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The effect of Voting Advice Applications on political understanding

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Voting wiser

The effect of Voting Advice Applications
on political understanding

Jasper van de Pol



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Voting Wiser:

The Effect of Voting Advice Applications on Political Understanding

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Voting wiser:
The effect of Voting Advice Applications on political
understanding

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Voor mijn vier ouders

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Chapter 1

Introduction

A well-informed, engaged, and participating electorate is essential for representative democracies. In order to carry out the 'will of the people', the parliament should be a reflection of the citizenry as a whole. Therefore, it is necessary that citizens take the effort to voice their interests and preferences through voting, and that their votes reflect these interests and preferences. Hence, at least in most mainstream conceptions of western democracy, citizens need to participate politically and they need to have a certain level of political knowledge in order to be able to judge which politician or which party represents them best. It is, however, a normative question what level of political knowledge and what level of participation is required for a 'healthy' democracy (Strömbäck, 2005). Even though there has been a lot of debate on this subject, there are widely shared concerns among scholars about the level of engagement and knowledge among citizens in Western democracies (Delli Carpini & Keeter, 1996; Lau & Redlawsk, 2007; Lupia, 1994; Somin, 1998) and the ease with which citizens' opinions are influenced by elite manipulation and the framing of information (Druckman, 2001; Sniderman & Theriault, 2004; Zaller, 1992).

The question how to engage citizens more with politics, and to harness them against attempts of public opinion manipulation by elites, is a central theme both to political communication science and political science (Dalton, 2014; McQuail, 2010). The (news) media have a crucial role here, as these are the most important channels through which citizens inform themselves about politics. When the internet became available to ordinary consumers in the 1990's, observers had high expectations of its potential for democratization and citizen engagement. After all, the internet circumvents the one-way, top-down communication model of traditional media like newspapers, TV and radio. It allows for direct interaction between citizens and politicians, without the interference of communication professionals and journalists (Blumler & Gurevitch, 2001). It offers almost unlimited information to anybody, greatly improving means to inform oneself on societal and political issues. And it facilitates political debate and exchange of ideas between citizens, without them having to leave their homes – especially since the introduction of social media (Chadwick, 2012; McQuail, 2010, p. 151).

According to this optimistic view, the internet can contribute greatly to political engagement, information exchange and public debate, and hence mobilize citizens to become more politically sophisticated. There is some evidence for this proposition: for example, Boulianne (2011) found that political internet use can lead to more interest in politics among Americans. At the same time, she found that TV news is only consumed by those who are already interested in politics, and does not engage the uninterested. There is, however, no agreement among political communication scholars whether the internet has the capacity to mobilize citizens where traditional media fail to do this. According to a more pessimistic view, the people who use the internet

for political information and deliberation are mostly the same people who were politically active before the availability of the internet (Norris, 2001). As Bentivegna (2006, p. 335) noted,

“The desire to be a ‘good citizen’ precedes and accompanies the wish to be an informed citizen. It is thus illusory to attribute to ICTs the power to transform distracted and uninformed citizens into well-informed participants. It is, rather, more realistic to attribute to ICTs the power to destabilize the control of the production and circulation of information held by the traditional media.”

In other words, while the internet does have the capacity to change the information context and interactions between politicians and citizens, it is incapable of bridging the gap between uninterested and interested citizens. For citizens to use the internet to learn about politics and develop their political views, the same personal resources (education, time) and motivations (interest and political efficacy) are required as for offline political media use. This latter view is referred to as the normalization hypothesis: availability of the internet does not automatically lead to more political efficacy, more participation and better-informed citizens, but rather reinforces traditional boundaries. This view is also supported by empirical evidence (Boulianne, 2009; Scheufele & Nisbet, 2002). The literature is inconclusive as to what is the contribution of the internet in general.

Voting Advice Applications serve as an interesting case in this academic debate. They are a good example of ICT that changes the information context and the interaction between citizens and politicians. Or, in Bentivegna’s words (2006, p. 335), they have the “power to destabilize the control of the production and circulation of information held by the traditional media” as they ignore the news cycle and the traditional dynamics of election campaigns, and instead provide a helicopter view on the key issues during the elections and each party’s positions on these issues. However, do they also have the power to “transform distracted and uninformed citizens into well-informed participants”, by increasing their understanding of politics?

VAA offers an approach of presenting political information that would not have been possible without the internet: they work as a freely available online quiz, appealing to large groups of voters, offering them the necessary information to make an issue-based voting decision, and tailoring this information to the individual user (Fossen & Anderson, 2014; Garzia, 2010). For this reason, they might succeed where other media and platforms fail to engage uninterested citizens. As Lau and Redlawsk (2006, p. 262) write about this new type of information source, “this level of control over the flow of information in a campaign is unprecedented and has the potential to change the way voters learn about their choices”. VAA builders have similar expectations and

aim to contribute to democracy by engaging more voters with politics, increasing political understanding and turnout and helping people to make better informed voting decisions (J. De Graaf, 2010; Marschall & Schmidt, 2010; Nuytemans, Walgrave, & Deschouwer, 2010). The study of the capabilities and effects of VAAs thus feeds into the wider mobilization / normalization controversy, serving as an interesting case of the potential of the internet.

This dissertation investigates to what extent VAAs live up to the promise of raising citizen competence. More specifically, it focuses on the contribution of Voting Advice Applications to citizens' understanding of politics. The central question of this dissertation is: *How do VAAs affect understanding of politics and political issues, and how does this interact with resources and motivations of citizens?* This subject is tackled from different perspectives, using a multitude of data sources and research methods. From a media use perspective, I study types of VAA users and their motivations to use VAAs – both in first- and second-order elections. This has implications for the capacity of VAAs to inform: if VAAs are only used by those who are informed already, they will not have a mobilizing influence. From a language use perspective, I test if the framing of policy issues affects the understanding people have of politics, and whether this affects their opinions. Lastly, I investigate whether VAA use results in an increase in factual political knowledge and in a feeling of knowledge, or internal political efficacy.

In the remainder of this chapter, I will introduce the dissertation and its chapters, situate this research effort in the broader context of political communication and VAA research, and discuss the theoretical, practical and methodological contributions of this dissertation. But first, I will give a more elaborate introduction into the phenomenon of Voting Advice Applications.

1.1 A Brief History of VAAs

As a way to provide insight into politics to high school students, during the 1989 Dutch elections the Citizenship Foundation (Stichting Bugerschapskunde) developed a package with a list of statements from party manifestos, about which students could give their opinions (J. De Graaf, 2010). This *Stemwijzer* package also contained a floppy disk so that students could use the school computer to calculate which party they agreed most with. While only 50 packages were sold to high schools during these elections, five years later some thousand *Stemwijzer* floppy disks were sold to schools and individuals through bookshops and kiosks. In 1996 *Stemwijzer* was first available online, and by 2012 about 50% of the Dutch electorate consulted *Stemwijzer* before casting a vote in the national elections (Marschall, 2014). Meanwhile, *Stemwijzer* spin-offs have appeared in other countries (like the German *Wahl-O-Mat*, attracting more than 13 million visitors in 2013) and alternatives have been developed, like the

Dutch *Kieskompas*. VAAs are now available throughout Europe, and are making their appearances in other democracies worldwide as well (Liao, Chen, Jensen, & Pritchard, 2015). In 2009, the first supranational VAA EU Profiler was developed for the European elections and in some countries, like Germany, Belgium, Switzerland and the Netherlands, the first regional-level VAAs have appeared (Schultze, 2014; Sudulich, Garzia, Trechsel, & Vassil, 2014)

Several explanations have been put forward for the remarkable rise of the popularity of VAAs throughout Europe. In many western European countries, the traditional relations between parties and voters have faded. A few decades ago, most voters were loyal to one party: the party of the class or social group they belonged to (Lijphart, 1975). In current times of eroded class boundaries and advanced mediatization, this traditional voter-party relation has become less relevant (N. D. De Graaf, Heath, & Need, 2001; Garzia, 2010; Mair, 2008). Other considerations have become more important in the voting decision process, such as evaluation of past performance, issue agreement, party identification, politician's performance in the media, or strategic considerations (Dalton, McAllister, & Wattenberg, 2002; Garzia, 2012; Lau & Redlawsk, 2006; Shanks & Miller, 1990). Voters also switch more often and make their voting decisions later in time (Dalton et al., 2002; Fournier, Nadeau, Blais, Gidengil, & Nevitte, 2004; Irwin & Van Holsteyn, 2008) – indicating they are less certain about their vote decision than some decades ago.

In the Netherlands this change was very profound: within one decade, this country changed from being a relatively politically stable nation to having one of the highest volatility rates in Europe (Mair, 2008). This resulted in an increasing fragmentation in Dutch politics: more and more parties are being considered by large groups of voters (Van der Brug & Pellikaan, 2003). In the latest national elections, 21 parties competed for seats in parliament, and 11 parties ended up with at least one seat. In this context of increased choice and lack of habits and tradition, voters seem to be looking for cues to rely on, and VAAs offer an easy and appealing way to find out which party fits one's preferences and interests (Garzia, 2010).

There is a wide variety of VAAs (see Garzia & Marschall, 2012, for an overview of differences), but they all share a couple of features. Users indicate their opinions towards a number of statements about political issues, and on each of these issues the VAA compares the user's opinion to the positions of each party. Based on this comparison, the VAA produces a voting advice (see Figure 1 and 2). This advice can either be in the form of a list of parties ranging from best to worst matching (Figure 1), or a graph depicting the political spectrum with the positions of all parties and that of the user (Figure 2). Most VAAs also offer functionalities like comparing one's opinion to the positions of all parties for each statement separately, and providing the arguments that parties put forward for their positions. Voting Advice Applications

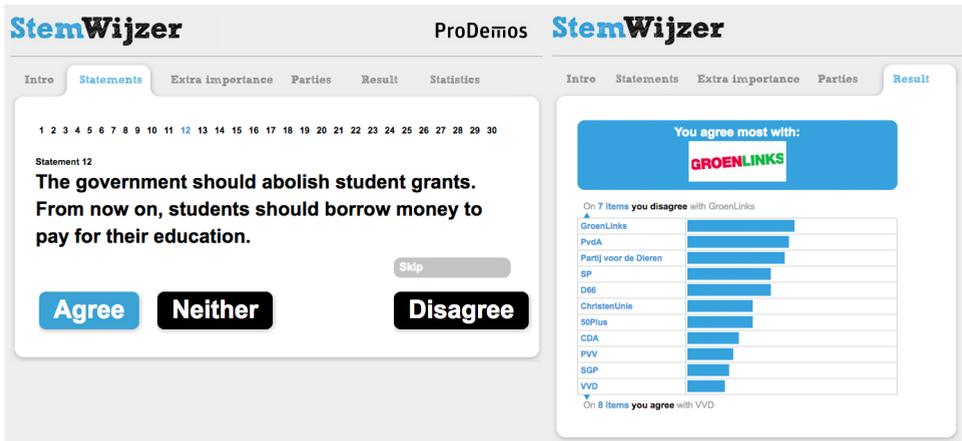


Figure 1.1: A statement in the *Stemwijzer* application (left) and the results page with the bar chart showing the match with every party (right)



Figure 1.2: A statement in the *Kieskompas* application (“There should be cuts on culture and the arts” - left) and the results page with the two-dimensional political spectrum showing the user’s position in relation to the positions of the political parties (right)

could therefore also be seen as tools that offer a very concise summary of all party manifestos on a selection of issues that are important in the election campaign. They enable voters to obtain, in 10 to 20 minutes, a rough overview of the political spectrum for a particular election.

The popularity of VAAs spurred a vivid debate on their function in politics – both public and academic. Research on VAAs can broadly be divided in two interrelated

lines: first, who are the users, what effects do VAAs have on their users and do they contribute to citizen competence? Second, what are the design effects, biases and assumptions of VAAs, do they offer a good representation of the political spectrum, and how can they be improved?

This dissertation contributes to these lines of research in multiple ways. It broadens the scope of the study of VAA users in earlier research by looking beyond socio-demographic characteristics. I distinguish different types of users by their cognitive characteristics and their motivations to turn to VAAs. Additionally, different contexts of VAA use are taken into account by comparing the role of VAAs in first- and second-order elections. The dissertation further contributes to the study of VAA effects on users by making a distinction between factual and perceived knowledge gains and offering a strict test of both. It contributes to the study of design effects by looking at different ways of framing political issues. Lastly, it contributes by using a number of methods that are innovative to the field of VAA research and help us to answer more questions about the use and effects of Voting Advice Applications. This dissertation is part of a comprehensive research project on the effects of VAAs on political attitudes, political literacy and understanding, and political behavior¹.

In the following sections, I will discuss the insights research on VAAs brought us so far, and how this dissertation is situated within the two lines of VAA research I discussed above: how VAAs matter for citizen competence and the biases and design effects in VAAs.

1.2 Democratic Contribution of VAAs?

The astronomical increase in VAA use, the formal way of matching voters to parties, and the persuasive influence this might have in the decision process of voters make VAAs an important actor in election campaigns. VAA developers often strongly emphasize that their tools are not intended to provide a voting advice, but rather to inform voters by offering a personalized summary of important issues and the party positions on these. One of the overarching questions in the debate about VAAs is on the exact role VAAs play in modern democracies, and whether this is a beneficial role. A couple of studies have empirically studied this role, and there has also been some reflection contesting the assumptions underlying VAAs, which I will discuss later.

¹ This dissertation was supported by a grant as part of the “Understandable Language” program by the Netherlands Organization for Scientific Research, grant number 321-89-003

1.2.1 Empirical findings

As mentioned previously, VAA builders aim to contribute to democracy by increasing political interest and knowledge, motivating citizens to vote and to help them make informed voting decisions (J. De Graaf, 2010; Nuytemans et al., 2010). Ideally, VAAs help people to be more aware of their preferences, vote accordingly, and to go out and vote if they otherwise would not. This will lead to better representation of the interest and preferences of citizens in the government. Hence, to answer the question whether and how VAAs contribute to democracy and democratic representation, scholars have looked at VAA users, gains in knowledge and interest, effects on turnout and effects on vote choice.

With respect to the users, the question is to what extent VAAs are used by those who are less well represented in government – those who are less inclined to inform themselves and turn out to vote in elections. Early research concluded that users are on average male, higher educated and more than average interested in politics (Boogers & Voerman, 2003; Hirzalla, Van Zoonen, & De Ridder, 2010; Hooghe & Teepe, 2007; Marschall & Schmidt, 2010; Ruusuvirta & Rosema, 2009). In a recent study on users of the German *Wahl-O-Mat*, Marschall and Schultze (2015) looked at motivations and political behavior of VAA users and observed that typical VAA users are young people who are politically engaged already, and accustomed to using the internet for their political information needs.

These conclusions support the normalization thesis: VAA users very much resemble the typical kind of people who inform themselves about politics anyway – and if that is the only type of citizens using VAAs, these tools will not be able to bridge the divide between politically uninterested and interested citizens. Chapters two and three in this dissertation, however, argue that a focus on the average user obscures the variability among users, and ignores the possibility that there is a minority of users who were not already engaged before. Additionally, in Chapter 3, I will investigate to what extent VAA use differs between types of elections. In some elections VAAs might attract more uninterested and uncertain voters than in others.

In case VAAs are used by less informed and less interested citizens, this might have mobilizing effects in terms of electoral participation. After all, those who are interested and informed already will go out and vote anyway (Verba, Schlozman, & Brady, 1995). The effect of VAA use on electoral turnout was tested in a couple of studies throughout Europe (Dinas, Trechsel, & Vassil, 2014; Enyedi, 2015; Fivaz & Nadig, 2010; Gemenis & Rosema, 2014; Ladner, Felder, & Fivaz, 2010; Marschall & Schultze, 2012). While all of these studies established positive relations between VAA use and turnout², not all of them could make causal inferences about this relation.

² Dinas, Trechsel and Vassil (2014), however, found that this relation is dependent on the extent to

Two studies deserve particular interest. Gemenis and Rosema (2014) use matching techniques to simulate an experiment and find that VAA use increases turnout with a little over 4%. Enyedi (2015) carried out an experiment, but could not find evidence for any contribution of VAAs to turnout. It seems that, if there is any effect, it will be modest.

How about political knowledge? Walgrave, Van Aelst, and Nuytemans (2008) argue that the rising participation in VAAs may lead to more debate on issues and positions of parties, rather than on “secondary aspects” of campaigns (p. 680), and this would be healthy for democracy. There has not been much academic attention yet, however, to the question whether VAAs actually contribute to factual knowledge about politics and positions of parties on issues. A couple of studies asked respondents to indicate what they felt was the effect of using VAAs. For example, about half of Finnish voters think that VAAs are an important source for political information (Ruusuvirta, 2010); 60% of German *Wahl-O-Mat* users indicate that this VAA had motivated them to collect more political information (Marschall & Schmidt, 2010); and 65% of Swiss *Smartvote* users claim that using *Smartvote* motivated them to discuss politics with others.

Only recently, VAA researchers began studying factual political knowledge, and the effect of VAAs on them. Schultze (2014) and Westle, Begemann, and Rütter (2014) operationalized political knowledge as the ability to correctly identify positions of parties on political issues. VAAs would have a positive effect on political knowledge if, for example, people are more often able to associate the conservatives with reducing unemployment benefits after using a VAA. They found this to be the case: in both studies, a moderate increase in political knowledge was found after using a VAA.

However, it should be remarked that, since Schultze (2014) compares users to non-users, his findings may be affected by selection bias. Westle and colleagues (2014) do not compare users against a control group but measure knowledge before and after using the VAA, with the risk of measuring test effects. In Chapter 5 I take another important step towards measuring the causal effect, by comparing political knowledge between users and non-users in a quasi-experiment. Additionally, this study also assesses whether VAAs contribute to a feeling of knowledge, or political internal efficacy. Efficacy is an important factor in the motivation of voters to go out and vote, and to be interested in politics and political campaigns (Kaid, McKinney, & Tedesco, 2007; Kenski & Stroud, 2006).

VAA researchers lastly also investigated the effects on voting decisions, and whether VAAs – as has been claimed – helps voters to make an informed choice. Assuming that not all voters vote for the party that represents their interests and preferences best,

which voters' positions are represented by parties. If the VAA shows that no party represents someone's preferences, they will demotivate users to vote.

then, if VAAs would help voters to make more informed vote choices, this should result in vote switching after using a VAA. The impact on voting decision was investigated in a series of studies (Alvarez, Levin, Trechsel, & Vassil, 2014; Andreadis & Wall, 2014; Dumont & Kies, 2012; Pianzola, 2014; Walgrave et al., 2008; Wall, Krouwel, & Vitiello, 2012). Using different sources of data – log data from VAA users, national election studies, experiments – they could all establish a (modest) effect on the vote choice of users, especially among lower educated citizens (Dumont & Kies, 2012).

To be sure, this impact of VAA advice on vote choice does not necessarily imply that VAAs contribute to democratic representation by helping people to make better-informed vote choices (i.e., pick parties that represent them better). But at least these studies established that there is a real-world effect that might matter for election outcomes. Whether voters now make ‘better’ or more ‘correct’ decisions is open for discussion and depends on many factors and views. For instance, is the VAA advice a proper reflection of the preferences and interests of users? And do these recommendations take into account everything that is relevant when making one’s mind up about which party to vote for?

In sum, research on VAA effects established a modest increase in turnout after VAA use, and found some indications that VAA use contributes to political knowledge. More robust evidence has been found that VAAs also affect the voting decisions of users. In the next section I discuss the normative model of democracy VAAs implicitly adhere to, and later in this chapter I will return to the question whether it is possible to build a neutral VAA.

1.2.2 Normative perspectives and assumptions underlying VAAs

A common trait of VAAs is that they ask users to specify their own issue positions and receive an overview of parties, ranked according to the extent to which they agree with the user. The issues included in VAAs are usually issues that are contested in the election campaign. This means that VAAs choose to assist voters in their decision process by focusing on policy measures that are proposed by parties for the upcoming period of office. This approach is less obvious than it may look at first glance. With this design VAA builders make some implicit choices, while other approaches would also have been possible (Fossen & Anderson, 2014).

First, VAAs assume voters should – or will – vote for the party that they agree most with on relevant issues, adhering to the issue voting model (see Downs, 1957). After all, that is what they help voters figuring out. In doing this, they ignore other considerations to vote for a party such as the performances of parties and politicians in the past period, ideological principles or the qualities of specific politicians like party leaders (Ladner, 2016; Rosema, 2012; Wagner & Ruusuvirta, 2011). More specifically,

within the framework of issue voting, some VAAs use a proximity model of voting: matching voters to parties they agree most with overall and taking all issues into account equally. Other VAAs have more attention for how strong people's opinions are (by distinguishing between "agree" and "completely agree"), adhering to a directional model. And some VAAs use the salience model, by taking account what issues users think are most important (Wagner & Ruusuvirta, 2011).

Second, the idea that voters choose the party that best represents their opinions adheres to a view of politicians as 'delegates' whose task is to represent the interests and opinions of their constituents. In an alternative view, politicians are 'trustees' who receive a mandate to act according to what they think is best for the common good (Anderson & Fossen, 2014; Ladner, 2016).

Third, the assumption that voters have fixed opinions on a set of political issues and need to know which party agrees most with them, fits well with a social choice model of democracy. This model emphasizes the need for the best possible match between one's political preferences and the party she or he voters for. Another possible model of democracy, for example, would be a deliberative model, assuming that voters are in need of arguments and are looking to find out what their preferences are instead of which party best matches these preferences (Anderson & Fossen, 2014; Fossen & Anderson, 2014; Fossen & Van den Brink, 2015; Strömbäck, 2005).

The assumption that voters have fixed opinions is also contested in the field of public opinion research. The absence of stable opinions grounded in arguments and principles is a well-established finding (Converse, 1964; Sniderman & Theriault, 2004; Tourangeau, Rips, & Rasinski, 2000; Zaller, 1992). Framing effects, encountered in a large number of studies in political communication, could on the one hand be regarded as an indication that many people do not have fixed opinions on many issues and adjust their opinions in response to different framings of an issue (Druckman, 2001; Zaller, 1992). On the other hand, effects of issue framing could also be the result of people having considerations and arguments both in favor and against a course of action. They just take into account the considerations relevant to the frame (Druckman, 2001; Sniderman, Tetlock, & Elms, 2001). I will return to the discussion of framing later. The point here is that while VAAs assume users have fixed and readily available opinions on political issues, it is more likely that users have some considerations about issues, in favor of and against the statement, or no opinion at all.

In conclusion, even though most VAAs share the same view on voting decisions, assumptions about democratic representation, and about engagement of voters, alternative views are possible and would result in VAAs with different approaches. A deliberative VAA, for instance, would not regard political opinions as fixed and would invite its users to engage in political discussions with each other, offering information and arguments in favor of or against certain positions. A less issue-based VAA would

include questions to find out about ideologies and principles users adhere to, or about how they value performances of candidates. In the Netherlands, the developers of *Stemwijzer* also offer the *Stemmentracker* (<http://www.stemmentracker.nl/>), a VAA that compares users' positions to how parties voted on bills in the past. And sociologists from Maastricht University developed the "Politieke Weegschaal" (Political Balance Scale), a VAA addressing the issue that in VAAs users can at the same time agree with tax cuts and also agree with more government spending. They force users to make a trade-off between alternative policies, and hence offer a 'more realistic' voting advice (Korthals & Levels, 2016). The challenge is to make them as easy and appealing as the VAAs that attract millions of users today.

In any way, regardless whether the voting advice reflects one's 'correct' voting decision and regardless whether the underlying assumptions of VAAs are contested or not, their 'voting advice' does affect real-world voting decisions. Hence, it is very relevant to study what function VAAs have in the way voters inform themselves about politics in modern election campaigns, and how design aspects affect the voting recommendations people receive.

1.3 The Impossibility of a Neutral VAA

There are a number of decisions VAA developers need to make about the design of their VAA. For example, which issues to include; how to formulate the questions and which order to put them in; which method to use to determine how much users agree with parties; how to present the results and so forth. Most of these decisions are political in nature, since there are no unambiguous principles that could guide developers in making them (Rosema, Anderson, & Walgrave, 2014). And these decisions all affect the voting advice and the likelihood for each party to be recommended to users. It is hence impossible to build a VAA that is entirely neutral and free from biases.

To start with, VAAs make use of a range of survey questions to assess the positions of users on political issues ("Immigration into the Netherlands should be made more restrictive"). These survey questions, or statements, are the same as those often employed in traditional surveys. They are therefore subject to the same wording and design effects. – identified in a large body of survey methodology literature.

For example, it matters whether statements are formulated positively ("... should be allowed") or negatively ("... should be forbidden") (Holleman, 1999; Schuman & Presser, 1981). For a test of this so-called valence framing effect in VAAs, see Holleman, Kamoen, Van de Pol, Krouwel, and De Vreese (2014). It also matters how many response categories are used and how they are labeled (Schwarz, Knauper, Hippler, Noelle-Neumann, & Clark, 1991) – *Stemwijzer*, *Wahl-O-Mat* and other VAAs use 3-point scales, plus the option to "skip this question" while *Kieskompas*, *Smartvote* and

yet other VAAs use 5-point (Likert) scales, plus the “don’t know” option. According to Gemenis (2012) the advantage of the 5-point scale is that more choice is offered, but the drawback is that two dimensions are conflated: both direction (agree / disagree) and intensity (tend to / completely). Additionally, there is some controversy over whether people use the middle option (“neither agree nor disagree”) and the “don’t know” option as intended, or perhaps also use the middle option to express a lack of opinion (Baka, Figgou, & Triga, 2012; Van Outersterp, Kamoen, & Holleman, 2016). It might even matter in what order the statements are presented to the user (Tourangeau & Rasinski, 1988). There could be contrast- or assimilation effects when respondents take the previous question into account when interpreting the question that follows. For example, respondents could be primed by the specific question to answer the more general question.

The literature on issue framing also offers insights about statement wording effects. VAA builders have to decide how to summarize a political issue concisely and accurately in one or two lines, and this can affect how users understand the issue. Before, I discussed how the framing of an issue often affects the opinions people express on the issue. Framing effects can already take place in the formulation of a single survey question. Sniderman and Theriault (2004) demonstrate that a majority of Americans favors a “big increase in government spending to increase opportunities for poor people” if the statement follows, “...so they can have a better chance of getting ahead in life”. However, if the statement instead says, “...even if it means higher taxes” only a majority still is in favor. The classic ‘Asian disease’ experiment by Kahneman and Tversky (1979) is another example of the potential power of framing (see Chapter 4). Zaller (1992, p. 95) summarizes the findings on the instability of public opinion as follows:

“What gets measured as public opinion is always and unavoidably dependent on the way questions have been framed and ordered. If different frames or different question orders produce different results, it is not because one or the other has distorted the public’s true feelings; it is, rather, because the public, having no fixed true opinion, implicitly relies on the particular question it has been asked to determine what exactly the issue is and what considerations are relevant to settling it.”

Will we encounter the same kind of framing effects in VAAs? After all, VAAs are a particular type of opinion surveys. Rather than indicating fixed opinions to the statements, many VAA users will probably form opinions on many issues on the spot. This means that effects of statement formulations are potentially large. On the other hand, formulation effects in VAAs might also be relatively small because VAA users have

different motivations for answering VAA statements, compared to respondents in regular opinion surveys. VAA users know that the quality of the voting advice depends on the effort they take in answering the statements. Chapter 4 in this dissertation will provide a first test of framing effects in measuring opinions in VAAs, by studying to what extent VAA users adjust their political attitudes in the face of different framings of the same political issue.

In addition to statement wording issues, VAA developers need to decide about the selection of issues. VAAs typically feature between 30 and 40 statements on political issues. Any selection of statements affects the likelihood for each party to be recommended to its users. For example, in the *Kieskompas* and in the *EUvox* for the 2014 European elections, the only party agreeing with the statement “The Netherlands should exit the EU” was the PVV. Including this statement is beneficial for the PVV since it will make it more likely that the PVV will be recommended to anyone who agree with this statement. Each statement in this way will be favorable or unfavorable to some parties, and the selection therefore has important consequences. Walgrave, Nuytemans, and Pepermans (2009) and Lefevere and Walgrave (2014) indeed found that the voting advice provided by VAAs differs hugely if another set of statements was included.

A third way in which design aspects matters for the party recommendations people receive is the way the agreement between users’ opinions and party positions is calculated and presented to the user. If we take the Dutch *Stemwijzer* and *Kieskompas* as an example: these two VAAs might provide different voting recommendations even if they would have the exact same selection of statements and these are formulated in the exact same way. *Stemwijzer* (and their equivalents in other countries like *Wahl-O-Mat* in Germany and *Doe De Stemtest* in Belgium) simply count the number of times users agree with each party and then show the parties in order from most to least agreement. *Kieskompas* (and its international equivalences), in contrast, distributes all issues on two political dimensions: economic left-right issues, and an ethical dimension ranging from progressive (Green, Alternative and Libertarian) to conservative (Traditional, Authoritarian and Nationalistic³). It then calculates the positions of users and parties in the two-dimensional political spectrum (see Figure 2). Because of these different approaches, the advice they produce is likely to be different even if two persons with the same opinions on the same issues use them.

While some scholars emphasize the advantages of the latter approach (the two-dimensional space) for providing more information about the political landscape than just a list of parties ranging from best to worst matching (Krouwel, Vitiello, & Wall, 2012, p. 235), others point to the fact that it is almost impossible to find two dimensions that accurately and reliably summarize the complete political space, and that

³ Taken from the work by Marks, Hooghe, Nelson, and Edwards (2006)

this structuring of issues should be based on empirical analyses (Germann & Mendez, 2016; Otjes & Louwerse, 2014). And then there is the question whether all issues are evenly important and should be assigned the same weight in the agreement calculation (Kleinnijenhuis & Krouwel, 2008; Wagner & Ruusuvirta, 2011)

Concluding, it is impossible to build one single objective, neutral and bias-free voting advice tool. Developers have to make one selection of statements, have to choose one order of statements, one formulation, choose one reporting scale and one agreement calculation method over another⁴. These choices all affect the VAA results and hence the likelihood of parties to be recommended to users. However, the vivid debate about possible biases in VAA design will hopefully increase awareness of the fact that VAAs cannot be neutral, that different VAAs will provide different voting recommendations, and hence these results should not be followed blindly. Rather, VAAs should be used as a starting point to inform oneself about politics.

1.4 Outline of the Dissertation

This dissertation will take the current state of affairs in VAA research as the point of departure, and put some of the claims about its reach and effects to a robust test. Chapters 2 and 3 take the users of VAAs as their focus, and provide more insight into the question what types of voters consult VAAs and for what purpose. Chapter 2 establishes a typology of VAA users based on the motivations and interests of VAA users. This study utilizes user data from the popular Dutch VAA *Kieskompas* and a latent class analysis to identify different user types.

Recently, VAAs are also being developed for supranational elections (the European elections of 2009 and 2014) and subnational elections (e.g., in Belgium, Germany, the Netherlands and Switzerland). The third chapter replicates the typology developed in Chapter 2 for these second-order elections, and investigates how VAA use differs across elections. I test the hypothesis that in second-order elections, voters feel less efficacious (politically self-confident) about the elections and about their voting decision, which results in a more ‘serious’ use of VAAs (i.e., people use it more often to inform themselves as opposed to entertainment purposes).

In the fourth and fifth chapter, I study the way VAAs affect political understanding, and how this differs for more and less politically literate citizens. In Chapter 4, I report on a field experiment that investigates to what extent political attitudes of VAA users depend on issue framing. If the framing matters for opinions of users, also the voting

⁴ This is perhaps a reason for VAAs to make a set of alternative choices (e.g., different sets of statements, formulations and orders) and offer the different versions of the VAA randomly to users. This is basically what has been done in a real-world VAA to test the framing effects reported in Chapter 4, but it requires significantly more effort to develop VAAs this way

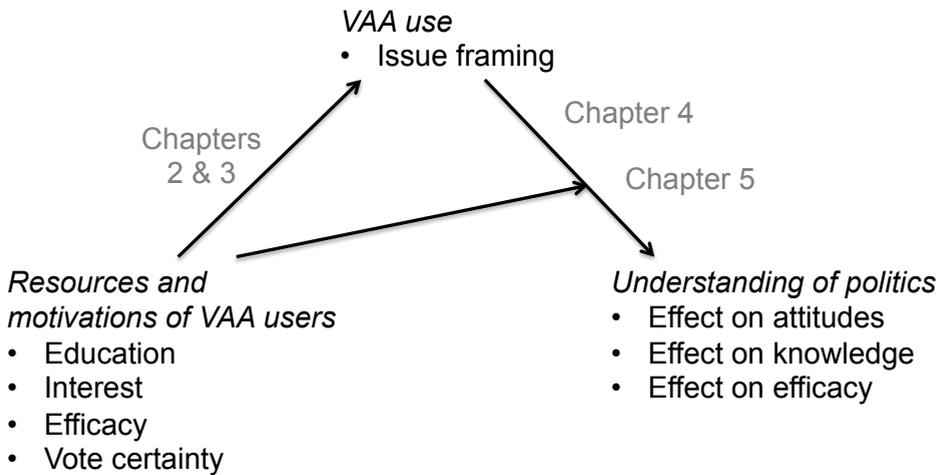


Figure 1.3: Conceptual overview of the dissertation

advice could be affected which could have consequences for political behavior of VAA users.

Chapters 2 and 3 reveal that interested, efficacious voters who are solely looking for entertainment or confirmation of their party preference are not the only users of VAAs. Since there is a sizeable group of users that is looking for more information, there is an opportunity for VAAs to actually contribute to understanding of politics. Up to date only a few pioneering studies have looked into the effects of VAAs on factual political knowledge, and provide correlational evidence at best, or did not compare users and non-users. Additionally, no research has yet been done to the effect of VAAs on internal political efficacy, which in addition to knowledge is an important prerequisite for political participation. Chapter 5 discusses a quasi-experiment carried out during Dutch municipality elections, offering a more robust test of the causal effect of VAAs on knowledge and political efficacy.

Together, these studies offer a comprehensive picture of the role VAAs have in informing and educating citizens. While chapters 2 and 3 investigate the functions VAAs fulfill in the information supply of citizens during election campaigns, chapters 4 and 5 focus on how this information supply affects political understanding. Chapter 4 investigates how issue framing affects people's understanding of particular issues and people's opinions on these issues. Chapter 5 studies how VAAs contribute to understanding of politics generally, and the feeling of understanding, or political efficacy. Both chapters 4 and 5 investigate how these effects differ for different groups identified in the first two chapters. The conceptual overview is shown in Figure 3.

1.5 Contribution and Conclusion

This dissertation incorporates a number of innovations in the research on VAAs, and an innovation to the field of framing and wording effects. First, with respect to the study of VAA users I argue that it is more informative to look at different groups of users instead of focusing on averages. This could also lead to a different picture of the function of VAAs in the political process. If users of VAAs on average are highly educated and interested in politics, as observed by extant research (Boogers & Voerman, 2003; Hirzalla et al., 2010; Hooghe & Teepe, 2007; Marschall, 2014), this suggests that VAAs will probably not manage to close the knowledge gap, as they set out to do. After all, to close the knowledge gap, less interested and lower educated citizens need to catch up in terms of political knowledge, and it is that group of people who needs to benefit from using Voting Advice Applications. However, if the users of VAAs are studied from a perspective of types of users, a different picture emerges, as is seen in Chapter 2 and 3. In these chapters, latent class analysis is employed to find out which types of VAA users can be distinguished. Chapter 2 shows that users can be subdivided into three types, only one of them resembling the picture of interested and efficacious voters as drawn by previous studies – labeled checkers. Chapter 3 shows furthermore that in second-order elections, this group of checkers is even in the minority.

This dissertation contributes methodologically by offering a test of the causality of effects of VAAs on understanding of politics. Early studies of VAAs had a very explorative character and often relied on estimations of VAA effects that were reported by users themselves (e.g., Fivaz & Nadig, 2010; Ladner & Pianzola, 2010), as measured with questions like “Did the *Smartvote* recommendation influence which parties or which candidates you voted for?” (Ladner et al., 2010, p. 114). As Pianzola (2014) notes, self-reported measures like these have reliability issues (cf. Walgrave et al., 2008), and because only VAA users are investigated, no comparisons can be made with non-users, and therefore not much could be said about the actual difference VAAs make.

More recent studies have taken important methodological steps in identifying the effects of VAAs. For example, to measure the extent to which people learn about party positions, Schultze (2014) uses a set of factual questions to accurately measure political knowledge, and compares users to non-users to see how VAAs contribute to knowledge. That study, however, still draws on non-experimental data, and respondents hence self-selected into treatment. Because of this reason, causal inferences are not possible. In an effort to test the effect of VAA use on electoral participation, Gemenis and Rosema (2014) therefore use matching techniques to mimic a field experiment. While this approach already greatly diminishes selection bias, it does not allow for the same sort of inferences that a randomized experiment would. In Chapter 5 I take an-

other step towards this golden standard, by carrying out a quasi-experiment in which VAA availability is unrelated to individual predispositions. I will further use the same matching techniques to further reduce selection biases. In Chapter 4 I report on a field experiment that meets the highest standards and allows us to draw causal conclusions about the effect of statement framing on political opinions.

Finally, this dissertation also contributes to the issue framing and survey literature by testing the effect of question wording – or framing – in the new context of Voting Advice Applications. As noted before, VAAs can be regarded as a special type of surveys. Effects may differ, however, because in VAAs respondents (users) have different motivations to answer the survey questions, compared to regular surveys. After all, they hope to receive a valuable voting recommendation, so they might spend more effort considering what their opinions are before answering the questions, compared to regular surveys. In the case of issue framing, this might lead to weaker wording effects. Another way in which this dissertation contributes to issue framing research is the clean design in which I use a narrow operationalization of issue framing, resembling equivalence framing.

In the following four empirical chapters, this dissertation studies the role VAAs have in modern election campaigns, and how they contribute to an understanding of politics for different (types of) citizens. VAAs serve as an interesting case in the normalization / mobilization debate, since they have the purpose of informing voters and are very widely used in election times, both in first- and second-order elections. This dissertation both looks at the extent to which VAAs are able to attract different groups of citizens, and to what extent they inform and contribute to political efficacy for different groups of citizens. Additionally, they also serve as an interesting case in the research on framing effects, as they offer a context in which subtle wording variations can have important real-world implications. By running different versions of one VAA, these subtle variations in framing are tested with high accuracy on a complete population of VAA users at once. In short, the dissertation provides more insight into the different ways in which VAAs affect understanding of politics for different groups of citizens.

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Chapter 2

Beyond Young, Highly Educated Males: A Typology of Voting Advice Application Users

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Abstract

Voting Advice Applications (VAA) are web tools that are used to inform increasing numbers of voters during elections. This increasing usage indicates that VAAs fulfill voters' needs, but what these needs are, is unknown. Previous research has shown that such tools are primarily used by young males and highly educated citizens. This suggests that VAAs are generally used by citizens who are already well-informed about politics and may not need the assistance of a VAA to make voting decisions. To analyze the functions that VAAs have for their users, this study utilizes unique user data from a popular Dutch VAA to identify different user types according to their cognitive characteristics and motivations. A latent class analysis resulted in three distinct user types that vary in efficacy, vote certainty, and interest: doubters, checkers and seekers. Each group uses the VAA for different reasons at different points in time. Seekers' use of VAAs increases as election day approaches; less efficacious and less certain voters are more likely to use the tool to become informed.

2.1 Introduction

Over the past decade, Voting Advice Applications (VAAs) have played an increasingly important role in many countries' elections. These online communication tools generate a personalized voting advice for their users by matching users' opinions about a selection of policy issues to party stances. Such voting recommendations are being provided to increasingly large numbers of voters. For instance, in 2009, the German *Wahl-O-Mat* provided advice to 6.7 million people; the Dutch *Stemwijzer* was consulted by 38% of the electorate in 2012; and the Swiss *Smartvote* attracted over 1.2 million users in 2011 (Garzia & Marschall, 2012). VAAs influence their users in several ways: They have been found to motivate people to participate in politics and to increase election turnout (Marschall & Schultze, 2012; Mykkänen & Moring, 2006; Ruusuvirta & Rosema, 2009). In addition, they prompt users to search for more information about politics (Marschall & Schmidt, 2010). Crucially, they have also been found to exert an influence on users' actual voting choices (Marschall & Schmidt, 2010; Walgrave, Van Aelst, & Nuytemans, 2008; Wall, Krouwel, & Vitiello, 2012).

To better understand the societal and electoral effects and their implications for the role of VAAs in election campaigns, it is necessary to know who is using these applications and why. According to several previous VAA studies, a typical VAA user is a male, highly educated, young and politically interested voter (e.g., Boogers & Voerman, 2003; Dumont & Kies, 2012; Hirzalla, Van Zoonen, & De Ridder, 2010; Hooghe & Teepe, 2007; Marschall, 2014; Marschall & Schmidt, 2010; Ruusuvirta & Rosema,

2009). Voters who are still in doubt about their vote close to election day relatively often use VAAs (Van der Kolk, Aarts, & Rosema, 2007), and citizens more likely use a VAA if they are involved in other forms of political communication, such as reading newspapers and visiting political events (Hanel & Schultze, 2014). However, because VAAs serve millions of users who comprise a significant proportion of countries' electorates, it is unlikely that this profile provides a comprehensive and accurate impression of people using VAAs and the reasons they use them. It is therefore necessary to depart from studying the demographics of a one-dimensional typical user and instead research types of users. This study investigates a set of motivational and cognitive characteristics to identify different user types and to study their reasons for using VAAs. This classification of user types will be compared with socio-demographic features examined in previous studies.

To put the typology to the test, we assess how VAA usage differs between groups over time. Literature on the timing of voting decisions suggests that those who are more unsure about their vote and less interested in politics generally make their voting decision later than more certain and more interested voters; often only days before election day or on election day itself (Fournier, Nadeau, Blais, Gidengil, & Nevitte, 2004; Irwin & Van Holsteyn, 2012; McAllister, 2002; Schmitt-Beck & Partheymüller, 2012). VAAs might be particularly helpful for those who are still in doubt (Van der Kolk et al., 2007). The time at which a VAA is consulted relative to the election is an important and thus far overlooked factor in understanding VAA usage. Voters who are certain about their party preferences may have different motivations for using a VAA and may consult it earlier than those who make their decision in the final days before an election. In other words, VAAs might function as decision aids for some voters but have another utility for others.

Identifying the different types of VAA users will not only provide more insight into the mechanisms of VAAs' effects on voter turnout and vote choice, but will also help researchers understand how and when different types of citizens determine whom to vote for. VAA developers and policy makers could use this knowledge to improve the supply and presentation of information to citizens during elections.

This study's analyses rely on data from the 2012 Dutch parliamentary elections made available by the Dutch VAA *Kieskompas*. We employ user log files ($N = 52,999$) to perform a latent class analysis (LCA) on a set of users' cognitive characteristics and motivations and develop a user typology. This typology is used to test our hypothesis about the diverse ways in which different user types used the VAA during the election. Unlike other VAA studies that focused on the electorate in general (e.g., determinants of VAA usage; see Vassil, 2011), this study explicitly focuses on VAA users – voters who do not represent the electorate as a whole.

2.2 Characteristics and Motivations of VAA Users

Most VAAs were developed in the early 2000s (Cedroni & Garzia, 2010). Consequentially, research on VAAs is also in its early stages, even though the tools are now used by millions of citizens. From the start, many studies focused on users and typically investigated their background, socio-demographic characteristics, and level of political interest. Insights into the use and function of VAAs, however, cannot be based on age, sex and education alone. This resonates with a point made earlier by scholars in the uses and gratifications tradition: To understand media use, we should go beyond the question of who is using the media and study why people use it (Katz, Blumler, & Gurevitch, 1973; Kaye & Johnson, 2004; McLeod & Becker, 1981). The assumption that people choose to use media based on rational, goal-directed considerations, which is at the core of this theoretical perspective, is especially relevant for the study of VAA usage. After all, it takes time and cognitive effort to work oneself through the list of statements before receiving the results; it is an active task, not a passive activity such as watching television. Users will be aware of the needs they expect to gratify by using a VAA, and these needs can differ depending on people's predispositions and interests (Katz et al., 1973). For instance, Kaye and Johnson (2002) identified several motivations for political internet use – for example, guidance, information seeking, and social utility – that are related to attitudes toward politics. Social utility relates strongly to interest in politics and information seeking relates to political efficacy.

To study the diverse use of Voting Advice Applications and to identify different types of users, the present research takes into account a set of cognitive characteristics and motivations that have not yet been studied in the context of VAA use (with the exception of interest; e.g., Fivaz & Nadig, 2010). To identify different types of users, the characteristics of political efficacy and political interest are considered, in addition to whether the users had already decided how they would vote at the moment of their VAA visit and their reason for using the VAA. We hypothesize that different combinations of characteristics and motivations would identify types of users. The indicators used in this study are based on previous research into (political) media use and use typologies (e.g., Baldassarri & Schadee, 2006; Brandtzæg, 2010; Kenski & Stroud, 2006; Liu & Eveland, 2005). The indicators will be discussed later on.

Political interest may explain a citizen's motivation to be informed about politics. This factor has been found to be highly stable over time (Prior, 2007). VAA use may be related to high levels and to low levels of political interest. Citizens with high political interest may show higher levels of VAA use in the early stages of a VAA's release; because they follow political news closely, they will be among the first to notice the availability of a VAA. It is also likely that greater political interest leads to higher VAA use in general, as found in previous studies (Hooghe & Teepe, 2007; Marschall

& Schmidt, 2010; Walgrave et al., 2008).

However, VAAs might also be interesting to those with less political interest who want to make a (partially) issue-based, informed voting decision. Becoming informed requires a voter to 1) invest time and effort in gathering, selecting and transmitting information; 2) invest time and effort in analyzing the information; and 3) accept the cost of relating the obtained information to specific goals to evaluate one's decision (Carmines & Huckfeldt, 1996). This process becomes increasingly complex when multiple parties are running in an election and when multiple issues are important to the voter. Voters who have little political interest may not want to invest much time and may stay home on election day. VAAs reduce the cost of participation by offering a clear and comprehensive overview of election-relevant information that is tailored to the individual user¹. Therefore, VAAs might be attractive to less politically interested citizens, because they offer such voters an opportunity to easily make a (relatively) informed voting decision. As Alvarez, Levin, Trechsel, and Vassil (2014) found, VAAs are perceived to be most useful by people who view politics as complex. Considering users' political interest might therefore help distinguish between groups of users. Less interested users might use a VAA later than interested users because they do not follow the election campaign closely and only decide who to vote for shortly before election day.

Certainty of one's vote decision may be another important factor that explains VAA use. The number of uncertain and floating voters has increased in recent years (Irwin & Van Holsteyn, 2008). This development is associated with an international trend of decreased party loyalty and increased electoral volatility (Fournier et al., 2004; Krouwel, 2012; McAllister, 2002), which is especially pronounced in the Netherlands (Mair, 2008; Van der Meer, Van Elsas, Lubbe, & Van der Brug, 2013). This trend may be related to voters' increasing need for other cues when deciding how to vote, such as information about a party's platform and other relevant issues (Garzia, 2010), which VAAs can provide. Voter uncertainty is found to be higher among citizens with lower political interest (Adriaansen, 2011; Dassonneville, 2011; Van der Meer et al., 2013). These citizens may therefore be attracted to VAAs.

Besides political interest and vote certainty, a third possibly important factor is political efficacy—the extent to which citizens feel that they have the competence and power to affect political decision-making. Internal efficacy refers to beliefs about one's own competence to understand and participate effectively in politics; external efficacy refers to one's beliefs about how well governments and institutions respond to individuals' needs and demands (Morrell, 2003; Niemi, Craig, & Mattei, 1991). Political use

¹ VAAs assume that users seek assistance to match their political opinions to a party platform. As Fossen, Anderson, and Tiemeijer (2012) remark, however, it is more often the case that users do not hold clear opinions on many issues and rather need assistance to define their own position.

of the internet has been found to relate to higher levels of efficacy, especially internal efficacy (Kenski & Stroud, 2006), which leads us to expect generally high levels of internal efficacy among VAA users. However, by providing political information to their users, VAAs could increase voters' internal efficacy (Kenski & Stroud, 2006), which may be a reason why other groups of users are also attracted to tools such as VAAs.

Finally, citizens' reasons for using a VAA are explored. According to the uses and gratifications approach, people have concrete and different motivations for using particular media; they have expectations about the gratifications media can offer, and they rely on these expectations when deciding which media to use (Katz et al., 1973; McQuail, 2010). Kaye and Johnson (2002) studied users' motivations when using the internet to obtain political information and found that the most important motivations were guidance (voting advice) and surveillance (information seeking). Less prominent motivations included social utility and entertainment. VAAs explicitly offer guidance to their users but may also satisfy those who are looking for surveillance, social utility, and entertainment. Kaye and Johnson (2002) also found that users with higher efficacy were more likely to report guidance and surveillance motivations when searching for political information online, but this result may not be generalizable to the relatively new phenomenon of VAAs. In their study of *Europrofiler* users during the 2009 European parliamentary elections, Alvarez et al. (2014) showed that those who felt less efficacious and those who were most interested rated VAAs most useful.

With the exception of political interest, the individual characteristics described above have not yet been applied to explain VAA usage. Studying them should increase researchers' understanding of VAA users; more specifically it should shed more light on how VAAs function for different types of users, as reflected by different moments of use. Our research questions are:

- RQ1 Can different types of VAA users be distinguished by looking at their political efficacy, political interest, vote certainty, and their reason for using the VAA?
- RQ2 Do these user types use VAAs at different moments in the election campaign?

2.3 User Types and Campaign Dynamics

The needs VAAs fulfill, and the types of users they attract, may change over the course of a campaign. One of the clearest findings in the campaign volatility literature is that

voters who make their voting decisions in the final weeks or days before the elections are less partisan than voters who decided which party to vote for before the campaign began (Fournier et al., 2004; Gopoian & Hadjiharalambous, 1994; Irwin & Van Holsteyn, 2008). Voters who visit VAA websites early in the campaign may therefore be less interested in a voting recommendation than voters using the tool closer to election day. A number of studies also found that campaign volatility and late decisions are generally associated with lower political interest and less attention to the election campaign (Adriaansen, 2011; Dassonneville, 2011; Fournier et al., 2004; Schmitt-Beck & Partheymüller, 2012).

Differences over time may also develop because politically interested citizens are the first to learn about the availability of VAAs, because these are applications that suit their interests. Hooghe and Teepé's research (2007) corroborates this supposition. They found that soon after the launch of a Belgian VAA, highly educated people, a group that is typically more politically interested, and men were overrepresented among the users. As election day came closer, users became more representative of the Belgian electorate and therefore more diverse. Meanwhile, party preferences did not crystallize; Belgians who used the VAA closer to election day generally did not have clearer party preferences than those who used the VAA 40 days before the election. This indicates that late users may be as certain about their vote choice as early users.

Based on these results, the following hypothesis was developed:

- H1 The most interested and efficacious voters use VAAs relatively early in the campaign, and the most uncertain voters use VAAs relatively late in the campaign.

2.4 Method

2.4.1 Participants

Data gathered in collaboration with the Dutch VAA *Kieskompas* were used for the analysis (see Krouwel, Vitiello, & Wall, 2012). This is the second-most-popular VAA in the Netherlands, where VAAs originated and where they are used by relatively more voters than in any other country (Garzia & Marschall, 2012). These circumstances make *Kieskompas* a valuable case study. The VAA for the 2012 Dutch legislative elections was online for 29 days, from August 15 until election day, September 12. During this period, *Kieskompas* was accessed 1,215,916 times and fully completed 757,052 times. A log file was recorded for each visitor containing the answers given to all of the questions and statements as well as additional information, including the advice provided

by *Kieskompas*, the date and time of the visit and the time it took the user to answer all of the questions. On the first page of the application, users were asked to report their gender, year of birth, highest level of education attained and the certainty of their vote choice. Thirty political statements followed to which users could indicate their agreement. *Kieskompas* advice is based on users' responses to these statements. One minute after the advice appeared on the screen, an additional short survey appeared containing questions about users' political interest, political efficacy, and reason for using *Kieskompas*. This pop-up questionnaire was completed by 7% of the users ($N = 52,999$).

Our final sample consists of the users who answered the posttest pop-up questionnaire. This sample differs from the overall population of *Kieskompas* users in several respects. The percentage of females was 40.8% in the overall user population and 31.2% in the final sample. The mean age was 39.7 among general users and 45.7 in the sample. Of all users, 59.4% were highly educated compared to 63.8% in the sample. For this reason, we replicated the analyses on a weighted sample that was representative of all *Kieskompas* users. The focus of this study is VAA users, and we do not aspire to extrapolate and generalize our conclusions to the electorate at large.

2.4.2 Indicators

As mentioned above, the selection of indicators for analysis was based on previous VAA research and the literature on political news usage and user typologies. The selected motivations and cognitive characteristics have been found to explain political news use in general and online political news consumption in particular (e.g., Ken-ski & Stroud, 2006; Liu & Eveland, 2005, Brandtzæg, 2010). Because the survey had limited space, for several scales we relied on one item from validated question batteries. Political interest was measured according to the intensity of the respondents' campaign interest, as suggested by David (2009). The answer categories included very intense (9.7%), intense (44.5%) and not very intense/nonexistent (45.9%)². Internal political efficacy was operationalized with the statement, "I feel that I have a pretty good understanding of the important political issues facing our country" ($M = 3.7$, $SD = .89$, range = 1–5), one of four key items in the standard internal efficacy scale (Morrell, 2003) and the most applicable in the present context. External political efficacy was evaluated using the statement, "There are so many similar parties that it does not matter whom I vote for" ($M = 1.8$, $SD = .89$, range = 1–5), which has also been used by De Vreese and Semetko (2004). The citizens' reasons for using *Kieskompas* were measured using four answer categories inspired by Kaye and Johnson's (2004) factor analysis and adapted to VAAs: "To gain more insight into the positions of the parties"

² These categories were combined because of the low number of people in the latter category (3.8%).

(15.9%); “To check whether I agree with the party I intend to vote for” (38.6%); “To determine which party to vote for” (17.2%); or as “an entertaining test to think about or discuss with others” (28.2%). Vote certainty was measured according to the following categories: “I have already decided which party to vote for” (34.4%); “I am still deciding between a few parties” (49.7%); and “I do not know yet” (15.9%). A fourth category, “I will not vote at all,” was also used, but because only 1% of the users chose this category, it was omitted. Internal and external political efficacy was measured using a 5-point scale on which respondents could indicate their agreement. Respondents who answered, “I don’t know” to any of these items were excluded. Reason to use the VAA, vote certainty, and political interest were treated as nominal variables; efficacy was treated as an interval variable.

2.4.3 Analysis

The first research question was answered by using a latent class analysis (LCA) to distinguish between types of VAA users. The resulting classification of user types was then compared to the socio-demographic features examined in previous studies. The second research question was answered by analyzing to what extent different user types consult the VAA at different points in the campaign. For this purpose we regressed the relative VAA usage by each user type on time (the day in the campaign).

Latent class analysis is an exploratory statistical technique that identifies the underlying (latent) categories that explain the response patterns in a set of variables (Hagenaars & McCutcheon, 2002). Using this technique, different types of respondents can be identified based on their responses to a set of questions. LCA differs from other classification techniques, such as cluster analysis, because it fits a model to the data rather than providing an ad hoc classification of the given data. In other words, LCA searches for the classifying model with the best fit to the data, whereas cluster analysis arrives at a small number of classes, or types, by repeatedly (ad hoc) adding together smaller clusters that are more similar. In addition, LCA differs from factor analysis related techniques such as multiple correspondence analysis because it searches for a categorical latent class structure rather than continuous dimensions (Gross & Manrique-Vallier, 2012). LCA uses an iterative approach to find underlying categories that explain the relationship between the observed response patterns and the indicator variables; it assumes that within these categories, the indicators are independent. LCA seeks a solution in which the relationships between the indicator variables are explained completely by the classes. LCA is applied in this study to create a model of the associations among user characteristics that explains these relationships with a limited number of latent user types.

Table 2.1: Fit indices of different LCA solutions

No. of classes	LL	BIC	Npar	BLRT <i>p</i> -value	Entropy
1	-295983.479	592086.617	11	N/A	N/A
2	-286596.198	573420.834	21	0.000	0.795
3	-280822.279	561981.777	31	0.000	0.695
4	-278388.160	557222.319	41	0.000	0.690
5	-275971.983	552498.746	51	0.000	0.725
6	-274778.365	550220.290	61	0.000	0.677

* LL = log likelihood, BIC = Bayesian Information Criterion, Npar = number of parameters, BLRT = Bootstrapped Likelihood Ratio Test.

2.5 Results

2.5.1 User typology

To develop a typology of VAA users, LCA was applied on the cognitive characteristics and motivations under investigation (i.e., political interest, internal and external political efficacy, certainty of one's vote, and reason for using the VAA). A description of the procedure is given in the appendix. Several measure-of-fit tests (log-likelihood, the Bayesian Information Criterion (BIC) and a Bootstrapped Likelihood Ratio Test) were assessed. In addition, the classification quality entropy, the solution's interpretability and parsimoniousness, and the proportionality of the classes were assessed. The fit statistics and entropy values are shown in Table 2.1.

A three-class (i.e., three-type) solution best explained the relationships among the indicators. As Table 2.1 shows, the BIC decreased with every increase in the number of user types, and the bootstrapped likelihood ratio test also favored every solution over the ones with less types. This is likely to be caused by the large sample size, which led to an extremely powerful test. However, both the absolute log-likelihood value and the BIC did not decrease much after the three-class solution: their decrease appears to flatten out (see Nylund, Asparouhov, & Muthén, 2007). Moreover, entropy (classification quality) decreased for solutions with more than three classes. The three-class solution also facilitates a theoretically sensible interpretation. Later on, we briefly discuss the differences with alternative specifications.

Table 2.2 presents the profile of each type by showing the marginal distributions of the categorical variables (reason for using the VAA, vote certainty, intensity of interest in the campaign) and the means of the continuous variables (internal and external efficacy).³ The proportion of VAA users that comprises each type is displayed at the

³ In an alternative specification of the model, we also included the personality trait Need for Cogni-

Table 2.2: Distributions of indicator variables for each user type

	Doubters (%)	Seekers (%)	Checkers (%)
Reason for using the VAA			
To gain more insight in the positions of the parties	20	18	14
To check whether I agree with the party I intend to vote for	27	29	46
To determine which party to vote for	27	41	2
Entertaining test to think about or discuss with others	25	12	38
Total	100	100	100
Vote certainty			
I have already decided which party to vote for	19	3	54
I am still deciding between a few parties	45	64	43
I do not know yet	36	33	3
Total	100	100	100
Internal efficacy (<i>M</i>)	3.4	3.3	4.0
External efficacy (<i>M</i>)	1.2	3.2	3.5
Intensity of campaign interest			
Very intense	7	2	14
Intense	32	30	54
Not very intense / non-existent	62	68	31
Total	100	100	100
Proportion of each type	0.099	0.318	0.583

* Reason for using the VAA, vote certainty and intensity of campaign interest are nominal variables; the percentages sum up to 100 per variable. Internal and external efficacy are measured on a scale from 1 to 5. Higher values indicate greater efficaciousness.

bottom of the table.

The first user type shown in Table 2.2 we will call doubters. They are characterized by uncertainty; citizens belonging to this group do not know whom to vote for.

tion (Cacioppo & Petty, 1982). This trait reflects the motivation to inform oneself about news and politics (David, 2009). We tested whether including this trait in our analyses would contribute to differentiating between those more fundamentally interested and those who are in need of immediate information. However, because we measured this concept using a single item (it is typically measured using at least 18 items) and the measure failed to discriminate between groups of users, we omitted it from the final model. It is unclear whether the lack of discriminatory power has a substantial meaning for the role of Need for Cognition in the typology, or alternatively, is the result of suboptimal measurement.

Although some of them have mild party preferences, only a few of them have already decided how to vote. This type of user cares little about politics: they are not much interested in following political news and have low external political efficacy, which indicates that they are unsure about their ability to influence politics. Users of this type access the VAA for many different reasons, but primarily to determine which party to vote for. This type comprises almost 10% of the VAA users.

The second type of VAA users, which we name seekers, generally have clear preferences for one or a limited number of parties, yet are still undecided how to vote. These users are the least interested in the political campaign and rarely consider themselves able to understand politics well enough to effectively participate. However, they are not as pessimistic as the doubters about their ability to influence politics. This group contains the most serious VAA users: To a greater degree than other types, they use the application to determine which party to vote for, suggesting that the application has a significant influence on their decision. They also use the VAA as an entertaining test, but to a lesser degree than other types. Thirty-two percent of the users belong to this type.

A third and final type of VAA users we label checkers, and they are most interested in politics and certain of their vote. Half of them have already decided how to vote, and half of them have clear preferences. They also have the highest internal and external political efficacy values. Moreover, they are highly interested in politics and follow the election campaign closely. Almost none of the users in this category used the VAA to determine which party to vote for. Instead, most of these users indicated that they used *Kieskompas* either to affirm that their views agreed with those of their favorite party or as an entertaining test, which suggests that they do not use the application with serious intentions. This group is the largest with 58%.

2.5.2 Robustness check

To assess to what extent the results of this analysis are replicable among all VAA users, a similar set of analyses was performed on a subsample of the data that was representative of the general *Kieskompas* user population with respect to age, gender and education. The response patterns and proportion of the population that belonged to each group were similar to the results presented in Table 2.2.

Furthermore, alternative specifications of the model that had two, four or five types yielded similar results. In the three-class solution discussed previously, the doubters and seekers share more similarities than the checkers, although there are notable differences between doubters and seekers, especially in external efficacy and reasons for using the VAA. The two-type solution results in one large group resembling the checkers and one smaller group that is a composite of the doubters and seekers —

they are more uncertain, less interested in politics, less efficacious and more interested in obtaining voting advice. The four- and five-type solutions similarly result in a larger group that is highly efficacious, certain and interested and smaller groups that, to varying degrees, resemble the less interested, less efficacious and more doubtful types⁴.

2.5.3 Relation to socio-demographic characteristics

The relations among the user types identified through the LCA and users' socio-demographic characteristics are depicted in Table 2.3. As the table shows, each type occurs in all age groups. However, the results showed a small positive correlation between age and being a doubter; seekers and checkers were typically slightly younger. There was a stronger effect for education, however. Highly educated users were more likely to be checkers than either of the other types. Furthermore, men were more likely to be checkers or doubters, and women were more likely to be seekers.

Table 2.3: Socio-democratic characteristics for each user type

	Checkers	Seekers	Doubters	Total
Age				
18-24	8.9%	8.9%	6.8%	8.7%
25-34	17.7%	16.6%	16.3%	17.2%
35-49	32.0%	34.8%	34.4%	33.1%
50-64	29.2%	29.6%	29.4%	29.3%
65+	12.2%	10.2%	13.2%	11.6%
Education				
Low education	5.8%	8.4%	11.6%	7.1%
Mid education	25.8%	34.2%	34.1%	29.1%
High education	68.5%	57.4%	54.3%	63.8%
Sex				
Male	74.1%	57.2%	72.1%	68.5%
Female	25.9%	42.8%	27.9%	31.5%

⁴ A cluster analysis (performed using Ward's method and Gower's similarity measure) showed patterns that moderately resemble the type-specific patterns identified using the LCA. However, the distribution of users across types is different. According to the cluster analysis, each type represents about 33% of the users. Membership in a cluster analysis user type was moderately correlated with LCA type membership (Cramér's $V = .35, p < .001$).

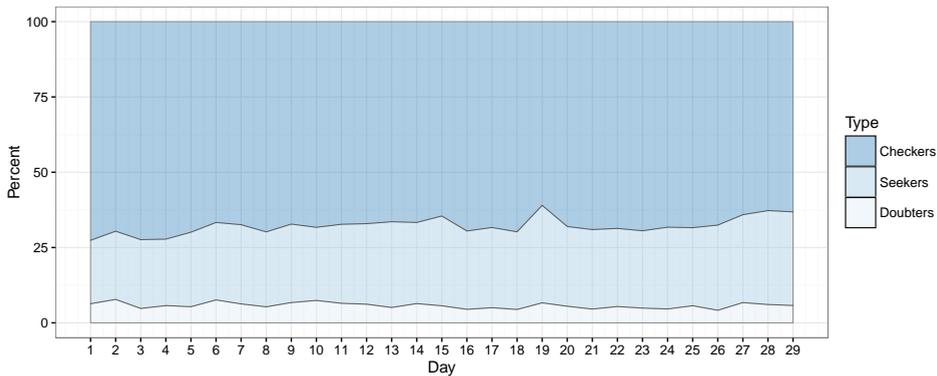


Figure 2.1: Percentage of user types visiting *Kieskompas* each day of the 2012 campaign

2.5.4 User types and VAA use over time

H1 puts forward that the most interested and efficacious type of voters use VAAs relatively early in a campaign and that the most doubtful voters use VAAs relatively late in a campaign. This means that—as the most interested and efficacious type—we expect the checkers to be relatively early users and the seekers and doubters to be relatively late users of VAAs.

Figure 2.1 shows the relative user traffic for each user type over the course of the campaign. As mentioned above, *Kieskompas* was online for 29 days during the 2012 Dutch parliamentary election campaign. The final day in the plot represents election day (September 12, 2012). Figure 2.2 shows how often each user type completed the questionnaire. As in Figure 2.1, this figure is based on answers provided by users who filled out the exit survey. The percentage that did so was more or less stable each day, so Figure 2.2 also reflects the general trend in usage of *Kieskompas*.

Figure 2.1 shows that the checkers were the most prominent VAA users. However, several substantial changes in their usage patterns are visible over the course of the campaign. Just after the VAA became available, more than 70% of the users were checkers. Over time, this overrepresentation decreased until the election day, on which 63% of the users were checkers. This decrease can primarily be attributed to the increase of seekers using the website. This result partially confirms the hypothesis. However, the presence of doubters, which was also expected to increase over time, remained stable. Table 2.4 presents the results of OLS regression analyses of the share of doubters, seekers, and checkers at each day of the campaign. The share of checkers decreases significantly, while seekers relatively more often use the VAA as election day approaches.

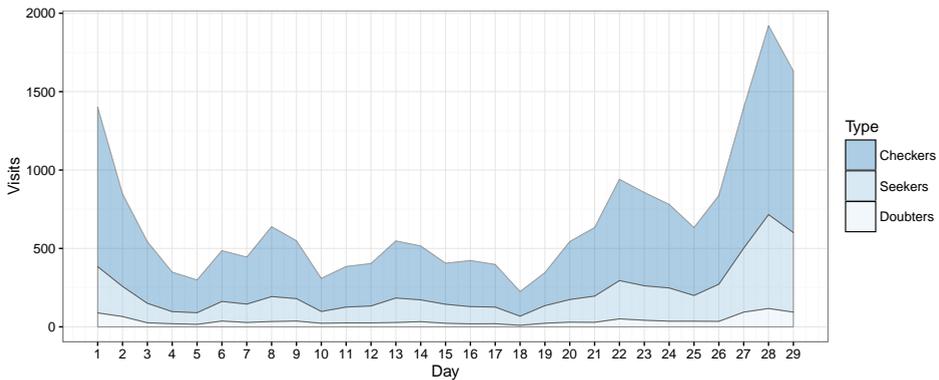


Figure 2.2: Frequency of visits per day of the 2012 campaign by user type

The frequency with which *Kieskompas* was consulted during the campaign varied greatly over time, as Figure 2.2 shows. The peak in the initial days is primarily due to the checkers. This confirms our expectations: Checkers would be the first to notice the availability of the VAA. There is a large peak in the last two or three days of the campaign (including election day) which can be attributed to an increase in visits of all user types. However, in these final days before the elections, VAA usage increases faster for seekers than for checkers and doubters; they also show a relative increase. The peak in visits between the 8th and 4th days before the election was caused by increased visits by checkers. This peak may coincide with increased media attention for the campaign; there were two important TV debates during this period.

Table 2.4: Multivariate regression of time (day) on the relative VAA usage by different types

	Doubters	Seekers	Checkers
Intercept	0.0641 (0.0035)**	0.2309 (0.007)**	0.7048 (0.0088)**
Day	-0.0004 (0.0002)*	0.0022 (0.0004)**	-0.0017 (0.0005)*
R^2	0.14	0.52	0.31

* Unstandardized coefficients; Standard errors between brackets; * $p < 0.05$; ** $p < 0.01$.

2.6 Discussion

The use of VAAs has increased tremendously in the past decade. Our study shows that usage is more diverse than common wisdom and extant research might lead us to believe. Not all users of VAAs belong to the group of interested and efficacious voters; a large share of VAA users is in need of information about politics in order to make their minds up before going to the ballots. They use VAAs to receive tailor-made information about parties' positions and their own position, and they increasingly often do so close to election day. This can be concluded from the typology of VAA users developed in this study, and the analysis of their usage of the VAA over the course of the election campaign.

By developing a user typology, we were able to analyze the reasons why voters used the VAA. Latent class analysis was used to identify three types of VAA users: 1) doubters, who are characterized by uncertainty about their vote choice and by low political interest and external political efficacy; 2) seekers, who are also uncertain about their vote and have little political interest but have clearer party preferences and are looking for guidance from the VAA; and 3) checkers, who are politically interested and efficacious, relatively certain which party they will vote for and seem to use the VAA for entertainment purposes more than the other types do. They are least interested in the voting advice provided by the application. Checkers are also the most frequent VAA users: Approximately 58% of the VAA users belonged to this type, while the seekers represented 32% and the doubters 10%.

Subsequently, we examined the usage of the VAA over time. Based on the inter-election and campaign volatility literature (Fournier et al., 2004; Van der Meer et al., 2013), we expected the checkers to be more prominent among the early users of the VAA and the doubters and seekers to be more prominently present near election day. The results supported these expectations with an exception for doubters; the presence of this relatively small group remained more or less stable over the course of the election campaign. These findings indicate that especially at the beginning of the campaign, in addition to serving an informing function, VAAs may also provide entertainment to people who do not base their voting decision on the tool's voting advice. However, as the election day neared, VAAs were used increasingly often by voters who seem to take the voting advice more seriously and who appear to use the tool to become more informed. In the final days before the election, there was a dramatic increase in VAA use, and this increase was largest among seekers, who seem to make their final voting decision relatively late. The association between user type and usage timing demonstrates the validity and relevance of this typology.

The results from this study correspond with findings from earlier studies of VAA users that found that young, highly educated men are overrepresented among VAA

users and that VAA use is more common among politically interested individuals (e.g., Garzia & Marschall, 2012; Hooghe & Teepe, 2007). We found that men and highly educated people — and to a lesser extent young people — are indeed more likely to be checkers, the group to which the majority of users in this study belonged. Less educated people and women are more likely to be seekers, the group that seems to profit the most from VAA use in terms of obtaining information about politics (see Hirzalla et al., 2010). However, the association between socio-demographic characteristics and user type is weak. Socio-demographics alone do not account for the diverse uses of and motivations for using VAAs.

This study demonstrates the value of analyzing VAA use from a broader perspective rather than only taking into account users' socio-demographic features. Political interest, vote certainty, efficacy, and usage motivation have been analyzed in media consumption research, and this study shows that these factors also explain VAA usage. Focusing on cognitive characteristics and motivational factors leads to greater insights. For example, the results of this study showed that during a campaign, VAAs seem to be an important source of political information for citizens who have low political efficacy and are uncertain how to vote. This result agrees with findings by Alvarez et al. (2014), who showed that VAAs are perceived to be most useful by voters who find politics “a complicated matter” (p. 26). Such users may profit the most from VAA usage in terms of increased knowledge and understanding. VAAs may be of special value in the final days before an election, when many uncertain voters decide how to vote.

Three limitations should be kept in mind when interpreting the results from this study's analyses. First, the sample consisted of self-selected users who completed the VAA exit survey. They are therefore not representative of *Kieskompas* users in general, and it is possible that *Kieskompas* users are not representative of VAA users in general. This problem was addressed by performing a robustness check on a subsample representative of all *Kieskompas* users. This analysis indicated that our results were not affected by our use of a nonrandom sample. Second, due to space limitations in the survey, internal and external efficacy were measured using only one item, whereas most studies use multiple-item scales to achieve more reliable measurements. However, the items we used were selected for their suitability to the subject. Third, a disadvantage of typology analyses is that the number of types chosen is often based on nonstandardized, diffuse criteria. However, a two-type or four-type solution of the latent class analysis would have yielded similar results.

Future research should focus on the extent to which VAAs increase users' understanding and knowledge of politics, a goal of many VAA developers (e.g., De Graaf, 2010). Our results indicate that users with lower political efficacy might profit the most from the tailored information VAAs offer. However, most voters reached by the

VAA do not seem to be interested in learning something, because they are already well informed and do not necessarily need VAAs to make voting decisions. More research is therefore required to discover ways to tailor VAAs to the specific needs of the group of less interested and less efficacious users. Because political efficacy is related to voter turnout (e.g., Kaid, McKinney, & Tedesco, 2007), increasing the political understanding and efficacy of this group could result in increased political participation (see Möller & De Vreese, 2013, for a confirmation of this expectation, and see Chapter 5 for a test of the effect of VAAs on political understanding and efficacy). In addition, our findings suggest that the influence of the VAA advice on vote choice might be greatest among those who are least interested and efficacious, especially if they use the VAA shortly before voting. The effects of VAAs on both of these dimensions are still understudied and, perhaps, underestimated.

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2.8 Appendix

Using Mplus Version 6, we performed a latent class analysis (LCA) to identify the underlying VAA user types. The following variables were analyzed: political interest, internal and external political efficacy, vote certainty and reason for using *Kieskompas*. Reason for using *Kieskompas*, vote certainty and political interest were treated as nominal variables and the efficacy items as interval variables. The LCA was conducted six times to determine which solution best fit the data: the solution with one latent user type, two types, etc. To avoid local maxima, a well-known pitfall of LCA, multiple random starting values for estimated model parameters were specified.

There are a number of factors to consider when determining the optimal number of latent classes (user types). First, the several model fit statistics should be considered. The Bayesian information criterion (BIC) decreases as the fit improves; one should therefore assess whether the solution with more classes improves the fit substantively. In addition, a bootstrapped likelihood ratio test assesses whether a model with K classes is a significant improvement on the model with $K - 1$ classes (Asparouhov & Muthén, 2012; Hagnaars & McCutcheon, 2002; Nylund et al., 2007). A second method for determining which solution is best is to evaluate the entropy, which reflects how well an individual's class membership can be predicted based on his or her answers to the indicator questions. An entropy approaching 1 indicates higher classification certainty (Celeux & Soromenho, 1996; Hagnaars & McCutcheon, 2002). A third consideration when deciding on the number of classes is the usefulness of the resulting model. Researchers should consider whether the types can be clearly interpreted and determine whether the model is parsimonious and confirm that there is no type with a very small number of individuals (Nylund et al., 2007; Vaughn, DeLisi, Beaver, & Howard, 2008).

Chapter 3

Same But Different: A Typology of Voting Advice Application Users in First- and Second-Order Elections

Abstract

Voting Advice Applications (VAAs) fulfill different needs for different citizens. In national elections the majority of users can be characterized as politically sophisticated citizens who use VAAs for entertainment purposes and confirmation of their party preference, but a significant minority uses VAAs to learn about politics and make an informed vote choice. VAAs might, however, play a different role in second-order elections, since in these elections campaign dynamics and information supply are very different. This study replicates an existing typology of VAA users in supra-national, national and sub-national elections in the Netherlands and compares VAA use across these elections. We applied latent class analysis on user data from a widely used VAA for each of these elections and identify the same three types of users in each election. Furthermore, we find that in second-order elections, VAAs are more often used for the purpose of gratifying informational needs, and hence their mobilizing potential will be greater in these elections.

3.1 Introduction

Not all elections are created equal – and not all election campaigns therefore have the same intensity and enjoy the same interest from voters. In particular, supranational (European Parliament) and subnational elections (municipality councils, regional political arenas) receive less media attention than national elections (De Vreese, Lauf, & Peter, 2007), and interest and turnout on the part of voters is also lower (Hobolt & Wittrock, 2011). After all, less is at stake in these second-order elections, and this is recognized by voters (Ervik, 2012; Heath, McLean, Taylor, & Curtice, 1999; Reif & Schmitt, 1980). As a result, voters may be less well informed about the key issues of the campaign, the choice of parties, and party agendas. In these second-order contexts, Voting Advice Applications (VAAs) could be very helpful to voters who want to make up their minds about their vote choice. In national, first-order election contexts, a large minority of VAA users indeed indicates to use VAAs to inform themselves about political matters and to make a voting decision (see Chapter 2). Not much is known, however, about users of VAAs in second-order elections and about how they use VAAs. In the current study, we therefore set out to research the usage of VAAs across first- and second-order elections to see if VAAs fulfill different needs, and are consulted by different audiences depending on election context.

Voting Advice Applications inform about what are important issues, what are the positions of parties on these issues, and which party is closest to the individual voter with respect to these issues. In national elections, there is a large demand of VAAs; they are visited by millions of users across Europe. In the Netherlands, for exam-

ple, VAAs reached up to about 50% of voters during the national elections of 2012 (Marschall, 2014). Recently, VAAs have also been developed for the European elections, and for local- and regional-level elections in a number of countries (Sudulich, Garzia, Trechsel, & Vassil, 2014). Substantive, although modest, effects of VAAs have been established by earlier research: using VAAs contributes to higher levels of internal efficacy and possibly to knowledge (Schultze, 2014; Westle, Begemann, & Rütter, 2014, see also Chapter 5), and also increases electoral turnout (Gemenis & Rosema, 2014) and affects vote choice (Alvarez, Levin, Mair, & Trechsel, 2014; Wall, Krouwel, & Vitiello, 2012). To better understand these effects it is essential to know to whom they apply: while VAAs might contribute most to political knowledge for those who are already knowledgeable (Westle et al., 2014), gain in efficacy and turnout are highest among less politically sophisticated voters (Gemenis & Rosema, 2014, see also Chapter 5). We thus need to know: how politically sophisticated are VAA users, and which groups need to be reached in order to increase beneficial and mobilizing effects of VAAs?

Early research on the users of VAAs revealed that they are on average younger, higher educated, more often male and more interested in politics than the general electorate (Hirzalla, Van Zoonen, & De Ridder, 2010; Hooghe & Teepe, 2007; Marschall & Schultze, 2015). This suggests that VAAs will probably not have the capability to mobilize or engage citizens. They are mostly used by those who already are engaged: higher educated males who are interested in politics (Norris, 2001). Some recent studies, however, broadened the scope and took into account political routines and motivations of VAA users. In a study of users of the German *Wahl-O-Mat* (used 6.7 million times in the 2007 federal elections) Marschall and Schulze (2015) focused on the role VAAs fulfill for their users in the vote decision process. They found evidence that typical VAA users are so-called ‘digital voters’: citizens who, for their voting decision, primarily rely on the internet as a source of political information.

Additionally, in Chapter 2 three types of VAA users are identified. One of these, called seekers, is largely undecided about their voting decision and indeed indicates to resort to the VAA for support in deciding which party to vote for. This user type is generally not very interested in the political campaign and does not feel very efficacious about politics. Another group, the checkers, makes up the majority of VAA users and resembles the typical VAA user as sketched in most previous studies (see Marschall, 2014): very efficacious and politically interested, and they have largely already made a decision. They use VAAs for entertainment and to check if they end up receiving a recommendation to vote for their favorite party. A small third group of users are doubters, who are less efficacious about politics than seekers and checkers and do not have a particular motivation for using the VAA.

While there is some knowledge about the users of VAAs in national election con-

texts, we know little about who is using VAAs in second-order elections, and for what purpose. Do local- regional- and European-level VAAs attract visitors who are looking for information to make a voting decision – the ‘digital voters’ – or rather visitors who have already made their voting decision? Are most users highly interested and engaged in politics or are they mostly unfamiliar with politics at that level? And how does this compare to the national elections? To answer these questions we replicate the analysis on users of the VAA for the national elections reported in Chapter 2, and test whether the typology that was developed there holds at other levels of government. In line with the second-order election model (Reif & Schmitt, 1980), in general we expect users of VAAs to be less engaged with the elections in second-order elections compared to the national elections, but we do expect to find the same structural patterns of VAA usage, thus accentuating the relevance of the typology of checkers, seekers and doubters.

In the next section we will derive expectations about the use of VAAs in different elections from three bodies of literature: on the digital divide, the uses and gratifications approach, and the second-order election model. We will then proceed by testing the typology of VAA users developed for the 2012 national elections and reported in Chapter 2, in all types of elections that are held in the Netherlands: the 2014 municipal, 2014 European, 2015 provincial, and 2015 water authority elections. In addition to replicating the analyses for the typology, we also study to what extent the usage of VAAs over the course of the election campaign by each of the types is similar to the national elections.

3.2 Engaging the Uninterested

With respect to online political information consumption, one of the most important academic debates is on the question to what extent the internet or certain digital media are capable of mobilizing voters, and specifically those who are not politically interested (Bimber, Cantijoch Cunill, Copeland, & Gibson, 2014; Norris, 2001). More precisely, can online tools and sites, by lowering the costs of communication and participation, increase engagement in politics? Can they contribute to political knowledge and electoral turnout? Or are the traditional, offline inequalities in political engagement and knowledge reinforced in the consumption of online political information, which means they have a normalizing effect rather than mobilizing (Norris, 2001)? Within this broad debate, Voting Advice Applications serve as an interesting case. They are purposely built to engage citizens and help them make an informed vote choice (Anderson & Fossen, 2014; De Graaf, 2010; Schultze, 2014), and at the same time reach millions of citizens – more than most other digital platforms that offer information about politics, like newspaper and party websites. The easy, attractive,

and personalized way to inform oneself about elections clearly appeals to many, and this makes VAAs a promising case for the mobilization thesis. Marschall and Schulze (2015), however, could not find evidence that VAAs have a mobilizing role: they are mostly used by politically interested and engaged citizens who often use the internet for political information, and are hence ‘preaching to the choir’.

In Chapter 2, on the other hand, it is argued that by focusing on averages, differences in user types go unnoticed. Instead, by developing a typology, they find that a large minority of VAA users (the seekers and doubters) indicates to be not very efficacious and interested in the campaign, and they are not certain about their vote choice. They do not belong to the ‘choir’ VAAs are preaching to, and more research is needed to understand if VAAs do have the capability to mobilize this subgroup. If VAAs increase political knowledge and participation of only a fraction of this group of seekers and doubters, this already means that a substantial number of voters is more engaged with politics due to their use of a VAA.

3.3 Motivations to Use a VAA

A second perspective to look at the use of political information tools like Voting Advice Applications is the uses and gratifications theory. This perspective fits the normalization thesis (Norris, 2001, p. 230): people are active and goal-directed in choosing the media that gratify their needs (Kaye & Johnson, 2004; Marschall & Schultze, 2015). VAAs, for instance, cannot be ‘consumed’ passively – users need to put effort in answering all statements and understanding the results. Hence, Marschall and Schulze (2015) formulate the expectation that those who decide to use a VAA are voters who are already interested in politics, use internet as their primary source of political information, and base their vote choice on issues rather than other considerations (e.g., charisma of the party leader). After all, these are the types of voters who would be most likely to find gratifications in using VAAs. Their analysis of users of the German *Wahl-O-Mat* confirms these expectations, except their hypothesis that the primary reason to use the tool is issue orientation.

However, different people might have different motivations to use the tool. In Chapter 2 the use of the Dutch *Kieskompas* was studied, and indeed, three different user types could be distinguished, based on users’ vote certainty, internal and external political efficacy, interest in the campaign and reason to use the VAA. The group of users with the highest level of efficacy and most interest in the campaign (checkers) often already decided about their vote choice and used the VAA primarily to check whether they end up being recommended to vote for their favorite party, or for entertainment purposes. Seekers, in contrast, use it hardly for entertainment, but primarily to make a voting decision. This is probably because almost none of them already made

their minds up about their vote choice. The doubters, lastly, have several reasons to use VAAs; their modal category is also ‘to determine which party to vote for’.

In conclusion, goal-directed media consumption – as assumed by the uses and gratifications approach – seems to support the expectation that VAAs are only used by those who are already interested in politics. However, it could also be the case that they gratify the needs of those not interested in politics (the seekers and doubters) to quickly and without too much effort inform themselves and make a thoughtful voting decision. Additionally, it is possible that someone who is a checker in the national, first-order elections, could rather be characterized as a seeker in second-order elections.

3.4 First- and Second-Order Elections

As noted above, conclusions about VAA users are, up to now, all based on studies of VAAs developed for national, or first-order elections. In second-order elections, such as the elections to the European Parliament and to local councils, generally less is at stake than in the first-order national elections. According to the model developed by Reif and Schmitt (1980), this leads to lower turnout, a better performance of small and new parties compared to large and government parties, and voting decisions that are motivated by national issues rather than issues that are at stake in the respective second-order election – such as the EU or the regional government.

When it comes to the European Parliament, however, there have been some significant changes challenging the “less is at stake” idea. First, the EU integration project has become a contested issues itself, put on the agenda mainly by Eurosceptic parties (Hix & Marsh, 2011; Hobolt & Spoon, 2012). Second, institutional changes have resulted in more power for the European Parliament – especially after the Lisbon treaty and the introduction of the so-called Spitzenkandidaten for the chair of the European Commission (Hix & Marsh, 2011; Van der Brug, Gattermann, & De Vreese, 2016). Third, the recent economic crisis and the measures taken by the European Union in response to it (budget mechanisms, austerity measures) increased media attention to the EU (Van der Brug et al., 2016). However, Hix and Marsh (2011) found EP election outcomes to be stable across time and in line with the second-order model. In spite of the new developments, also the 2014 European election was not very different from earlier elections (Van der Brug et al., 2016).

Most literature on second-order elections focuses on EP elections and relatively little work has been done on sub-national elections (Jeffery & Hough, 2003). The extent to which the elections matter, and something actually is at stake, does not merely distinguish elections to the European Parliament from all other elections. Generally, how much is at stake is different for different types of elections (Van der Eijk, Franklin, & Marsh, 1996). Majoritarian systems are most decisive for the composition of the gov-

ernment, while in multi-party systems elections are about which parties will be able to form a coalition (Deschouwer, 2003). In other words, some elections might be second-order to a larger degree than other elections. This was also suggested by Heath et al. (1999) who compared European, national and local elections in Britain. They found that local elections could be considered to be less second-order than European Parliament elections: turnout is higher and voting decisions are to a lesser extent based on national political issues than in European Parliament elections.

Many observations made by Reif and Schmitt (1980) about the second-order nature of the elections to the European Parliament apply to local and regional elections as well. For example, next to the EP and national (House of Representatives) elections, the Netherlands has three sub-national elections: to municipality councils (local), provincial councils (regional) and to the water authorities (regional). These elections determine the composition of the executive branch at that level of government to a much greater extent than the European elections do. But like in the EP elections, there is less at stake policy wise compared to the national elections. The municipalities, provinces and water authorities all have to operate within the framework of policies set out by the national government. In this study we look at the Netherlands as an example; these dynamics are the same in other European countries.

The findings by Heath et al. (1999) about turnout and vote decisions are consistent with the hypothesis that the less is at stake in elections, the less voters feel motivated to find out about issues relating to the specific arena they are voting for, and the less motivated voters feel to turn out to vote. Interestingly, this is precisely where VAAs claim to be helpful: informing voters about party positions on the most important issues, and by doing that increasing the turnout. A couple of studies indeed confirmed the positive effects VAAs have on turnout (e.g., Dinas, Trechsel, & Vassil, 2014; Gemenis & Rosema, 2014) and political knowledge (Kamoen, Holleman, Krouwel, Van de Pol, & De Vreese, 2015; Schultze, 2014; Westle et al., 2014) or at least a feeling of political efficacy (see Chapter 5 in this dissertation). If VAAs in second-order elections are more often used for the purpose of informing oneself about issues, parties and their positions, this should be reflected both in overall levels of interest and engagement, and in the composition of types of VAA users.

3.5 Hypotheses

Based on the typology developed in Chapter 2 and the literature on the digital divide, uses and gratifications and the second-order election model, we formulate the following expectations:

- H1 The user typology of checkers, seekers and doubters that was found for first-order elections can be replicated for second-order elections
- H2a Overall levels of internal and external efficacy, interest in the campaign and vote certainty will be lower for second-order elections than for first-order elections
- H2b Lower levels of efficacy, interest and certainty will result in larger proportions of seekers and doubters relative to checkers using the application

Because checkers are more interested in the election campaign than seekers and doubters, we expect checkers to use VAAs relatively early in the campaign as compared to seekers and doubters, whose usage of VAAs will be more prominent closer to the elections. This was found for first-order elections in Chapter 2. But since we expect generally lower levels of interest in the election campaign of second-order elections, we also expect relatively lesser traffic at the VAA website during the campaign, compared to election day itself.

- H3a Checkers use VAAs relatively early in the campaign; seekers and doubters use VAAs more often as election day comes closer
- H3b Overall, in second-order elections usage of VAAs will be more concentrated closely to election day, as compared to first-order elections, and the more second-order the election the more this is the case

3.6 Data and Methods

3.6.1 Participants

Our analyses rely on original data gathered in collaboration with the VAA *Kieskompas*. *Kieskompas* is the second most widely used VAA in the Netherlands and served as a prototype for many other VAAs worldwide, such as the EU Profiler and the Canadian Vote Compass (Garzia & Marschall, 2014). In the Netherlands, *Kieskompas* develops a VAA for all elections. In the period from 2012 to 2016, all types of elections that are held in the Netherlands took place once: the national legislative elections (for the parliament) in September 2012, municipal elections in March 2014, elections for the European Parliament in May 2014, and province council elections and water authority elections in March 2015. Table 3.1 shows how often the VAAs were used in each of these elections. For the parliamentary elections, the European elections and the water

authority elections a nation-wide *Kieskompas* VAA was developed. In the municipal elections, a VAA was developed for 36 of the 403 Dutch municipalities. In the province council elections, a VAA was developed for 1 of the 12 provinces (the province of Utrecht). The differences in numbers of users between VAAs in Table 3.1 is largely due to the availability of these VAAs: in some elections a *Kieskompas* was available across the country but in other elections only locally.

Table 3.1: VAA use in each election

Year	Election	Number of VAA users	Number of exit survey respondents
2012	Parliament	694,387	53,617
2014	Municipality council	473,989	33,736
2014	European parliament	183,915	11,800
2015	Province council	32,171	1,558
2015	Water authority	710,289	27,933
	Total	2,094,751	128,644

The design of the VAA is identical for each election: on the first ‘page’ users are asked to indicate their age, gender, education, the extent to which they have already decided which party to vote for, and interest in politics. Subsequently, users give their opinion on a Likert scale to a list of 30 statements about key issues in the election campaign (like “*All nuclear power plant should be closed by the end of 2015*”). *Kieskompas* compares these responses with the positions of all parties on these issues, and presents the match in a two-dimensional figure (see Krouwel, Vitiello, & Wall, 2012, for the details). About one minute after arriving at the result screen, a short questionnaire (the exit survey) pops up with questions about the user’s reason to use the VAA, internal and external political efficacy and the extent to which they followed the election campaign. The response rates to the exit survey varied between 3.8% and 6.7%, with a mean of 5.2% of all VAA users. The analyses reported in this paper are based on items from this exit survey, background information asked on the first page and the log data from the site, specifically the moment at which the user visited the application.

This study focuses on the users of VAAs rather than the population of voters or inhabitants of the Netherlands. Since socio-demographic information was asked on the first page rather than in the popup- questionnaire, the response rate was much higher for these demographic questions: between 56.9% (2015 provincial elections) and 74.8% (2012 national elections). This allows us to map quite accurately to what extent the exit survey respondents are representative of VAA users in general. For each election, the percentage of females in the final sample is lower than in the population of VAA users, and the final sample is slightly higher educated. For each election the

sample is slightly older than the population of VAA users. See the appendix for all distributions.

3.6.2 Indicators

To develop the typology of VAA users, we use a number of indicators that we measured in the exit surveys of the VAAs. The selection of each of these indicators is based on previous VAA research and literature on political news consumption, in particular online political news consumption. The answer categories for the first indicator – one’s reason for using the VAA – were inspired by the factor analysis reported by Kaye and Johnson (2004), and adapted to VAAs. In the 2012 national elections, the categories were: to gain more insight into the positions of the parties; to check whether I agree with the party I intend to vote for; to determine which party to vote for; or as an entertaining test to think about or discuss with others. In the other elections a fifth category was added (inspired by the results of the 2012 elections): to check if the VAA makes sense. The second indicator, vote certainty, was measured using the following categories: I have already decided which party to vote for; I am still deciding between a few parties; or I do not know yet.

Internal efficacy was measured using the statement “I feel that I have a pretty good understanding of the important political issues facing our country”, taken from the standard internal efficacy scale (see Morrell, 2003). “Country” was replaced by the relevant political arena, i.e., “municipality”, “province”, “water authority” or “the EU”. Respondents indicated to what extent they agreed on a 5-point Likert scale ranging from “completely disagree” to “completely agree”. External efficacy was operationalized with the item “There are so many similar parties that it does not matter whom I vote for”, which has also been used by De Vreese and Semetko (2004). The same 5-point answer scale was used here.

The last indicator was the intensity by which respondents followed the election campaign: very intensely, intensely, not very intensely or not at all. The last two categories were collapsed because of the low numbers of respondents choosing them. In the provincial elections, this item was not included in the survey, which is why we replaced it for this election with the question: “How interested are you in politics”, with five answer categories ranging from “very interested” to “not interested at all”. To make the categories as comparable as possible to the other elections we reduced them to: “(very) interested”, “not interested, not uninterested”, and “not interested (at all)”. In the municipal elections and the EU elections, where both questions were included, the correlation between interest in the campaign and interest in politics is $r = 0.49$ and $r = 0.51$, respectively. For reasons of comparability and replicability, all indicator variables used for the analyses – except for interest in the provincial elections and reason

to use the VAA in the national elections – are identical to those in Chapter 2.

3.6.3 Analysis

The typology developed in Chapter 2, based on the 2012 national elections in the Netherlands, was developed using latent class analysis (LCA). In short, LCA searches for a categorical latent class structure that explains the response patterns of different respondents. It tries to find a classification (typology) of respondents explaining these response patterns. For an elaboration of the technique and the settings, see Chapter 2. In a first step, we ran the same LCA using the same indicators for the municipal elections, the European parliament elections, the provincial elections (here we used interest in politics rather than interest in the campaign), and the water authority elections¹. Conditional on the typology being replicated in the other elections, in a second step we study the user traffic for each user type over the course of the campaign, and compare this between elections to test our second hypothesis.

3.7 Results

Table 3.2 shows the results of the latent class analysis for each election². The first four columns in the table show the results for the 2012 national elections, also reported in Chapter 2³. In order to examine the first hypothesis that the typology developed for the national elections can be replicated for second-order elections, we compare each typology to the original. In Table 3.2, each election has four columns: three columns

¹ Ideally, instead of running a LCA for each election separately, a model is developed for all elections at once (multigroup LCA), allowing formal tests of comparability of types across elections. We could however not use this approach for our complete dataset as the indicator 'reason to use' has slightly different answer categories in the national elections compared to the other elections, and the indicator 'intensity of following the campaign' is not included in the provincial elections. This makes the models not comparable enough for formal tests. A multigroup latent class model comparing only the municipality and European elections, in which means are allowed to vary across elections but the measurement model was restricted to be the same, resulted in a significantly better fit than that of a model without assumptions about comparability across elections ($\chi^2 = 258584.4$, $df = 31$, $p < .001$). In other words, we can be sure that we measured the same types of VAA users in both elections (Hagenaars & McCutcheon, 2002). When we include the water authority elections, this results in a slightly worse fit, which indicates that the typology is slightly less comparable in these elections, which is also visible in Table 3.2.

² In Table 3.2, the labels that are added to the classification results in all elections after the 2012 national elections are based on the interpretation of the authors. The LCA only gives the distributions of the indicator variables. However, we could easily identify the same types across elections because the distributions for the classes in each election resemble the distributions for the original 2012 typology to a great extent.

³ To make the results more comparable we rescaled external efficacy to have a range from 1 – 5, which is why the values reported here are one higher than the values reported in Chapter 2.

showing the answer patterns per user type, and one (bold printed) column indicating what the overall distributions of the indicator variables are per election. The reason for using a VAA, vote certainty and intensity of campaign interest are measured on a nominal level and hence Table 3.2 shows the percentages per category; they sum up to 100% for each user type. Internal and external efficacy was measured on an interval scale (range 1—5) and Table 3.2 displays their means for each type.

Table 3.2: Distributions of indicator variables for each user type

	2012 National elections			2014 Municipal elections		
	Doubters (%)	Seekers (%)	Checkers (%)	Doubters (%)	Seekers (%)	Checkers (%)
Reason for using the VAA						
Gaining more insight into party positions	19	19	14	16	30	26
Checking agreement with favorite party	26	29	46	38	15	41
Determining vote choice	29	41	3	17	51	5
For entertainment	25	12	38	28	2	18
Checking sensibility VAA						
Total	100	100	100	100	100	100
Vote certainty						
Already decided	19	3	54	34	1	44
Still deciding between a few parties	45	64	43	50	47	49
Don't know yet	36	33	3	16	52	7
Total	100	100	100	100	100	100
Internal efficacy (M)	3.4	3.3	4.0	3.7	2.8	3.6
External efficacy (M)	2.2	4.2	4.5	4.2	2.1	4.3
Intensity of campaign interest						
Very intense	7	2	14	10	7	39
Intense	32	30	54	44	26	36
Not very intense/none	62	68	31	46	67	25
Total	100	100	100	100	100	100
Percentage of each type	10	32	58	100	15	37
N				53,617		33,736

(Table continues on next page)

	2014 European elections				2015 Provincial elections			
	Doubters (%)	Seekers (%)	Checkers (%)	Total (%)	Doubters (%)	Seekers (%)	Checkers (%)	Total (%)
Reason for using the VAA								
Gaining more insight into party positions	19	22	22	22	20	32	28	29
Checking agreement with favorite party	19	16	48	31	14	15	44	31
Determining vote choice	46	59	6	32	41	50	6	25
For entertainment	9	1	16	9	15	2	15	10
Checking sensibility VAA	8	2	9	6	10	2	7	5
Total	100	100	100	100	100	100	100	100
Vote certainty								
Already decided	12	1	39	20	15	3	42	25
Still deciding between a few parties	38	49	57	51	38	59	57	56
Don't know yet	50	51	4	28	47	38	1	19
Total	100	100	100	100	100	100	100	100
Internal efficacy (M)	2.9	2.8	3.6	3.2	2.4	2.6	3.2	2.9
External efficacy (M)	2.1	4.0	4.4	4.0	2.0	3.9	4.4	4.0
Intensity of campaign interest*								
Very intense	18	8	38	23	46	30	78	57
Intense	28	27	37	32	37	59	21	36
Not very intense/none	54	65	25	45	17	11	1	6
Total	100	100	100	100	100	100	100	100
Percentage of each type	11	41	48	100	10	36	55	100
N				11,800				1,558

* Note: for the provincial elections we measured interest in politics rather than interest in the current campaign.

(Table continues on next page)

2015 Water authority elections					
	Doubters	Seekers	Checkers	Total	
	(%)	(%)	(%)	(%)	(%)
Reason for using the VAA					
Gaining more insight into party positions	21	23	36		26
Checking agreement with favorite party	10	6	33		15
Determining vote choice	60	70	18		52
For entertainment	4	1	8		3
Checking sensibility VAA	5	1	6		3
Total	100	100	100		100
Vote certainty					
Already decided	10	5	33		14
Still deciding between a few parties	22	22	47		30
Don't know yet	68	73	20		55
Total	100	100	100		100
Internal efficacy (M)	2.3	2.4	3.1		2.6
External efficacy (M)	2.1	3.8	4.1		3.7
Intensity of campaign interest					
Very intense	17	11	38		21
Intense	23	25	37		29
Not very intense/none	60	64	25		51
Total	100	100	100		100
Percentage of each type	16	51	31		100
N					27,933

Overall, the similarities between elections are quite evident. The response pattern characterizing the checkers (relatively efficacious, interested, certain about their vote choice, checking agreement with their favorite party) can clearly be distinguished in each election. In Table 3.2 these are in the third column each time; we again labeled this type *checkers*. For this group the modal reason to use a VAA is “checking agreement with my favorite party”. This is true for all elections except the water authority elections, in which the modal reason is “gaining more insight into party positions”. They still do, however, indicate “checking agreement” much more often than other types, and “determining vote choice” much less often. On the other indicator variables their pattern also is consistent over elections: checkers are the most decisive about their vote choice, have the highest internal and external efficacy and most interest in the election campaign.

Responses that are typical for seekers are also clearly distinguishable: in all second-order elections one of the types consistently has relatively low internal efficacy but high external efficacy, is almost always undecided about their vote choice and is using the VAA mostly to determine which party to vote for. They are in the second column each time. The doubters, who are in the first column, are recognizable by their relatively low internal and external efficacy, while at the same time having already decided about their vote choice more often than seekers. In short, the data support our first hypothesis; the typology can convincingly be replicated in second-order elections. Another striking finding in this regard is that while the response category “to check if the VAA makes sense” was not included in the elections on which the original typology is based, the results for this category do fit the expectation that mostly checkers give this as a reason for their VAA use.

Hypothesis 2a states that overall levels of internal and external efficacy, interest in the campaign and vote certainty will be lower for second order elections. To test this hypothesis, we can look at the marginal distributions in Table 3.2 (the bold printed columns). For the categorical indicator variables, we calculated chi-squared tests (on observed frequencies rather than the percentages displayed in Table 3.2) to see whether these frequencies significantly differ between elections. They do: for vote certainty $\chi^2(8) = 15473, p < .001$, Cramer’s $V = 0.24$, indicating a medium difference between elections; for interest in the campaign (excluding the provincial elections) $\chi^2(6) = 4614.9, p < .001$, Cramer’s $V = 0.13$; a small to medium difference. Except for interest in the campaign, these results are in line with H2a. Internal and external efficacy and vote certainty are indeed lower in second-order elections than in first-order elections. Strikingly, in no election efficacy and vote certainty are as low as in the water authority elections. And for all second-order elections, vote certainty and external efficacy are highest for the provincial elections.

Contrary to our expectations, however, interest in the election campaign is higher

for second-order elections compared to the national elections. For the provincial elections, we measured *political interest* instead of *interest in the campaign*, so we unfortunately cannot include this election in the comparison. For all other second-order elections, twice as many users indicate they follow the campaign “very intensely” as compared to the national elections.

The differences between elections are also reflected in the proportions of user types that are observed, in line with H2b. Indeed, in second-order elections the proportion of checkers is lower than in first-order elections, and notably lower for the water authority elections. In these elections the proportion of doubters is higher than in any other election. For the provincial elections the proportion of checkers is relatively high. Concluding, we can say that VAAs in first-order elections serve a different function than in second-order elections. While in first-order elections many users appeared to be less dependent on VAAs for political information and used it more often for entertainment, in second-order elections users appear to be more interested in the information offered by VAAs overall.

3.7.1 User types and VAA use over time

Hypothesis 3a predicts checkers to be relatively more prominent early in the campaign as compared to seekers and doubters. Figure 3.1 shows the usage of VAAs over the course of the campaign for each election. Like in the 2012 national elections, the second-order elections have a small peak at the beginning of the campaign – when the VAA becomes available – and a large peak on and just before election day. Only in the water authority elections there was no peak at the campaign start. In line with H3a, the peaks at the beginning of the campaigns are mostly caused by checkers visiting the VAA website. The presence of seekers is more or less constant throughout the campaign until just before election day, when there is a huge increase in VAA use by seekers. The peak at the end of the campaign is primarily driven by seekers using the VAA, and to a lesser extent by doubters.

When comparing the overall use of VAAs over the course of the campaign between first- and second-order elections, the difference is striking. Supporting H3b, the concentration of usage around election day is much stronger in second-order elections. This is also reflected in the correlations between overall frequency of usage and time; for second-order elections the number of visits increases much stronger with time in the run up to the elections. Most extreme in this regard are the water authority elections, and least extreme among the second-order elections are the provincial elections. Concluding, in second-order elections we observe information-seeking activity relatively much later than in first-order elections. This finding seems to be at odds with the fact that the reported interest in the election campaign is much lower for the national

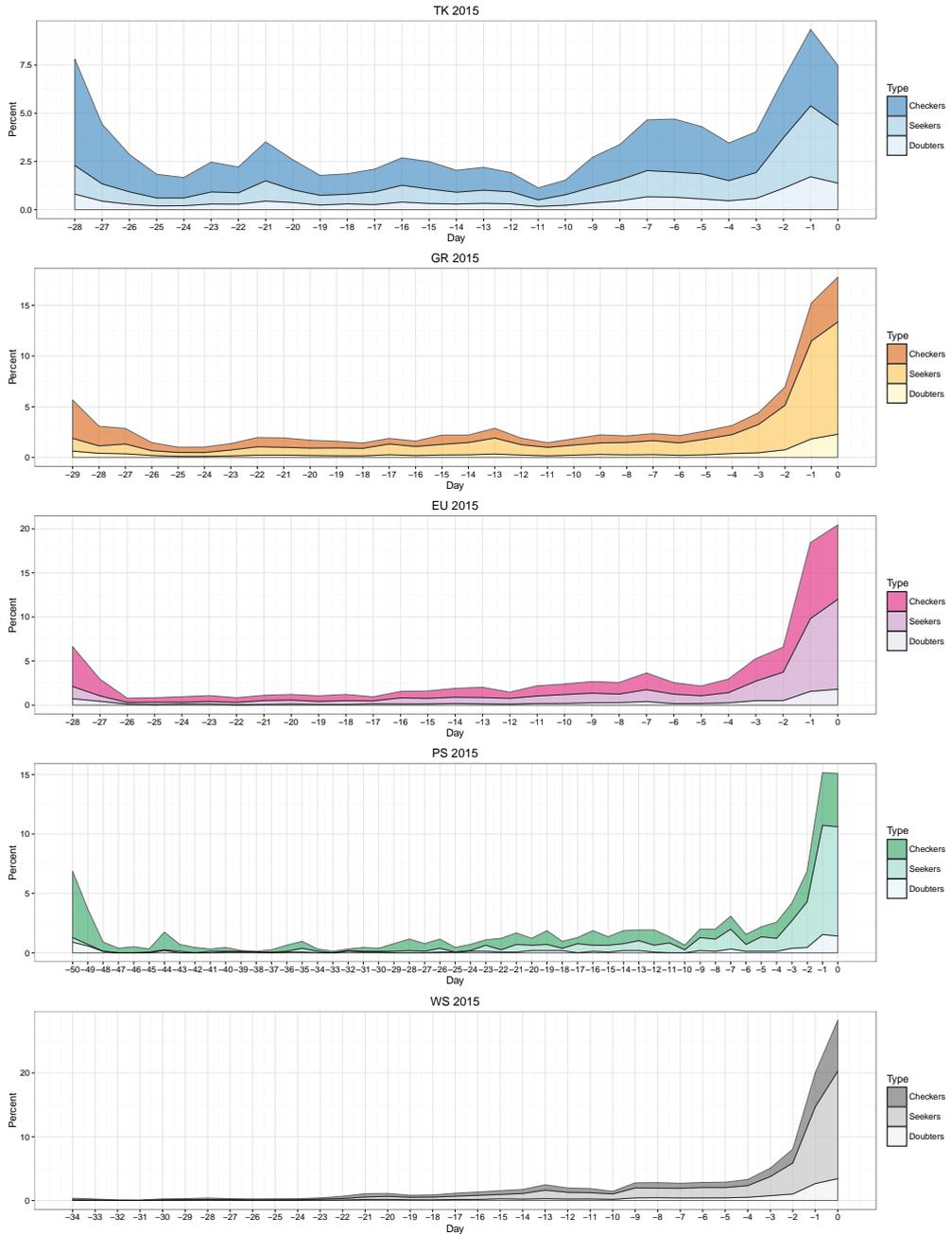


Figure 3.1: Frequency of visits per day of the campaign, for each election. Correlations between number of days until election day and the total frequency of visits are shown in the legend.

elections than for all other elections.

3.8 Conclusion and Discussion

This study demonstrates that the election context matters for the use of Voting Advice Applications. In this study we looked at all types of elections – a supranational, a national and three subnational elections – and found substantive differences in VAA usage between first- and second-order elections. More specifically, we can draw three general conclusions. First, in each election we can distinguish the same three types of VAA users: checkers, seekers and doubters; corroborating the typology developed in Chapter 2. Their distinctive usage patterns are similar across elections: checkers are most certain about their vote choice, most interested in the campaign and most efficacious about politics. They hardly use VAAs with the purpose of learning something new. Seekers do use VAAs for that purpose: they are generally less interested, less internally efficacious and less decisive about their voting decision, so they mostly consult VAAs to determine their vote choice or learn about party positions. Doubters are relatively less efficacious as well, but especially about the responsiveness of the government. More often than the seekers they already decided which party to vote for and they use the VAA mostly to determine their vote choice.

Secondly, in second-order elections, VAA users are generally less certain about their vote choice, feel less efficacious about politics and therefore more often use VAAs to learn about party positions and to determine their vote choice. These differences are also reflected in the proportional presence of each user type: seekers and doubters relatively more often consult VAAs in second-order elections. These findings are in line with the second-order election literature: because less is at stake in these elections, voters are less engaged (Heath et al., 1999; Hobolt & Wittrock, 2011).

The pattern that we observe in the data fits nicely with the importance of each election in the Netherlands. Because the provincial elections also indirectly determine the composition of the national Senate, relatively more is at stake in these elections compared to other sub-national elections. Hence, in these elections, checkers are almost as prominently represented as in the first-order elections. On the other hand, in the water authority elections, even less is at stake than in other second-order elections, since the policy area in which these authorities operate is relatively limited (flood control and water resources management). In these elections general levels of efficacy are lowest, people are most unsure about their vote, and the percentages of seekers and doubters are highest.

Not in line with our expectations is the fact that in second-order elections users reported to be substantially more interested in the campaign than in the national elections. This unexpected finding might be explained by the fact that media attention in

second-order elections is scarce compared to the election campaign in national elections. As a result, those who want to know more about the elections will have to put more effort in finding information, and hence they indicate to follow the campaign more intensely than with the general elections. At the other hand, we do find that for the national elections VAAs were used quite constantly throughout the campaign, while in all second-order elections relatively more voters visited the VAA website only closely before election day.

Our third main conclusion is that, as expected, checkers use VAAs relatively early in the campaign and seekers relatively late, while doubters' use of the tool is quite stable over time. In addition to these differences between users, we found large general differences between elections. During second-order elections, voters use VAAs much later in the campaign than during first-order elections. Again, we observe this difference at its extreme for the water authority elections, where more than 50% of all traffic happens in the last three days of the campaign.

Our finding that in second-order elections, more than in national elections, VAAs are used for the purpose of gratifying informational needs – finding out about party positions and determining one's vote choice – suggests that their mobilizing capacity is stronger in second-order elections. Previous findings that VAAs are mostly used by those who are politically interested and engaged already (e.g., Marschall, 2014; Marschall & Schultze, 2015) do not apply to second-order elections, where the checkers are in a minority – except for the provincial elections. Since VAA users in second-order elections are generally less politically sophisticated, probably there is a larger opportunity for beneficial VAA effects in these elections, like increased political efficacy and electoral participation. These VAA effects, after all, are stronger for less politically interested citizens (cf. Zaller, 1992), especially the seekers. The mobilizing potential of VAAs is strongest in the final days of the election campaign, when VAA usage increases sharply and relatively most users are seekers.

This is the first study to focus on a comparison of VAA users between first- and second-order elections. Yet, it has two limitations. In order to achieve the highest possible response rate in the exit survey – on which our analyses are based – we needed to be concise and could only measure internal and external efficacy with one item, while they are usually measured with more items. In the trade-off between more reliable measurement and a larger sample of VAA users, we prioritized the latter. We selected the items that were most suitable to the subject. Related, unfortunately there were some inconsistencies in the measurement of these indicators between elections, preventing us from testing a more sophisticated multi-group latent class model for all elections. However, we could establish measurement equivalence for two elections (see footnote 1), and for the other elections we observe highly similar patterns across elections, allowing us to give them the same labels. Secondly, it has to be noted that this

sample of respondents who answered the exit survey is a non-random, self-selected group of VAA users. While the size of this sample is modest judged by the response rate, its composition does not differ much from the population of VAA users in terms of gender, age and education (see the appendix).

For future research we suggest to compare the indicators used in this study between VAA users and non-users, who were not taken into account in these analyses. This way, more can be said about the likelihood of less politically engaged citizens to still use VAAs, and hence whether VAAs successfully reach less informed segments of society. The current study could also serve as a starting point to research effects of VAAs in second-order elections, to find out whether VAAs contribute to knowledge, efficacy and participation more in second-order elections than in national elections. For now, we demonstrated the value of VAAs for informational demands in campaign times, which is largest in the ‘most’ second-order elections.

3.9 References

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3.10 Appendix

External validity of samples for the population of VAA users: socio-demographic characteristics

Elections	National (2012)		Municipalities (2014)		Europe (2014)		Provinces (2015)		Water authorities (2015)	
	Population	Sample	Population	Sample	Population	Sample	Population	Sample	Population	Sample
% Female	41.1%	31.6%	47.0%	42.9%	42.6%	34.6%	45.9%	37.0%	47.3%	43.4%
Age										
<i>M</i>	39.02	45.80	41.70	49.38	40.70	47.62	43.61	51.01	42.59	51.74
<i>SD</i>	15.02	14.89	15.38	15.02	15.51	16.22	15.94	15.47	15.27	15.37
Education										
Low	7.8%	7.1%	7.4%	8.5%	5.0%	5.3%	5.7%	6.7%	5.3%	8.6%
Middle	34.1%	29.1%	33.4%	30.6%	30.6%	28.5%	26.5%	24.4%	31.8%	31.3%
High	58.1%	63.8%	59.3%	60.9%	64.3%	66.1%	67.8%	68.8%	62.9%	60.1%

Chapter 4

Pushing the Voting Advice Left or Right: Identifying Framing Effects in a Field Experiment

Abstract

The rise of Voting Advice Applications (VAAs) is one of the most significant developments in internet-based political communication over the past decade. VAAs provide voting recommendations to millions of people. As these voting recommendations are based on users' answers to attitude questions, framing these questions can have far-reaching consequences. In a large-scale randomized field experiment using an actual VAA, we studied the effects of minimal differences in the way attitude questions are framed. We found a modest across-the-board effect of issue framing on the answers that was in line with our expectations. The study is a first demonstration of how framing differences may affect people's political attitudes in a natural political choice environment.

4.1 Introduction

Framing can shape public opinion through individuals' perceptions of political issues and choices in many ways. Framing effects, though, might also be directly relevant to the voting considerations of large groups. Voting Advice Applications (VAAs) form an important context in which framing effects can have direct and far-reaching consequences. Before casting their ballot, a large and increasing number of voters in and beyond Europe pay a visit to these web applications in order to receive a voting advice. VAAs ask their users to report their attitudes to a set of policy statements. An algorithm compares users' attitudes to party positions, after which the VAA tells its users which party matches their issue positions best, and to what extent users agree with all other competing parties. Most of these VAAs have self-proclaimed aims of providing a neutral and balanced overview of the issue agreement with each party (Garzia & Marschall, 2014; Van Camp, Lefevere, & Walgrave, 2014). Since the VAA recommendations are based on policy statements, the framing of these statements potentially impacts the attitudes people report, and hence the voting advice a substantial share of the electorate receives from these applications.

The way an issue or attitude question is framed can greatly affect people's attitudes (Chong & Druckman, 2007). More people, for instance, are willing to tolerate a Ku Klux Klan meeting if this is framed as a free speech issue than when framed as a threat to public order (Nelson, Clawson, & Oxley, 1997); more egalitarians agree with government support for poor people if that action is framed as giving them a 'better chance of getting ahead' rather than when it is framed as leading to higher taxes (Sniderman & Theriault, 2004); and 'climate change' is considered an actual phenomenon by more Republicans than 'global warming' is (Schuldt, Konrath, & Schwarz, 2011). The attitude questions or statements included in Voting Advice Applications have the same

potential of steering the attitudes people report to them. Each policy issue is captured in a statement of one or two sentences, often accompanied by a few keywords classifying the policy theme of the issue. When answering these statements, users have little information to navigate on. If a particular frame directs people's attitudes in a certain direction, this will affect the voting advice that people receive. This is relevant since several studies found evidence of a persuasive effect of this voting advice on people's actual vote choices (Alvarez, Levin, Mair, & Trechsel, 2014; Wall, Krouwel, & Vitiello, 2012). Yet there is a paucity of knowledge about the extent to which the framing of policy statements in VAAs affects reported attitudes. This is exactly the aim of our study: A large-scale randomized field experiment using a real-world VAA is carried out to, for the first time, test framing effects of VAA statements. The field experiment allows us to test framing effects in an unobtrusive way, in a naturalistic setting, with great internal and ecological validity, combining the advantages of experiments with the call for increased realism in framing research (e.g. De Vreese, 2012). Our research question is: *To what extent does the way issues are framed in VAAs affect the attitudes people report towards these issues?*

Apart from applying and testing framing theory in this potentially highly relevant, natural context, this study is also important to the emerging field of VAA research. Extant research has shown that aspects of the VAA design influence the voting advice people receive, such as the selection and number of statements (Lefevre & Walgrave, 2014), the way the match between users and each party is presented, and the algorithm used to calculate this match (Louwerse & Rosema, 2014). Statement framing is a crucial way in which design aspects of VAAs can – intentionally or not – affect the voting recommendations received. The fact that VAAs are frequented by large numbers of people – up to 52% of voters during Dutch national elections (*Stemwijzer*), 30% in Germany (*Wahl-O-Mat*), 36% in Finland (*Vaalikone*), and 30% in Sweden (*Valkompassen*) (Marschall, 2014) stresses the urgency of studying framing effects in VAAs.

4.2 Issue Framing

Voting Advice Applications are intended to make politics more comprehensible for the general public (De Graaf, 2010; Garzia & Marschall, 2014). The way political issues are perceived depends on the problem definitions that are put forward by different frames (Entman, 1993). When VAA developers formulate issue statements, inevitably they offer users a frame. For instance, consider the statement, “Free market competition makes the health care system function better” (<http://www.euvox2014.eu/>): This formulation surely activates different associations and considerations compared to an alternative statement, “Nationalization of health care companies leads to a better functioning health care system”. Likewise, the headers many VAAs provide with

the statements also carry a particular problem definition. The statement mentioned before had a header indicating this is an *Economy* issue, but it could equally well have been *Health care*, which might have highlighted different aspects of the issue.

Different headings and different ways of phrasing the statements are examples of frames employed by statements in VAAs. Over the past decades, scholars have gathered a vast amount of evidence of the effect of framing on public opinion (Chong & Druckman, 2007; De Vreese, 2012; Druckman, 2001a). Within political communication, framing effects have been classified in two broad categories (Borah, 2011; Caciatore, Scheufele, & Iyengar, 2016; Druckman, 2001b; Matthes, 2007). *Equivalence framing*, often found in psychological research and economic rational-choice literature, exists of “two logically equivalent (but not transparently equivalent) statements of a problem [that] lead decision makers to different options” (Rabin, 1998, p. 36). The famous experiment by Kahneman and Tversky (1979) is often cited in this context, in which was demonstrated that people are inclined to be risk averse if a dilemma is framed in terms of gains and risk taking if the same dilemma is framed in terms of losses.

The second category of framing research, called *emphasis framing*, is most often studied within the field of media effects (Matthes, 2007) and uses a more relaxed definition of framing which supposedly better reflects the “complexity of everyday communication environments, where attitude formation is likely driven by an interplay of complementary or competing frames” (Matthes, 2007, p. 5) and is therefore more reflective of most actual political communication (Druckman, 2001a; Scheufele & Iyengar, 2012). Many studies in this field use the definition of framing by Gamson and Mogdilian (1987, p. 143): Framing as a “central organizing idea or story line that provides meaning to an unfolding strip of events, weaving a connection among them. The frame suggests what the controversy is about, the essence of the issue”. For example, Valkenburg, Semetko, and De Vreese (1999) found that news stories with a human-interest frame, emphasizing an individual’s story or emotional aspects of the issue, made readers focus on individual implications and emotions more often in their responses. The same story with a frame emphasizing conflict between involved parties inspired readers to report thoughts about conflicts more often. Literature on emphasis framing has often received the criticism that their definition of framing is too relaxed and inclusive (Entman, 1993; Scheufele, 1999; Scheufele & Iyengar, 2012). Operationalizations are context-specific and the distinction between frames and messages has become thin, which hinders the generalizability of framing effects.

In our field experiment, we overcome these drawbacks by using an operationalization of emphasis framing that is close to equivalence framing: We study the effect of changing the header that comes with the VAA question, while keeping the attitude question the same, so nothing is changed to the underlying issue. The headers em-

phasize one side of the issue and ignore other considerations people might have with regard to the issue. In this way, we argue, we employ an internally valid test of the emphasis framing effect in a real-world context, and comply with the notion of framing in the ‘strict sense’, as Sniderman and Theriault (2004) put it: “Semantically distinct conceptions of exactly the same course of action which induce preference reversals”. In many previous emphasis-framing studies, subjects might have reported different attitudes in response to different frames, not because their opinion are affected in response to the frame, but because the content or issue they were responding to was slightly different across frames (Cacciatore et al., 2016). Using our operationalization, any effect of framing would demonstrate that users of a VAA form their opinions in response to the framing of questions the application asks, rather than revealing pre-existing ‘true attitudes’ (cf. Zaller, 1992, p. 33).

Druckman (2001a) argues that if people’s opinions are partly dependent on the way issues are framed, this raises concerns regarding the competence of citizens to fulfill the role they have been ascribed in a democracy. Two broadly shared criteria of citizen competence are that people’s political opinions should not be subject to “arbitrary aspects of how an issue or problem is described” or to “elite manipulation” (2001a, 232–233). These criteria are especially relevant to the study of framing effects in VAAs: The point of departure of VAAs is people’s political opinions. VAAs assume that the attitudes reported by users reflect their authentic opinions on the matter (Anderson & Fossen, 2014) and base their voting recommendations on this assumption. Any persuasive effect of the voting advice on people’s vote choices would be problematic if users’ responses to the statements in VAAs do reflect other factors than just the users’ pre-existing attitudes.

Nonetheless, the general finding in framing research is that people tend to adapt their opinion in the direction of a frame: If a frame motivates them to think positively about a course of action, people are inclined to agree with it; if a frame draws attention to negative aspects or consequences, people will more likely oppose (Sniderman and Theriault 2004; Zaller 1992). Previous literature has suggested several models of the mechanisms driving framing effects – some of which assume direct effects on public opinion and some assuming indirect effects (De Vreese, Boomgaarden, & Semetko, 2011). One account of an indirect framing effect is that a change in opinion is driven by a change to the weight of considerations (reasons to favor or oppose an issue) people hold about the issue at hand. Frames increase the weight or importance of particular considerations by emphasizing a certain aspect of an issue and downplaying other aspects (Gamson & Mogdilian, 1987; Nelson, Oxley, & Clawson, 1997). Another indirect framing effect, suggested by, amongst others, Cappella and Jamieson (1997) is that frames make certain considerations more *accessible*. Frames could also affect opinions in a direct way by changing the *content* of considerations about the issue. Especially

when an issue is new for citizens, frames can add new considerations and links between considerations, changing the balance of considerations in people's minds and altering the attitudes people hold (De Vreese et al., 2011; Lecheler & De Vreese, 2012; Slothuus, 2008; Zaller, 1992, p. 119). Empirical evidence on which mechanism is driving framing effects on opinion is yet inconclusive (De Vreese, Boomgaarden, and Semetko, 2011), but scholars agree on the outcome of the process: Frames generally have the power to push people's attitudes in the suggested direction.

This 'direction' could be conceptualized in several ways. Within VAAs, many issues can be organized along the left-right continuum (Van Camp et al., 2014). Like in many Western democracies, in the Netherlands this is the dominant way political views are organized (De Vries, Hakhverdian, & Lancee, 2013; Van der Eijk, Schmitt, & Binder, 2005). It is therefore possible to heap together a variety of political perspectives under the categories "left" and "right" in a fairly consistent way, and study whether people tend to follow these frames. Slothuus and De Vreese (2010) find that people are inclined to follow frames supported by different political parties on this left-right axis, regardless of their own political orientation. Similarly, and consistent with previous research on issue framing, we expect VAA users to report more right-wing opinions when the statement is presented with a header emphasizing right-wing considerations to an issue. In contrast, when a statement comes along with a header emphasizing left-wing aspects to an issue, we expect users to report on average more left-wing opinions in VAAs.

H1 When exposed to a right-wing frame, VAA users report more right-wing opinions than when exposed to a left-wing frame and vice versa.

As Entman (1993) notes, it is certainly possible that people recall facts and make associations not suggested by the frame, and therefore the particular framing of a subject would not affect their thoughts about the topic. Users might have crystallized opinions about certain issues that are covered by VAAs, especially when statements are about key issues in the election campaign. After all, issues in VAAs are selected based on political salience (Van Camp, Lefevere, and Walgrave 2014). If users do have very clear opinions about an issue, they should be more resistant to the framing of this issue, and this is more likely to happen if someone is more politically interested or aware (cf. Converse, 1964). Those with more interest will usually more often follow political news, more often inform themselves about parties and issues, and have more discussions about politics with people around them. Hence, they are more likely to have thought about political issues, before they are asked about these issues in VAAs. Delli Carpini and Keeter (1996) indeed found self-reported political interest to correlate strongly with all dimensions of political knowledge. Zaller (1992) and Sniderman and Theriault (2004) argue that people who are more interested in and informed about politics

are more likely to have opinions that are stable and consistent with their ideology, and also find support for this. Regardless of the framing condition, Sniderman and Thériault (2004) found that better-informed citizens more often report opinions that are consistent with underlying principles they endorse. This would also be in line with the theory, discussed above, that framing effects are driven by a change to the *content* of people's considerations: Since less interested citizens have fewer considerations about issues included in VAAs, they will be more susceptible to new considerations offered by the frame. Hence, we predict the following:

H2a Political interest moderates the framing effect such that the less one is interested in politics, the stronger one is affected by the framing.

By contrast, if framing effects are driven by a change in the weight of considerations in people's minds, those who are more interested in politics should be affected more strongly by the framing of issues. Slothuus (2008) and Nelson et al. (1997) argue that before a frame or message could change the weight of considerations in people's minds, they need to be equipped with issue-relevant considerations in the first place. Cacciatore, Scheufele and Iyengar (2016) also argue that "an audience member's pre-existing cognitive schema or knowledge structures will determine the degree to which a frame will resonate" (p. 13). More politically aware or interested citizens are more likely to be exposed to and actively process political messages, and will more often be able to comprehend frames and relate them to their own cognitive schemas or considerations (see also Lecheler & De Vreese, 2012). Support for this theory was reported by Nelson et al. (1997) and Slothuus (2008): Both found that informed citizens put more weight on the considerations on welfare spending suggested by the frame, while uninformed citizens were not susceptible to the framing of the issue. Lecheler and De Vreese (2012), however, found that the most politically aware citizens most often showed a change in the content of considerations. These findings, however, all point towards a stronger framing effect among citizens with more political interest. Our alternative hypothesis therefore is:

H2b Political interest moderates the framing effect such that the more one is interested in politics, the stronger one is affected by the framing.

4.3 Methods

To test our hypotheses, a randomized field experiment was carried out during the campaign for the municipality elections in Utrecht, a large Dutch city. For this experiment we collaborated with the Voting Advice Application *Kieskompas*, which is the second

most well-known VAA in the Netherlands (after *Stemwijzer*)¹. *Kieskompas* was online for 30 days, during which 41,505 people accessed the website. People who visited the website were randomly assigned to one of five versions of the website². Like many VAAs, *Kieskompas* places a header above every statement indicating the issue theme, e.g., ‘Economy’ or ‘Nature & Environment’. We operationalized the framing of the statements by manipulating the headers. Each manipulated statement had either a right-wing or a left-wing header. To ensure ecological validity, we only used headers that normally would be used by a VAA, and that were relevant to the issue at stake. The left-wing headers we used are *Nature & Environment*, *Social policy* and *Culture & Education*. Right-wing headers are *Mobility*, *Safety*, *Building & Living*, *Finances* and *Economy*. Studies of issue ownership confirm these are the issues associated with left-wing and right-wing parties (e.g., Walgrave, Lefevere, & Tresch, 2012)³. Figure 4.1 shows an example of the stimulus material for one of the 17 manipulated statements.

Version A of the VAA was developed according to the standard procedure at *Kieskompas* (see for a discussion on this procedure: Krouwel, Vitiello, & Wall, 2012), and did not include headers. Based on this benchmark version, four alternative versions (B-E) were created in which issue framing and polarity was varied, in a 2 (left-wing and right-wing framing) \times 2 (polarity) design. Polarity was manipulated by presenting either positively or negatively formulated statements; this is not reported in this study⁴. An overview of all 17 manipulated statements and corresponding left-wing and right-wing headers, translated from Dutch, is shown in Table 4.1. Users of the VAA were asked to what extent they agree with each statement, on a five-point scale from ‘completely agree’ to ‘completely disagree’ (or ‘no opinion’). The dependent variable in this study is the score on this variable: We test whether people, in a left-wing framing condition, more often agree with a left-wing statement and more often disagree with a right-wing statement. Similarly, we expect people to more agree with a right-wing statement in a right-wing framing condition. The moderator political interest was measured before *Kieskompas* users were directed to the statements (“How

¹ Utrecht University, the Dutch Science Foundation and the Utrecht City Council approved the project description prior to fielding the study. Participation in the survey was voluntarily and participants could stop at any time.

² In the municipality of Utrecht, 258,087 people were eligible to vote and 139,989 eventually did cast a vote. If all visitors to *Kieskompas* would be unique visitors, 29.7% of the voters consulted *Kieskompas*.

³ Left-wing parties are associated with more state intervention and ensuring equal opportunities through education and social support while right-wing parties usually emphasize smaller governments, economic growth and less regulations. Walgrave et al. (2012) observed in Belgium (which has an electoral system comparable to the Dutch) that left-wing parties such as the Greens and the Socialists are associated with issues like environment, social security and culture, while right-wing parties such as the Liberals are associated with issues like taxes, economy and crime.

⁴ As the effect of question headings interacted with the effect of the polarity for only two statements, which is what one could expect based on chance, we decided to report the effect of polarity elsewhere.



Figure 4.1: Issue frames for statement 2. The statement says “The charges for parking can be raised”; the left-wing heading is “Nature and environment” and the right-wing heading is “Mobility”

interested are you in politics?” – $M = 3.3$, $SD = 0.8$, range 1 – 5). This question was answered by 70.7% of the people included in our analyses.

4.3.1 Participants

A total of 41,505 people visited Kieskompas. We included in our analyses those who were eligible to vote (18 years or older), who took more than two minutes to fill out all statements, and who did not give show straight-lining behavior. In addition, we only included people who were assigned to one of the four experimental conditions instead of the benchmark version. Since the benchmark version does not feature any headers, we are not comparing frames when we include this version in the analyses⁵. The resulting sample consists of 31,112 Kieskompas users. Except for people who were excluded because of the reasons listed above⁶, the respondents make up the complete population of users of one of the two major VAAs available in the municipality elections of the city of Utrecht.

Our experiment is naturalistic in every dimension. The intervention we are studying resembles a real-world phenomenon (framing by headers in VAAs), the participants are those who would normally encounter these frames, the context is an actual VAA and the outcome we measure is the exact outcome of interest: attitudes reported to VAA statements (cf. Gerber & Green, 2012).

A randomization check showed that VAA users in the different conditions did not differ significantly, or substantially, on age ($F(3, 22207) = 1.58$; $p = .19$), gender ($\chi^2(3) = 2.90$; $p = .41$), educational level ($\chi^2(3) = 11.90$; $p = .85$) or interest in politics ($F(3, 21990) = 0.34$; $p = .80$).

4.3.2 Analysis

The dependent variable in this study is the opinion reported by users of the VAA on a series of statements. Two kinds of analyses were carried out. Firstly, a multivariate regression is performed for the framing effect on each statement, and secondly, the framing effect is considered for all statements at once in an inclusive cross-classified multilevel model. The multivariate regression, in which the framing condition is the only independent variable and the opinion on each statement is a separate dependent

⁵ In addition, the polarity of statements in the benchmark version does not align with two of the four experimental versions (for some statements the polarity in version A aligns with version B and D, for other statements with the polarity in version C and E). For this reason it is not possible to include version A in a ML analysis.

⁶ By far the largest portion of the excluded respondents was excluded because they were in the benchmark condition, which means they are a completely random subsample of the population of Kieskompas-users.

variable, has as advantage that the framing effect could be tested for each statement, while preventing an inflation of Type I error chance. The advantage of the second analysis is that an estimation of the general effect is obtained (also preventing a Type I-error-inflation); however, this also brings some challenges. The statements of VAAs are selected to cover a wide range of issues and to discriminate between parties (Van Camp, Lefevre, and Walgrave 2014), which results in small correlations between answers to each statement. This large between-statement variance, together with the small number of statements, makes it difficult to isolate a general framing effect across the statements. On the other hand, the large N in our study allows for very precise estimation of this effect (Hox, 2010).

4.4 Results

4.4.1 Single statements

Table 4.1 provides an overview of all 17 statements included in the framing experiment, the averages for both framing conditions, and the results of a multivariate regression analysis comparing these averages. Figure 4.2 shows the confidence intervals for the framing effect on each statement.

In about one-third of the statements, we find significant differences. More people agree to the statement “Cars that pollute most should be banned from the city center” if the header indicates this is a *Nature & Environment* issue, compared to a *Mobility* issue ($b = 0.041, p = .018$). Second, more people agree with the statement “In bad neighborhoods, the municipality is allowed to tear down social housing” if the accompanying frame is *Social policy* instead of *Safety* ($b = 0.067, p < .001$). Third, there is a framing effect for the statement “The municipality can build houses in the Rijnenburg polder”; more people agree if this is framed as a *Building & Living* issue instead of a *Nature & Environment* issue ($b = 0.031, p = .023$). Fourth, when framed as a *Culture & Education* issue instead of a *Finance* issue, more people agree that “The municipality should invest extra money to fight children’s language deficiencies” ($b = 0.085, p < .001$). And fifth, more people agree to the statement “Everyone on social security should be forced to do volunteering work, or his benefits will be cut back” if this was accompanied by the frame *Economy* instead of *Social policy* ($b = 0.027, p = .049$). For other statements the framing did not significantly affect reported opinions. Except for the statement about tearing down social housing, all effects were in the expected direction of a more right-wing opinion in the right-wing framing condition. In summary, we have some evidence for Hypothesis 1, but the effect size is very small. The largest effect is 0.085 on a 5-point scale, meaning a difference between “neutral” and “agree” (or between “completely disagree” and “disagree”) for every 12th VAA user.

Table 4.1: Framing effect per statement

N ^o	Statement	Left frame	M	SD	Right frame	M	SD	b	s.e.	p
1	The A27 highway should be broadened at Amelisseweerd	N & E	2.54	1.28	M	2.54	1.28	0.01	0.02	0.790
2	Parking charges can be raised in the city of Utrecht	N & E	2.22	1.15	M	2.21	1.15	0.01	0.02	0.623
3	Cars that pollute most (older than EURO 3 for diesel and EURO 0 for gasoline) should be allowed in the city center	N & E	3.39	1.23	M	3.37	1.23	0.04	0.02	0.018
4	The budget for improving neighborhood livability (the livability budget) should be abolished	SP	2.35	0.97	F	2.36	0.96	0.01	0.01	0.595
5	In disadvantaged neighborhoods, the municipality can tear down social housing	SP	3.16	1.12	S	3.09	1.12	-0.07	0.02	0.000
6	The municipality can cut down on social work	SP	2.52	1.02	F	2.53	1.03	0.01	0.01	0.459
7	The municipality can build houses in the Rijnenburg polder	N & E	2.92	0.98	B & L	2.95	0.99	0.03	0.01	0.023
8	The municipality should invest money to build a bicycle bridge over the Amsterdam-Rijn canal between Oog in Al and Leidsche Rijn	N & E	3.39	1.11	F	3.39	1.11	0.00	0.02	0.960
9	The municipality should invest extra money to fight children's language deficiencies	C & E	3.75	1.00	F	3.68	1.04	0.09	0.01	0.000
10	Waste charges should be abolished	N & E	2.62	1.03	F	2.63	1.03	0.01	0.01	0.458
11	The municipality can cut down on art and culture	C & E	2.84	1.20	F	2.83	1.21	0.01	0.02	0.686
12	Taxes may be increased for measures for the environment	N & E	3.03	1.09	F	3.02	1.10	0.00	0.02	0.798
13	The municipality may force businesses to take energy-saving measures	N & E	3.47	1.10	E	3.45	1.10	0.01	0.02	0.450
14	A wind park can be built at the Lage Weide industrial zone	N & E	3.57	1.15	B & L	3.59	1.14	0.01	0.02	0.438
15	The municipality should spend more money to fight poverty, even if taxes should be increased for this	SP	3.02	1.07	E	3.01	1.08	0.01	0.01	0.415
16	It's better if the municipality has temporary deficits instead of having to cut down on social services	SP	2.98	1.09	E	2.98	1.09	0.01	0.01	0.678
17	Everyone on social benefits should be forced to do volunteering work, or their benefits will be cut back	SP	3.44	1.19	E	3.47	1.20	0.03	0.01	0.049

* $N = 21029$. For the multivariate regression (column *b*), the dependent variable is coded such that a higher value indicates a higher agreement with the right-wing direction.

Abbreviations: N&E = Nature & Environment, SP = Social policy, C&E = Culture & Education, M = Mobility, F = Finances, S = Safety, B&L = Building & Living, E = Economy.

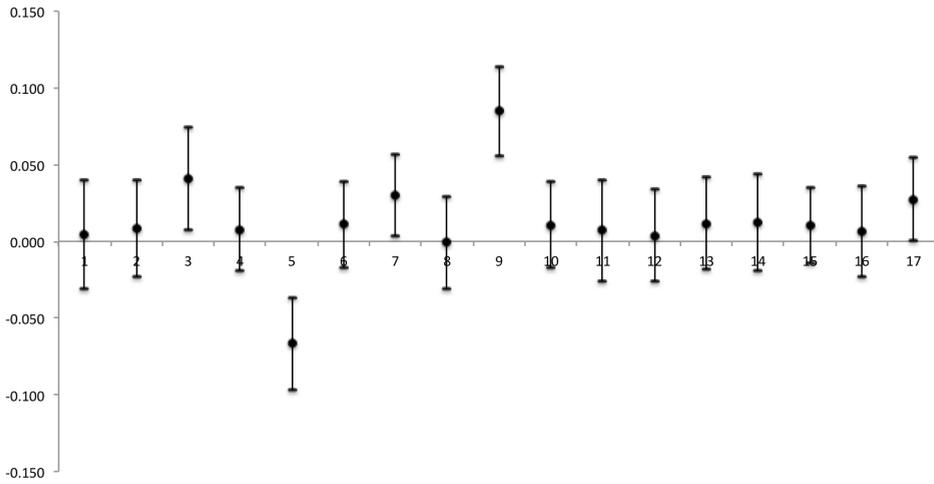


Figure 4.2: Confidence intervals for framing effects for each statement. Opinions and framing effects were coded in the same direction: a higher value means a more right-wing opinion. The point estimates indicate the mean differences between the right-wing and the left-wing framing condition.

4.4.2 Cross-classified multilevel model

In the cross-classified multilevel analysis, opinions are nested within people and simultaneously within statements. This means that the analysis assumes that variation in opinions can be explained by the individual reporting the opinions (i.e., some people tend to have more right-wing opinions than others) and by the statements the opinions are reported towards (i.e., people will on average agree more with some statements than with others). However, the analysis does not assume that statements are nested within individuals or the other way around, which means that individuals and statements are both on the second level. To test our hypotheses, we include on the attitude level (the first level) the framing predictor. This variable varies among individuals and statements. On the second level, we include political interest, which only varies among individuals. The attitudes are recoded such that a higher value always indicates a more right-wing opinion. The framing predictor is a dummy variable indicating per statement which condition had the right-wing frame (the left-wing frame is the reference category, thus had value 0). Political interest is grand-mean centered for a better interpretation of the moderation effect.

Table 4.2 shows the results of the multilevel analyses. The models are fitted on a subsample of the data with only valid responses to the manipulated statements and to

the political interest question ($N = 21,981$)⁷. The first model does not estimate any effects, but merely decomposes the variance at the different levels. The intercept of 2.79 is the overall average attitude score (on a scale from 1 – 5). The random part of the model shows the standard deviations that belong to each level of the model. The subscripts of the standard deviations refer to the part of the model of which the variance is estimated: σ_y is the extent to which the intercept of the attitude varies due to different statements; the standard deviation σ_i refers to the variation on the level of individual and σ_s to the variation between statements. The estimated residual standard deviations at the attitude level, the individual and the statement level are $\sigma_y = 1.01$, $\sigma_i = 0.44$, and $\sigma_s = 0.40$. Thus, the variation among attitudes is largest – only a part of the total variation can be attributed to individual differences or differences between statements. In fact, the intra-class correlation (ICC)⁸ for individuals is 0.160, which means that differences between individuals account for 16.0% of the total variance. The ICC for statements is 0.137. Taken together, the statements and individuals account for 29.6% of the total variance. The following models will show the extent to which this percentage can be attributed to framing differences.

⁷ Of all respondents to the statements, 29.3% did not respond to the political interest question, and could therefore not be included in Model 5. To enable comparison across models, we fitted all models on the subsample of those who answered the interest question. The results of Model 1 – 4 were the same when fitted on the full sample of $N = 31,112$.

⁸ The ICC (for individuals) is calculated using the formula: $\sigma_i^2 / (\sigma_i^2 + \sigma_y^2)$

Table 4.2: Results multilevel analysis of reported opinions

	Model 1		Model 2		Model 3		Model 4	
	Intercept only		+ Framing effect		+ Random effect framing		+ Interaction framing × political interest	
	Coeff. (s.e.)	<i>t</i>	Coeff. (s.e.)	<i>t</i>	Coeff. (s.e.)	<i>t</i>	Coeff. (s.e.)	<i>t</i>
Fixed part								
Intercept	2.789 (0.098)	28.59	2.783 (0.098)	28.54	2.784 (0.098)	28.54	2.784 (0.098)	28.54
Right-wing frame			0.011 (0.003)	3.11	0.011 (0.003)	3.11	0.011 (0.003)	3.12
Political interest							-0.026 (0.005)	-5.54
Frame × interest							-0.006 (0.004)	-1.53
Random part								
σ_y	1.010		1.010		1.010		1.010	
σ_i	0.440		0.440		0.441		0.441	
σ_s	0.402		0.402		0.402		0.402	
σ_f					0.001		0.002	
Deviance	1048599.8		1048590.2		1048590.1		1048539.2	
<i>N</i>	21981		21981		21981		21981	

* Opinions are nested within individuals and within statements. A higher value on the dependent variable indicates a more right-wing opinion. Political interest is grand mean centered. *N* = number of individuals.

In Model 2, the framing of the statements is taken into account. This improves the model slightly, as is clear by the decrease of the deviance. Framing has a significant effect on the opinion ($t = 3.11$), which means that a right-wing frame leads to more right-wing opinions across all statements and individuals. However, this significant average effect is not very large: On a five-point scale, people's reported attitudes are in general 0.01 point more right wing because of a right-wing frame. The inclusion of the framing predictor in the equation does not noticeably explain variance at the level of statements, individuals or attitudes. In sum, the model provides evidence for hypothesis 1, but shows a very modest effect size.

In order to test the rivaling hypotheses H2a and H2b and study whether the effect of framing is stronger for people with either more or less political interest (i.e., on the level of individuals), we estimated a random slope for the framing effect in Model 3. The variance in framing effect across individuals is $\sigma_f = 0.001$, which is negligible. This means there is hardly any variance in the framing effect across individuals that can further be explained by another variable. In other words, the framing effect is too similar for different people to further analyze how the effect differs for different people. Indeed, when an interaction between the individual-level variable political interest and framing is added in Model 4, this interaction shows to be nor substantial nor significant ($t = 1.53$). We can therefore find no evidence of a stronger effect among either more or less politically interested VAA users.

4.5 Discussion

This study tests the effects of issue framing in the new context of Voting Advice Applications (VAAs). We carried out a large-scale randomized field experiment during local elections in the Netherlands. By changing the headers of the statements in the VAA, we framed these statements either as a right-wing or as a left-wing issue. Analyzed on an item-by-item basis, we found differences for 5 out of 17 statements. These were generally in line with our expectation that right-wing frames would cause people to report more right-wing attitudes than left-wing frames, and vice versa. However, the size of these framing effects is small. Multilevel analyses considering all statements at once confirmed this conclusion: Framing the VAA statements has a small, but significant, across-the-board effect. On a 5-point scale, people's attitudes are on average 0.01 point more right wing, and the largest effect for a single statement would mean that every 12th user would shift one category on the answer scale, like from "neutral" to "agree". Given the sheer amount of real world users however, we do not consider this inconsequential or trivial.

We formulated two rivaling hypotheses about who is more likely to be affected by the framing of issues: Either the least politically interested users or the most politically

interested users. On the one hand, people with more interest are assumed to have more crystallized opinions, which are more consistent with general principles. On the other hand, in order for frames to affect considerations users hold towards issues, users need to have considerations toward the issue in the first place, which is more likely if they are more interested in politics. Our findings, however, do not support either of these hypotheses. The framing effect did not vary much between users, so one's political interest could not explain variance in framing effects. One explanation of this lack of variation in susceptibility to framing might be that both mechanisms are at work and balance out against each other: Less interested people would be more susceptible to how issues are framed but often failed to recognize how the header was relating to the issue; more interested people better understood this association but also had crystallized opinions about the issues more often. Another explanation could be that less politically interested citizens are less likely to use a VAA, leaving us with a group of relatively interested users, and within this group there is not enough variance in interest to observe differential susceptibility to framing effects.

By manipulating the header of the statements in the VAA and keeping the statements identical, our study can be regarded as an emphasis-framing study using a narrow operationalization of framing: We changed the issue frames while keeping the underlying issue or message exactly the same. Doing this we have overcome some critics of emphasis framing research that the definition of framing has become too inclusive (e.g., Cacciatori et al., 2016; Scheufele, 1999): As it is often hard to keep the content of messages similar while changing the frames, emphasis-framing studies cannot rule out the possibility that attitude changes are attributable to differences in message contents rather than frames (see also Scheufele and Iyengar 2012; Zaller 1992). The effects in this study, however, demonstrate that people change their opinion in response to frames even when the underlying issue remains exactly the same.

The other side of the bargain is that our manipulation of issue framing is quite minimalistic. It might therefore be the case that users have overlooked these headings, and that a manipulation of the framing of statements themselves would yield stronger effects. However, manipulating issue frames in the statements of an actual VAA would not be desirable, given the large effects this could have on VAA results. The conclusion, in any case, should not be that framing of VAA statements does not matter. Previous research has shown the power of simple adjustments to attitude questions; we speculate that with more obtrusive manipulations of VAA statements, effects of a larger magnitude can also be expected in such a context. Future studies could test to what extent people notice the headers and take their suggestions into account in reporting opinions.

Because of the wide reach of VAAs (Marschall 2014) and the persuasive effects their advice has on the party preferences of some users (Wall, Krouwel, and Vitiello

2012) it would not be desirable for these voting advices to reflect anything else than the match between users' opinions and party positions. However, this study presents new evidence of design aspects affecting the vote advice, in addition to the selection of statements (Lefevere and Walgrave 2014) and the choice for a matching algorithm (Louwerse and Rosema 2014). If VAA developers want to offer applications that are as objective and neutral as possible, they need to find out how to avoid steering people's attitudes in any direction.

On a final note, while previous framing effects research mostly relied on lab experiments or survey-based experimentation, this study provides some evidence for the effect of framing on public opinion that is innovative in two regards: First, it finds evidence for framing effects in the new context of VAAs. Users of VAAs have other objectives for filling out survey questions (or statements) than respondents in a regular survey: they take the test spontaneously and out of interest rather than feeling obliged, or in order to receive an incentive. Second, the experiment provides evidence of the issue framing effect with great ecological validity, next to the high internal validity warranted by the experimental set-up. But most importantly, this study shows that if VAA developers want to help citizens to make informed vote choices, and in that way improve democratic representation, they should be aware of the potential powers of framing.

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Chapter 5

The Effect of Voting Advice Applications on Political Efficacy and Knowledge: A Quasi-Experiment

An earlier version of this article won a Top Student Paper Award in the Political Communication Division at the 66th Annual Conference of the International Communication Association, June 10, 2016 in Fukuoka, Japan. The title of the paper was: 'Do Voting Advice Applications narrow the digital divide? A quasi-experiment'.

Abstract

By offering relevant political information in an attractive and easy-to-digest way, and reaching millions of voters, Voting Advice Applications (VAAs) are expected to contribute to political knowledge and internal political efficacy. While previous studies provide correlational evidence or single-group experiments at best, the current study puts the alleged contribution of VAAs to a critical test. To study the causal effect of VAAs, we rely on a quasi-experiment during Dutch municipality elections and use matching techniques to exclude selection bias. We find evidence for an increase in internal efficacy after using VAAs, especially among lower educated voters. We do not find support for the expected gain in factual political knowledge. Our findings confirm the important role of VAAs in the political media landscape of contemporary elections, but do not suggest that VAAs bridge the digital divide.

5.1 Introduction

The steep increase in use of Voting Advice Applications is one of the most significant developments the Internet has contributed to the media landscape during election times in many European countries. Voting Advice Applications (VAAs) ask their users to answer a set of attitude questions on policy issues. Users' positions are compared to the positions of parties or candidates on the same issues, and an overview is presented of the extent to which each party agrees with the user's policy preferences. This has proven to be a successful recipe: web applications like these attract millions of visitors in election times across and beyond Europe (see Marschall, 2014, for an overview). VAAs provide a cost-efficient and appealing way to inform oneself about the political landscape (Garzia, 2010; Marschall & Schultze, 2012; Walgrave, Van Aelst, & Nuytemans, 2008): they make a selection of key issues in an election campaign, summarize the positions of all parties on these issues, and offer a tailored advice to individual users.

The wide reach of VAAs and the relevant information they present in an easy-to-digest way triggers the question whether these web applications have actual engaging and mobilizing capabilities for their users, and whether they contribute to citizen competence to participate in democracy. VAA developers hope to increase their users' understanding of the political landscape and help them in making an informed vote choice (Anderson & Fossen, 2014; De Graaf, 2010). Extant research does provide convincing evidence that VAAs contribute to turnout among their users (Dinas, Trechsel, & Vassil, 2014; Gemenis & Rosema, 2014) and affect vote choices (Alvarez, Levin, Mair, & Trechsel, 2014; Wall, Krouwel, & Vitiello, 2012). However, surprisingly lit-

tle research offers a critical examination of the contribution of VAAs to two essential factors for citizen engagement with politics: factual political knowledge and internal political efficacy. Knowledge of political parties and issues enables voters to decide which party best represents their values and interests (e.g., Delli Carpini & Keeter, 1996). Without internal efficacy, a feeling of competence to understand and participate in politics, people are likely to become disengaged from the democratic process (Kaid, McKinney, & Tedesco, 2007; Kenski & Stroud, 2006; Morrell, 2005). Both factors have been proven to be important for political participation.

The VAA effect on political knowledge has been the focus of previous studies, which looked almost exclusively at the gain in knowledge and interest reported by users themselves. They univocally conclude VAAs have positive effects (Fivaz & Nadig, 2010); especially among women (Marschall & Schmidt, 2010), young and higher educated users (Kamoen, Holleman, Krouwel, Van de Pol, & De Vreese, 2015). Because these studies relied on estimations of VAA-induced knowledge gain reported by VAA users themselves, and did not compare them to non-users, these findings have suboptimal reliability (Walgrave et al., 2008). They do, however, suggest users experience an increase in political competence, or efficacy, after using VAAs. Schultze (2014) and Westle, Begemann, and Rütter (2014) took an important step and measured factual political knowledge. Schultze (2014) subsequently compared the level of knowledge between VAA users and non-users. In his study, knowledge is conceptualized as the capability to correctly identify positions of parties on key issues, which is the kind of knowledge VAAs would contribute to. In the current study we will use a similar conceptualization of political knowledge, but argue that correlational studies like these still suffer from selection bias, which is likely to invalidate the conclusions. Westle and colleagues (2014) compare the level of knowledge before and after respondents used an experimental VAA in mock elections, with the risk of measuring test effects and suboptimal external validity.

Using a large-scale quasi-experiment during the 2014 Dutch municipality elections, this study sets out to offer a captious test of the causal effect of VAAs on political knowledge and internal political efficacy. We draw upon a large sample of voters from nearly all Dutch municipalities that held elections in March 2014. The study includes both voters who used a VAA and voters who were likely to use one, but lived in a municipality in which no VAA was available. Hence, we have a naturally occurring quasi-experiment where VAA use is dependent on municipalities deciding to acquire a VAA, which is a factor that is exogenous to the outcome of the study, political knowledge and efficacy of individuals. This allows us to approximate the causal effect of VAA use on political knowledge and efficacy.

5.2 Political knowledge and efficacy

Democratic processes are conditional on citizens being active, informing themselves on political matters and participate in the political process. Earlier research has found abundant evidence for the positive impact political knowledge has on political engagement (Delli Carpini & Keeter, 1996; Howe, 2006; Popkin & Dimock, 1999). While less often studied, internal political efficacy is also found to boost participation and engagement (Kaid et al., 2007). However, political knowledge and internal efficacy differ in important respects. Factual knowledge of politics helps people to connect their interests with political issues, and therefore to vote for the parties that represent them best. Internal efficacy, on the other hand, is a feeling that one is competent to understand and participate effectively in politics, and has a motivational aspect to it. In contrast to some earlier VAA studies (e.g., Kamoen et al., 2015; Marschall & Schmidt, 2010), the current study distinguishes the two and studies the effect of using a VAA on these concepts separately.

The notion that citizens' knowledge of politics is beneficial for the democratic process is uncontested. In order for citizens to feel engaged with society and to actively participate in democracy, many scholars argue, it is vital to be informed about democratic institutions and the political set-up (Delli Carpini & Keeter, 1996; Galston, 2001; Strömbäck, 2005). As Delli Carpini & Keeter (1996, p. 155) point out: "Less informed segments are [...] less able to discern their political interest, less likely to participate in politics, and, most important, less likely to connect their political interests effectively to their political participation". Furthermore, knowledge is strongly related to political attitudes that are ideologically consistent and to support for democratic values such as tolerance and trust in the political system and public life (Delli Carpini & Keeter, 1996).

There is considerable academic debate on the level of factual knowledge that is required for citizens in order to make rational decisions and participate in democracy (such as which party to vote for) (Galston, 2001; Strömbäck, 2005). While some see the notably low level of knowledge among the electorate as problematic for democracy (Somin, 2006), others argue that – even without basic knowledge of the system – citizens will "get by" using information shortcuts, heuristics and cues (Lupia, 1994; Popkin & Dimock, 1999). The information on which citizens base their voting decisions (such as inflation, gas price, crime, and health care) is obtained accidentally – in everyday life, without actively informing themselves about politics. But even these low-information rationality theorists acknowledge the relevance of some basic knowledge in order to understand and interpret political information. Additionally, several studies showed that citizens make different political decisions were they fully informed (Boudreau & Mackenzie, 2014; Oscarsson, 2007), which suggests that there is merit to

having more knowledge of politics.

We expect VAAs to contribute to specific types of knowledge. For instance, we assume VAA users will gain little knowledge about political institutions. By indicating their opinions towards the policy issues, users will however learn what are the most salient issues in the political campaign, and the result screen will show users which party they agree most with, and what the party's positions are on each issue. Depending on the type of VAA, users will also learn about the political spectrum: whether they are left- or rightwing and conservative or progressive, and where all parties are (Marschall & Garzia, 2014). In addition, there might be learning effects if using a VAA motivates users to look for more information on politics, or discuss politics with others (Marschall & Garzia, 2014; Schultze, 2014). In any case, we expect that the most important type of information that people learn from using VAAs is the positions of parties on important issues, which is how we conceptualized political knowledge in this study.

H1 VAA usage increases political knowledge on issue positions of parties.

Internal political efficacy, or self-efficacy, is another prerequisite for citizens to be engaged with civic society and democracy. Internal political efficacy refers to a feeling that one is competent to understand politics and participate effectively in politics. It is distinguished from external political efficacy, which is a confidence in the responsiveness of the political system, i.e. that their participation means something for the political outcome (Niemi, Craig, & Mattei, 1991). Internal efficacy is an important determinant for engagement with politics: without this political self-confidence, citizens are not motivated to engage in politics or to vote (Kaid et al., 2007; Kenski & Stroud, 2006; Morrell, 2005). This is confirmed in previous research: internal efficacy is found to be a predictor of political participation (Jung, Kim, & de Zúñiga, 2011), and it relates negatively to cynicism (Pinkleton, Weintraub Austin, & Fortman, 1998). Increased levels of political efficacy will hence contribute to a thriving democracy.

We expect VAA use to contribute to political efficacy because they are a remarkably cost-efficient way to inform oneself about the key political issues and the positions of all parties regarding these issues. Because VAAs give a personalized recommendation, they are likely to give users the feeling they are making a better-informed voting decision, since they took all relevant issues into consideration and compared all parties and candidates. This expectation is also in line with previous studies that found that VAA users reported an increase in political understanding (e.g., Kamoen et al., 2015).

H2 VAA usage increases internal political efficacy of citizens.

We do not expect VAAs to affect everyone to the same extent. The capacity of VAAs to contribute to political knowledge and efficacy will depend on whom VAAs can reach via media channels and peer-to-peer publicity (Hirzalla, Van Zoonen, & De Ridder, 2010). In the literature on new political media (like VAAs) and their consequences for political engagement, efficacy and knowledge, two lines of thought are represented. On one side are scholars who believe that the availability of political information on the internet reinforces the same gap or divide that characterizes the use of so-called ‘legacy media’, and hence they call this the digital divide (Norris, 2001). Those who are more likely to use legacy media (newspapers, television, radio) for political information are the same people who are more likely to use new media to learn about politics; usually higher educated people (Wei & Hindman, 2011). New media do not succeed either in bridging the divide between those who are politically engaged and those who are not (Norris, 2001; Scheufele & Nisbet, 2002), and will therefore not increase knowledge or efficacy among citizens who are less knowledgeable. The internet may even widen the divide if it allows people to be more selective in the content they choose to consume. This line of thought is referred to as the “normalizing thesis” (Hirzalla et al., 2010; Kenski & Stroud, 2006).

On the other side are scholars who argue that online media do have the potential to engage citizens who were not engaged before; this is known as the “mobilizing thesis” (ibid). The internet gives people access to a lot of information, offers new ways for involving oneself in politics – like being in direct contact with politicians through social media – and provides applications such as VAAs that summarize and present essential political information in an easy and appealing way (Garzia, 2010; Kenski & Stroud, 2006; Kruikemeier, Van Noort, Vliegthart, & De Vreese, 2013). A meta-analysis of research on the effects of internet use on political engagement does not provide strong support for a positive effect that would narrow the digital divide, but does not point at a clear negative effect either (Boulianne, 2015). Recently, however, scholars have been arguing that instead of looking at the internet in general it is necessary to make a distinction between several kinds of online media, such as online versions of legacy media (websites of newspapers and television shows), online native outlets, party websites, social media and Voting Advice Applications (Dimitrova, Shehata, Stromback, & Nord, 2011; Hirzalla et al., 2010; Kruikemeier et al., 2013).

As the discussion above implies, an important prerequisite for VAAs to be able to mobilize citizens and increase their political efficacy and knowledge, is that people who are not highly educated also use them. Additionally, for VAAs to narrow the divide between those who are informed already and those who have ‘tuned out’ of politics, they should especially be helpful for the latter group. Studies on the users of VAAs, however, suggest that VAAs predominantly reach politically interested, higher educated men (see Marschall, 2014, for an overview) – precisely the group that already

is relatively knowledgeable. However, Chapters 2 and 3 of this dissertation show that apart from a majority of highly politically engaged users, a substantial minority of VAA users – who is generally lower educated – is much less interested in politics and less politically efficacious, and indicates to use the VAA to gain more insight into the positions of parties, or to determine which party to vote for.

When assessing the mobilizing capacity of VAAs, we will differentiate between higher and lower educated people to see whether VAAs succeed in contributing to knowledge and efficacy more for lower educated people, who are more likely to be at the uninformed and less engaged end of the digital divide (Norris, 2001; Wei & Hindman, 2011). VAAs have a wide reach and are being used by substantial shares of the general electorate – including the lower educated, relatively less informed segments. We expect the latter group to benefit most from VAA use in terms of political knowledge and efficacy, because they will be exposed to new information more than higher educated users.

H3 The increase in (a) knowledge and (b) political efficacy caused by VAA use will be stronger among lower educated people.

5.2.1 Estimating causal VAA effects

In the research literature on Voting Advice Applications, an ongoing debate concerns the question how causal effects of using VAAs on any outcome variable should be measured. As mentioned before, studies that rely on estimations of VAA effects that are reported by VAA users themselves (Fivaz & Nadig, 2010; Kamoen et al., 2015) are criticized for being unreliable (Walgrave et al., 2008). Other studies of VAA effects compare actual political knowledge (Schultze, 2014), reported in post-election studies, between voters who used a VAA before the elections and voters who did not. This approach has as weakness that VAA use is not an exogenous variable in analyses of its effects: a positive statistical relationship between VAA use and knowledge could also be driven by more knowledgeable people being more likely to use a VAA. A correlation between VAA use and knowledge or efficacy can therefore not be interpreted as a causal effect.

To accurately study whether VAA use causes higher knowledge, a randomized (field) experiment would be the ideal design. However, as Gemenis and Rosema (2014) point out, it would be neither feasible nor ethical to deny access to VAAs for some and force others to use a VAA during election time. An alternative approach would be to look at spontaneous VAA use, and use statistical matching techniques to minimize the differences between those who used a VAA and those who did not. Theoretically, if these groups are identical on all factors except for VAA use, any dif-

ference in outcome variables can only be caused by the use of a VAA. This approach was used by Gemenis and Rosema (2014), who used a Dutch national election study sample and pre-processed their data using matching techniques to eliminate mean differences in age, education, sex, political knowledge, interest and party identification between those who did and did not use a VAA. After pre-processing, they still found an effect of VAA use on turnout.

In correlational studies like the one by Gemenis and Rosema, however, matching techniques cannot completely make up for the fact that VAA use is not exogenous. A range of unobserved covariates that are not taken into account, but relate to both VAA use and the outcome, might severely bias conclusions about the causal effect (Arceneaux, Gerber, & Green, 2006; Ho, Imai, King, & Stuart, 2007; Levendusky, 2011; Pianzola, 2014). For instance, while the matched groups of VAA users and non-users have identical levels of political interest, the group of VAA users might include more individuals with politically engaged friends. These friends might encourage them both to use a VAA, and to go out and vote. If this unobserved covariate (engaged friends) would have been taken into account, the conclusion could be that there is no causal effect of VAAs on turnout.

Compared to correlational studies, the current quasi-experimental study takes an important step towards studying causal effects of VAAs in a natural (i.e., externally valid) setting. Efficacy and knowledge are compared between VAA-users living in municipalities that commissioned a VAA, and similar people in municipalities without a VAA. In this way the possibility of unobserved confounding effects is greatly reduced, since the decision of municipality councils and VAA developers to make a VAA available is hardly related to characteristics of individual citizens. By balancing background characteristics that are known to predict VAA use, and additionally controlling for structural municipality characteristics, we further diminish any difference between the treatment group (who used a VAA) and control group (who did not use a VAA).

5.3 Data and Methods

On March 19, 2014 council elections were held in almost all municipalities the Netherlands. For 105 of the 392 municipalities that held elections on this day¹, one or more Voting Advice Applications were available to all residents of the municipality. These applications were online for four weeks during the election campaign. After election day, a survey was sent to respondents who were registered at the panel of the Dutch VAA *Kieskompas* (see for a description of the methodology: Krouwel, Vitiello, & Wall,

¹ 19 of the Dutch 392 municipalities did not have elections that day

2014). Over the course of the last decade, these respondents had voluntarily enrolled at the *Kieskompas* panel by leaving their email address at a visit to *Kieskompas* during earlier elections. The survey was sent out by March 24, 2014; a reminder was sent at April 2 and the survey closed at April 6.

The survey has a nearly perfect coverage of Dutch municipalities: respondents from 382 out of 392 municipalities completed the survey. Eleven respondents lived in municipalities that did not run elections on March 19, 2014. In two municipalities that did have elections no one responded; from all other municipalities at least one person filled out the survey. The response rate was 32.7%; the survey was sent to 39,213 people and completed by 12,855 people. We discarded respondents younger than 18 (not eligible to vote). 3917 respondents did not indicate in which municipality they live and/or whether they used a VAA. A VAA (*Stemwijzer* or *Kieskompas*²) was available in 70 municipalities; people in other municipalities could therefore not use a VAA to receive a voting advice for the elections they participated in. To have a sound and strict comparison, we only included in our analyses those respondents who lived in municipalities for which *Stemwijzer* and/or *Kieskompas* was available and also indicated they used at least one of these (the treatment condition, $N = 3,522$), and those living in non-VAA municipalities who indicated they did not use a VAA (the control condition, $N = 2,223$)³.

Our final sample size is $N = 5,745$. As these respondents are VAA users who signed up for the *Kieskompas* panel voluntarily, they are likely not representative of the general Dutch population in general. However, our aim is to make inferences about VAA effects on likely VAA users. That is people who are likely to use a VAA when one is available and therefore will actually be subject to the ‘manipulation’ we study. Our sample offers a very good reflection of that group of citizens. Additionally, this quasi-experiment incorporates a realistic and natural treatment (the VAA) that takes place in a natural context (whenever and wherever people prefer to use a VAA).

The post-election survey included questions about respondents’ sex, age, educa-

² *Stemwijzer* and *Kieskompas* are the two Dutch VAAs that are well known and widely used. In the municipality elections a third VAA, *De Stem Van ...*, was available in some municipalities, but used by too few people (172) to include in our analysis.

³ If we would include in the control condition those living in VAA-municipalities who did not use a VAA ($N = 947$), we are comparing VAA users with less similar people, increasing the likelihood of selection bias. Those living in non-VAA municipalities but indicated they did use a VAA ($N = 2,242$) might have used the VAA of a neighboring municipality, or the municipality where they work. Because they could not learn about issues, party positions and their match with parties in the municipality for which they voted, and because we cannot be sure what type of treatment they actually received, we do not take the effect of their VAA experience into account. We matched those who complied with the treatment (using the VAA when available) to those who complied in the control condition (not using a VAA when no VAA is available for their region), so that eventually we are simulating a field experiment in which all participants are complying with the treatment assignment.

tion, occupation and degree of urbanization of their living environment. Internal political efficacy was measured by three items from the widely used scale developed by Niemi et al. (1991): “I think that I am better informed about politics than most people”, “I feel that I have a pretty good understanding of the important political issues facing our municipality” and “I consider myself well-qualified to participate in politics”, all measured with a Likert scale. Together these items have a Cronbach’s α of .73. We combined them on a scale ($M = 3.5$, $SD = .8$, range 1 – 5).

Studies on political knowledge, and its causes and consequences, often conceptualize political knowledge as ‘civics-textbook’ kind of information like number of seats in parliament, recognizing politicians, or the current political situation (Delli Carpini & Keeter, 1996; Fraile, 2013; Levendusky, 2011). The information that VAAs provide, in contrast, is about policy proposals of political parties and candidates, ideological positions of parties and candidates relative to each other, and the position of the VAA user in this political spectrum (Garzia, 2010). As it is unlikely that this leads to more knowledge about political institutions, appearance of politicians or current affairs, we follow Schultze (2014) and Westle et al. (2014) and conceptualize political knowledge as the ability to correctly recognize party positions on a set of exemplary political issues.

We asked respondents to identify the positions of six political parties on five political statements. As the VAAs included in this study were developed for a large number of municipalities and therefore included different issues in each municipality, it was impossible to directly assess what users learned from VAAs about policy positions in their own municipality. We were not able to develop a measure of knowledge gain that was tailored for each municipality-specific VAA separately. Moreover, we want to study whether using a VAA contributes to users’ political knowledge above and beyond recalling party positions on single issues. Therefore, we asked respondents to identify the positions of six national parties that are also represented in most municipalities, and we selected a number of issues that relate to both national and local issues, and to ideological divisions as much as possible.

The knowledge items were taken from the VAAs Kieskompas and Stemwijzer that were developed for the 2012 general elections. We selected the following statements: “The government budget for development aid can be reduced”; “The government should intervene more with the economy”; “Marriage officiants are allowed to refuse services to gay couples”; “Taxes on meat should be increased”; and “Unemployment benefits can be reduced”, and asked respondents to indicate which parties agreed with which statements. The correct answers were also taken from the VAAs, which use standardized methodologies to calibrate party positions on these statements (Krouwel & Van Elfrinkhof, 2013).

The eventual knowledge score is an index with 30 possible values: for each party

and statement combination for which respondents correctly indicated whether the party agreed or not, respondents received one point. If respondents did not check any party/statement combination (i.e., if they did not indicate any party to agree with any statement) their answers were recorded as missing (resulting in 53 additional missing values). The index was rescaled to make it comparable with internal efficacy ($M = 3.5$, $SD = .5$, range 1 – 5).

5.3.1 Covariate balance

In a randomized field experiment, which would be the golden standard for studying causal effects, there are no dependencies between using a VAA and any background characteristic or other potential confounder (Gerber & Green, 2012). The semi-random allocation of VAAs over Dutch municipalities creates a quasi-experimental setting, in which there should be no systematic relations between someone's VAA use and their (observed or unobserved) background characteristics. In other words, because the reason that someone uses a VAA is an exogenous factor – municipalities deciding to commission VAA developers to make one available – there are no reasons to expect that those who use a VAA are a systematically different selection of people than those who do not use a VAA. However, VAA availability is not completely randomly assigned so we still expect differences between VAA users and non-users. For that reason, we pre-process our data by statistically balancing VAA users and non-users on their individual background characteristics (covariates), using entropy balancing. The purpose of this pre-processing is to make sure the distributions of covariates is identical between the treatment and control group, which further reduces dependencies between VAA use and background characteristics. In addition, in our analyses we control for municipality characteristics to take into account the fact that some municipalities will more likely commission a VAA than others.

Entropy balancing reweights the observations in the control group to reach a distribution of covariates that is identical to the distribution of covariates in the treatment group, as specified by the researcher (Hainmueller, 2012). For balancing the subsamples of users and non-users, we specified the covariates age, education, sex, occupation (employee / entrepreneur / retired / student / unoccupied) and degree of urbanization of their living environment⁴. In addition, we included interactions between all covariates to make sure the means of one covariate (e.g., age) is the same across each level of another covariate (e.g., education). We included nine interactions; because the occupation variable had many small categories, we did not include interactions between

⁴ In order not to 'control away' possible mediated effects of VAA use on efficacy and knowledge, we did not control for characteristics that could be affected by the treatment, such as political media consumption.

occupation and other covariates (the weighting still ensures equal distribution of cases over the categories of occupation in both subsamples).

The entropy balancing is specified with, for the numerical variables, the same mean, variance and skewness across treatment groups. For the binary variables (including dummies of categorical variables) exactly adjusting the mean also exactly adjusts the variances. Our large sample size allowed us to put relatively strict constraints on the entropy balancing: we included a total of 11 covariates and almost all interactions between them, and for the numeric covariates we constrained the variances and skewness to be the same across groups as well, in addition to the means.

Figure 5.1 shows difference-in-means tests for all covariates and the interactions, for the unmatched sample, the sample that is processed with entropy balancing and the exactly matched sample (see footnote 5). While the means of most covariates and interactions differ considerably and significantly, after covariate balancing all means are identical, and all p -values are insignificant. Hence, after pre-processing the data, differences in knowledge and efficacy should be the result of the treatment.

In addition to covariates relating to individual respondents, municipalities also differ on structural characteristics like the population size and income. Theoretically these characteristics could both relate to the likelihood that a VAA is available (Klein-nijenhuis, Van de Pol, Van Hoof, & Krouwel, 2015), and to average levels of knowledge and efficacy, in which case these factor would result in a spurious relationship. Since our sample is a self-selection of people who used a VAA before and are plausibly very similar on relevant aspects, we do not expect them to differ across municipalities. However, to make sure our results are robust we controlled our analyses for the following characteristics: number of inhabitants, share of inhabitants under 20 years old, average household income, and share of non-Western immigrants living in the municipality. These municipality data were obtained through the Dutch Central Office for Statistics (CBS).

In sum, we will compare individuals who used a VAA with very similar individuals, to whom a VAA was not available. Hence, the treatment effect we arrive at is the treatment effect on the treated (Ho et al., 2007). In other words, we estimate the effect of VAA use on efficacy and knowledge for those who are likely to use a VAA, rather than for the population at large (including those who would probably never voluntarily use a VAA) (see Gerber & Green, 2012, p. 134, for a discussion).

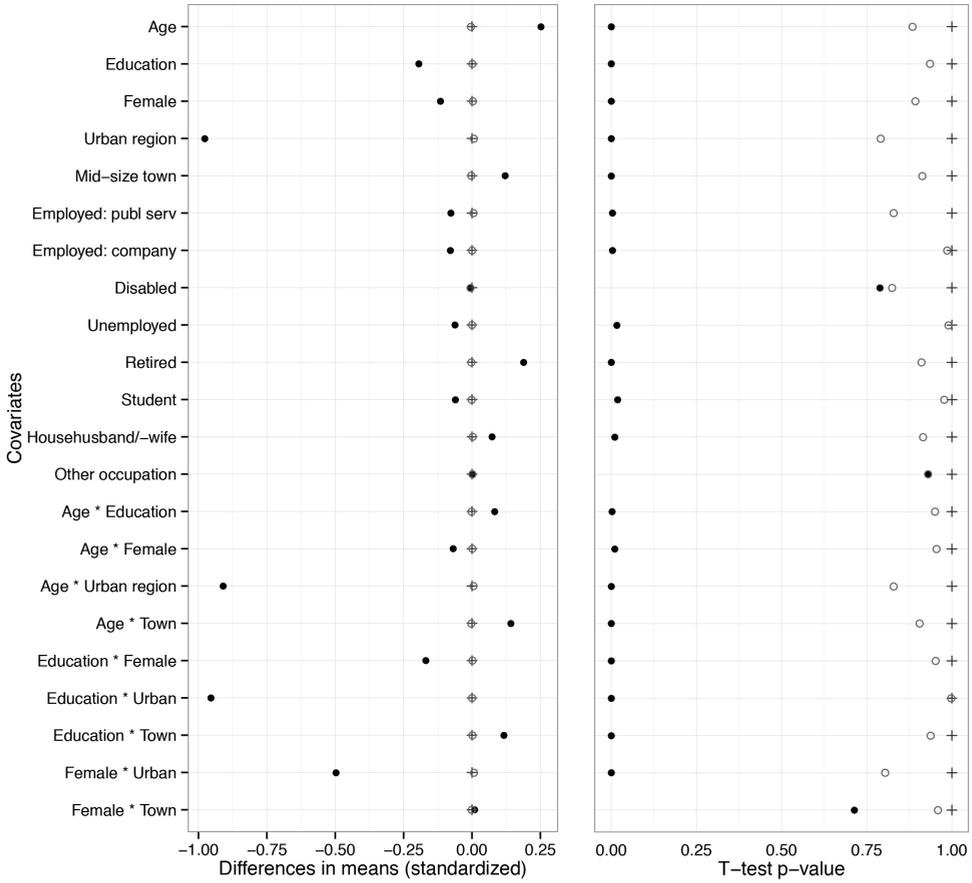


Figure 5.1: T-tests of differences in means for all covariates, in three samples. The black dots represent, respectively, the differences in means and the t-test p-values for the unmatched and unweighted sample. The dark grey pluses represent the exact matched sample and the light grey circles represent the sample processed with entropy balancing.

5.4 Results

5.4.1 Political knowledge

We test our hypotheses by running OLS regressions on the sample that was not pre-processed and secondly on the sample that was reweighted according to the entropy balancing procedure. For each approach, first the mean difference in efficacy is tested between VAA users (in municipalities with a VAA available) and non-users (in non-VAA municipalities), and in a second model the interaction with education is added. In all models, coefficients are controlled for structural municipality characteristics. Hypothesis 1 predicts that VAA use leads to higher levels of knowledge of party positions. As Table 5.1 shows, we could not find any evidence for a positive effect of using VAAs on political knowledge⁵. The first two models show the results of our quasi-experiment without preprocessing the data. In these models, the coefficient for the VAA effect is negative and statistically insignificant. In the sample that is pre-processed with entropy balancing there is even a significant negative coefficient, indicating VAA users are generally less knowledgeable about politics than voters who did not use a VAA. Hence, these results do not confirm Hypothesis 1. Also Hypothesis 3a is not supported: we could not find evidence for a stronger VAA effect on knowledge among lower educated people (see also Figure 5.2).

⁵ As a robustness check, we also pre-processed our data with exact matching. One-to-one exact matching matches observations in the treatment condition (VAA use) with observations in the control condition that have identical values on all specified covariates and their combinations (i.e., 37 years old, female, vocational training, living in a midsize town, self-employed), thus eliminating all associations between VAA use and observed background characteristics (Ho et al., 2007). While this approach ensures the best similarity between treatment and control groups (see Figure 5.1), the drawback is that observations for which no exact match can be found are discarded, which in our analyses means only 2,156 observations could be retained. In the sample that was pre-processed with exact matching, we found the same results: no positive effect of VAA use on knowledge; also no moderation effects by education. The significant negative effect in the entropy balanced data could not be replicated using exact matching.

Table 5.1: Effect of VAA use on political knowledge

	Not pre-processed		Entropy balancing	
	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)
Intercept	3.54*** (0.01)	2.98*** (0.04)	3.58*** (0.01)	2.90*** (0.04)
VAA use	-0.02 (0.02)	-0.10 (0.06)	-0.06*** (0.02)	-0.01 (0.06)
Education		0.12*** (0.01)		0.14*** (0.01)
VAA × education		0.02 (0.01)		-0.01 (0.01)
§				
<i>N</i>	5,692	5,609	5,571	5,571
<i>R</i> ²	0.01	0.10	0.01	0.10

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

§Coefficients are controlled for the structural municipality characteristics *number of inhabitants, ratio of inhabitants under 20, average disposable income per household and percentage of non-Western immigrants*. These characteristics have been omitted from the table for reasons of conciseness.

5.4.2 Internal efficacy

For the outcome variable internal political efficacy, we followed the same procedure. Hypothesis 2 predicts that VAA use leads to a higher internal political efficacy. Table 5.2 shows the regression analyses of the effect of VAA use on internal political efficacy.

When comparing users to non-users in the data that was not pre-processed, there is a modest effect of VAA use on political efficacy: on a five-point scale, efficacy is 0.07 points higher for people who use VAAs. Because there are still some differences between the users and non-users with respect to (observed) relevant background characteristics, this estimation of the effect can be biased. After adding education as a moderator, the relation between education and efficacy appears to have about the same magnitude as the relation between VAA use and efficacy. Without pre-processing the data, no moderation with education is visible.

In the entropy-balanced data, the findings of the first model prove to be robust. A similar positive effect of VAA use on efficacy is found: modest but statistically significant. This supports Hypothesis 2. In addition, the entropy-balanced sample shows that the VAA effect is negatively moderated by education. This is in line with Hypothesis 3b: the higher one is educated, the smaller becomes the positive effect of VAA use

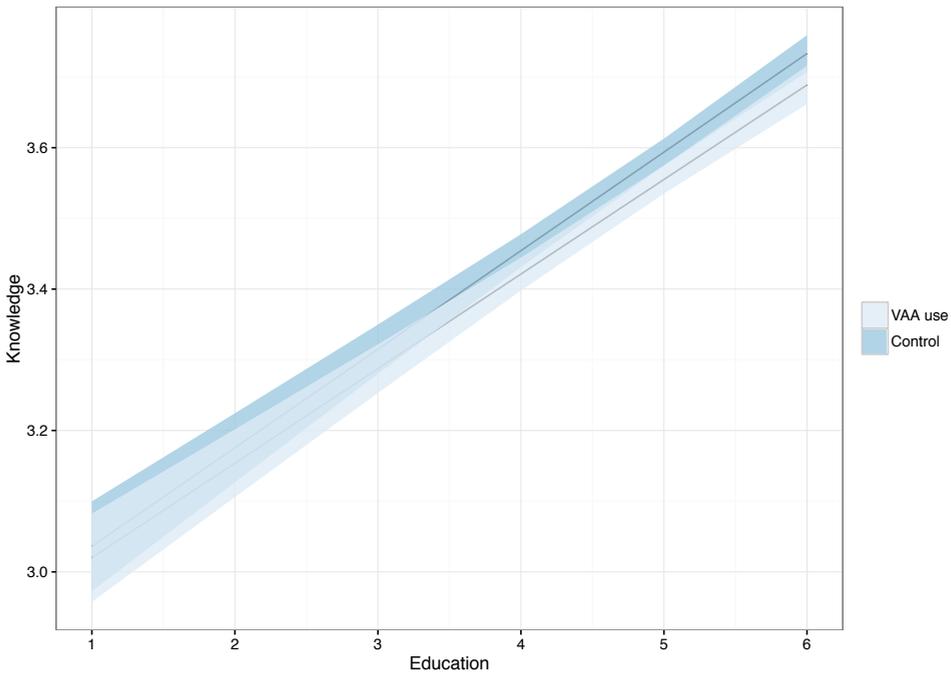


Figure 5.2: Moderated effect of VAA use on political knowledge by education.

on efficacy. In other words, the effect is stronger for lower educated people. Figure 3 illustrates this effect, which is in the hypothesized direction: the increase in efficacy caused by using VAAs is higher for lower educated people^{6,7}.

⁶ The robustness analysis on the exact matched data also shows a significant VAA effect on internal efficacy. A moderation effect by education could however not be found, which may be explained by the selection of observations: in the entropy-balanced sample almost all observations could be retained while in the exact matched sample more than half of the observations had to be discarded. This results in a more narrow distribution of education in the latter sample, with less lower educated people ($M = 4.9$, $SD = 1.0$, range: 2–5) compared to the entropy-balanced sample ($M = 4.7$, $SD = 1.2$, range: 1–5).

⁷ The fact that the interaction is not found in the sample that was not preprocessed points at a suppression effect. In this sample, VAA users are generally higher educated than non-users. The effect of using VAAs is greater for lower educated people, but because the treatment group is on average higher educated than the control group, this interaction effect is masked. In the entropy balanced sample, where the distribution of education is equal across groups, the interaction between treatment and education can be observed.

Table 5.2: Effect of VAA use on political efficacy

	Not pre-processed		Entropy balancing	
	<i>b</i> (s.e.)	<i>b</i> (s.e.)	<i>b</i> (s.e.)	<i>b</i> (s.e.)
Intercept	3.46*** (0.02)	2.73*** (0.07)	3.46*** (0.02)	2.48*** (0.06)
VAA use	0.07* (0.03)	0.18* (0.09)	0.07** (0.02)	0.42*** (0.09)
Education		0.16*** (0.01)		0.20*** (0.01)
VAA × education		-0.02 (0.02)		-0.07*** (0.02)
§				
<i>N</i>	5,745	5,658	5,619	5,619
<i>R</i> ²	0.01	0.05	0.01	0.06

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

§Coefficients are controlled for the structural municipality characteristics *number of inhabitants, ratio of inhabitants under 20, average disposable income per household and percentage of non-Western immigrants*. These characteristics have been omitted from the table for reasons of conciseness.

5.5 Discussion

This study is the first to examine, in a real-world setting, the causal effect of Voting Advice Application use on political knowledge and on internal political efficacy. A quasi-experiment was carried out, and the data were pre-processed using matching and covariate balancing to avoid selection bias, allowing us to study the causal relation between VAA use and efficacy and knowledge. We found support for the hypothesis that using a Voting Advice Application during election time increases political efficacy; after using a VAA in the municipality elections, people more often felt they were informed about and had a good understanding of politics. This effect is robust across matching approaches, but is small in magnitude. Furthermore, the effect is found to be larger for lower educated people, which is in line with our expectations. Generally, lower educated people are less efficacious than higher educated people, but after using a VAA this difference becomes smaller.

The results indicate that the contribution of VAAs to political understanding, as propagated by many VAA developers and assumed by governments who finance VAAs (De Graaf, 2010; Kleinnijenhuis et al., 2015), mostly relates to a *feeling* of understanding; political knowledge proves to be harder to affect than political efficacy. While us-

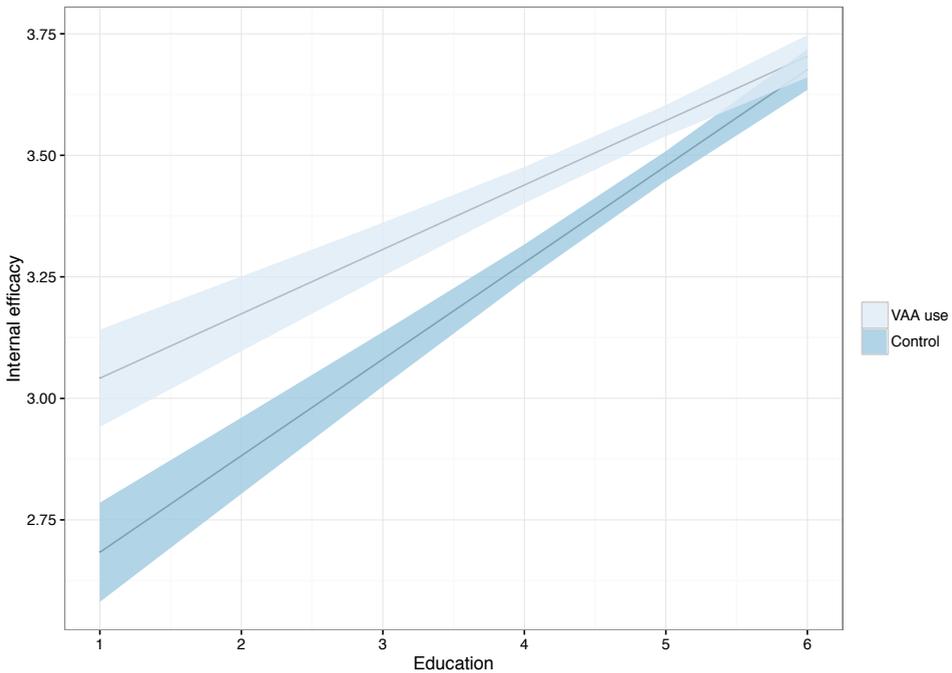


Figure 5.3: Moderated effect of VAA use on political internal efficacy by education.

ing an attractive and interactive internet tool does potentially make people feel more efficacious – more confident about their political choices and preferences – we do not find that it actually informs people. In one model we even found a negative VAA effect: people who used a VAA during the campaign were, on average, less knowledgeable than non-VAA users. While this finding is not robust across our matching methods, it could hint at a dynamic where voters who consulted a VAA *feel* like they are sufficiently informed and those who could not use a VAA put more effort in finding out about party positions. Additionally, we expected the impact on knowledge to be larger for lower educated people, but could not find support for this hypothesis either.

An important remark to make, however, is that we conceptualized political knowledge as the ability to correctly identify the positions of parties on ideological issues at the national level. While these measures were optimal given the design (it was not possible to tailor our measure to each of the 382 municipalities), many political issues that were covered by the local VAAs were of a more practical character: increasing highway capacity, building a wind park, housing issues, and such. It is conceivable that there is an actual effect of VAAs on knowledge of local issues and party positions that we were not able to distinguish. However, studying the VAA effect on a municipi-

pality level allowed for this quasi-experimental set-up, leading to a better estimate of the causality of the effect.

All in all, we developed a demanding test of the causal effect of VAAs on political efficacy, and especially of the effect on knowledge. First, we measured the outcome variables only after the elections, which is one to five weeks after people used the VAA. Secondly, in our sample, efficacious and engaged citizens are likely to be overrepresented. Respondents self-selected into VAA usage, then into leaving one's email address to join surveys about politics and VAAs, and finally into responding to the survey we sent them after the municipality elections. This may lead to a ceiling effect: we look for an increase among those who already have high levels of efficacy and knowledge. On the other hand, VAA usage in the Netherlands is very widespread (Marschall, 2014), so people who self-select into VAA use do not necessarily have to be a niche of highly politically efficacious and knowledgeable citizens. And – equally important – we test for the impact of VAAs for the group of people who would actually use VAAs, rather than those who would never use them anyway. In short, we might have failed to capture some of the effects on efficacy and knowledge because of our conservative set-up, but the effects we did find prove to be relevant and very robust.

The fact that VAA availability – and hence VAA usage – is an exogenous variable has important implications for our design. In most cross-sectional studies of media effects, respondents self-select into media usage, which makes usage an endogenous variable and this leads to findings suffering from selection bias. Matching on some observed covariates does not solve this problem, as there are numerous reasons why people choose to use or not to use the medium of interest, and most of these cannot be measured and accounted for. However, since in our study VAA usage is an exogenous variable, we expect no systematic relations with (measured and unmeasured) individual covariates. Matching and covariate balancing, and controlling for municipality characteristics, further reduces the imbalance that still exists between VAA users and non-users. Hence, our study design approximates a randomized experiment.

Our findings partially support the mobilization thesis that online media are capable of bridging the so-called digital divide (Kenski & Stroud, 2006; Norris, 2001; Scheufele & Nisbet, 2002). Lower educated people, who generally have lower levels of political internal efficacy (and more often find themselves at the disengaged side of the digital divide), are the ones who gain most in political efficacy from using VAAs, narrowing the divide. Considering the huge popularity of VAAs, they have a great potential to engage people in politics and by that to increase the quality of democracy (Strömbäck, 2005). However, if VAAs aspire to contribute to factual political knowledge they should attempt to improve their design in such a way that users are challenged to gain more knowledge about key issues and party positions.

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Chapter 6

General Conclusion and Discussion

This dissertation sheds light on the way VAAs affect understanding of politics and political issues, and how this interacts with the resources and motivations of VAA users. This last chapter distills the general conclusions about the effects of VAAs on political understanding, based on the four empirical chapters of the dissertation. Subsequently, implications are discussed for democracy and the study of VAAs and political information in general. Finally, I will discuss limitations and suggestions for future research.

6.1 Main Findings

The four studies combined in this dissertation lead to four general conclusions. The first general conclusion concerns users of VAAs: they are more diverse than earlier expectations and findings suggested (e.g., Marschall, 2014; Norris, 2001). VAAs being merely a ‘fun’ tool for the politically most interested citizens is only part of the story – a substantial share of the users feels less efficacious about politics, does not follow the campaign closely, and is not very sure about their voting decision. Many of them use the VAA to learn about politics. In the national elections about 40 percent of users can be described in these terms, and in most second-order elections these types of voters are the majority of VAA users.

More specifically, three types of VAA users can be distinguished. These have similar usage patterns across supranational, national, and subnational elections. This typology, developed in Chapter 2, consists of three VAA user types: *checkers*, *seekers* and *doubters*. Checkers are the most certain about their voting decision, have most interest in the campaign and feel most efficacious about politics. They mostly use VAAs as entertainment, or to check whether the VAA will advise them to vote the party they already decided to vote for. Seekers, in contrast, use VAAs with the purpose of increasing their understanding of politics. They are generally less interested, less internally efficacious and less decisive about their voting decision, so they mostly use VAAs to determine their vote choice or learn about party positions. Doubters are similar to seekers – they are relatively less efficacious and interested – but they are especially less efficacious about the responsiveness of the government and have a less clear motivation to use VAAs.

In line with expectations based on campaign volatility literature (Fournier, Nadeau, Blais, Gidengil, & Nevitte, 2004; Van der Meer, Van Elsas, Lubbe, & Van der Brug, 2013), I found that the politically interested checkers use VAAs relatively *early* in the campaign and that the less interested and less decisive seekers consult VAAs relatively *late*, close to election day. VAA use by doubters is constant over the course of the campaign. This pattern is found for each type of election: as the elections come closer, VAA use increases dramatically, and the peak in usage leading up to election day is mostly due to the group of seekers.

Although the same types of VAA users can be identified in first- and second-order elections, and they show the same usage patterns across the election campaign, there are some remarkable differences across elections, as described in Chapter 3. In second-order elections, VAA users are generally less certain about their vote choice, feel less efficacious about politics, and therefore more often use VAAs to gain understanding of the election at hand and to determine their vote choice. This general difference is also reflected in the composition of VAA users: second-order election VAAs are relatively more often used by seekers and doubters. Additionally, in second-order elections, all types of users generally use VAAs much later in the campaign.

These findings can be explained by the second-order national election literature: voters are generally less engaged and interested because less is at stake in such elections (Heath, McLean, Taylor, & Curtice, 1999; Hobolt & Wittrock, 2011). Not in line with this literature, however, is the higher interest in the political campaign by VAA users in second-order elections. This unexpected finding might be explained by the fact that political information is scarcer in these elections, and voters have to put more effort in becoming informed. In the supply of political information in second-order elections, VAAs seem to have an important role.

The second general conclusion of this dissertation is that users' understanding of political issues can be affected by how these issues are framed. Chapter 4 shows how, by changing the headers above the statements in an actual VAA, users' opinions were affected. By changing only the headers, I use an operationalization of emphasis framing that is as narrow and minimal as possible and resembles equivalence framing. The actual statements were kept the same across versions, making sure that the only factor explaining the difference in attitudes was the frame suggested by the headers, not any other aspect of the statement. Still, I found a statistically significant, albeit modest, effect of this framing variation. This subtle variation pushed people's opinions in the direction of the frame. In other words, if issues were framed in a right-wing way, users tended to give slightly more right-wing opinions on the issue. This was found both among very politically interested and less interested people.

Additionally, this framing effect is yet another way in which design aspects affects the voting recommendation people receive, in addition to other wording effects, statement selections, calculation method and way of presenting the advice (see e.g., Germann & Mendez, 2016; Lefevere & Walgrave, 2014; Rosema, Anderson, & Walgrave, 2014). One possible interpretation of the results reported in Chapter 4 is that VAA developers do not have to worry about the way issues are framed, as only slight differences are found among an exceptionally large sample. I argue, on the contrary, that the effect of this subtle manipulation indicates that there must be larger effects of issue framing by statements themselves (rather than the headers). VAA builders have to summarize a political issue in one or two lines, and any formulation they choose

will contain a particular framing of the issue.

The third conclusion is that, while VAAs could affect how users understand particular issues, no evidence was found for an increased understanding of party positions after VAA use. About one in every four to five VAA users use the tool to gain more insight into the positions of parties (see Chapter 3), and lower educated people more so than higher educated people (see Chapter 2). Arguably the most important type of information provided by VAAs is the positions of parties on salient issues, so I expected people to be better at identifying these positions, especially lower educated people. However, the positive relation between VAA use and political knowledge as found in earlier studies (Schultze, 2014; Westle, Begemann, & Rütter, 2014)¹ did not hold in the causal test reported in Chapter 5.

One reason for the different findings might be that this test was quite demanding: the effect on knowledge was measured one to five weeks after using the VAA. Additionally, it was measured among a group of already quite knowledgeable people, which could mean that there is a ceiling effect. Another reason for the inconclusive findings could be that earlier studies looked at national elections and mock elections, while Chapter 5 studied the effect in the context of municipal elections. In these local elections, there might be a less clear connection between party ideologies and their positions on concrete issues. In any way, there is no clear contribution of VAA use to knowledge about party positions, and more research is needed on this topic.

Conclusion four is that VAA use leads to more internal political efficacy. After using a VAA, users more often felt they were informed about politics and had a good understanding of politics. Although small, this effect is significant across the board, and in line with the expectations. Using VAAs will give people the feeling that they are making a more informed voting decision, since they took all important issues into considerations and compared all parties on these issues. Also in line with the expectation is that lower educated people are generally less efficacious, and the gain in efficacy is largest for them. This might be because they are on average less often exposed to political information and therefore more often feel like they learned something new.

Summarizing, VAAs are used by different types of voters with different resources and motivations. While the most interested and efficacious voters are not using VAAs for a better understanding of politics, less interested voters do indicate they use the VAA to learn about politics. However, neither of these groups of citizens actually profits from using a VAA in terms of knowledge about party positions. Resources do matter for efficacy: VAA use contributes to internal efficacy for everybody, but even

¹ As a matter of fact, Westle and her colleagues (2014) emphasize that the effect they find after using the *Wahl-O-Mat* is small and positive overall, but for some issues respondents were less successful in identifying the correct party positions. Also the number of “don’t know” answers increased after using the VAA

more so for lower educated citizens. So, while VAAs do not seem to close the knowledge gap, it does contribute to closing the efficacy gap. Finally, there is no difference between more and less interested people in the way framing of issues in VAAs affects their understanding of these issues.

6.2 VAAs and citizen competence

Taken together, do Voting Advice Applications contribute to citizen competence? This dissertation demonstrates that, because of the wide reach of VAAs and the diversity of their users, VAAs are a potentially powerful tool to mobilize citizens who are less interested and politically engaged. Especially in second-order elections, where a majority of VAA users can be described as seekers or doubters, VAAs seem to gratify information needs of many visitors who otherwise do not consume much political information. The picture that arises from Chapters 2 and 3 is more optimistic about the capacity of VAAs to reach disengaged citizens than earlier research on VAA users, which concluded that the average VAA user is very politically interested anyway (Marschall, 2014; Marschall & Schultze, 2015). This new insight is the result of looking at differences between users instead of studying the average user, and it is the result of taking into account second-order elections, where VAAs are increasingly often deployed as well (Sudulich, Garzia, Trechsel, & Vassil, 2014).

VAA developers aim to contribute to citizen competence, and hence to democracy, by engaging more voters with politics, increasing political understanding and helping voters to make better-informed voting decisions (De Graaf, 2010; Marschall & Schmidt, 2010; Nuytemans, Walgrave, & Deschouwer, 2010). Hence, they are designed to give users more insight into the positions of parties on key issues, and are aimed primarily at those who are not already informed and have not already decided which party to vote for. The findings suggest that this purpose of VAAs resonates more with the needs of users in sub-national elections, because in such elections users more often indicate to be unsure about their vote choice, to be not very efficacious and to be interested to learn about party positions.

One reason for this might be that VAAs, implicitly, have the issue voting model (Downs, 1957) as a point of departure. This model assumes that voters have opinions on concrete issues, and want to elect politicians based on their agenda concerning these issues for the upcoming period of office. Therefore, this model of the voter decision process might fit better with local and regional elections, where ideology potentially plays a more modest role, and campaigns are about very practical and proximate issues that do not necessarily all have ideological loadings, such as whether there should be a new highway between A and B. Because these issues are very concrete and specific, voters might also more often have readily available opinions about them, com-

pared to national elections where many issues are abstract, general, and more remote to the daily lives of voters, such as whether the government budget for development aid could be reduced.

In view of the different groups of citizens VAAs manage to reach, and the extent to which they seem to fulfil information needs, it is striking that VAAs do not appear to contribute to political knowledge – neither for those with many resources nor for those with less. Using VAAs does not change the knowledge gap, or digital divide – hence this corroborates the normalization thesis that the traditional boundaries between un-informed and informed citizens are not affected by online media (Bentivegna, 2006). On the other hand, VAAs do contribute to internal political efficacy, especially so for lower educated voters. This has a clear potential for a mobilizing effect; VAAs seem to close the gap in political efficacy, and efficacy is a crucial determinant of political engagement and turnout (Kaid, McKinney, & Tedesco, 2007; Kenski & Stroud, 2006; Möller & De Vreese, 2013). VAAs may even lead to more political knowledge in an indirect way, if citizens pay more attention to political information because they feel more efficacious about politics.

In any way, VAAs turn out to gratify different needs for different groups of people, and their popularity indicates that many people believe it is worth the time and effort to use these tools and think about political issues. Many of them are people who do not inform themselves about politics that much, and they appear to be mobilized by using a VAA, and feel more efficacious because of using a VAA. These are some clear reasons that VAAs should be available during elections.

It is, however, important for users to realize that the VAA result is subject to many assumptions, biases and design choices, and that the VAA result should therefore not actually be interpreted as a voting advice. VAA developers themselves warn about this, but it is important to keep repeating this message (Wagner & Ruusuvirta, 2011). I suggest VAAs can best be viewed as tools that offer a concise summary of party manifestos on a set of concrete political issues, and help users to compare the policies and agendas proposed by parties against each other and against their own opinions. In this way, they can help citizens to look beyond campaign slogans and horse race-like coverage of the election campaign, and focus on issues and positions of parties (Walgrave, Van Aelst, & Nuytemans, 2008).

6.3 Deliberative VAAs

In addition to being informed and to participate politically, citizen competence also encompasses the competence to develop one's own opinions about an issue, irrespective of how the issue is presented (Druckman, 2001). With respect to this dimension of citizen competence, there is some room for improvement in VAAs. The issue fram-

ing experiment in Chapter 4 shows that people's understanding of an issue could be affected by VAAs, even by very subtly suggesting, using one or two words, what the issue is about. This might indicate that users are in need of more information to make a judgment about the issue. Instead of trying to be as succinct as possible about issues (and inevitably framing issues in certain ways anyway), VAAs could also do more to inform users about issues and provide background information, arguments and possible positions on an issue. In other words, it could be beneficial to have a stronger focus on developing opinions about political issues as a goal, rather than finding a party that matches supposed fixed opinions.

Fossen and Anderson (2014) suggest that a "deliberative VAA" might help to overcome a gap in having well-considered views about what should be done about particular issues, and what positions parties should have, rather than knowledge about what positions parties do have on issues. The gap in having developed opinions about issues is more worrisome to political scientists and theorists (e.g., Caplan, 2007; Fishkin, 2009) than the gap in knowledge about party positions which traditional VAAs try to address. Next to providing background information, more deliberative VAAs could encourage voters to exchange opinions with others, and make voters aware of inconsistencies in their opinions (e.g., favoring an increase in spending on health care and lowering taxes and keeping the budget balanced at the same time) (Fossen & Anderson, 2014).

One initiative that is interesting in this regard is the Political Balance Scale, a Dutch VAA addressing the inconsistencies in voters' preferences, forcing users to choose between policy programs (for the philosophy behind this VAA, see Korthals & Levels, 2016). This tool also meets complaints about traditional VAAs that they give voters the impression that a lot can be spent and arranged by the government while lowering taxes at the same time and ignoring the need to make trade-offs (*"Eindhovense raad: Te veel gratis bier in Stemwijzer"*, 2014).

Regular VAAs, like *Stemwijzer*, *Kieskompas*, *Smartvote* and their international spin-offs, could also do more to encourage users to reflect about their opinions. For example, VAAs could provide arguments pro and con each position with every statement. Users then have many different views at their disposal and will be able to make a more informed judgment about the issue. *Stemwijzer* offers the arguments that parties have for their positions on each statement, in a pop-up window after users click a button. This option could be made even more obtrusive, and to avoid steering people's opinions by following their favorite parties, the party labels could be blinded². If users spend more time developing an informed opinion about issues, they will probably also pay more attention to the positions that parties have on these issues, and hence increase their political knowledge.

² This suggestion was made by Jonas Lefevere at a conference on VAAs.

6.4 Limitations and Suggestions for Future Research

The scope of this dissertation is limited to VAAs, and within the study of VAAs it is limited to the way VAAs affect understanding of politics in Dutch elections. Still, this is studied from multiple perspectives and multiple contexts are taken into account. Additionally, and naturally, the studies reported in this dissertation suffer from a number of more specific shortcomings. The specific limitations of the separate studies are discussed in the respective chapters. Here, I will discuss the general limitations this dissertation deals with, and suggest some directions for future research.

Doing research on VAAs offers interesting opportunities, like large samples, data from minute to minute, and the possibility to carry out a field experiment involving all users, randomly distributed over experimental conditions and a very precise measure of the effect. VAA research however also introduces a couple of particular challenges. A first challenge is related to external validity. Unlike in most research on public opinion, campaign dynamics or media use, it is not evident what the population of interest exactly should be. Do we want to draw conclusions about all citizens of the Netherlands? All voters? All VAA users? Or all users of one particular VAA, in a particular election or constituency?

Most studies in this dissertation (those reported in Chapters 2, 3 and 4) are based on log data from *Kieskompas*, which means no inferences can be made about non-users. I do, however, argue that users of *Kieskompas* are to a large extent comparable to users of other VAAs in the Netherlands and across Europe. Studies of VAA users without exception found users to be more often male, relatively young and highly educated, and relatively interested in politics (for a summary, see Marschall, 2014). Chapter five is different from the other chapters in that it includes non-users – however, these non-users are very similar to users since they have been VAA-users before.

The lack of a well-defined population, the non-random nature of sample selection, and the large size of the samples also affect how self-evident the use of inferential statistics is. The assumption behind hypothesis testing statistics, that the sample is randomly drawn from a well-defined population, does not hold in the experimental studies in this dissertation. The issue framing experiment does not use a sample but investigates the entire population of VAA users in Utrecht, and the quasi-experiment on knowledge and political efficacy draws on non-random data. However, most experimental studies do not use data that is representative for a larger population. I still used inferential statistics to provide an indication of the signal-to-noise ratio, i.e., to what extent the observed effect is larger than the measurement error.

The lack of data on non-users is another limitation of this dissertation. The typology based on VAA data shows that they reach a group of voters who usually are not very interested in politics. It is not clear, however, how large this group is relative to

other voters who do not use VAAs. To get more insight into the capabilities of VAAs to bridge the knowledge gap and contribute to understanding among the disinterested, a replication of the typology would be needed on a sample that is representative of all voters of a country.

For future research, I suggest that the VAA user typology is used to obtain a better understanding of VAA effects. Most extant research on the effects of VAAs on knowledge, turnout and voting decisions does not take into account individual characteristics and motivations of VAA users (Andreadis & Wall, 2014; Enyedi, 2015; Schultze, 2014), though it is very well conceivable that VAAs have different effects for checker, seeker- and doubter types of users. Some efforts have already been undertaken in this direction: for example, Gemenis and Rosema (2014) find that the effects of using VAAs on turnout are stronger for younger and lower educated people, and for those with weak party identification and limited political knowledge.

The effect of a VAA's voting advice on vote choice would be interesting to differentiate for diverse types of users especially. The typology developed in Chapter 2 suggests that seekers are most susceptible to the voting advice – as they most often indicate to use the VAA to “determine their vote choice”. Additionally, as Zaller (1992) argues, when the campaign gets more intense, the least politically sophisticated voters are more exposed to political information, and will be most influenced by the campaign. Seekers – less sophisticated than the majority of VAA users – consult VAAs close to election day and will therefore probably be most subject to the persuasive effect of voting recommendations. Future research should assess this hypothesis.

Another direction for future research is what the effect of VAA recommendations on vote choice imply for democratic representation. Does this lead to an election outcome that better reflects the opinions of citizens on concrete issues – in other words; do voting decisions to a greater extent follow the issue-voting model? Since the VAA does not take into account what people voted last time, will a VAA effect on vote choices lead to more volatility? And, since the VAA does not take into account which parties are large and which are small, will a VAA effect on vote choices lead to more fragmentation on the aggregate level?

Despite the limitations listed here and in the individual chapters, this dissertation offers evidence that VAAs have an important role in the provision of information in election campaigns. They have the capacity to bridge the knowledge gap, affect opinions and raise political efficacy. As long as users do not interpret the recommendations as evidence-based directions for their choice at the voting booth, VAAs are a useful and powerful tool to inform about political issues and party positions, and future types of VAA might prove to be even more useful.

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Summary

Voting Advice Applications (VAAs) aim to contribute to understanding of politics. They ask people to think about a number of political issues, provide them with information and arguments, and show them which party best matches their views. Since VAAs are very popular during election in many democracies, expectations about their contributions to knowledge about political are high. There is also criticism: some claim that VAAs reduce complex issues to simple questions or that they are biased and have too much influence on voter's decisions.

Early research into VAAs suggests that these tools increase intention to vote, political knowledge, and the motivation to look for further information. On the other hand, other studies suggest that VAAs are mostly used by politically sophisticated people who are unlikely to learn more from using VAAs. This dissertation contributes to the knowledge about VAAs by extending this research and delving deeper into the ways VAAs affect political understanding. It does so by looking at the profile of VAA users and their motivations for using the VAA; by studying how VAAs affect opinions people have about issues, and by studying the contribution VAAs make to political efficacy and knowledge. The central research question this dissertation deals with is: *how do VAAs affect understanding of politics and political issues, and how does this interact with resources and motivations of citizens?* The four empirical chapters in this dissertation lead to four main conclusions.

The first concerns the users of Voting Advice Applications: in chapters 2 and 3 I show that these are more diverse than earlier research led us to believe. Globally, three types of VAA users can be distinguished. The first type is highly politically interested. They do not need the VAA to inform themselves or to make a voting decision. I called them *checkers*: they use VAAs mainly to check whether the VAAs result confirms their political preference or whether the VAA makes sense at all. The second type, on the other hand, is interested to learn more about politics or needs help to decide which party to vote for. They are generally less politically interested and efficacious. This is the group of people VAAs should target if their aim is to increase political knowledge and engagement. I called this type of users *seekers*. The third type is called *doubters*: they are – like the seekers – less interested, but are especially more cynical about politics. Checkers use VAAs relatively early in the election campaign; seekers relatively closer to the election day, and the doubters' use of VAAs is quite stable over time.

Usage of VAAs by each of these types differs across elections. In the ('first-order') national elections, about 60% of users can be characterized as checkers; 30% are seekers and doubters make up the last 10%. In second-order elections like those for municipalities, provinces, water authorities and the European Parliament, these proportions are different. Seekers are relatively more prominent among the users in these elections; the proportion of doubters, again, is quite stable around 10% to 15%. In general, in second-order elections users of VAAs are more doubtful about their vote

choice, feel less efficacious and hence more often use VAAs to learn about the positions of parties, and to determine their vote choice.

Secondly, this dissertation shows the implications of how statements in VAAs frame political issues. Chapter 4 shows that people are more inclined to report a left-wing opinion if the statement they are reacting to is framed in a left-wing direction. This effect is modest, but I argue that the framing of these statements in this experiment is subtle: only the headers are manipulated. A different formulation of the statement itself would have a much stronger effect on the opinions that people report – and this is yet another way in which design choices in VAAs may bias the results.

A third conclusion is that there is no evidence for a contribution of VAAs to political knowledge. Even though one out of four VAA users indicates they use the VAA in order to learn about the positions of parties on political issues, I could not find an effect of VAA use on people's ability to correctly identify the issue positions of parties on crucial issues.

On the other hand, my fourth conclusion is that VAAs *do* contribute to internal political efficacy. After using a VAA, people feel better informed and more capable of making political decisions. This is an important contribution because political efficacy is a crucial factor in political participation. This effect is especially strong for lower educated people.

In short, Voting Advice Applications are being used by different types of people with different needs. Although many people are using the tools for entertainment or merely check whether VAAs correctly predict their party preferences, an important group indicates they use VAAs to learn about politics and to make a voting decision – especially in second-order elections. This group of users, the seekers, are generally less efficacious and lower educated, and people with less efficacy and lower education more often experience increased efficacy after using VAAs. VAAs therefore contribute to closing the gap in political engagement – a gap that relates to educational background. This is the group of people VAAs should target if they want to contribute to political engagement and participation.

VAAs have an important role in the provision of information during elections in many democracies. However, it is vital to stress that the 'voting advice' these applications provide should not be viewed as an advice to vote for one specific party – all sorts of biases in VAAs make it impossible to calculate neutral and reliable voting advices. Rather, VAAs can be regarded as a helpful tool that summarizes the agendas and manifestos of different parties on a set of key issues in election campaigns in a very accessible way.

Nederlandse samenvatting

Kieswijzers of stemhulpen – in de wetenschappelijke literatuur aangeduid als *Voting Advice Applications* (VAAs) – zijn een steeds belangrijker speler in verkiezingstijd. De Nederlandse Stemwijzer is een uitvinding van het toenmalige Instituut voor Publiek en Politiek en werd eind jaren 80 van de vorige eeuw voor het eerst uitgebracht op floppydisk. Intussen worden er kieswijzers ontwikkeld voor verkiezingen in tientallen landen binnen en buiten Europa, en sommige (bijvoorbeeld de Nederlandse, Duitse en Finse) worden door miljoenen kiezers gebruikt. VAAs worden vaak onthaald als een aantrekkelijke en eenvoudige manier voor kiezers om zich te informeren over politiek: ze laten mensen nadenken over een reeks politieke kwesties, geven de argumenten bij de standpunten van verschillende partijen, en laten dan zien welke partij het dichtst bij de kiezer staat.

In de eerste studies naar de effecten van VAAs waren onderzoekers positief over de potentie van VAAs om bij te dragen aan politieke interesse en participatie in verkiezingen. Maar ondanks de grote populariteit van VAAs is er nog weinig onderzoek gedaan naar de mensen die deze kieswijzers gebruiken: zijn dit mensen die behoefte hebben aan meer inzicht in de politiek en in de standpunten van partijen? Of worden VAAs vooral gebruikt door ‘politieke junkies’ die al zeer geïnformeerd zijn? Daarnaast is er ook nog weinig bekend over de invloed van VAAs op hun gebruikers: draagt het gebruik van een VAA bij aan begrip van politieke kwesties en meningen daarover, en aan politieke *efficacy*, een gevoel van vertrouwen in de eigen capaciteiten en mogelijkheden om politieke keuzes te maken en deel te nemen aan het politieke proces?

Naast deze grote verwachtingen is er ook kritiek op VAAs: ze zouden te simpel, oneerlijk of sturend zijn en mensen zouden zich er te veel door laten leiden. Onderzoek laat zien dat er inderdaad vertekeningen zijn: allerlei aspecten aan het ontwerp van kieswijzers (selectie van stellingen, antwoordschaal, rekenmethode, presentatie van de resultaten) werken soms in het voordeel van bepaalde partijen, dan weer in het voordeel van andere. Een neutrale VAA bestaat niet. Ontwikkelaars van deze *tools* geven dan ook aan dat ze niet moeten worden gebruikt als leidraad bij het maken van een stemkeuze; toch toont onderzoek aan dat het ‘stemadvies’ bij sommige kiezers meeweegt wanneer zij een stemkeuze maken. Het is daarom belangrijk om in kaart te brengen op welke manier VAAs kunnen sturen en op welke manier zij een rol spelen bij de meningen die kiezers hebben over politieke kwesties, en bij het begrip van politiek.

Dit proefschrift draagt bij aan kennis over de rol van VAAs in verkiezingscampagnes door de gebruikers van VAAs te bestuderen en de *effecten* van VAAs op gebruikers te bestuderen. Dit heb ik gedaan in de context van verschillende Nederlandse verkiezingen, en met behulp van verschillende methoden. Uit de vier empirische studies die in dit proefschrift zijn gebundeld komen vier algemene conclusies naar voren.

De eerste conclusie betreft de gebruikers van VAAs. Hoofdstukken 2 en 3 beschrijven hoe deze gebruikers diverser zijn dan eerdere studies deden vermoeden: er vallen drie globale typen te onderscheiden. Het eerste type is zeer geïnteresseerd in politiek – zij hebben de kieswijzer niet nodig om zich te informeren over de verkiezingen. Dit type gebruikers heb ik *checkers* genoemd; zij komen vaak checken of het resultaat van de VAA inderdaad bij hun politieke voorkeur past, of ze checken of de VAA hout snijdt. Het tweede type VAA-bezoekers gebruikt deze juist met als doel meer van de politiek op te steken, of als hulp bij het maken van een stemkeuze. Zij zijn doorgaans minder geïnteresseerd en hebben minder politiek zelfvertrouwen (*efficacy*); dit is de doelgroep die interessant is voor ontwikkelaars van VAAs als zij als doel hebben begrip van politiek te vergroten en mensen te helpen een geïnformeerde stemkeuze te maken. In dit proefschrift heb ik ze *seekers* genoemd. Het derde en laatste type noem ik de *doubters*: zij zijn net als de seekers minder geïnteresseerd in politiek, maar hebben daarnaast een minder duidelijke reden VAAs te gebruiken en zijn er vooral vaker van overtuigd dat het geen zin heeft aan politiek deel te nemen. Checkers gebruiken VAAs relatief vroeg in de verkiezingscampagne; seekers relatief laat en het gebruik door doubters is vrij constant.

Bij de Tweede Kamerverkiezingen valt bijna 60% van de gebruikers van *Kieskompas* te typeren als checkers; ruim 30% bestaat uit seekers en bijna 10% uit doubters. Bij andere verkiezingen ziet deze verdeling er echter anders uit: seekers zijn de grootste groep bij de gemeenteraadsverkiezingen en bij de waterschapsverkiezingen. Ook bij de verkiezingen voor het Europees Parlement en voor de Provinciale Staten zijn er relatief minder checkers en valt een groter deel van de *Kieskompas*-gebruikers als seeker te typeren dan bij de Tweede Kamerverkiezingen. Het gebruik van VAAs door doubters is wederom constant over verschillende verkiezingen. In de zogenaamde *second-order elections* (tweederangsverkiezingen) zijn kiezers over het algemeen minder zeker over hun stemkeuze, hebben minder politieke *efficacy* en gebruiken daarom vaker VAAs om te leren over de verkiezingen en om hun stemkeuze te bepalen.

Ten tweede blijkt uit dit proefschrift dat het uitmaakt hoe stellingen worden geformuleerd in VAAs. In hoofdstuk 4 beschrijf ik hoe mensen eerder een linkse mening geven over een kwestie binnen een VAA als de stelling op een linkse manier is *geframed*. Dit effect is bescheiden, maar de *framing* is hier erg subtiel: alleen de kopjes die boven de stellingen stonden en aangaven bij welk onderwerp de stelling hoorde waren aangepast. Met een andere formulering van de stelling zelf worden sterkere *framing*-effecten verwacht. Dit betekent dat naast de bovengenoemde aspecten aan het kieswijzerontwerp, ook de formulering van stellingen bijdraagt aan *biases* binnen VAAs. VAA-ontwikkelaars moeten een politieke kwestie in één of twee regels samenvatten, en elke formulering die zij kiezen zal een bepaald *frame* dragen.

Verder concludeer ik in hoofdstuk 5 dat er geen bewijs is voor een toename van

politieke kennis door het gebruik van een VAA. De belangrijkste informatie die VAAs geven – naast misschien het berekenen van het ‘stemadvies’ – is wat de standpunten zijn van alle partijen ten aanzien van de belangrijkste kwesties. Ongeveer één op de vier VAA-gebruikers geeft bovendien aan de kieswijzer te gebruiken om meer inzicht te krijgen in de standpunten van partijen. Daarom heb ik onderzocht of kiezers die een VAA hebben gebruikt beter kunnen inschatten wat de standpunten van partijen zijn op cruciale kwesties. Er is wel een verband tussen VAA-gebruik en politieke kennis, maar als rekening wordt gehouden met het feit dat mensen met *meer* kennis *vaker* een kieswijzer gebruiken, blijven er geen aanwijzingen over dat kennis toeneemt als *gevolg* van het gebruik van een VAA.

Ten slotte: hoewel VAAs niet aantoonbaar bijdragen aan politieke kennis, blijkt uit het onderzoek besproken in hoofdstuk 5 wel dat het gebruik van VAAs leidt tot meer interne politieke efficacy. Met andere woorden, VAAs zorgen voor meer zelfvertrouwen in de eigen capaciteiten om aan politiek mee te doen. Mensen voelen zich na het gebruik van een stemhulp beter geïnformeerd en beter in staat een stemkeuze te maken, wat een belangrijke factor in de motivatie om mee te doen aan het politieke proces. Interessant is hierbij dat dit effect sterker is voor lager opgeleiden – mensen die doorgaans minder efficacy hebben en dus ook minder van zich laten horen in de politiek.

Kortom: VAAs worden gebruikt door verschillende mensen met verschillende behoeften. Hoewel een aanzienlijk deel deze *tools* vooral ter vermaak gebruikt en slechts checkt of hun voorkeur goed wordt voorspeld, is er een belangrijke groep gebruikers die aangeeft te willen leren over politiek, of assistentie wil bij hun stemkeuze – vooral bij andere verkiezingen dan die voor de Tweede Kamer. Deze gebruikers, die ik seekers noem, hebben minder politieke efficacy en zijn iets vaker lager opgeleid, en mensen met weinig efficacy en een lagere opleiding ervaren vaker een toename in efficacy naar aanleiding van het gebruik van VAAs. VAAs dragen dus bij aan het dichten van een kloof in politieke betrokkenheid, die samenhangt met opleiding. Het is deze groep seekers waar VAAs zich op moeten richten als zij willen bijdragen aan politieke participatie.

Voting Advice Applications hebben dus een belangrijke functie in de informatievoorziening in moderne democratieën. Het is echter belangrijk te blijven benadrukken dat het ‘stemadvies’ dat VAAs geven niet daadwerkelijk als advies voor een stemkeuze moet worden gezien; daarvoor is deze te afhankelijk van allerlei keuzes in het ontwerp van VAAs en bijbehorende *biases*. Het beste kunnen VAAs worden beschouwd als een instrument dat op overzichtelijke wijze de partijprogramma’s van alle partijen samenvat voor een reeks belangrijke politieke kwesties.

Author contribution

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Chapter 2

Beyond young, highly educated males: A typology of VAA users. Van de Pol, J., Holleman, B.C., Kamoen, N., Krouwel, A.P.M., De Vreese, C.H.

Study concept: CV, BH and JP. Data acquisition: AK. Analysis and interpretation: JP. Drafting the manuscript: JP with help of BH, CV and NK. All authors critically revised the manuscript and approved the final version.

Chapter 3 *Same but different: A typology of Voting Advice Application users in first- and second-order elections.* Van de Pol, J., Kamoen, N., Krouwel, A.P.M., De Vreese, C.H., Holleman, B.C.

Study concept: JP, BH, CV and NK. Data acquisition: AK. Analysis and interpretation: JP. Drafting the manuscript: JP. All authors critically revised the manuscript and approved the final version.

Chapter 4 *Pushing the voting advice left or right: Identifying framing effects in a field experiment.* Van de Pol, J., Kamoen, N., Krouwel, A.P.M., De Vreese, C.H., Holleman, B.C.

Study concept: BH and CV. All authors contributed to the study design. Data acquisition: AK. Analysis and interpretation: JP and NK. Drafting the manuscript: JP. All authors critically revised the manuscript and approved the final version.

Chapter 5 *The effect of Voting Advice Applications on political efficacy and knowledge: A quasi-experiment.* Van de Pol, J., Kamoen, N., Krouwel, A.P.M., De Vreese, C.H., Holleman, B.C.

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