




Who Counts, Counts: An Exploratory Analysis of How Local Authorities Organise the Electoral Count in Germany's Most Populous State

Achim Goerres & Evelyn Funk


To cite this article: Achim Goerres & Evelyn Funk (2019) Who Counts, Counts: An Exploratory Analysis of How Local Authorities Organise the Electoral Count in Germany's Most Populous State, German Politics, 28:1, 61-79, DOI: [10.1080/09644008.2018.1541319](https://doi.org/10.1080/09644008.2018.1541319)

To link to this article: <https://doi.org/10.1080/09644008.2018.1541319>

 View supplementary material [↗](#)

 Published online: 01 Nov 2018.

 Submit your article to this journal [↗](#)

 Article views: 58

 View related articles [↗](#)

 View Crossmark data [↗](#)

Who Counts, Counts: An Exploratory Analysis of How Local Authorities Organise the Electoral Count in Germany's Most Populous State

ACHIM GOERRES and EVELYN FUNK

The organisation of the electoral counting process is a complex task that, in Germany, is delegated to local authorities. This article presents novel data from a representative survey of local communities in North Rhine-Westphalia, Germany's most populous state, to describe and to explain the variation of the ways in which the electoral count for major elections is organised. The findings are: (1) local communities differ greatly in the ways they recruit poll workers for election day and in the ways the counting teams are composed; (2) the inclusion of parties in the recruitment of poll workers, the only main prescription in the legal framework, is not heeded by one third of all local communities, and (3) most importantly, actual election results such as the proportion of invalid votes systematically and widely co-vary with the ways in which local authorities organise the counting process – a pattern that should not exist. This article discusses the implications of these patterns for the electoral integrity of Germany during the electoral administration process.

INTRODUCTION

Organising free and fair elections is a complex task. The counting process at the local level especially requires long-term planning. Political scientists often analyse these organisational issues in polities that have recently made the transition to democracy, although the task is no less complex in more established democracies. Surprisingly, we know more about these processes in defective or recently democratised polities than from established ones. This article presents novel survey data from such a context, namely from local authorities in the German state of North Rhine-Westphalia (NRW).

Germany as a whole follows the Governmental Model of Election Management (IDEA 2014) that places the executive at the heart of the election administration. The organisational responsibility for the local level lies with the local executive, supported by a variety of laws and ordinances specifying the fine detail. But the local executive has to draw on the public to get the counting done, with an estimated 150,000 individuals in NRW busy on election day. Poll workers, from both the electorate and the public sector, count side-by-side in the polling station.

Given this institutional context of electoral administration, we answer the following three questions: First, how do local authorities in NRW organise the counting process, in particular the recruitment of poll workers from the electorate? Second, how does the

variation in organisational practices co-vary with one specific electoral outcome, namely the proportion of invalid votes? Third, what are the predictors of using differing recruitment strategies for poll workers? Ideally, the organisation of counting should not impact the actual electoral returns. As this article discovers for the first time, in the most populous German state, the organisation of counting does indeed impact actual electoral returns: Who counts, counts.

Germany and its biggest state provide a particularly useful context to explore the details of organisational practice in an established democracy. NRW is one of the old *Bundesländer* and has had fair democratic elections since 1949. NRW is a particularly heterogeneous *Bundesland* that covers a variety of socio-economic regions (from very rich communities like the capital Düsseldorf, to economically weak communities in the rural countryside such as Sauerland and Eifel, to deprived urban areas like Unna) and a variety of political outcomes (for instance, the electoral returns of the Christian-Democratic Union (CDU) ranged from 27.3 per cent to 59.5 per cent in the 2013 *Bundestag* elections). NRW is also a very important state to understand in the German context as it entails one sixth of the total German population of about 82 million. If it was a country on its own, it would have the eighth largest population in the European Union after Germany proper, the United Kingdom, France, Italy, Spain, Poland and Romania.

The criteria that local authorities individually choose to decide how they organise the counting procedure lead to massive, idiosyncratic variations across communities. Despite the fact that representatives of local authorities go to seminars to get training, learn about practices of other authorities and hear about best practice from the state department of the interior, we found large differences between local authorities within NRW. These differences can be explained with regard to various background variables, and most surprisingly, these differences co-vary with the electoral outcome of invalid votes, a finding that highlights that electoral organisational practices actually have implications for election outcomes. Voters can thus wonder whether they get fairly counted election results, depending on where they live. However, we did not find any pattern that would be sufficient to explain any kind of election fraud. On balance, the findings suggest systematic differences that communities in NRW are not aware of.

Our findings improve our understanding of electoral administration and electoral integrity in established democracies. First, the empiric data provide rich new detail about how the complex task of setting up the counting of votes in a state of 18 million people works. Second, it shows that problems with electoral administration are not unique to recently democratised or 'in-name-only' democracies. Third, the findings characterise the central character of the very social process of counting which is at the heart of German electoral democracy. All told, scholars should thus be aware that who counts, counts.

THEORETICAL FRAMEWORK AND CASE DESCRIPTION

We will first describe the relevant literature on electoral administration and electoral integrity, and then the counting process in Germany from a comparative viewpoint, followed by a more detailed description of how poll workers defined as all individuals responsible for counting are recruited in Germany. Finally, we will propose some ideas about why counting votes is a genuinely social process.

Electoral Administration, Electoral Integrity and Counting

There is a relatively new field of research on electoral integrity (Norris 2013). Very often, researchers in this field deal with recently democratised or not fully democratised polities (for an example see Birch 2011; Elklit and Reynolds 2002; Norris 2014). In contrast, this article deals with the democratic process in an established democracy, Germany (like Breunig and Goerres 2011; Goerres and Krause 2017; Mebane, Klaver, and Miller 2016), and falls in line with other attempts to look systematically at established democracies like the United Kingdom (Clark 2017; James 2011, 2012, 2013, 2018).

As part of this wider interest in electoral integrity, the counting process has been central, especially with regard to the question of deliberate fraud (Lehoucq 2003). Put simply, who counts, counts. The aggregation of votes into results is critical and can easily be manipulated by fraudulent measures such as ballot box stuffing, intimidation around the polling station, non-transparent counting procedures etc. Problems with the administrative part of voting, which is the main concern of our analysis, can also result in shaking voters' confidence in the democratic process (Hall, Quin Monson, and Patterson 2009; Atkeson and Saunders 2007).

In addition, the organisation of the counting process has been viewed from the perspective of public management by some researchers (Montjoy 2008) with the prevention of electoral maladministration in mind (Norris 2014, 36), and from the perspective of human resources (James 2017, 2018). There is no national best-practice system that is universally recommended for electoral administration. Some think that independent electoral commissions from the executive are necessary, whereas others argue for the competitive influence of parties (Birch 2011; IDEA 2006). Analyses of sub-national differences in institutional electoral performances in an established democracy are rare (for an exception see James 2018).

The organisation of the electoral count and the aggregation of votes to an overall result reflect Germany's federal structure and the peculiarities of the electoral system wherein electoral district (*Wahlkreis*) results and *Land* results determine who wins seats from the candidate votes and how the seats for a party are distributed across states. The electoral count is always public and can be monitored by anyone as long as there is no interference with the process. The counting takes place in the polling stations (with each polling station counting up to about 2.000 ballots) in the case of normal ballots, and in a publicly known open office of the local authority for mail ballots. Poll workers recruited from the electorate and public sector employees usually count the votes side by side.

For instance, in 2017 in the city of Duisburg in NRW (about 500,000 inhabitants) there were 323 polling stations for the *Bundestag* election and 45 virtual polling stations for mail ballots. Thus, on the eve of the election, there were 368 simultaneous counting processes going on: 323 physically separate counting processes in polling stations like schools, sports clubs and other localities, and one complex process across several rooms of the *Rathaus*.

When a result is available in a polling station, it is transmitted, usually first orally by phone and then physically, to the local authority (*Gemeinde*), and from there to the returning officer of the electoral district (*Wahlkreis*). The returning officer aggregates

all results from his or her district. These results implicitly confirm the winner of the district for the first candidate vote, and the returning officer reports the district results to the returning officer of the *Bundesland*. The *Bundesland* results are important for the distribution of seats in the *Bundestag* according to the state-level lists which are then aggregated and transmitted to the federal returning officer (the head of the Federal Office of Statistics). There is an official form (*Schnellmeldeformular*) used for all transmission of results. Increasingly, computer software and encrypted digital transmission are used at the higher levels of aggregation.

The organisational responsibility for counting lies with the executive branch of government, with the greatest responsibility being placed on the local authority and the final responsibility placed on the ministry of interior. Germany thus follows the “Governmental Model” of Electoral Management (IDEA 2014). In Europe in 2014, this model was also practised in all Scandinavian countries, the United Kingdom, Ireland, Belgium, Luxemburg, Austria, the Czech Republic, Switzerland, Italy, Greece and Cyprus, thus creating a broad geographical band of countries – from the North to the South – that used the same electoral management model. However, across the world, the dominant model is an independent electoral management organisation (see Poland for an example), and a very small number of countries use a mixed organisational mode (like the Netherlands).

What makes Germany an interesting case is that the actual counting process involves many voters who have no attachment to the public sector, as well as public sector employees. This current German system contrasts with the authority-abiding model which was practised in Prussia after 1848 in which only civil servants did the counting (Buchstein 2004). Since local authorities are responsible for recruiting ordinary citizens as poll workers nowadays, the ways in which they recruit could create systematic differences between the counting groups. Political parties are involved in the organisation of the counting at the polling station level but not at the management level, nor at the observer level (compare against Otaola 2018; Casas, Díaz, and Trindade 2017).

Recruiting Poll Workers in North Rhine-Westphalia

Since the organisation of recruiting poll workers is itself part of the electoral process, understanding what is going on is desirable by itself. When introducing a comprehensive framework to assess the quality of an election, Elklit and Reynolds (2005, 153) use a dimension of quality entitled “Counting and tabulating the vote” as one of their 11 dimensions to measure electoral integrity. Birch (2011) introduces electoral management as one of the dimensions of electoral malpractice. In the election cycle described by Norris (2014), the voting process and the vote count make up two out of 11 stages.

In Germany, different kinds of elections (EU-wide, federal, regional and municipal) are regulated by different electoral laws. For each of these laws, statutory regulations provide more detailed interpretations even though, in our view, the rules do not differ a lot. The current Federal Election Law (*Bundeswahlgesetz*)¹ determines how the electoral bodies are established, including the election board (*Wahlvorstand*). According to the law, the election board includes a chief chairperson and a deputy chairperson as well as between three and seven eligible voters as board members (*Bundeswahlgesetz* §9, 2). The law states that the regional government (*Landesregierung*) or an appointed deputy

authority can assign the recruitment of election boards to the municipalities.² Furthermore, the law states that the recruitment process should consider those political parties that are represented in the respective districts “as far as possible”. Municipalities also have the mandate to approach public sector bodies and request personal data of public sector employees who reside in the respective municipality so that they can be recruited as polling officers (§9, 5).

The counting process is public by law (§10, 1) and polling officers are obliged to act neutrally throughout the process (§10, 2). The law defines that participation in an election board is an honorary appointment that can be declined ‘for good reason only’ (§11, 1). The Federal Election Statutory Regulation (*Bundeswahlordnung*)³ and other regulations provide the details of the Federal Election Law. Among others, it names those “good reasons” that allow citizens to decline an appointment as a polling officer (*Bundeswahlordnung*, §9).

In general, the laws themselves are not prescriptive for recruiting the poll workers; rather, the details can be found in the decrees (*Ordnung*). In general, there are only three prescriptions that guide the local authorities in their recruitment process, some of which are only ‘ought to’ rules. First, the presiding poll workers must be eligible voters with respect to that particular election. Second, they are to reside, but do not have to in the precinct. Third, political parties ought to be ‘adequately (*angemessen*)’ represented in the recruitment process according to their level of representation in the body to be elected.⁴

In 2015, every resident of NRW was required to take on ‘duties of honour (*Ehrenamt*)’ according to the municipal ordinance (*Gemeindeordnung*, §28). In other words, any voter who is resident in a district in NRW can be nominated with or without consent to act as a poll worker on election day. This gives local authorities an instrument that in theory is strong enough to solve any problems of coverage that they may encounter. However, instead of just forcing voters to engage in the counting, local authorities use a variety of other channels to recruit voluntary poll workers.

Counting Ballots as a Social Task

If all electoral counting in Germany was done by robots who did not interact with one another, had no personal history, no memory of past counting and no political preferences, looking at the differences between the ways in which counting was operated across local authorities would be meaningless. However, it is humans, mostly ordinary citizens working next to public employees, who do this task. Thus, the human factors could start to matter. Ideally, we would want to observe the poll workers counting (which we can) while knowing these things about them (which we can’t).⁵ The counting process in an established democracy like Germany could be systematically flawed due to problems stemming from these human interactions, even if not a single individual intends to skew the results. Thus, it is important to zoom into the social aspects of this process at the heart of democratic politics.

Counting ballots after an election is a complex social and numerical task done under time pressure. Poll workers are surrounded by some people they do not know and maybe some of whom they do know. Conducting tasks in the presence of others leads to effects on one’s performance (Markus 1978; Bond and Titus 1983), a phenomenon that is well analysed under the term ‘social facilitation’. As such, a numerical task

conducted by a group is likely to outperform the task conducted by a single individual (Qin, Johnson, and Johnson 1995), thus suggesting that counting in groups (apart from the democracy-enhancing mutual control) is a good thing with regard to the accuracy of the counting result. However, since the output of the task (the counting results) is not individually attributable, 'social loafing' is likely to be present, in which the tendency of individuals is to put less effort in when doing something in a group with their own contribution to the result not being visible (Harkins 1987; Williams and Karau 1991).

From management studies, we know that similarities between co-workers produce work-enhancing results (Bacharach, Bamberger, and Vashdi 2005). This suggests that poll workers who are similar to each other and who count together could achieve a different level of accuracy than poll workers who are less similar to each other. Here, different hypotheses can be imagined. On the one hand, people who are similar in terms of appearance and in terms of social signals such as language and body language could feature higher levels of trust and thus a higher level of efficiency when working together. On the other hand, the higher trust in more similar groups could lead to less control and thus higher levels of inaccuracy through inefficiency. For example, if all individuals counting together in a group are public employees who work together every day, their group dynamics will differ from a situation where people who have never seen each other before come together to count for the first time.

Breunig and Goerres (2011) speculate that the degree to which those who count together in elections know one another, or perceive each other to be alike, might influence the way they count. The expectation would then be that more similar groups trust one another more, leading to less double-checking and more mistakes. The degree to which similarity between groups varies at the precinct level could vary systematically in different contexts. For example, this phenomenon is likely to be more prevalent in small localities where people know more residents than in large cities where they might know fewer residents. Thus, we will look at the differences in urban and rural contexts. Breunig and Goerres (2011) also hypothesised that similarity could be reflected by the degree of population stability, with greater migration being associated with the potential of less similarity among the poll workers. Therefore, we will look at the fluctuation of inward and outward migration of residents as a potential factor affecting the similarities among poll workers.

The literature demonstrates that it is necessary to look at the counting process in order to be sure about the level of electoral integrity. NRW's electoral organisation is complex, but at the same time there are very few requirements to consider when recruiting poll workers. Since counting is a genuinely social process, depending on who comes together to do the counting, the results may vary.

METHODS AND DATA

Sampling of Local Authorities and Data Collection

NRW is an important context in which to understand the administration of elections because it is the biggest *Bundesland* of Germany in terms of its population. At the end of 2013, NRW had about 17.5 million inhabitants. NRW is also characterised by the heterogeneity of a multitude of socio-economic indicators such as average

income, poverty rates, population density and others. Politically, NRW is also very heterogeneous, with some electoral districts being strongholds of the Social-democratic party (SPD), such as the city of Duisburg, and other areas being the strongholds of the Christian-Democratic Union (CDU), such as Paderborn-Gütersloh.

The territorial and electoral organisation of North Rhine-Westphalia cut across each other. Electorally, the land comprises electoral districts (*Wahlkreise*) that form the basis of directly elected members of parliament to the *Bundestag* and *Landtag*. Within each electoral district there are a number of electoral precincts or wards that are to cover about the same number of eligible voters, between about 2000 and 3000. Territorially, the state of NRW consists of 396 municipalities including 23 urban districts. Precincts do not cut across municipal boundaries, i.e. every precinct can unambiguously be defined within a municipality.

We collected data in two phases. First, during the exploratory phase, we conducted semi-structured telephone interviews with 19 local authority representatives who were mainly responsible for organising elections in their area to assess the range of recruiting procedures and challenges (see the online appendix A.1 for details about our selection strategy and A.2 about the characteristics of key informants). Second, we developed a standardised questionnaire (see online appendix A.3 for details about the questions) to collect data from a larger number of respondents. Data collection took place between January 2015 and June 2015. We included all 23 urban districts of NRW and drew a random sample of 100 from the remaining 373 municipalities, resulting in a total gross sample of $n = 123$. We identified appropriate representatives in the municipalities through municipal websites or hotlines and addressed the representatives directly with our interview requests. In some cases, the local authority representatives agreed to talk to us directly; in other cases, we made appointments for interviews. Subsequent to the interviews, we asked respondents to complete another data form themselves that asked for exact figures they had to look up, like the actual number of poll stations. Local authority representatives were very responsive regarding our interview requests. Only ten representatives declined to participate altogether, giving lack of time as a reason or because the responsible staff were on parental leave and there was no appropriate substitute. The overall response rate of 92 per cent reflects the great transparency of local authorities regarding the electoral process.

This survey strategy follows the logic of a ‘key informant’ which assumes that those who work in an electoral organisation can also reliably inform us about it. This assumption seems warranted, given the high level of technicality of the subject (for an overview see Hurrell and Kieser 2005). However, there might be some variation as to tenure of office, for instance. We ran some additional analyses and did not find any impact of our informants’ personal characteristics on their answers (see online appendix A.2 for details on personnel).

In addition to data from telephone interviews, we collected statistical data from the Land Statistical Office. Our data set thus included our own primary data as well as secondary data from the municipalities in our sample. The statistical analysis corrected for finite population sampling. We had a sample of 113 *Gemeinden* out of 396. Occasionally, we had item non-response for some questions. We assume that these data are missing at random and impute the means. This assumption is reasonable as the missing data seems to be a function of the person giving the interview rather than of

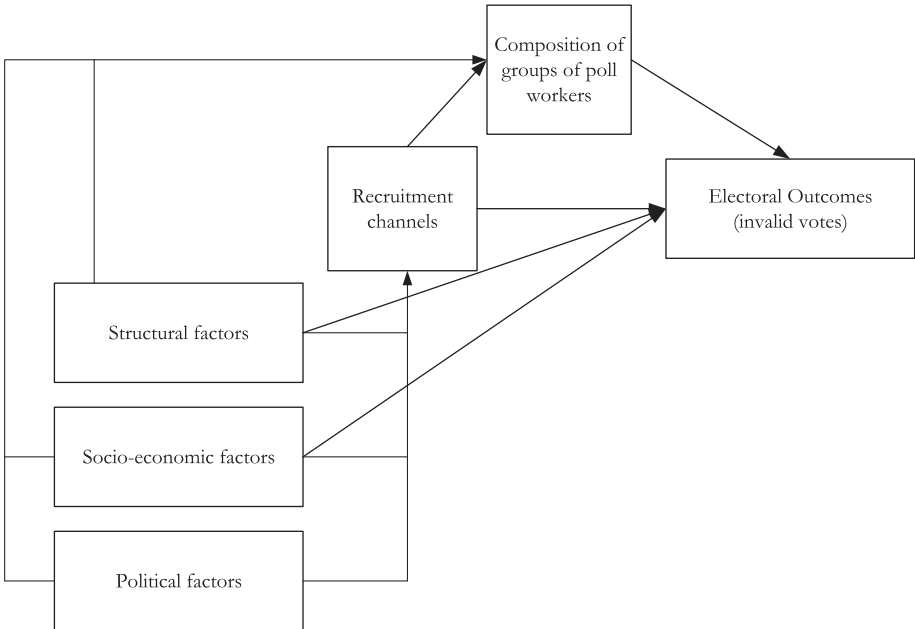
the expected missing value. Estimates produced by listwise deletion did not reveal substantively different results.

Empirical Approach

We followed the logic of a path model (see Figure 1) by looking at direct and indirect associations.⁶ The ultimate dependent variable that we were interested in was the proportion of invalid votes. We started with the full model that contained all structural, socio-economic and political variables as well as the organisational variables that we measured in the survey and we worked our way backwards focussing on significant coefficients of organisational variables. The first full model showed us whether, controlling for a whole range of other factors, knowing something about the electoral administrative organisation would help us to explain the proportion of invalid votes. In this first regression, we identified three organisational variables with an effect that is systematic. These three variables then became the dependent variables in a further three regressions to find out how structural, socio-economic and political variables can explain their variance. Through their variance we found another indirect effect that we explored in a fifth regression. We then combined these results in one discussion of direct and indirect paths.

We estimated ordinary least squares (OLS) regression models in which we corrected for a random sample from a small universe (113 out of 396 elements). Some dependent variables were dichotomies, so that the OLS model is a linear probability model for

FIGURE 1
HEURISTIC DIAGRAM OF THE EMPIRICAL APPROACH



these dependent variables. Alternative specifications such as binary logistic regressions yielded substantively the same results.

Variables

First, we looked at one outcome indicator, namely the proportion of invalid votes per *Gemeinde*. In our sample this varied between .35 per cent and 2.70 per cent, with a mean of 1.15 per cent.⁷ This is the only indicator of a measurable outcome of the electoral process. It is not an ideal indicator as voters are allowed to deliberately spoil their ballot, for instance, to express their general discontent with the voting choices (Moral 2016). However, the variation within one political system is usually not considered to be caused by counting differences. As we will show, a more extensive involvement of established teams, i.e. groups of citizens who want to count together, co-varied with a higher estimated proportion of invalid votes. Also, asking parties and politicians to recruit poll workers changes the proportion of invalid votes. Whether this positive coefficient is good or bad cannot be answered as we do not know the true proportion of invalid votes. But we can say that all organisational variables ought to have a coefficient of zero to reflect an ideal world where the organisational decisions of the local authority how to recruit poll workers do not impact on the actual election result.

We used three types of exogenous variables: structural, socio-economic and political. The structural factors were: (a) whether the voting was in a large city or not (*kreisfreie Stadt*); (b) the number of eligible voters at the 2013 *Bundestag* election, and (c) the geographical size of the community in order to further measure the complexity of the organisational task – this is relevant because the administrative unit is very large with hundreds of thousands of voters. The socio-economic factors were: (d) the prosperity of the region per working age adult (gross domestic product per person); (e) the unemployment rate, to control for general socio-economic differences across localities, and (f) the net migration, in order to check whether the ‘stability of the citizen pool’ impacted on our dependent variables. Finally, we had two political factors: (g) the party background of the mayor, who in NRW is a fulltime employee and the head of the local administration, and (h) the amount of public debt per person that could explain differences in recruitment strategies due to different financial constraints across communities (see James and Jervier 2017). Continuous variables that are not dependent variables were z-transformed to have means of zero and a standard deviation of one (see head column in table 3) to make them more comparable.

EMPIRICAL ANALYSIS

Describing the Dependent Variables from the Survey

Tables 1 and 2 give an overview of the survey-based dependent variables as to their general means and their group means for 23 large cities (like Düsseldorf, Köln or Duisburg) versus all other smaller communities (also see Goerres and Krause 2017).

Four ways of recruiting poll workers before the election were almost universally present and did not differ much in their popularity between large and small communities. These recruitment channels were: using personnel from the organising authority itself for poll work; re-using residents who have acted as poll workers before, either

TABLE I
 DESCRIPTIVE PATTERNS OF THE DEPENDENT VARIABLES (RECRUITMENT CHANNELS,
 PERCEPTIONS OF COMPOSITION OF COUNTING TEAMS, INVALID VOTES) IN PERCENTAGES

Recruitment channels	Overall	Large cities	Other <i>Gemeinden</i>	Difference between large cities and other <i>Gemeinden</i>
Use employees from public authority	100	100	100	0
Use experienced people as individuals	96	96	96	0
Use experienced people in established teams	92	95	91	4
Volunteers register on their own	91	91	91	0
Call for interest internet/ facebook	83	95	80	15
Call for interest press	79	86	77	9
Contact local parties overall	66	77	63	14
Contact CDU	59	50	62	-12
Contact SPD	59	50	62	-12
Contact Greens	58	50	59	-9
Contact FDP	53	41	56	-15
Contact The Left	31	9	36	-27
Contact Pirates	17	5	20	-15
Use public employees from adjacent localities	50	32	54	-22
Ask publicly-owned banks (Sparkassen)	47	73	41	32
Use all public employees (Bereitschaft)	46	23	52	-29
Ask high school students	45	64	41	23
Ask politicians and sachkundige Bürger	32	5	39	-34
Ask teachers	18	23	17	6
Ask local associations (Vereine)	15	18	13	5
Ask personal contacts	9	9	9	0

Note: Cell entries are estimated proportion for the whole sample, large cities, other communities or the difference thereof.

individually or as established teams, and using volunteers who registered of their own initiative. The popularity of the re-employment of established teams is remarkable. It means, for instance, that individuals A, B and C who had counted together last time were approached to count again. This means that people who definitely know one another would perform the same task at a new election. This could be positive because they have experience as a group and the counting processes are clear to them, or it could be negative because they might lack the distrust that the electoral administrative system actually requires in its set-up of the counting process.

The employment of professional administrators is not surprising as it allows the local authority to staff precincts with reliable colleagues whom they can trust to show up on election day. Most authorities also used general calls for volunteers to recruit poll workers. Interestingly, only 80 per cent of the less urban municipalities, compared to 95 per cent of the large cities, used internet and internet platforms to disseminate their calls for volunteers.

TABLE 2
PERCEPTION OF COMPOSITION OF COUNTING GROUPS

Recruitment channels	Overall	Large cities	Other <i>Gemeinden</i>	Difference between large cities and other <i>Gemeinden</i>
% of counting teams in wards that include public employees	69	61	71	-10
% of counting teams in wards that consist of established teams	57	39	61	-22
% of poll workers who are personally known to organiser	60	29	66	-37

What is really surprising is that only 66 per cent of local communities asked local political parties for voluntary poll workers. It is legal for local communities not to ask the parties, but it is the only prescribed ordinance for how to recruit poll workers, and it is not heeded among one third of the communities. Adhering to this ordinance is more prevalent in the large cities (77 per cent) than in the smaller localities (63 per cent). We surveyed each of the six major parties represented in the regional parliament (*Landtag*) whether they had been approached individually. Here, there is a clear division between rural communities, where this single-party approach is more prevalent, and the smaller cities, where it is less common. In addition, we see that the old established parties – the CDU, SPD, the liberals (FDP) and the Greens – were approached much more frequently than the organisationally much younger parties, The Left and Pirates.

Further down the list of the recruitment channels in Table 1, we see that to approach elected politicians⁸ or *sachkundige Bürger* for poll working is more common in the more rural areas (39 per cent) compared to the large cities (5 per cent). Something that struck us in the open answers was that 9 per cent of authorities used personal contacts, i.e. friends, family and acquaintances, to recruit them as poll workers. This is remarkable as it creates a socially much more homogenous body of poll workers. Using random samples from the register as the only way to ensure equality of poll workers on average, a strategy that is dominant in other countries (e.g. Mexico, Francisco and Sandra 2017), was reported by only two out of 113 authorities (1.7 per cent).

We asked our respondents to estimate the percentage of counting teams in their area that included at least one public employee. With an overall mean of 69 per cent, the mean was only 61 per cent for large cities, and 71 per cent for smaller communities. This is interesting as it shows that the inclusion of public officials in poll workers' groups is more common in the countryside than in the large cities. Also, 61 per cent is the mean of the estimated number of wards in the countryside in which established teams are employed for counting; much higher than the 39 per cent in large cities. The employment of established teams is thus more prevalent in more rural settings. Finally, the estimated proportion of poll workers who were personally known to the organisers was much lower in large cities (66 per cent) compared to more rural communities (29 per cent). This might be a function of the smaller networks in which the organisers are embedded.

With these descriptive statistics, we found some remarkable differences between large cities and the countryside. The organisation of the counting process in the countryside is characterised by more direct communications, at least with the established

TABLE 3
FIVE OLS REGRESSIONS ON INVALID VOTES, PERCEPTIONS OF THE COMPOSITION OF
COUNTING TEAMS AND THREE SELECTED RECRUITMENT CHANNELS

	Behavioural outcome (1)	Perception of composition (2)	Reported use of recruitment channels		
			(3)	(4)	(5)
	% invalid votes (0-100)	% of counting teams in wards that consist of established teams (0-100)	Contact local parties overall (0, 1)	Ask politicians and <i>sachkundige Bürger</i> (0, 1)	Ask personal contacts (0, 1)
Perception of composition of counting teams					
% of counting teams in wards that consist of established teams	0.002* (0.009)				
% of poll workers who are personally known to the organiser	-0.001 (0.300)				
% of counting teams in wards that have a public employee	-0.000 (0.590)				
Selected recruitment channels					
Contact local parties overall	-0.143* (0.008)	-5.61 (0.268)			
Ask politicians and <i>sachkundige Bürger</i>	0.291* (0.001)	1.622 (0.795)			
Ask personal contacts	-0.098 (0.181)	16.748* (0.036)			
Structural factors					
Large city (<i>kreisfreie Stadt</i>)	0.027 (0.688)	-27.275* (0.004)	0.072 (0.687)	-0.250* (0.019)	0.066 (0.249)
Number of eligible voters in K at the 2013 general election (z-transf.) std. = 107.000	-0.122* (0.002)	7.527 (0.104)	0.039 (0.629)	0.003 (0.954)	0.032 (0.326)
Area in km ² (z-transf.) std. = 61 km ²	0.027 (0.430)	-6.605 (0.104)	-0.065 (0.279)	-0.049 (0.392)	-0.007 (0.831)
Socio-economic factors					
GDP per 18-65 years old (z-transf.) std = 202.000 €	-0.005 (0.879)	-1.242 (0.721)	0.130* (0.002)	0.006 (0.890)	-0.013 (0.563)
Net migration (z-transf.)	0.052* (0.002)	-0.119 (0.002)	-0.014 (0.002)	-0.061* (0.002)	-0.013 (0.002)

std.=6 per thousand inhabitants	(0.027)	(0.968)	(0.659)	(0.075)	(0.612)
Unemployment rate (z-transf.)	0.164*	-11.392*	-0.064	-0.01	-0.061*
std.=2.2 %	(0.000)	(0.007)	(0.324)	(0.853)	(0.059)
Political factors					
Mayor from SPD (BL: mayor from CDU)	-0.006	6.803	0.119	0.028	-0.04
	(0.925)	(0.282)	(0.203)	(0.742)	(0.260)
Mayor from other party or independent	-0.07	-7.945	0.164	0.055	-0.007
	(0.287)	(0.322)	(0.146)	(0.626)	(0.923)
Public debt per person (z-transf.)	-0.015	8.849*	0.061	0.016	-0.017
std.=2002 €	(0.638)	(0.028)	(0.318)	(0.738)	(0.366)
Constant	1.261*	61.795*	1.285*	0.350*	0.090*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)
R ²	0.335	0.150	0.110	0.109	0.041

N=113.

* where $p < 0.10$, standard errors adjusted for finite population, OLS estimates with p-value (in parentheses) of a two-sided test in which $\beta = 0$.

parties, and with individual politicians or active individuals, and with a higher number of public employees in the poll worker groups. Counting in established groups and personal acquaintance with the organisers were also more common in the countryside. Using public employees, and those with experience, as well as volunteers, are the strategies that are used almost universally across local communities.

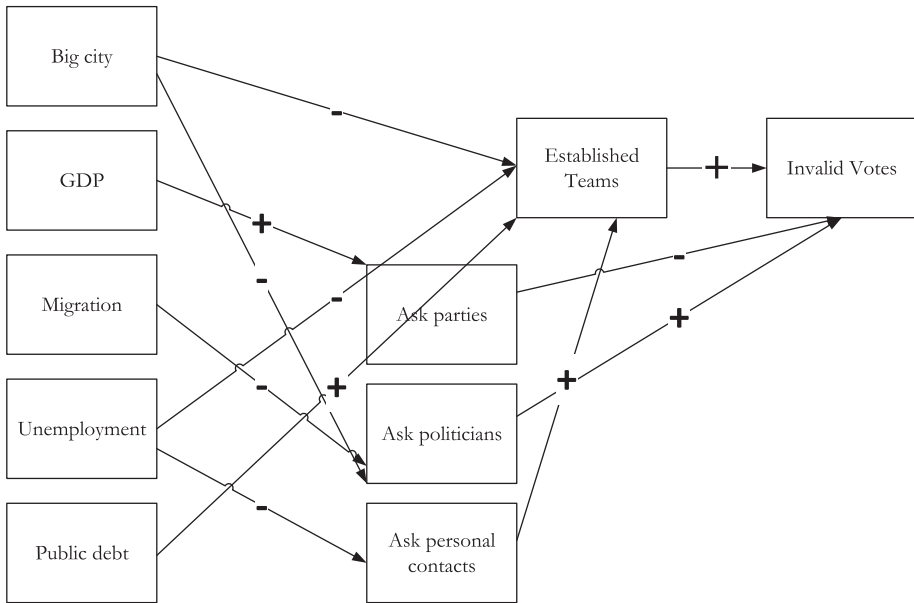
How do these findings compare internationally? NRW's recruitment patterns are open in that any voter who wants to count can count. Public employees are central for filling the gaps and getting the more demanding administrative tasks done, and parties can play a significant role if they want to. Random samples from the register, as used in Mexico (see Francisco and Sandra 2017), were reported rarely, even though this is a means of impartial recruitment.

Multiple Regression Analysis: Organising the Electoral Count and Invalid Votes

In a perfect world, the way an election is organised locally should not systematically covary with the election results. Unfortunately, as we will show, this *is* the case in NRW. Entries in Table 3 are non-standardised OLS point estimates and p-values of a two-sided test, corrected for the fact that we had a rather large sample from a small population (113 out of 396 elements). To reiterate, continuous predictors were z-transformed, thus having a mean of zero and a standard deviation of one. Effect sizes were thus comparable across models and variables.

We worked our way backwards from the final dependent variables to the proportion of invalid votes, which varied between .35 per cent and 2.70 per cent with a mean of 1.15 per cent. Let us look at the organisational variables that we collected in our survey. If none of them has a significant coefficient, it would mean that, causally, either they were irrelevant, or that they only mediated the effects of one of the structural,

FIGURE 2
A GRAPHICAL SUMMARY OF THE EMPIRICAL FINDINGS



socio-economic and political variables. Instead, there were three significant coefficients from organisational variables. The reported percentage of polling stations where poll workers work in established teams has a coefficient of .002. It means that for every additional 10 per cent that were reported for polling stations being worked on by established teams (people who want to count together again) there was an increase in the proportion of invalid votes of .02 per cent. This does not seem much, but this organisational variable has a standard deviation of 35 per cent, so that a typical effect would be $35 \cdot .002 = .07$ per cent on the dependent variable. It could be that poll teams that knew each other, had worked together before and had selected themselves to work together again are just more professional and thus stricter when validating ballot papers. The fear that they may be controlling each other less because they trust each other seems less warranted.

Moreover, communities that report to contact parties to get poll workers have an estimated proportion of invalid votes that was .14 per cent lower. It could be that partisan poll workers are more willing to count ballots in their favour or in another party's favour than poll workers without a partisan background. Then, communities that recruit by addressing individual politicians or *sachkundige Bürger* had an estimated .29 per cent higher proportion of invalid votes. As already mentioned, these recruits cannot stand for elections themselves so they could be stricter than recruits from other recruitment channels when they validate ballot papers.

In Table 3, regression 1 also yields other significant coefficients that are of less interest except for their magnitude. When the unemployment rate goes up by 2.2 per cent, the estimated proportion of invalid votes is .16 per cent higher. This means that our

organisational variables capture bigger effects than the biggest effect from the structural, socio-economic and political factors. The organisational process is directly related to the proportion of invalid votes. We can only speculate about the causal mechanisms at this point. Partisan poll workers may count differently than others when they are in groups; individual politicians or active political citizens not standing for elections may also count differently. That groups of established teams work together again seems most noteworthy. Their usage without breaking them up seems to go against the underlying principles of mutual control and mistrust.

Regressions 2–5 in Table 3 explore the antecedent factors of the three identified variables. In regression 2, we have the percentage of polling stations with established teams as the dependent variable (between 0 per cent and 100 per cent). Here, recruiting through the organisers' personal contacts has a strong significant effect of 16.8 per cent. Since the coefficient of recruiting through personal contacts is not significant in regression 1 ($p = .181$), this means that this effect on invalid votes only goes through the established team variable. Moreover, established teams are more likely to be employed in smaller communities, in areas with lower unemployment (thus a phenomenon of less-deprived communities) and in areas with higher public debt (perhaps as a cost-saving technique).

In regression 3 (contacting parties, 0 or 1), we only find one significant positive effect from economic prosperity. In better-off regions, parties are more likely to be asked than in less well-off regions. In regression 4 (asking individual political individuals), again we find that being in a large city reduces the chance of using this recruitment channel by .25. Also, net migration yields a negative coefficient ($b = -.061$, $p = .075$), meaning that more volatile districts are associated with a lower chance of using this technique. Finally, asking personal contacts (regression 5) is significantly negatively linked with the unemployment rate ($b = -.061$, $p = .059$). In more deprived areas, organisers talked less often to their personal contacts when recruiting poll workers.

Regressions 2 to 5 in Table 3 show that the organisational ways of recruiting poll workers are themselves systematically linked to several variables. Figure 2 summarises the findings again, and we see at least one variable from each of the three factors – structural (e.g. large city), socio-economic (e.g. GDP per person) and political (e.g. public debt) – somewhere in the findings.

Let us consider the findings backwards to get a better sense of direct and indirect paths (see Figure 2). There are three strategies of organising the electoral count that have a systematic impact on the proportion of invalid votes: (a) recruiting established teams, (b) not asking parties for help, and (c) asking individual politicians and politically active citizens (*sachkundige Bürger*). Starting with community characteristics, we deduce the following: large cities are associated with a lower proportion of invalid votes because they use fewer established teams and because they ask fewer individual politicians and active citizens. Richer communities are associated with a lower proportion of invalid votes because they ask parties more frequently. Communities with a higher net migration are associated with a lower proportion of invalid votes because they ask politicians less frequently. Communities with higher employment are associated with a lower proportion of invalid votes because they use established teams less often, and they also use fewer personal contacts, which again are associated

with more established teams. Finally, communities more in debt are associated with a higher proportion of invalid votes because they use established teams less often.

These regressions taught us that the proportion of invalid votes is contingent on the way in which the electoral process is organised. Normatively, this is not a good thing. For instance, the proportion of invalid votes in the *Bundestag* elections varies between local communities depending on the kind of voters who cast their vote there. But this proportion must not depend on organisational features. It seems that the way in which a local authority organises the counting process influences the way in which the counting is conducted. It might actually affect real-world election outcomes. We can only speculate about the causal mechanisms, but the established counting teams seem to be worrisome: people who have worked together as a team before may be able to produce more accurate results because of their experience; but they may also be less distrustful of one another, which could reduce the accuracy of results. A greater involvement of political parties could mean more partisan poll workers who might be more willing to acknowledge a valid ballot – maybe even in their favour.

CONCLUSIONS

This study shows for the first time that actual electoral outcomes are contingent on the ways in which the counting process is organised. The proportion of invalid votes systematically co-varies not only with the type of recruitment channels that are employed to recruit the army of poll workers, but also with the composition of the counting teams, as perceived by the people interviewed in this representative survey of NRW communities. We found, for instance, that the proportion of established counting teams was associated with a higher number of invalid votes. Since the proportion of established counting teams itself depends on the extent of social deprivation, as measured by unemployment, it is by itself already positively associated with invalid votes. Socially deprived communities are more likely to have a higher proportion of invalid votes due to their socio-economic composition, but fewer invalid votes because established teams for counting are deployed less often. Established teams are also more common if the organisers draw on their own personal contacts, which again happens less frequently in deprived communities.

In addition, using the strategy of approaching elected politicians and active citizens is associated with a higher number of invalid votes. Here, two very different conclusions seem to be in order. Elected and active politicians are more likely to be in the establishment. They might also be less willing to count a dubious vote for a small or extremist party if there is any risk of the ballot being spoiled. Or, these politicians might, just like public employees, be more familiar with the rules of the electoral counting process and thus be stricter about whether to count a ballot paper as valid. Since asking politicians to become involved in the counting process is more common in smaller localities, invalid votes are more likely to occur in the more rural communities due to this feature of electoral management. Finally, contacting parties for recruiting poll workers is negatively associated with the proportion of invalid votes. When parties are approached for recruitment, the estimated invalid vote count goes down. This may be due to a greater willingness to count ballots – maybe in their favour – although this is pure speculation.

Overall, the organisation of the counting teams varies according to the urban–rural dimensions and to some extent according to the socio-economic factors of prosperity and deprivation. This would not be problematic if it was not related to actual voting outcomes. The inclusion of political parties in the electoral process, as one of the few guidelines for recruiting poll workers, was only heeded by two thirds of the communities, and is more likely to occur in richer settings. Surprisingly, many communities employ the technique of re-using established teams for counting, i.e. teams of individuals who have counted together previously. This may be problematic (in that these groups trust each other too much) or good (in that they have established working routines); we do not know.

This exploratory study raises more questions than it answers: What happens between individuals at the actual group level during the count? Although counting is public, how does the accuracy of the counting, e.g. vis-à-vis counting spoiled tickets, vary with the composition of the counting groups? How bad is the problem with inaccurate counting? Organising the electoral counting process in a large, modern democracy is a massive and complex task. Is there any way that is actually better than the system that emerges from this study? These are urgent questions that need answering in the future.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

SUPPLEMENTAL DATA AND RESEARCH MATERIALS

Supplemental data for this article can be accessed on the Taylor & Francis website, doi:[10.1080/09644008.2018.1541319](https://doi.org/10.1080/09644008.2018.1541319).

ABOUT THE AUTHORS

Achim Goerres is professor of empirical political science and chair of the department of political science at the University of Duisburg-Essen. His research interests cover political behaviour, electoral administration, and the politics of migration and population ageing.

Evelyn Funk is a research associate at the German Development Institute, Bonn, and a PhD candidate at the University of Duisburg-Essen. Her research interest lie in evaluation research, policy effectiveness measurement and the politics of evaluation.

NOTES

1. Federal Election Ordinance, 2013 version.
2. Regulations for election boards that count postal votes are slightly different and will not be described here in detail.
3. Federal Election Ordinance, 2013 version.
4. In our qualitative interviews before the standardised survey, we learnt that the local authorities share information and best practice with one another. However, there is no additional regulation from the NRW department of the interior as the department only gets involved with problems of the recruitment process. In summary, there is thus a relatively small legal basis for recruiting the poll workers in NRW

(Personal Communication with Markus Tiedtke Referat 111, 3 March 2015, at the Department of the Interior and Local Affairs, Düsseldorf).

5. For some rare poll worker surveys, see Clark and James (2017).
6. We also estimated structural equation models as path models but did not find them too useful as we were not interested in explaining all variance of endogenous variables.
7. The variable approximates a normal distribution but for three outlying communities with higher proportions. Excluding them from the analysis did not change the substantive results.
8. Candidates for the body to be elected are banned from counting, although local councillors can act as poll workers in, for instance, a *Bundestag* election.

REFERENCES

- Atkeson, Lonna Rae, and Kyle L. Saunders. 2007. "The Effect of Election Administration on Voter Confidence: A Local Matter?" *PS: Political Science and Politics* 40 (4): 655–660.
- Bacharach, Samuel B., Peter A. Bamberger, and Dana Vashdi. 2005. "Diversity and Homophily at Work: Supportive Relations Among White and African-American Peers." *Academy of Management Journal* 48 (4): 619–644.
- Birch, Sarah. 2011. *Electoral malpractice*. Oxford: Oxford University Press.
- Bond, Charles F., and Linda J. Titus. 1983. "Social Facilitation: A Meta-Analysis of 241 Studies." *Psychological Bulletin* 94 (2): 265–292.
- Breunig, Christian, and Achim Goerres. 2011. "Searching for Electoral Irregularities in an Established Democracy: Applying Benford's Law Tests to Bundestag Elections in Unified Germany." *Electoral Studies* 30 (3): 534–545.
- Buchstein, Hubertus. 2004. "Das Verschwinden der armen Wahlhelfer." *Leviathan* 32: 309–318.
- Casas, Agustín, Guillermo Díaz, and André Trindade. 2017. "Who Monitors the Monitor? Effect of Party Observers on Electoral Outcomes." *Journal of Public Economics* 145: 136–149.
- Clark, Alistair. 2017. "Identifying the Determinants of Electoral Integrity and Administration in Advanced Democracies: The Case of Britain." *European Political Science Review* 9 (3): 471–492.
- Clark, Alistair, and Toby S. James. 2017. "Poll Workers." In *Election Watchdogs: Transparency, Accountability and Integrity*, edited by P. Norris and A. Nai, 144–166. New York: Oxford University Press.
- IDEA. 2006. *Electoral Management Design: The International IDEA Handbook*. Stockholm: IDEA.
- IDEA. 2014. *Electoral Management Design: The Revised Edition*. Stockholm: IDEA.
- Elklit, J., and A. Reynolds. 2002. "The Impact of Election Administration on the Legitimacy of Emerging Democracies: A New Comparative Politics Research Agenda." *Commonwealth & Comparative Politics* 40 (2): 86–119.
- Elklit, Jørgen, and Andrew Reynolds. 2005. "A Framework for the Systematic Study of Election Quality." *Democratization* 12 (2): 147–162.
- Francisco, Cantú, and Ley Sandra. 2017. "Poll Worker Recruitment: Evidence from the Mexican Case." *Election Law Journal: Rules, Politics, and Policy* 16 (4): 495–510.
- Goerres, Achim, and Sebastian Krause. 2017. "Wie Wahlhelfer rekrutiert werden: Befunde aus den Kommunen Nordrhein-Westfalens." *Kommunalpraxis Wahlen* 8: 122–125.

- Hall, Thad E., J. Quin Monson, and Kelly D. Patterson. 2009. "The Human Dimension of Elections: How Poll Workers Shape Public Confidence in Elections." *Political Research Quarterly* 62 (3): 507–522.
- Harkins, Stephen G. 1987. "Social loafing and social facilitation." *Journal of Experimental Social Psychology* 23 (1): 1–18.
- Hurrle, Beatrice, and Alfred Kieser. 2005. "Sind Key Informants verlässliche Datenlieferanten?" *Die Betriebswirtschaft* 65 (6): 584–602.
- James, Toby S. 2011. "Only in America? Executive Partisan Interest and the Politics of Election Administration in Ireland, the UK and the USA." *Contemporary Politics* 17 (3): 219–240.
- James, Toby S. 2012. *Elite Statecraft and Election Administration: Bending the Rules of the Game?* Basingstoke: Palgrave Macmillan.
- James, Toby S. 2013. "Fixing Failures of U.K. Electoral Management." *Electoral Studies* 32 (4): 597–608.
- James, Toby S. 2017. "Building Better Elections: The Role of Human Resource Management Practices." In Building Better Elections Workshop, organised by the Electoral Management Research Network, ECPR Conference. Oslo.
- James, Toby S. 2018. *Comparative Electoral Management: Performance, Networks and Instruments*. New York: Routledge.
- James, Toby S., and Tyrone Jervier. 2017. "The Cost of Elections: The Effects of Public Sector Austerity on Electoral Integrity and Voter Engagement." *Public Money & Management* 37 (7): 461–468.
- Lehoucq, Fabrice. 2003. "Electoral Fraud: Causes, Types, and Consequences." *Annual Review of Political Science* 6 (1): 233–256.
- Markus, Hazel. 1978. "The Effect of Mere Presence on Social Facilitation: An Unobtrusive Test." *Journal of Experimental Social Psychology* 14: 389–397.
- Mebane, Walter R. Jr., Joseph Klaver, and Blake Miller. 2016. "Frauds, Strategies and Complaints in Germany." In Annual Meeting of the Midwest Political Science Association, Chicago, IL, April 7–10.
- Montjoy, Robert S. 2008. "The Public Administration of Elections." *Public Administration Review* 68 (5): 788–799.
- Moral, Mert. 2016. "The Passive-Aggressive Voter: The Calculus of Casting an Invalid Vote in European Democracies." *Political Research Quarterly* 69 (4): 732–745.
- Norris, Pippa. 2013. "The new research agenda studying electoral integrity." *Electoral Studies* 32 (4): 563–575.
- Norris, Pippa. 2014. *Why Electoral Integrity Matters*. Oxford: Oxford University Press.
- Otaola, Miguel Lara. 2018. "To Include or Not to Include? Party Representation in Electoral Institutions and Confidence in Elections: A Comparative Study of Latin America." *Party Politics* 24 (5): 598–608.
- Qin, Zhining, David W. Johnson, and Roger T. Johnson. 1995. "Cooperative Versus Competitive Efforts and Problem Solving." *Review of Educational Research* 65 (2): 129–143.
- Williams, Kipling D, and Steven J Karau. 1991. "Social Loafing and Social Compensation: The Effects of Expectations of Co-worker Performance." *Journal of Personality and Social Psychology* 61 (4): 570–581.