64% (60% – 66%)	36% (34% – 40%)	100% (n=890)

**Note:** \*This table only uses data from those users who knew if they had used VAAs before and who intended to vote for a party or did not know what party to vote for. Pearson's  $\chi^2$  test  $p=0.007$ .

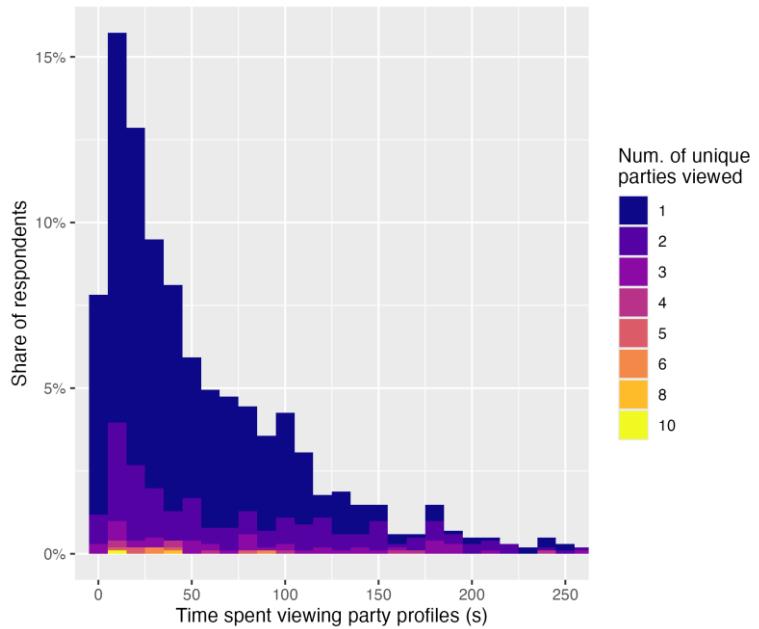
We also asked from the part of the sample that did not fill the VAA whether they would like to learn more about parties' or candidates' views. We report that 58% (42%) of the respondents preferred to learn about parties' (candidates') views.

**Figure A.1.** Key attitudinal and behavioral metrics of the study and their timing in the experiment.

<b>Pre-VAA survey attitudes</b>	<b>Political interest</b>	<b>Vote certainty</b>	<b>Vote intention party choice</b>
	<ul style="list-style-type: none"> <li>- Not at all interested</li> <li>- Not very interested</li> <li>- Somewhat interested</li> <li>- Very interested</li> </ul>	<ul style="list-style-type: none"> <li>- Undecided</li> <li>- Not at all certain</li> <li>- Quite certain</li> <li>- Very certain</li> </ul>	<ul style="list-style-type: none"> <li>- Party name</li> </ul>
<b>Behavioral metrics in VAA use</b>	<b>Number of party profiles viewed</b>		
	<ul style="list-style-type: none"> <li>- One (1)</li> <li>- More than one (1+)</li> </ul>		
<b>Post-VAA survey attitudes</b>	<b>Pre-vote party viewed</b>	<b>Recommended party viewed</b>	
	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> </ul>	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> </ul>	
	<b>Parties' written explanations viewed</b>		
	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> </ul>		
	<b>Intention to use VAA</b>		
	<ul style="list-style-type: none"> <li>- Learn about parties' opinions</li> <li>- Check if my party agrees with me</li> <li>- Find out who/what to vote for</li> <li>- Interesting test to reflect and discuss</li> </ul>		



**Figure A.2.** How much time do users spend in each section of the VAA?  
 Notes: Boxplots of time spent in different sections of the VAA. Mean values: Party profiles 65s (median = 40s), Results page 119s (median = 92s), Answering statements 172.5s (median = 144s). Note that users were forced to stay in the results page for 30 seconds before proceeding. N = 1011.



**Figure A.3.** Time spent viewing party positions, by number of parties viewed.  
*Notes: Users were forced to open at least one party to proceed. Among voters who viewed 1 party, the median time spent on viewing party details was: 36s,  $sd = 58.1$ ,  $n = 733$ . For 2 viewed parties: median = 58s,  $sd = 81.3$ ,  $n = 200$ . 3 parties: median = 87.5s,  $sd = 130$ ,  $n = 52$ . 4 parties: median = 103s,  $sd = 222$ ,  $n = 11$ . 5 parties: median = 182s,  $sd = 186$ ,  $n < 10$ . 6 parties: median = 34s,  $n = < 10$ . 8 parties: median = 39s,  $n < 10$ .*

## B Visual Appearance Of the Voting Advice Application

In this section of the supplementary material we present a set of screenshots illustrating the visual appearance and ordering of the VAA.

Epinion  
– making sense

AARHUS  
BSS

Jyllands-Posten

?

Epinion undersøger i øjeblikket valgtests sammen med Aarhus Universitet.

Testen er lavet i et samarbejde mellem Aarhus Universitet, Epinion og Jyllands-Posten med henblik på at forske i borgernes brug af valgtest.

Dine oplysninger og svar anonymiseres og anvendes udelukkende til forskning. Læs mere om [metoden](#) og [vilkårene](#) for at deltage.

Jeg accepterer vilkårene for at deltage

[TILBAGE](#) [NÆSTE](#)

**Figure B1.** VAA screenshots: User consent.



Først vil vi gerne stille nogle baggrundsspørgsmål.



**Hvad ville du stemme, hvis der var folketingsvalg i morgen?**

Vælg parti

Hvor sikker er du på, at du ville stemme på dette parti?

- Meget sikker
- Ret sikker
- Ikke særligt sikker



**Er du?**



**Hvad er din alder?**



**Hvad er postnummeret på din bopæl?**

- Bosat i udlandet



**Hvor interesseret vil du sige, at du er i politik?**

- Meget interesseret
- Noget interesseret
- Kun lidt interesseret
- Slet ikke interesseret
- Ved ikke



**Hvad er din højst gennemførte uddannelse?**

- Grundskole (folkeskole, privatskole, efterskole)
- Gymnasie, HF, studenterkursus
- Erhvervsgymnasium (HHX eller HTX)
- Erhvervsfaglig (f.eks. tømrer, frisør, kontorassistent)
- Kort videregående (f.eks. datamatiker, laborant)
- Mellemlang videregående (f.eks. teknikumingeniør, lærer)
- Bachelor (f.eks. 1. del af en lang videregående uddannelse)
- Lang videregående (f.eks. gymnasielærer, økonom, jurist)

**Figure B2.** VAA screenshots: Before entering the VAA users answered a background survey.



På næste side vil vi bede dig tage en valgtest.

I valgtesten stiller vi dig nogle spørgsmål om dine holdninger til en række politiske emner. Herefter vil du få vores bud på, hvem du er mest politisk enig med.

[TILBAGE](#)

[NÆSTE](#)

**Figure B3.** VAA screenshots: Informing the respondent that the next page opens a VAA.

1

## Staten bør bruge flere penge på at uddanne ledige



Særligt vigtigt for mig

[Spring spørgsmålet over](#)

MEGET UENIG

DELVIST UENIG

HVERKEN/ELLER

DELVIST ENIG

MEGET ENIG

[TILBAGE](#)

[NÆSTE](#)

**Figure B4.** VAA screenshots: VAA statements were displayed one at a time. Users had an option to skip a statement or use salience weights by clicking the “important for me” check box.

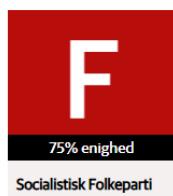
**Dit resultat i partitesten**

Her kan du se, hvilket parti du er mest enig med baseret på de 18 spørgsmål.

**Klik på partierne** for at sammenligne deres holdninger med dine og se deres begrundelser.

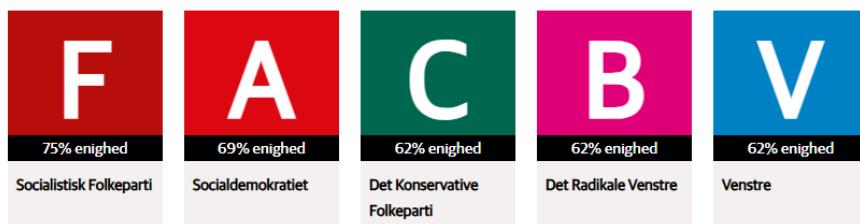
Moderaterne har ikke ønsket at deltage og indgår derfor ikke i testen. Læs mere om [metoden](#) bag testen.

**Du er mest enig med**

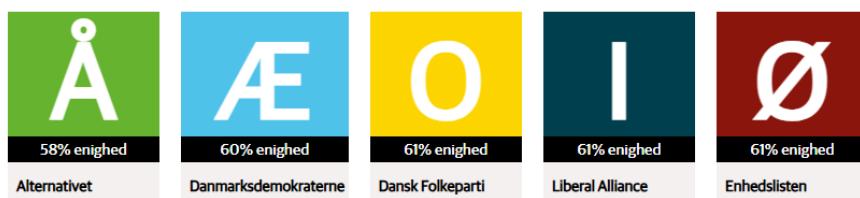


**De fem partier, der har svaret mest som dig**

Klik på partibogstaverne, hvis du vil blive klogere på partiernes svar og politik.



**De fem partier, der har svaret mindst som dig**



Vi vil bede dig bruge **minimum 30 sekunder** på dette.

Du skal **klikke dig ind** på **minimum ét partis svar**, før du kan gå videre.

[TILBAGE](#)

[27](#)

**Figure B5.** VAA screenshots: After completing the statements users were shown the results page which indicated their matches with parties. In the upper part of the page, users were shown their best match. In the results, ten parties were ranked by their matching score with the user. Second row shows five closest matches and the third row the five worst matches. Users could not progress onward to the post-VAA survey without spending at least 30 seconds on the results page and they also had to open one party profile.

The screenshot shows the Epinion Jyllands-Posten VAA interface. At the top, the logos for Epinion (making sense), Aarhus BSS, and Jyllands-Posten are visible. The main content area is titled "Dit resultat i partitesten". The first party profile is for "Socialistisk Folkeparti". It displays a statement: "Staten bør bruge flere penge på at uddanne ledige" with a rating of 1/18. Below the statement is a horizontal scale with five options: "MEGET UENIG", "DELVIST UENIG", "HVERKEN/ELLER", "DELVIST ENIG", and "MEGET ENIG". A red button with the letter "F" is positioned above the scale. A link "Se partiets begrundelse" is provided. The second party profile is partially visible, showing a statement: "Staten bør i højere grad anvende afgifter og regulering for at mindske det private erhvervslivs miljøpåvirkning" with a rating of 2/18. It also features a scale and a red "F" button with the link "Se partiets begrundelse". The background of the interface is dark grey, and the overall design is clean and modern.

**Figure B6.** VAA screenshots: The view of the detailed party profile. Users could display party's justifications to all VAA statements by clicking the button "Se partiets begrundelse".

**Epinion**  
– making sense

AARHUS  
BSS

**Jyllands-Posten**

Dit resultat i partitesten

Her  
Klik  
Mod  
test  
Du  
So  
De  
Klik  
So  
De  
So  
De

**Socialistisk Folkeparti**

**1/18**

**Staten bør bruge flere penge på at uddanne ledige**

MEGET UENIG	DELVIST UENIG	HVERKEN/ELLER	DELVIST ENIG	MEGET ENIG
-------------	---------------	---------------	--------------	------------

**F**

**Skjul partiets begrundelse**

*"Der skal være langt mere fokus på uddannelse og opkvalificering i beskæftigelsessystemet, og retten til uddannelse til ledige bør udvides. Efteruddannelse er et at de stærkeste svar, når der mangler arbejdskraft."*

**- Socialistisk Folkeparti**

**2/18**

**Staten bør i højere grad anvende afgifter og regulering for at mindske det private erhvervslivs miljøpåvirkning**

**Dig**

MEGET UENIG	DELVIST UENIG	HVERKEN/ELLER	DELVIST ENIG	MEGET ENIG
-------------	---------------	---------------	--------------	------------

**F**

**Skjul partiets begrundelse**

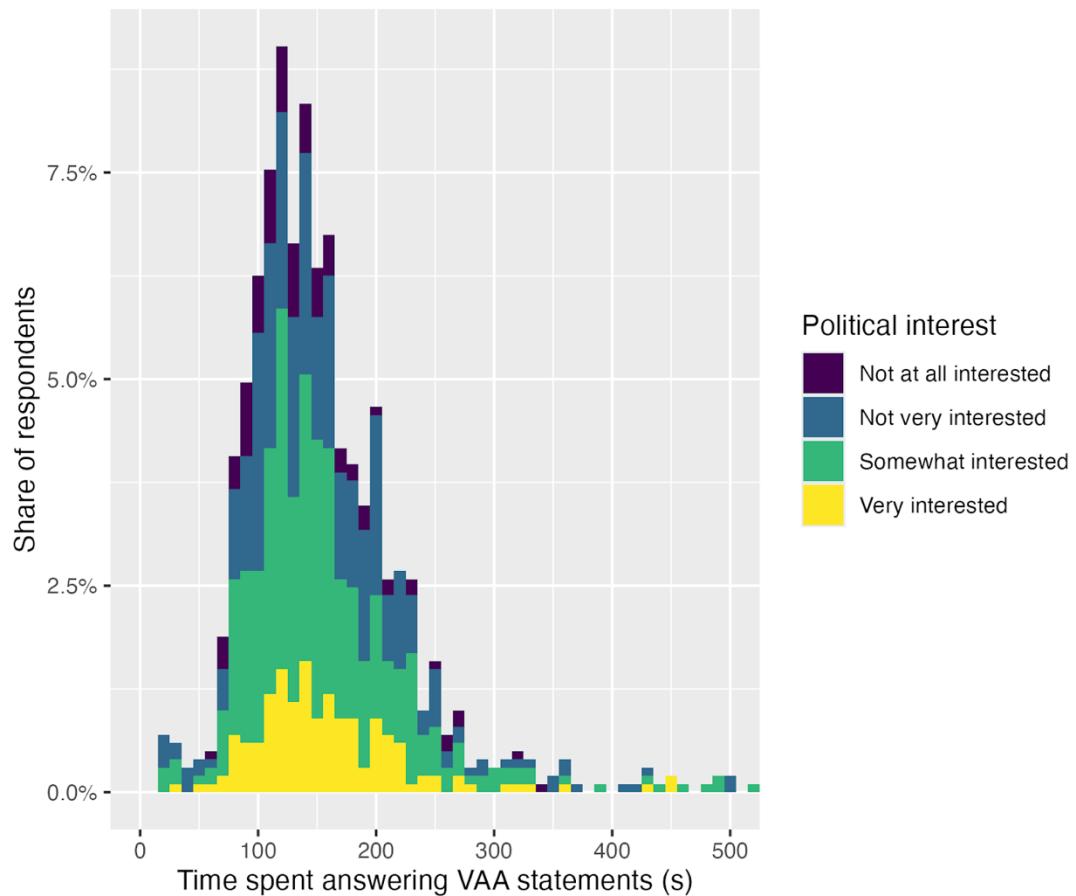
*Partiet har ikke givet nogen uddybende forklaring.*

**Figure B7.** VAA screenshots: The view of the party profile with party's justifications opened.

## C Supplementary Analyses of Time Spent Filling the VAA Statements

In this section, for completeness, we turn to how political interest is related to the time spent filling the VAA statements. A potential concern in designing VAA's is that the number of issue statements and their substantive difficulty could make the VAA less accessible to some voters. This rests on the assumption that it takes more effort for voters who are not very politically interested and informed to answer a given number of statements. However, using our behavioral data, we do not find any substantial association between users' political interest and how long they spend answering the issue statements. As shown in Figure C1, the median time spent answering the issue statements is virtually identical for all levels of political interest, except the very least interested spent 12-15 seconds less answering the statements.

**Figure C1.** Did voters with different levels of political interest take longer time answering the issue statements?



Notes: Histogram of time spent for VAA statements colored by respondents' self-reported political interest. Very interested: median = 148, sd = 106, n = 161; Somewhat interested: median = 145, sd = 105, n = 416; Not very interested: median = 148, sd = 121, n = 336; Not at all interested: median = 133, sd = 214, n = 95.

## D Danish party blocs

Left bloc (red bloc):

Socialdemokratiet

Radikale

Socialistisk Folkeparti

Enhedslisten

Alternativet

Right bloc (blue bloc):

Konservative

Borgernes Parti

Liberal Alliance

Moderaterne

Dansk Folkeparti

Venstre

Danmarksdemokraterne

We adopt the categorization applied in:

Stubager, Rune; Hansen, Kasper; Lewis-Beck, Michael and Nadeau, Richard. *The Danish Voter*. 2021. DOI: 10.3998/mpub.10031711