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Are Single-Party Voting Advice Applications Useful? Comparing Voter Preferences in the BSW-O-Mat With a Probability Sample

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Abstract

As the voting advice application (VAA) market has grown increasingly competitive, developers have focused on innovation, including specialised VAAs that focus on specific topics. This article evaluates the analytical potential of a "single-party VAA" called BSW-O-Mat, a website developed to assess alignment with the newly founded German party Bündnis Sahra Wagenknecht (BSW), attracting over 50,000 participants. Single-party VAAs face compounded selection bias; beyond the typical overrepresentation of educated politically engaged users, they disproportionately attract voters interested in the focal party. Despite over 50,000 responses, questions remain about data validity for estimating voter preferences. To address the usefulness of VAA data for analysing the new party's supporters, this study examines convergence validity by comparing the average marginal effects from logistic regression models based on VAA data with those from the 2025 German Longitudinal Election Study's (GLES) probability sample. Despite substantial overrepresentation of potential BSW supporters in the VAA sample, convergence in the direction of effects was observed across datasets. Effect correlations reached $r = 0.65$ (increasing to $r = 0.87$ when excluding non-converging effects), though the VAA dataset tends to overestimate effect sizes. Notably, even analysing substantially underrepresented AfD voters (5.5% in VAA vs 19.8% in GLES) yielded results largely consistent with probability-sample models. These findings demonstrate that the VAA data can provide valid insights when appropriately weighted and interpreted in light of self-selection biases.

Keywords

BSW; convergence validity; non-probability sample; selection bias; VAAs

1. Introduction

Over the last two decades, the number of VAA users has grown steadily, now reaching potentially millions of voters (Garzia & Marschall, 2019). Initially developed for civic education, especially for first-time voters, VAAs also provide campaign-related data for political scientists. VAAs offer valuable data on candidates' and parties' positions (Ferreira da Silva et al., 2021) and user data on the same issues. Some VAAs, such as the Wahl-O-Mat, do not directly collect user data or offer follow-up surveys only to randomly selected users. Others use opt-ins for data collection, often in combination with additional questionnaires. Such additional questions often relate to political attitudes, voting intention, and socio-demographic variables. As user and party data address the same issues, they can be used to analyse party-voter congruence (Tromborg & Albertsen, 2023; M. Wagner & Ruusuvirta, 2012; Zhirnov et al., 2025).

VAA user data presents unique opportunities for exploring the voter's mindset. However, the opt-in nature of VAA samples is not unproblematic. VAA usage is linked to several self-selection biases, as male, highly educated, and politically interested users are generally overrepresented (Marschall, 2014; Pianzola, 2014). Accounting for these biases can help to make the data "more" representative, for example, with survey weights (Toshkov & Romeijn, 2021).

During the last decade, the "VAA market" has become increasingly crowded, and for many elections, even at the subnational level, multiple tools are available. This has resulted in numerous "specialised" VAAs, tools dedicated to specific topics and content. For example, in 2023, Dutch VAA company Kieskompas launched a Climate and Energy tool that matched users and parties on issues related to climate change, environmental politics, and energy (Vogels, 2023). Other tools calculate matches based on historical contexts: the Federal Archive of Germany has published a tool that allows users to explore their closeness to parties from the Weimar Republic (Bundesarchiv, 2018).

Although the number of such specialised tools has increased strongly over the last few years, the usefulness and associated biases of user data from specialised VAAs remain largely unstudied. After all, such datasets are affected not only by known biases related to interest in elections but also by biases inherent to the specialised content itself. To use the cited example, a politically highly interested user may use a tool for climate issues only if they are interested in this topic. This could lead to a situation where pro-environmentalists are extremely overrepresented in this tool's dataset. While specialised VAAs can provide valuable data on topics that neither classic VAAs nor traditional surveys adequately cover, biases in their use may strongly limit the potential of these datasets.

The following article addresses this research gap by comparing the convergence of the analytical results from the specialised VAA BSW-O-Mat with those from a probability sample. BSW stands for Bündnis Sahra Wagenknecht, a party formally founded in January 2024. Shortly after the party was officially founded, political scientists from the University of Potsdam developed the VAA tool BSW-O-Mat. It can be described as a single-party VAA, as users are confronted with items derived from BSW's first manifesto. This facilitates the analysis of party-voter congruence, since VAA users have positioned themselves to the party's own policies.

However, the self-selection bias inherent in such a tool is obvious: those more curious about the new party were more likely to use it. While the dataset offers valuable insights into more than 50,000 users, it may

nevertheless be of little value if it is strongly skewed towards (likely) BSW voters and lacks those who would not vote for the party. This article puts the empirical usefulness of such a dataset to a hard test by comparing the analytical results based on it with a probability sample. Although VAA research has suggested that voter policy preferences obtained from weighted VAA datasets are comparable to probability sample estimates (Toshkov & Romeijn, 2021), testing this with a specialised VAA dataset represents a stricter test, as an additional bias compounds standard VAA biases.

The article is structured as follows. The following second section will summarise the research on the extent to which VAA data is useful for analysing voter preferences. This will be followed by Section 3, which identifies variables for the convergence validity test by discussing research on BSW's voters and their voting potential. The fourth section introduces the research design, which compares the BSW-O-Mat dataset with the German Longitudinal Election Study's (GLES) rolling cross-sectional dataset, a probability sample collected for the 2025 Bundestag elections. Section 5 provides a detailed discussion of the processes of data cleaning, sampling, and weighting. The core analysis then compares the results for four different models, focusing on socio-demographics, policy preferences, populism, and vote recall in predicting BSW support, which were calculated using the two datasets. The conclusions summarise the results and discuss their implications for future research.

2. The Challenges of Using VAA Data for Voter Research

Ladner and Fivaz (2012, p. 178) describe VAAs as "issue-matching systems." This summarises the basic functionality of VAAs, as they are designed to produce voting advice based on the similarities between their users and political parties and/or candidates on the most salient political issues (Garzia & Marschall, 2019). VAAs typically ask users to state their agreement with 20–35 policy-related statements. Once a user completes the task, which is technically a questionnaire with a series of Likert-scale questions, the VAA describes the similarity between their position and the positions of the major political actors.

Most VAAs also collect user data, especially projects led by researchers. Data collection is typically opt-in, though some VAAs also collect data under an opt-out principle or ask only a random sample of VAA users to provide additional information. As tools such as the German Wahl-O-Mat reach tens of millions of voters (Marschall, 2014), the advantages of VAA user data are obvious. Such large-n datasets allow for the study of even relatively small subgroups of voters, such as those of smaller parties. This is often problematic with probability samples. As Toshkov and Romeijn (2021, p. 2) demonstrate, even analyses of voters of 5%-parties (e.g., junior coalition partners) are difficult, with standard sample sizes of $n = 1{,}000$ respondents, as estimated policy preferences have large statistical uncertainty.

One of the main limitations of VAA data is that VAA users deviate from the general population in several respects. Research has shown that VAA usage is systematically linked to variables such as education, political interest, age, and gender (Hooghe & Teepe, 2007; Marschall, 2014; Pianzola, 2014). In addition, VAA samples are opt-in samples by design. Everyone who has access to the VAA link can use the tool, and VAAs are typically designed to reach as many voters as possible. This stands in stark contrast to classic probability samples, which aim to gather responses from typically 1,000 to 2,000 respondents who should closely resemble the general population.

The extent to which these biases pose a problem depends on the research question. Munzert and Ramirez-Ruiz (2021) have noted that reported VAA effects on turnout and voting choice strongly differ between observational and experimental VAA data. While the former tend to overreport such effects, the latter represent a setting in which VAA usage is randomised, i.e., no self-selection into using the tool can occur. In analyses based on experimental VAA samples, effects on turnout and voting choice are much smaller and often not statistically significant. However, as VAAs are open to the public, a typical VAA dataset is always observational.

Wheatley et al. (2014) highlight that in VAA tools, selection bias is strongly associated with the intention to participate in the respective elections. This is reflected in the share of non-voters among VAA users. Gemenis and Rosema (2014) report that, according to the Dutch election study, only 3% of Dutch VAA users were non-voters. To be fair, non-voters are generally difficult to reach, also with probability samples (see Table 1). Gemenis and Rosema report that even among non-VAA users, only 9.4% of the respondents were self-declared non-voters. There appears to be a general trend showing that VAA data may be less useful for studying aspects unrelated to elections, which extends to sociological research (Sheppard, 2018). Another study by Pianzola (2014) suggests modelling the selection process, for example, related to political interest. This underlines one of the most crucial aspects regarding the usefulness of VAA data. To assess data quality, reference data are needed, which are not always available. Data should be collected around the same time, and questions should, ideally, be identical in wording.

There are, however, studies showing that such biases are less important than assumed. Toshkov and Romeijn (2021) analysed the policy preferences of party voters in Germany and the Netherlands and concluded that positions modelled with VAA data are comparable to those from representative voter studies. However, they do underline that, especially in the Netherlands, policy preferences based on weighted VAA data are closer to those obtained from representative surveys. Thomeczek et al. (2025) demonstrate that dimensions obtained from unweighted EU-wide VAA data are comparable to those derived from the European Election Study's sample.

The overall question is related to the validity of VAA data, which addresses two aspects. First, there is the question of whether VAA datasets can identify the same substantial effects as probability samples, with effects pointing in consistent directions. The second aspect is related to effect sizes, namely, whether the magnitude of these effects aligns with analyses based on probability samples. If VAA data correctly identify which factors matter and in which direction, researchers can use them to understand voting behaviour mechanisms, even if effect magnitudes differ due to selection bias or measurement contexts. Conversely, if different variables are significant across datasets, the data may produce similar predictions through compensating for errors, but would not support explanatory inferences about potentially causal drivers of voting.

While research has focused on the data quality of classic VAA datasets, the potential of datasets from specialised VAAs is largely understudied. The goal of this article is to address this research gap by focusing on the user data of the single-party VAA BSW-O-Mat. The results will be compared to analyses based on a probability sample from the GLES. This provides a hard test: if convergence validity is achieved despite heightened selection bias, it demonstrates that specialised VAA data can be used for substantive voter analysis when appropriately weighted. Conversely, failure to converge would indicate that single-party VAAs' self-selection overwhelms demographic corrections, limiting their analytical utility to descriptive

purposes. The next section summarises the literature on BSW voters to identify potential effects that will be analysed with the single-party VAA dataset and the GLES probability sample.

3. Who Supports the BSW?

Although the BSW is a comparatively young party, founded in early 2024, several published articles have examined its potential or actual voters. This section discusses the most important factors that explain BSW's voting potential for the convergence validity test. The following literature review, therefore, focuses on factors that (a) are theoretically established BSW predictors and (b) can be operationalised in both datasets using available items.

S. Wagner et al. (2023) found higher BSW potential among East Germans, cultural conservatives, and voters with pro-market, anti-immigration attitudes. This analysis preceded the party's official founding, when Wagenknecht had long contemplated launching such a party. Furthermore, those who are less satisfied with the democratic output and those with a higher propensity to vote for the AfD and Die Linke are reportedly more likely to vote for such parties. The ideological profile of such a new party was of particular interest, as many expected it to have potential appeal among "left-authoritarian" voters, who had not had a political home in Germany so far (Steiner & Hillen, 2021).

Academic interest in the party has been growing since its official founding in January 2024 (Patton, 2025). Most of the findings by S. Wagner et al. (2023) have been confirmed in subsequent publications (Heckmann et al., 2025; Herold & Otteni, 2025; Hoffmann, 2025; Jankowski, 2024; Steiner & Hillen, 2025). However, some additional factors have been identified by researchers as explaining BSW's appeal. Firstly, foreign policy plays an important role for potential BSW voters. Over the course of the Ukraine war, Wagenknecht has developed distinct foreign policy positions. She is highly critical of NATO and seeks common ground with Russia, advocating for "peace" in Ukraine, even at the cost of Ukrainian territory. Therefore, NATO scepticism and rejection of delivering more weapons to Ukraine are strong predictors of BSW support (Heckmann et al., 2025; Hoffmann, 2025; Wurthmann & Wagner, 2024). Secondly, the BSW offers an electorally attractive alternative to those holding populist attitudes (Herold & Otteni, 2025; Hoffmann, 2025; Jankowski, 2024; Thomeczek, 2024a) and having less institutional trust (Baumann & Seikel, 2024). Finally, regarding the BSW's potential among AfD voters, the effect depends on how AfD voters are operationalised. Those who contemplate voting for the AfD show a stronger propensity towards the BSW (Heckmann et al., 2025; Jankowski, 2024). However, the BSW has actually not won over many voters who voted for the AfD at the previous national elections in 2021 (Infratest dimap, 2025b; Jankowski, 2024). High BSW potential is reported among former left voters, non-voters, and voters of minor parties (Jankowski, 2024; Thomeczek, 2024b).

Some socio-demographic factors are relevant in explaining BSW support (Bundeswahlleiterin, 2024, 2025). Accordingly, the BSW tends to be voted for more by women than by men, and by East Germans than by West Germans. A significant shift can be observed in terms of age. While the BSW achieved its highest vote share among the baby boomer generation in the European elections, it received its highest vote share among 18 to 44-year-olds in the Bundestag elections.

Based on this literature, the convergence validity test will examine six variable domains: (a) socio-demographics, (b) policy preferences, (c) populist attitudes, institutional trust, and democratic satisfaction, as well as (d) vote recall (2021 Bundestag election). The next section details how these are operationalised in both datasets.

4. Research Design

The research design follows Toshkov and Romeijn (2021) and tests convergence validity (Adcock & Collier, 2001) between the analysis based on the single-party VAA dataset and the probability sample. Convergence validity tests whether two different data sources produce similar results when analysing the same (political) phenomenon. If they converge, it is assumed that both measurements are valid. For the following analysis, several factors impacting the BSW vote with matching variables in both datasets are analysed, and their results are compared. The extent to which they arrive at similar conclusions is then related to the extent to which we can speak of convergence validity.

In this study, two aspects of convergence validity are examined to explain BSW's voting potential: substantial effects and effect sizes. Given the exploratory nature of this validation—the first for a single-party VAA—we refrain from specifying ex-ante thresholds for "acceptable" convergence. Instead, we report convergence descriptively and interpret patterns in light of theoretical expectations about selection bias. Substantial effect convergence is related to the identification of a statistically significant effect: do the BSW-O-Mat and GLES datasets yield comparable findings regarding the identification of factors significantly affecting voting for BSW? If they do, this suggests that both datasets capture genuine voter preferences rather than measurement artefacts. The second part of the analysis focuses on the convergence of effect sizes. As a last step, it will also be tested whether the dataset can achieve convergence validity when analysing AfD voters, a strongly underrepresented voter group in the BSW-O-Mat dataset.

Following the Michigan model (Campbell et al., 1960), core predictors of voting behaviour should remain stable across (short) time spans. However, in the context of self-selection biases, it may be that convergence validity cannot be achieved if samples differ too much. Although differences in relative group size are less significant, a VAA may reach only specific voters of a given party, particularly specialised VAAs. For example, if populist users do not use VAAs, maybe due to the lack of trust in political scientists, a voting effect related to populism cannot be detected with VAA datasets. Failing to address such self-selection biases can have drastic consequences, as the Literary Digest fiasco of 1936 illustrates (Squire, 1988).

Although studies have reported convergence validity between probability and VAA samples (Toshkov & Romeijn, 2021), the BSW-O-Mat VAA presents a more challenging test case. The tool was developed by political scientists from the University of Potsdam and is based on policies directly extracted from BSW's first manifesto. Single-party VAAs differ from classic VAAs in their selection mechanisms. While all VAAs overrepresent politically engaged users, classic multi-party VAAs attract users seeking general election guidance. Single-party VAAs pose a methodological challenge for testing convergent validity for three reasons. Firstly, they attract users specifically interested in that party, creating an additional self-selection bias compared to classic VAAs. Secondly, all policy items are drawn from the party's manifesto, which can affect the analysis of congruence, defined as the extent to which BSW voters align with the policy positions of the party. The analysis may potentially inflate congruence effects, as users agreed with policies directly

derived from BSW's manifesto; in contrast, researchers have typically used established policy items in surveys. Thirdly, as users know they are evaluating their alignment with a specific party, this could introduce additional biases (e.g., potential voters may agree with the statements because they like the party). These features make convergence with probability samples less likely but more meaningful if achieved. Finally, even if convergence is observed, both datasets could yield similar results because they are subject to similar biases. This could occur when comparing two VAA datasets. To rule this out, the reference dataset should be a probability sample. Although far from perfect, a probability sample is the "gold standard" in sampling (Pekari et al., 2022).

One sample that fulfils these criteria is the rolling cross-sectional sample from the GLES. The dataset includes more than 8,000 individuals who were interviewed around the 2025 Bundestag elections and is publicly available (GLES, 2025). As the study also features a supplementary wave, including, among other variables, items on populism, the dataset includes a large set of comparable items. The entire study was conducted between January 6 and March 31, 2025. Thus, there is a temporal limitation affecting the convergent validity test: the BSW-O-Mat data were collected in early 2024, while the GLES data come from the 2025 election period. The majority of the 50,000 users visited the BSW-O-Mat website in the first quarter of 2024. This means that most BSW-O-Mat users responded to the items around one year earlier than the respondents in the GLES 2025 study.

To what extent are the two datasets comparable? At both points in time, in January 2024 and January 2025, the BSW was polling closely to its actual Bundestag election result (4.98%), as shown in Figure 1. The party's approval peaked in late Summer 2024, shortly before the three state elections in Thuringia, Brandenburg, and Saxony, where the BSW did exceptionally well and entered two state governments (Patton, 2025). Although a dataset collected in autumn 2025 would be much closer to the Bundestag elections, it is more likely that the potential BSW electorate would differ more strongly, as by then the number of potential BSW voters had almost doubled.

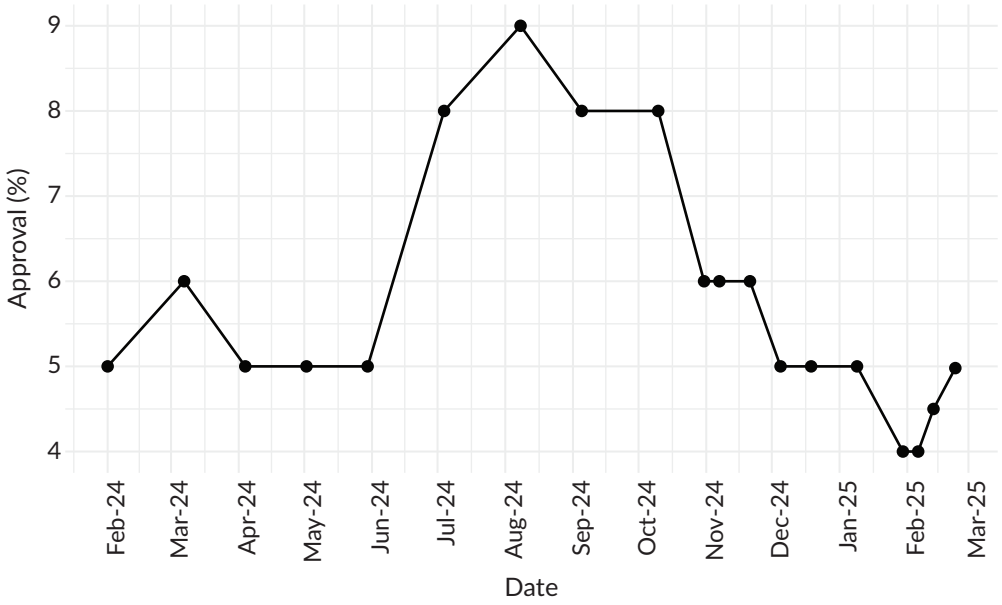

Figure 1. Approval of BSW in Infratest polls. Source: Zicht & Cantow (2025).

Another potential problem is that the electorate may have changed between 2024 and 2025, which may have been the case regarding age (see the previous section). Nevertheless, exit polls from the 2024 European and 2025 Bundestag elections reveal that BSW voter profiles remained stable: programmatic voting dominates, though dissatisfaction with other parties and the appeal of leader Wagenknecht matter substantially. Key policy priorities—foreign policy positions (ending weapon deliveries to Ukraine, "securing peace"), left-wing economics combined with immigration restriction—remained consistent across both elections (Infratest dimap, 2024, 2025a).

Both exit polls confirm that the party is mainly supported by those with medium levels of education, and to a lesser extent by those with high and low levels of education. BSW is also less popular among men than among women, likely because the party leader is female. The only observable shift reported is the reversal of the age effect, as discussed in the previous section. Overall, these exit poll results indicate that the profile of BSW voters was rather similar in early 2024 and early 2025.

5. Data Cleaning, Sampling, and Weighting

Several steps were taken to improve data quality through data cleaning. As a first step, all respondents with missing data for the independent and dependent variables of interest were removed. In the GLES dataset, the speeder index was used to remove speeders (i.e., the 10% fastest respondents, see codebook in GLES, 2025). In the BSW-O-Mat dataset, speeders and skimmers were identified based on the minimum time it took to read the items (Andreadis, 2014); respondents below that threshold were removed. In addition to the main VAA items, respondents could complete a background questionnaire on sociodemographics (before the main task started) and answer additional questions (e.g., attitudes such as populism, trust, and voting intention) after the match was calculated. Around 60% of the respondents completed the last question of the additional survey. The data were weighted by age, education, gender, and region. Those with missing data for these variables were removed, including those below the voting age (18), students at school (due to the lack of clear ISCED levels), and those not identifying as male or female (as the data are not present in the census). Respondents were grouped into four age categories: 18–34, 35–49, 50–65, and 65 and older. Population data were obtained from CensusHub (Eurostat, 2021). Concerning education, an indicator based on low education was built (0 = ISCED 1 or 2, i.e., no degree, a Hauptschule or Realschule degree, else = 1), as this allowed for the identification of respondents' level of education in the absence of questions on further job qualifications. The region was coded by assigning states to East, West, or Berlin, as the city is composed of former Eastern and Western districts.

After data cleaning, 5,159 cases out of the initial 8,562 respondents remained for analysis in the GLES dataset. Although the dataset provides its own weights, the data were re-weighted using the exact same mechanism as for the BSW-O-Mat data (post-stratification weights based on known joint marginal distributions for the four variables). The full BSW-O-Mat dataset consists of 50,711 cases. After data cleaning, 7,537 respondents remained in the dataset. As around 93% of all BSW-O-Mat users visited the tool before the European elections (June 9, 2024), respondents after the EP elections were removed. As the number of respondents was still higher than in the GLES dataset, a quota sample with the same sample size as the GLES dataset (5,159) was drawn from the weighted dataset, where the chance of being selected was equivalent to a respondent's weight. This ensured comparable statistical power across datasets, preventing the VAA's larger sample from producing artificially higher significance rates that could affect the convergence validity test. Subsequently, the dataset

was reweighted to obtain the analysis weights. Weights ranged from 0.42 to 5.16 (BSW-O-Mat) and 0.08 to 5.0 (GLES), indicating moderate adjustment needs.

The main dependent variable, the intention to vote for BSW in the next Bundestag election, was coded as a binary indicator: 1 for BSW voters and 0 for all others; invalid voters and those who had not yet decided were removed from the analysis. Table 1 compares the composition of potential voters in both datasets, in terms of recall and voting intention, against the backdrop of the actual results. While it should be noted that the BSW-O-Mat data were collected around one year earlier, when Bündnis '90/Die Grünen were polling slightly better and Die Linke worse compared to their 2025 election result, it becomes clear that the BSW-O-Mat dataset is strongly skewed towards potential BSW voters, which raises doubts about convergence validity with the probability sample results. A full 34.3% of users indicated that they would vote for the new party, compared with only 6.0% of GLES respondents. AfD, SPD, and CDU/CSU voters are strongly underrepresented in the VAA dataset, as are non-voters; those indicating an intention to vote for Die Linke are overrepresented. Nevertheless, neither does the voting intention in GLES accurately reflect the election results—even here, BSW voters are overrepresented, just as potential voters of the AfD, CDU/CSU, and SPD. GLES also fails to reach a substantial share of non-voters. These trends are also visible for the 2021 recall questions, although the BSW-O-Mat data are even more strongly skewed towards former Bündnis '90/Die Grünen and Die Linke voters.

Table 1. Voting intention and vote recall in the two datasets (unweighted distributions).

Party	Voting Intention 2025		Result 2025	Recall 2021		Result 2021
	GLES (2025)	BSW-O-Mat (2024)		GLES (2025)	BSW-O-Mat (2024)	
BSW	6.0	34.3	4.1			
AfD	19.8	5.5	17.2	12.5	4.4	8.0
CDU/CSU	29.2	13.9	23.5	25.1	10.2	18.5
FDP	4.1	5.0	3.6	8.0	11.9	8.8
Bündnis '90/ Die Grünen	11.0	18.9	9.6	12.8	25.0	11.4
Die Linke	5.3	10.2	7.2	3.9	21.8	3.8
SPD	19.2	7.0	13.5	26.5	16.2	19.8
Other	2.9	4.0	3.7	2.8	5.1	6.0
No right to vote				2.5	2.5	
Non-voters	2.4	1.1	17.6	6.0	2.7	23.7
n	5,159	5,159 (quota sample)		5,159	5,159 (quota sample)	

Note: As only around 74% of the German population were eligible voters, but both datasets had eligible voters as their target population, the 2021 election results are reported as percentages of eligible voters.

While the fact that VAA data, especially data from such specialised VAAs, are skewed is not surprising, the summary in Table 1 also indicates the bias's direction: voters from the left side of the political spectrum are overrepresented in the BSW-O-Mat dataset. Nevertheless, this does not automatically risk convergence validity. The self-selection bias in VAA data is a function of multiple factors, and when a VAA offers a match with only one specific party, some voter groups are more likely to be interested in this tool than others.

The key question is whether biases also extend beyond the relative size of groups, i.e., systematic biases linked to voters' preferences. Regarding the BSW, this could be the case if the BSW-O-Mat only reaches, for example, liberal BSW voters, which would reduce observed convergence.

A more nuanced picture of BSW-O-Mat users emerges when examining the distribution of the propensity-to-vote (PTV) variable for BSW, which was included in the BSW-O-Mat tool but not in GLES. Typically, PTV variables are skewed towards negative evaluations, even for mainstream/catch-all parties (A. Wagner, 2017). Figure 2 shows the PTV distribution for the BSW-O-Mat users. The best and worst evaluation categories stand out as those that were used most frequently. In line with the voting intention reported in Table 1, the website attracted more users with a strong propensity to vote for BSW, but those evaluating BSW negatively were also present, thereby increasing polarisation. This could lead to larger effect sizes, as there is a tendency to compare unlikely BSW voters to likely BSW voters.

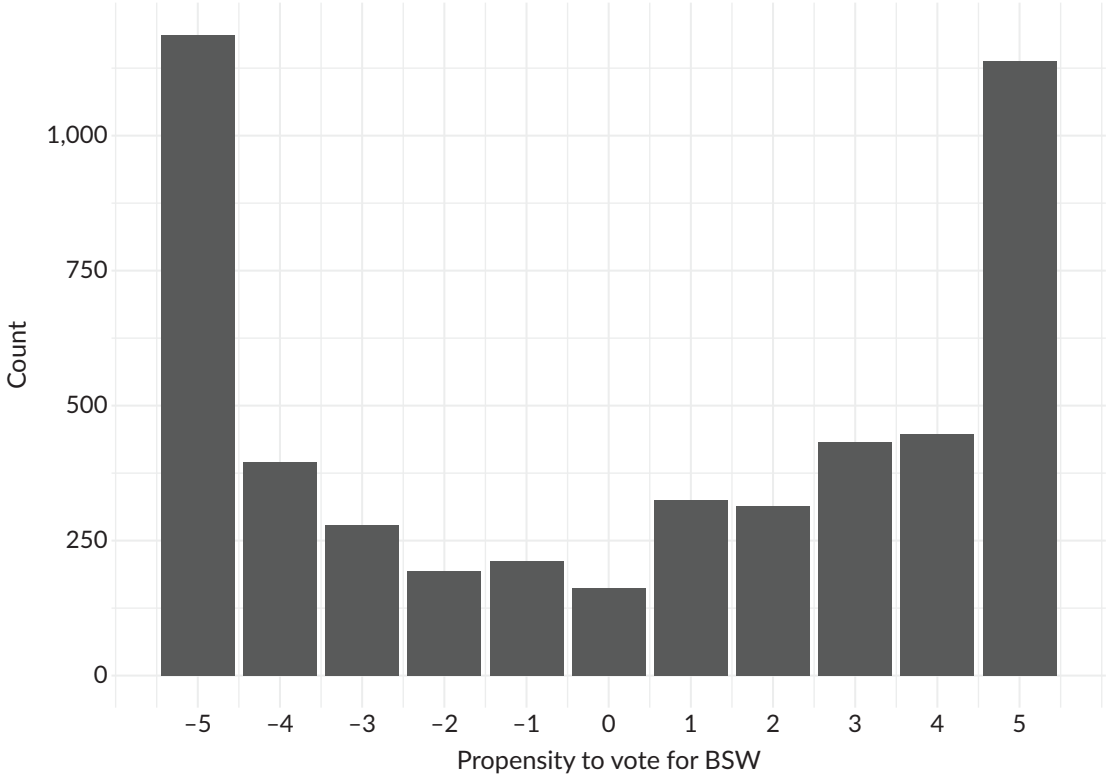

Figure 2. Univariate distribution of propensity to vote for BSW in the BSW-O-Mat dataset (unweighted).

5.1. Independent Variables

Based on the Section 3 literature review, independent variables are organised into four groups: socio-demographic factors, policy preferences, trust and populism, and past voting behaviour. The relatively large set of comparable items was a key criterion for selecting GLES as the comparison dataset. The independent variables of interest can be summarised into four groups: socio-demographic factors, policy preferences, trust and populism, and past voting behaviour. Age (18–34, 35–49, 50–65, and 65+), gender (male/female), education, and region (East/West/Berlin) are the socio-demographic factors that will be tested. Whilst the primary goal is testing convergence rather than causal hypotheses, the Section 3 literature

suggests expected patterns: East Germans and women are more likely to support BSW, and university graduates are less likely. The age effect is likely to differ across the two datasets, as discussed in Section 3.

Regarding policy preferences, the BSW-O-Mat dataset offers a much richer set of variables, as all 27 main VAA items are policies proposed by the BSW in its manifesto. BSW-O-Mat items measure user policy positions that, because they derive directly from BSW's manifesto, simultaneously operationalise congruence with BSW. In contrast, GLES items measure general policy positions, requiring us to calculate congruence separately by comparing responses to BSW's party positions. This could hamper the identification of similar items in the GLES dataset. Six items in the GLES dataset were identified as measuring similar constructs: climate change, weapon deliveries to Ukraine, taxation, economic intervention, immigration, and integration (see Table A1 in the Supplementary File). To additionally analyse congruence with the GLES dataset, congruence was calculated for four of these items (climate change, economic intervention, immigration, and integration) using BSW party positions from the GEPARTEE expert survey on political parties in Germany (Thomeczek et al., 2024). Here, congruence is defined as the absolute distance from BSW's position by the GEPARTEE, based on a simple proximity model. As the GLES item on weapons for Ukraine reflects BSW's direct position (Bündnis Sahra Wagenknecht, 2025, pp. 6–7), agreement with this item was regarded as congruence with BSW's position. Thus, policy congruence with BSW's positions was calculated for a total of five items in the GLES dataset, which was tested in an additional model.

To measure populist attitudes, the BSW-O-Mat dataset included items from the populism scale developed by Castanho Silva et al. (2019), while the GLES dataset included six items from various populism scales. Six items from the BSW-O-Mat dataset were selected, as they share the common "people vs. elite" denominator with the GLES items. In addition, trust in the federal government, measured using an 11-point Likert scale, was included in both datasets. Satisfaction with democracy in Germany was measured using a 5-point Likert scale in both datasets. The final set of items addresses vote switchers. Based on the recall question for the 2021 Bundestag elections, the extent to which the different voter groups support the BSW will be analysed. Based on the literature review, the focus lies on Die Linke, AfD, and non-voters.

6. Analysis

6.1. Predicting BSW Vote Intention

The analysis addresses convergence validity, specifically whether models based on the two datasets yield similar conclusions. For substantial effect convergence to be present, statistically significant effects should point in the same direction, while the second part of the analysis focuses on effect size convergence. Due to the nature of the VAA, effect sizes may differ from those in the GLES probability sample. Generally, it is expected that the effect of the policy items will be stronger in the BSW-O-Mat analysis, as these items are derived directly from the BSW manifesto, which was also transparent to users. Nevertheless, apart from the age effect, which appears to have been reversed between early 2024 and early 2025, this analysis remains based on the assumption that the core BSW electorate regarding the tested factors is relatively stable and has not undergone substantial change.

Prior to the analysis, all variables were recoded to have the same direction. The policy items were recoded so that agreement indicated support for policies associated with BSW's ideology. Numeric variables were

transformed to a range of 0 to 1 (min–max scaling) to facilitate comparison with variables of different scales. The results are presented as average marginal effects (95% CIs) from the weighted logistic regression models. Average marginal effects have the advantage over logistic regression coefficients in that they allow for direct comparisons between variables and, in this case, across datasets. They indicate the average marginal change in the probability of voting for the BSW across all cases, where the marginal effects differ for respondents, unlike in linear models.

The first model, which includes the socio-demographic factors, is presented in Figure 3. The models from both datasets show a higher average marginal probability of voting for BSW among East Germans and female voters, and a lower probability among those holding a university degree. Regarding age, the effect points in opposite directions, as expected. Generally, the average marginal effects are stronger in the model based on the BSW-O-Mat dataset. The socio-demographic variables are kept as additional variables in the following models to test their robustness.

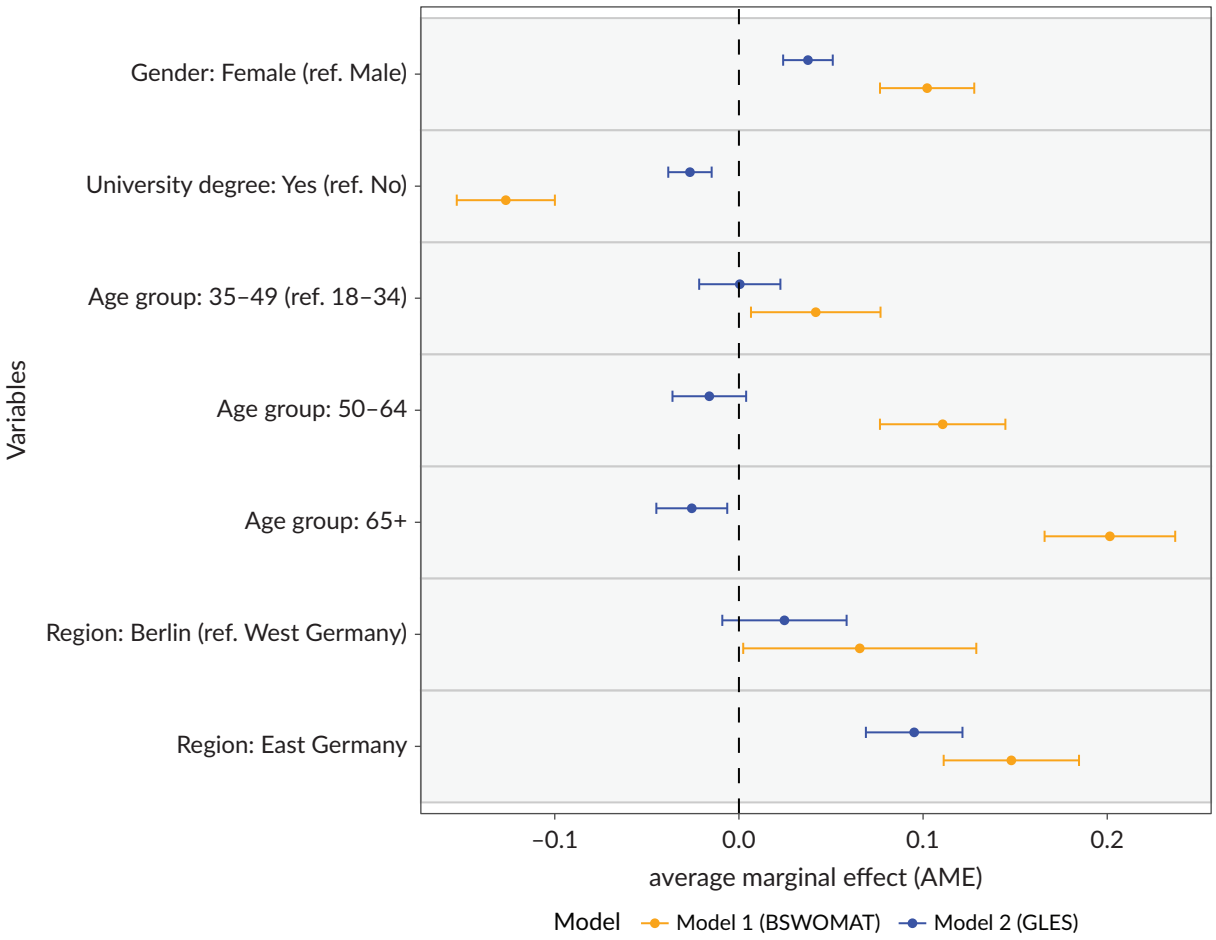

Figure 3. Average marginal effects (95% CIs) of weighted regression models predicting a BSW vote for socio-demographic factors.

The effects of the policy-related factors are summarised in Figure 4. Two models were estimated using the GLES dataset: one for policy support (blue) and one for policy congruence based on the BSW position from the GEPARTEE project (red). The BSW-O-Mat models, which measure support for BSW policies using BSW's

wording, report strong and statistically significant effects for all policy-related items. Unsurprisingly, the effect is weakest for the item that does not originate from the main BSW-O-Mat VAA items (i.e., a policy proposal not derived from the BSW manifesto), namely the item on state intervention in the economy, which was asked in the additional survey. Turning to the GLES analysis, the effects of supporting higher taxation of the wealthy, favouring state intervention in the economy, and rejecting weapon deliveries to Ukraine all point in the same direction. The GLES dataset contains two items related to immigration: immigrants' adaptation to German culture (assimilation) and the limitation of immigration. Surprisingly, the assimilation item shows no effect, whilst the immigration limitation item shows a negative effect. This likely reflects measurement issues: the assimilation item shows near-ceiling agreement across all voters (the mean is greater than 0.6 even among the least supportive group, which is voters of the Bündnis '90/Die Grünen; see Table A3 in the Supplementary File), resulting in insufficient variance. The immigration limitation item may capture general restrictionism rather than BSW's specific position, which emphasises cultural integration alongside such limitations. The congruence model addresses this by measuring proximity to BSW's exact stance, yielding a significant positive effect. No significant effect is reported for the climate-versus-economy item.

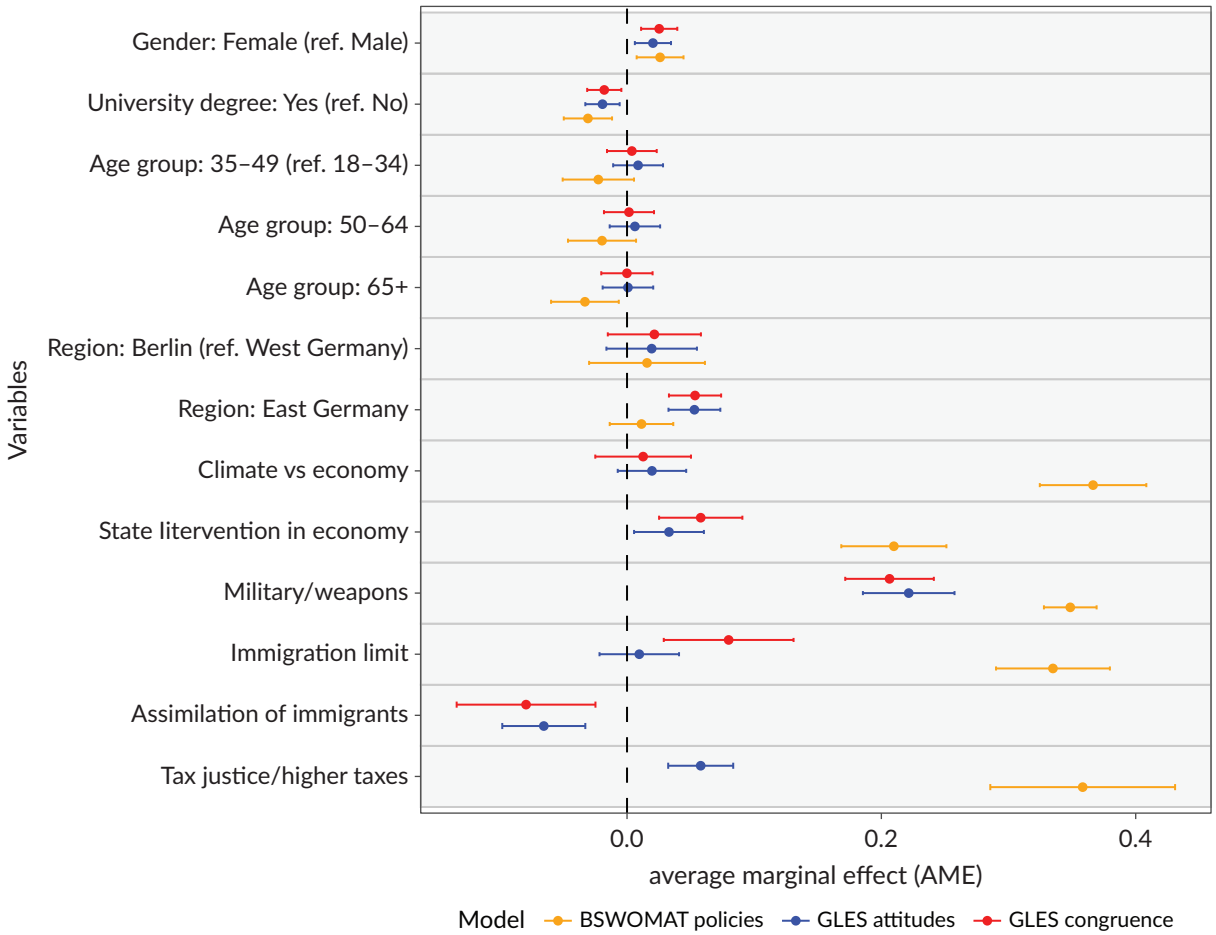

Figure 4. Average marginal effects (95% CIs) of weighted regression models predicting a BSW vote for policy-related factors.

For four variables (state intervention, climate versus economy, immigration limit, and weapon supply to Ukraine), congruence could be calculated for the GLES dataset, as reported in the second model (red). Overall, the effects are stronger compared to pure policy support, and the immigration item also shows a

statistically significant effect. Regarding immigration, it seems logical that congruence matters more than raw policy support, as the BSW advocates for limiting immigration but takes a less radical stance compared to the AfD.

The results for populism and institutional trust are summarised in Figure 5. As discussed in Section 5.1, the populism items differed, which prevented the formation of a comparable index. However, multicollinearity does not pose a problem in the two models—the VIF values for all populism variables are smaller than 2. Both datasets reveal consistent patterns. Although the set of populism items varied, the results from both models indicate that agreeing with these items generally increases the likelihood of voting for the BSW. In contrast, trusting the federal government and being satisfied with contemporary democracy in Germany lowers this likelihood. Again, a trend is visible that the effects are larger in the analysis with the BSW-O-Mat dataset.

Figure 5. Average marginal effects (95% CIs) of weighted regression models predicting a BSW vote for institutional trust and populism.

Finally, Figure 6 shows the average marginal effects for voting BSW across three voter groups with high expected BSW potential: former AfD voters, Die Linke voters, and non-voters. Both models show a significant positive effect for former non-voters and Die Linke voters. The effect for non-voters is much stronger in the BSW-O-Mat model. This is likely due to additional selection bias: non-voters using the website had greater affinity for BSW than non-voters in the representative sample. Regarding AfD voters from 2021, the BSW-O-Mat model reports no significant effect. The average marginal effect is almost the

same magnitude in the GLES model but is estimated with less uncertainty, resulting in a significant, albeit minimal, negative effect (the upper boundary of the confidence interval is −0.001). Therefore, it can be concluded that the BSW was able to draw strongly from former Left voters, some non-voters, and, contrary to initial expectations (S. Wagner et al., 2023), only minimally from former AfD voters, if at all.

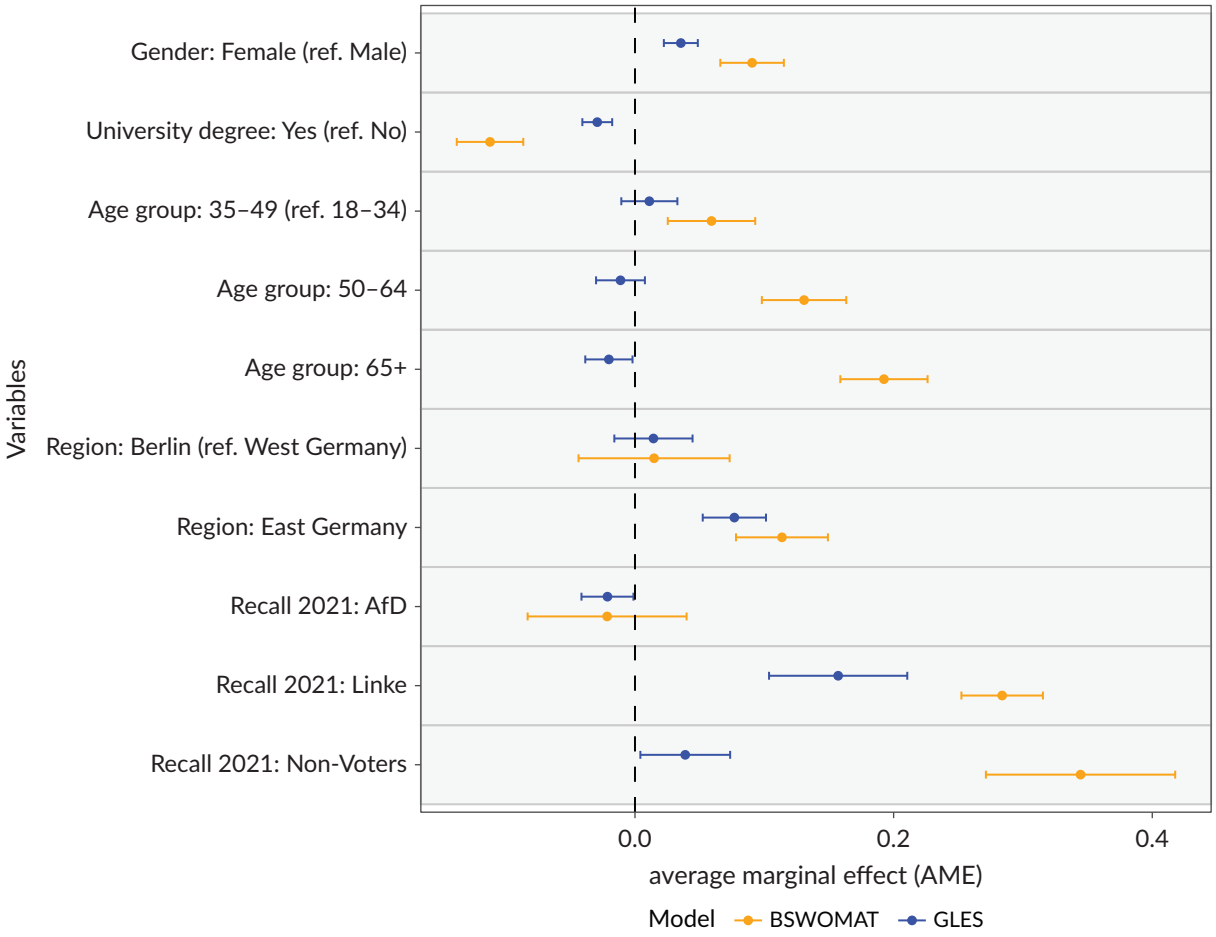

Figure 6. Average marginal effects (95% CIs) of weighted regression models predicting a BSW vote for recall.

To further analyse effect size convergence, Figure 7 illustrates the correlation between the estimated average marginal effects in both models, excluding the populism variables (as the items differed) and the effects for age (since the effects, as expected, pointed in different directions). Among all effects, the correlation is moderately high with $r = 0.654$. In addition, all estimates are either positive in both models or negative in both models, i.e., they do not point in different directions. As indicated by the colour, some outliers concern effects that were only statistically significant in one of the models. The right plot shows that removing these pairs increases the correlation to $r = 0.872$, indicating a strong correlation.

Lastly, because the largest weight in the BSW-O-Mat dataset was approximately 12 times that of the smallest, the average marginal effects were recalculated using unweighted data to assess the robustness of the results relative to the original 8,562 respondents. The estimated effects only deviate minimally. The correlation between the average marginal effects from the unweighted analysis and the weighted BSW-O-Mat analysis is very high, with $r = 0.991$ (see Figure A1 in the Supplementary File). Thus, while

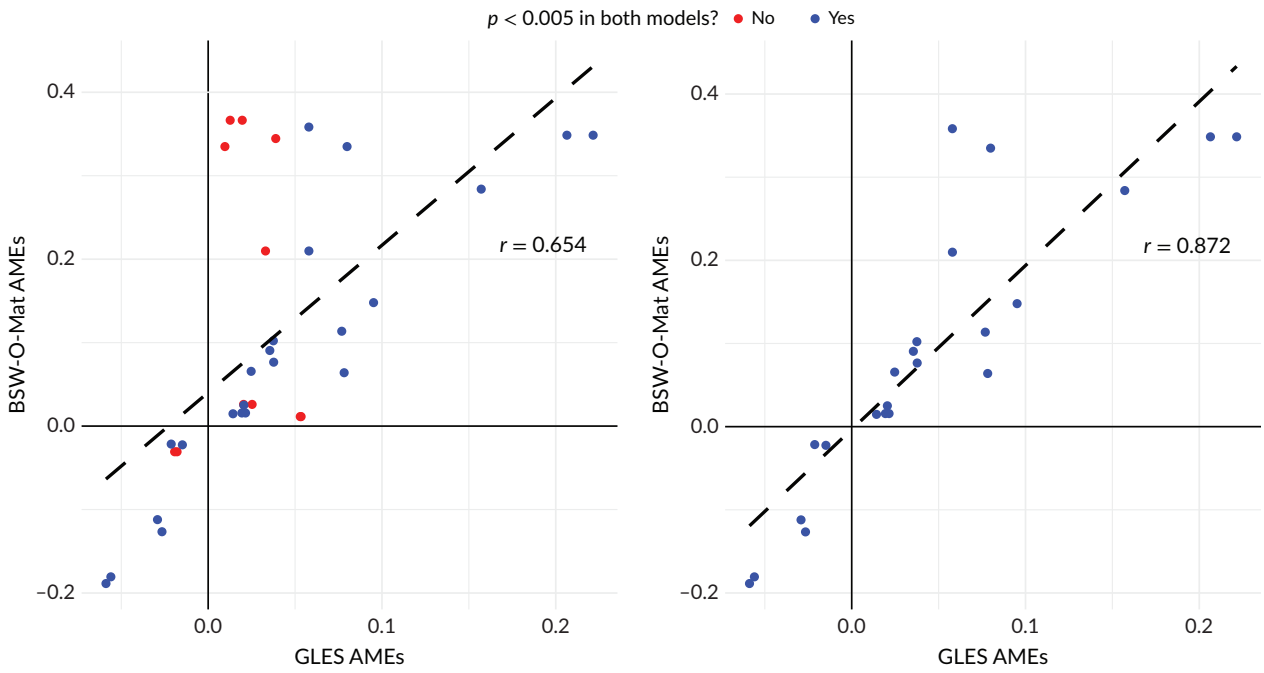

Figure 7. Correlation of average marginal effects in GLES and BSW-O-Mat models.

BSW-O-Mat users are demographically not representative, their response patterns within demographic groups remain stable after weighting.

6.2. Robustness Test: Predicting Underrepresented AfD Voters

Section 6.1 has demonstrated that the BSW-O-Mat dataset is, overall, useful for analysing BSW support. In this section, the analysis will be repeated for predicting AfD support. As shown in Table 1, AfD voters are strongly underrepresented in the BSW-O-Mat dataset. While this alone does not pose a problem—it could be a bias only affecting the relative size of voter groups—the fact that the VAA was designed to analyse congruence with the BSW could have attracted only a specific segment of AfD voters, namely those interested in the BSW, which could be another self-selection bias. To test whether the BSW-O-Mat dataset can also predict voting for the AfD, the same models were rerun for both datasets, with AfD voting intention as the dependent variable. Regarding recall, the largest voter groups switching to the AfD were former CDU/CSU voters, FDP voters, and non-voters (Infratest dimap, 2025b). As the AfD (unlike the BSW) also competed in the 2021 elections, the model includes a dummy variable for 2021 AfD voters.

Despite AfD voters constituting only 5.5% of the BSW-O-Mat sample (vs. 19.8% in GLES), substantial effect convergence is achieved (see Figures A2–A5 in the Supplementary File), suggesting that the tool captures general political dimensions rather than BSW-specific artefacts. The successful AfD prediction strengthens confidence in the BSW results, as it demonstrates that the dataset's validity extends beyond its intended focal party.

Both datasets show that the AfD is less supported by women, West Germans, and those with a university degree, and is more supported by the 35–49 age group than by the youngest age group. The policy models show that AfD voters prefer less state intervention in the economy, less taxes, the assimilation of migrants,

and a strict immigration limit, and are critical of weapon deliveries to Ukraine. The last two effects (immigration limitation and weapon deliveries) were not significant in the BSW-O-Mat analysis. This is expected: BSW-O-Mat items measure congruence with BSW's positions (opposing all military intervention; moderate immigration restriction), not AfD's positions (no strict anti-militarism; radical immigration restriction). The GLES items capture more general stances, aligning more closely with AfD's policy demands (Alternative für Deutschland, 2025), thus showing significant effects. The populism and trust models reveal a significant negative relationship between trust in government and satisfaction with democracy. Regarding populism, surprisingly, there are only a few significant positive effects across models in items related to the people's will, and even statistically significant negative effects. It should be noted that the GLES populism battery includes several new items that have not been validated yet. It was confirmed that FDP and CDU/CSU voters in 2021 were more likely to vote for the AfD. For non-voters, both the GLES and BSW-O-Mat models show a positive effect; however, the lower boundary is −0.0015 in the latter, indicating an effect that is not significantly different from 0. This is another indication that non-voters closer to BSW policies are overrepresented.

7. Conclusions

As the VAA market has become increasingly crowded, specialised VAAs focused on specific topics or parties have become more popular recently. The usefulness of such VAA data has not yet been studied; however, they may be subject to additional biases related to the tool's topic. Therefore, such VAA datasets present an even harder case for testing convergence validity with probability samples. This article has focused on the specialised single-party VAA BSW-O-Mat, developed in early 2024 to evaluate a match with the newly founded party BSW. The VAA dataset was then compared with the 2025 election probability sample from the GLES. Despite a strong overrepresentation of potential BSW voters, this study demonstrates that single-party VAA data can achieve convergent validity with probability samples. Convergence validity of substantial effects was observed in almost every case. The two main differences between the BSW-O-Mat and the GLES models were related to effect sizes, which were generally stronger in the former, and the robustness of some socio-demographic factors.

Convergence validity was put to an even harder test by running the same models used to predict voting intention for the AfD, whose voters were strongly underrepresented in the BSW-O-Mat dataset. The results for AfD voters, surprisingly, showed a similarly high level of convergence. Overall, these results contribute substantial insights into current methodological debates in VAA research. They suggest that such single-party VAAs can yield valuable (and valid) insights into the study of new parties, offering a promising avenue for researchers focusing on new parties or specific topics. This is generally good news for VAA researchers and developers, as the data have proven to be useful even for strongly underrepresented voter groups.

The (strong) self-selection bias—a challenge for almost every VAA dataset—present among potential BSW voters did not compromise convergence validity. The nature of the VAA (a tool focusing on policies proposed by a single party) is likely the reason for differences in effect sizes: First, because it attracted more BSW voters; second, because all statements were derived directly from the party's manifesto. The state intervention item demonstrates that this is the only policy item asked identically in both datasets and shows the strongest effect-size convergence among policy variables. Nevertheless, larger effect sizes were also observed for other variables, such as trust, education, and gender. For VAA researchers, this means being

cautious when interpreting effect sizes, but they can be relatively confident in the direction and statistical significance of effects.

These findings advance VAA methodology in three ways. Firstly, they establish that convergence validity—previously demonstrated only for classic multi-party VAAs (Toshkov & Romeijn, 2021)—extends to single-party tools despite compounded selection bias. Secondly, they clarify that substantial-effect convergence is more robust than effect-size convergence, guiding researchers as to when VAA data support explanatory inferences and when caution is warranted in interpreting magnitudes. Thirdly, the successful AfD analysis demonstrates that VAA data validity extends beyond focal voter groups, enabling comparative analyses within single-party VAA datasets.

Several limitations emerged from the analysis, which have implications for VAA research. Firstly, VAA designers need to know and address these biases (Pianzola, 2014). Effects related to non-voters differed most strongly and, in the case of the AfD models, could not be replicated. While the tool attracted a substantial share of non-voters, it is generally not suited to study this group, as it apparently attracted predominantly non-voters interested in the BSW. Secondly, convergence validity may have been facilitated by BSW's large public attention, which may have attracted broader segments. Other tools for new parties may attract fewer, more self-selected users. Thirdly, because VAA items were directly derived from the party's manifesto, it was more difficult to compare the results on issue congruence with those from the GLES study. In the future, VAA designers could consider using established survey items in these contexts as well. However, this may pose a challenge for new parties, as it is often unclear to researchers where such parties stand. Finally, there is the obvious limitation that the data covered only one specialised VAA in Germany, but it would be interesting to compare it with similar new-/single-party VAAs.

The analysis has revealed the potential of data from specialised VAAs for future research. While such tools have been around for some time, their data are hardly analysed. The fact that a specialised VAA for a new party, such as BSW, attracted so many interested users and yielded analytical insights comparable to those from probability samples is reassuring for VAA developers. Most countries have seen new parties emerge that quickly gained support (e.g., Dutch New Social Contract; Otjes & De Jonge, 2024). Having similar tools for more new parties can not only help voters understand what these new parties stand for, but also provide initial insights for political science on the electoral potential of such parties without requiring the wait or investment in probability samples. This also reveals the democratic function of such tools, as they can help voters to inform themselves about new parties or specific topics.

Another possibility is to view specialised VAAs as tools for analysing hard-to-reach groups. While such scenarios are thinkable (e.g., migrants via multilingual VAAs), the BSW analysis does not test this application, as BSW voters are not systematically underrepresented in probability samples. While this study compared single-party VAA data to probability samples—the methodological gold standard—future research could complement this by comparing single-party VAAs to classic multi-party VAAs to isolate VAA-specific versus single-party-specific selection mechanisms. Such comparisons would clarify which biases stem from VAA usage in general versus specialised tool design.

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Conflict of Interests

The author declares no conflict of interests.

Data Availability

After the end of the projects associated with the dataset, the data will be made publicly available at https://doi.org/10.7910/DVN/PGIGYC

LLMs Disclosure

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Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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