

**Loved by Politicians but Irrelevant at the Ballot Box?**

The Diffusion of Twitter and its Impact on Preference Voting in the Dutch General Elections of  
2010 and 2012

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## Abstract

One of the most relevant questions for campaigners and politicians is: what determines the number of votes a candidate gets? Recent studies have shown that usage of social media such as Twitter can have a (modest) impact on the number preference votes of a candidate. However, these studies used data on elections in which only a very limited group of politicians used Twitter. In such a context it was easy for a candidate to stand out. It remains to be seen whether this effect also holds in times of widespread usage. This study examines the impact of Twitter use in the Dutch 2010 and 2012 national elections. It uses a unique dataset of all 1024 candidates of the parties that won at least one seat in the respective elections. Twitter use skyrocketed: the number of candidates having an account increased from 34.1 to 75.5% and the average number of tweets increased from 3.6 to 9.7 per politician a day. The number of voters that followed politicians on Twitter, however, only increased modestly. In this new context of widespread Twitter usage, still an effect was found. In 2010 Twitter yielded a decent bonus for those candidates who both had a high number of followers and tweeted a lot. In 2012 the situation was more equalized: all candidates seemed to have something to win. However, the number of extra votes that Twitter yielded, was considerably lower. As such it seems that the competition has become much fiercer.

## 1. Introduction<sup>1</sup>

Ever since Obama won his first presidential election in 2008, media pundits have pointed to social media as an essential component of a successful campaign strategy. The election victory of Beppe Grillo's Five Star Movement in Italy (Bartlett, 2013), the recent American elections in general (Agranoff and Tabin, 2011) or the election campaign of Australia's Kevin Rudd (Pollard, 2013) all have been highlighted as examples of the huge impact of social media. Politicians themselves seem to believe the hype and especially Twitter is increasingly being used in communication and campaigns (Lee and Yun Shin, 2012; Vergeer, Hermans and Sams 2013).

Yet scholarly assessments so far have a more sobering message. Cyber campaigning in general seems only modestly associated with the number of votes a candidate gets (Sudulich, Baccini and Wall, 2012; Gibson and McAllister, 2012). Kruikemeier, Van Noort and Vliegenthart (2013) and Spierings and Jacobs (2013) found a significant but again modest association between social

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media, including Twitter, and the number of preference votes a candidate gets. Part of these effects reflect the fact that people who like a politician are both more likely to follow and vote for that candidate. However, actively using Twitter (Spierings and Jacobs, 2013) and interaction with followers (Kruikemeier, Van Noort and Vliegenthart, 2013) also yields an effect. If voters both follow and vote for a politician because they already liked her in the first place, usage should be irrelevant, but this is not the case. Surely these results are not definitive, but they suggest nevertheless that actively using Twitter in one's campaign can have modest electoral benefits.

Yet it remains to be seen whether this result is just a temporary blip stemming from the competitive advantage the Twitter early adopters had in being able to tap into new niches of voters. After all, with Twitter usage being more widespread by now, its added value may have evaporated. The central question this study thus seeks to answer is: does the positive effect of Twitter on preference voting disappear when most politicians use it?

In its simplest form one can expect that if everybody uses Twitter, it has no added value anymore. Moreover, when a voter gets hundreds of tweets per day, it is difficult for individual politicians to stand out. As such there are reasons to expect the impact of Twitter as communication tool on preference voting disappeared by now. On the other hand one could retort that as Twitter has become more widespread, it has also become more integrated in the broader society and more people (especially journalists) are now using it as well. Additionally, by now most parties have a social media campaign team and Twitter usage is becoming ever more professionalized. Both factors might suggest that Twitter use may still yield votes.

In this paper we will use a unique dataset including of 1,024 candidates of the Dutch 2010 and 2012 national elections. For each of these candidates we collected data on their number of preference votes and their usage of Twitter along with information on factors that have been identified to have an impact on the number of the preference votes a candidate gets: their position on the list, gender, ethnicity, incumbency, campaign activities, and media exposure (André, Wauters and Pilet 2012; Gibson and McAllister 2012; Lutz 2010; Thijssen and Jacobs 2004). Our analyses show that the number of tweeting candidates increased spectacularly between 2010 and 2012 (from one third to three-quarters of the candidates) and on average they sent out almost three times as much messages. Moreover, such a context of widespread usage, Twitter still

appears to yield preference votes. However, to really stand out and making Twitter to have a substantial impact a 2012 candidate needed to use Twitter substantially more often compared to the 2010 candidates. The implications of these finding for the broader field of political communication are discussed in the concluding section.

## **2. The impact of Twitter on preference voting: causal mechanisms**

Why would Twitter have an impact on preference voting? Based on the literature, we can formulate at least four mechanisms predicting a higher number of preference votes. The most optimistic expectation is that even minimal Twitter use will already have an effect on the number of preference votes. Through this *advertisement effect*, Twitter can serve as a cheap and accessible showcase or campaign poster, which allow users to add details about their hobbies, interests, political views, socio-demographic characteristics etc.. This facilitates ‘personality-centered’ campaigns that give potential voters insight in the life and interests of a politician (Vergeer, Hermans and Sams 2013). Next, merely having a Twitter account can also have a *symbolic value*, communicating to voters that a given candidate is a modern politician.<sup>2</sup> Third, Twitter allows politicians to make contact with certain *niche groups* of people that are hard to make contact with through normal media. As Twitter does not require an address of the receiver and is not geographically limited, it allows politicians to reach new audiences (cf. Utz, 2009: 240).<sup>3</sup> Lastly, journalists often roam Twitter to build *news stories* around tweets by prominent politicians and inflammatory tweets by less prominent ones (Peterson, 2012:432), thereby increasing the media exposure for candidates on Twitter.

### *A. The number of followers*

In all these cases, one can expect that the more followers a candidate has, the larger the effect potentially is. However, of the four mechanisms outlined earlier, only the first two work well with minimal Twitter use. Communicating with niche groups and providing journalists with

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<sup>2</sup> As the online campaign manager of the Dutch social democrats put it, talking about experimenting with Google Hangouts: “we wanted to appear modern” (Bleijerveld, 21/8/2013).

<sup>3</sup> Evidently, voters can dislike the messages they receive. Nevertheless, the overall effect is expected to be positive, as a sizable part of the mechanism is not about the content but about (name) recognition (as holds for other communication strategies) (Grimmer, Messing, and Westwood 2012). Hence, one can expect that the positive effects of reaching out to voters will overall outweigh possible small negative ‘side effects’ of some Tweets on some followers.

quotable tweets requires actual (frequent) usage of Twitter. Therefore, other scholars have stressed that merely having a lot of followers does not do the trick. The mere ‘pretence of presence’ is not enough to convince voters (Crawford, 2009: 530; Wilson, 2009). As Spierings and Jacobs (2013) argue, any effect of the number of followers is likely to be spurious and seems to represent the popularity of the candidate rather than point at a genuine Twitter effect.<sup>4</sup>

### *B. The non-linear effect of the number of tweets*

Unlike the number of followers, Twitter usage is more likely to be *causally* related to the number of preference votes. First, the number of Tweets sent out does not depend on being more well-known, whereas the number of followers most likely does.<sup>5</sup> As a result, a significant association between preference votes and number of Tweets is unlikely to be spurious, whereas an association with the number of followers most likely is spurious. Second, especially communication with niche groups and providing journalists with material to write about requires active usage of Twitter. When studying the impact of Twitter, one should thus also account for actual Twitter usage. Both mechanisms can also be *multiplicative*: the information transmitted through Twitter from the candidate to her followers not only has an effect on the followers, but it can spread out through the digital (so-called ‘retweets’) and real-life social network of these followers. It can also spread by journalists to newspapers, radio and television, boosting the impact of the medium significantly (cf. Bond et al. 2012; Gibson and McAllister, 2012). While we can expect a positive effect of Tweeting, the effect of it might not be linear: the added value of the 15<sup>th</sup> tweet on a day is probably smaller and bombarding one’s followers with tweets may actually lead to annoyance and reduce a candidate’s vote share. In sum, one can expect that:

Hypothesis 1a. The more tweets a candidate sends out, the more preference votes she gets.

Hypothesis 1b. The effect of the number of tweets decreases the more a candidate tweets.

### *C. An interaction effect between tweets and followers*

While having more followers might not have an effect in itself, they can increase the electoral

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<sup>4</sup> We will therefore not translate this variable into a hypothesis.

<sup>5</sup> Indeed, the number of followers and tweets does not correlate: in 2010 the coefficient was 0.133 (p=0.085) and in 2012 0.079 (p=0.114).

dividend of the Tweeting, as the candidate has a larger group of people to actively mobilize. Indeed, Kruikemeier, Van Noort and Vliegthart (2013) found that candidates who actively interact with their followers get more votes. Similarly, Spierings and Jacobs (2013) found that the effect of the number of followers is strengthened by the effect of the number of tweets a candidate sends out. In sum, it is the interaction effect, in the statistical sense of the word, between followers and tweets that is the most important.

Hypothesis 2. The effect of the number of tweets increases the more followers a candidate has.

In sum, overall there are reasons to expect a (modest) Tweeting effect. However, two potential biases need to be addressed. First, the available evidence rests on information of the early adopters only. By now Twitter has moved from the early-adoption stage to the stage in which a clear majority of the candidates uses the technology: the effect might have changed. This will be discussed more elaborately in Section 3. Second, omitted variables could lead to serious overestimations of an effect, therefore we review the preference voting and derive the most crucial control variables from it, in Section 4.

### **3. The effect of Twitter in a context of widespread Twitter use**

Until now most studies of Twitter focused on analysing the causes and effects of the early adopters of Twitter (Peterson, 2012; Vergeer, Hermans and Sams 2013; Kruikemeier, Van Noort and Vliegthart 2013; Spierings and Jacobs, 2013). Yet, it may well be that the effect that studies found is extremely short-lived and only holds for the early adoption phase.

#### *A. Reasons to expect the effect disappears*

The main argument here is that when everybody uses Twitter, the competitive edge of the early adopters disappears. After all, elections tend to be zero-sum games: a voter typically can only cast a vote for one candidate.<sup>6</sup> When Twitter has become widespread a larger number of candidates are competing for the scarce time of followers, niche groups and journalists. When a voter gets hundreds of tweets per day, it is difficult for individual politicians to stand out. Given that Twitter already had a modest effect in the studies focusing on the early adopters, the effect

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<sup>6</sup> There are electoral systems such as Belgium where a voter can cast multiple preference votes. Such systems are, however, quite rare (Colomer, 2011).

may easily disappear.

Zooming in on the four mechanisms discussed earlier it becomes clear that widespread diffusion is indeed likely to kill the effect. First, the *advertisement* effect is likely to be reduced because voters are now confronted with large numbers of candidates that provide similar information. Second, when Twitter use is widespread, the *symbolic* value of having a Twitter account no longer differentiates a candidate from the others. Candidates who do not have an account are likely to come from rather traditional parties whose votes do not care about whether a candidate is modern or not.<sup>7</sup> Third, when more candidates use Twitter, candidates have to compete more amongst each other for the scarce attention of *niche groups*. These groups (e.g. youngsters) may even be turned off completely by frequent soliciting of politicians. Fourth, journalists are receiving much more information through Twitter as well, while the news agenda is a zero-sum game and all candidates have to compete against each other for the scarce newspaper space and television airtime. Based on such a saturation logic, we expect:

Hypothesis 3. In a context of widespread Twitter use, Twitter has no effect on the number of preference votes.

*B. Reasons to expect the effect to remain or even increase*

There are also forces that may increase the impact of Twitter. Being widely used, Twitter may have become more *integrated* in the broader society, and voters and journalist may use it as a more important source of information. Additionally candidates and parties may have become more *proficient* in using Twitter thereby increasing its effectiveness. Especially regarding the connection with niche groups and journalists, integration and profesionalization seem important. Hence if the maturation effect counterbalances the saturation effect described above, one can expect the following:

Hypothesis 4a. In a context of widespread Twitter use, Twitter has the same effect on the number of preference votes as before.

If the professionalization and widespread integration of Twitter actually surpass the saturation

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<sup>7</sup> In the Dutch 2012 elections most of the candidates who did not have a Twitter account were from the Christian fundamentalist party SGP.

effects than the following hypothesis should hold:

Hypothesis 4b. In Twitter use becomes more widespread, Twitter has more effect on the number of preference votes than before.<sup>8</sup>

#### **4. Preventing spuriousness: Traditional explanations of preference voting**

One of the most pressing challenges in the study of the impact of Twitter on preference votes is avoiding spuriousness due to omitted variables. Positive findings may well merely reflect candidates who are, for whatever reasons, strong and successful, attracting both a lot of votes and a lot of followers.<sup>9</sup> Therefore, controlling for traditional explanations of preference voting is necessary. Two broad clusters of explanations can be identified in the literature: ballot position (Darcy and McAllister 1990; Geys and Heyndels 2003; Krebs 1998; McDermott 1997; Lutz, 2010; Wauters, Weekers and Maddens 2010; André, Wauters and Pilet 2012) and media and campaign activities (Thijssen and Jacobs 2004; Gibson and McAllister 2012).

1. *Ballot position effects* are based on the contention that voters only have a limited capacity and willingness to gather, store, and process information about large numbers of candidates. After determining which party to vote for, voters in Dutch election can still choose between, on average, about 50 candidates. As getting in-depth information on all these candidates is virtually impossible, it is argued that voters basically vote for the first candidate on the list that satisfies their preferences (Lutz 2010, p. 169). This makes ballot positions crucial. Additionally, one can expect that a substantial number of voters cast their preference votes for the first woman on the list or the first candidate of a certain non-white ethnic group, as one of their core preferences is expressing the importance of substantial and descriptive representation (Wauters, Weekers and Maddens 2010).

2. *Media and campaign activities* increase the saliency and name recognition of a given candidate. Three sets of campaign variables are used: the overall experience of the candidate, the media attention for a candidate, and campaigning activities by the candidates themselves (Thijssen and Jacobs 2004; Gibson and McAllister 2012). Media attention and campaign

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<sup>8</sup> As this is largely uncharted territory, it is difficult to pinpoint which of the last two hypotheses is the more likely, so we advance and test both of them.

<sup>9</sup> As these variables are only included as controls, they will not be translated into hypotheses.



activities directly affect the candidate's salience and name recognition, whereas experience builds on prior name recognition. Experienced candidates have more knowledge about how campaigning is best handled and can often rely on a more experienced campaign team. It can also influence a candidate's salience and name recognition. Which campaign activities are most successful differs from one country to another. For instance, door-to-door canvassing is very common in Anglo-Saxon countries (Karp, Banducci and Bowler, 2008), but less so in continental European countries such as the Netherlands (cf. Andeweg and Irwin 2005, p. 94). In the Netherlands, the main tools individual candidates have are flyers, posters, personal websites and social media.

## 5. Data and Method

### *A. Cases sample and data*

No less than 18 and 21 parties fielded candidates in the Dutch parliamentary elections on 9 June 2010 and 12 September 2012 respectively. Ten and eleven of these received at least 0.67 % of the votes—and thereby at least one of the 150 seats.<sup>10</sup> In what follows we will shortly describe the Dutch political-institutional context. The Dutch electoral system is a list-PR system: Voters can cast one vote for one candidate on one of the party lists. They cannot vote for a party without choosing a particular candidate. All the votes on candidates of one party list are added up and this determines the number of the 150 seats the party gets (Andeweg 2005). Whenever candidates cross the 'preference threshold' of 25% of the electoral quota (1/150 of all votes cast), they are automatically elected, provided that the party has a seat available (Jacobs and Leyenaar 2011).<sup>11</sup> The remaining seats are distributed according to the list order. This procedure is considered 'semi-open', which makes the Dutch ballot structure a typical case (Colomer 2011:10). In 2010, the Dutch preference threshold was at 15.694 votes. Thirty candidates crossed this threshold, of whom two would not have been elected otherwise. In 2012, the threshold was 15.708, which was met by 26 candidates and for one candidate that made the difference ([www.kiesraad.nl](http://www.kiesraad.nl)).<sup>12,13</sup>

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<sup>10</sup> Received at least one seat in both elections: VVD, PVDA, Partij voor de Vrijheid, CDA, SP, D66, GroenLinks, ChristenUnie, SGP, Partij voor de Dieren; as of 2012 also 50Plus is represented in parliament ([www.kiesraad.nl](http://www.kiesraad.nl)).

<sup>11</sup> Candidates who crossed the threshold move to the front of the line, the one with the highest number of preference votes first, for all other the list order is followed. Subsequently, the seats won by the party are allocated from the front of the line.

<sup>12</sup> In 2012, one candidate, Dirk Poot of the Pirate Party, did not get elected despite passing the preference threshold; the party did not pass the threshold of 1/150<sup>th</sup> of the votes. This is very rare. ([www.kiesraad.nl](http://www.kiesraad.nl)).

Dutch electoral campaigns largely focus on the party and the first candidate on a list. Some candidates set up a personal campaign, but they have only limited funding, as parties devote most of their staff and money to the general campaign. The parties run the campaigns and focus on getting the party message into the media. Grassroots campaigning only plays a limited role in the Netherlands and individual candidates tend to have very low campaign budgets (Andeweg & Irwin 2005: 92–97). This makes internet and social media campaigns a serious alternative.<sup>14</sup>

For our analyses, we used a dataset including all 493 of the candidates of the 10 parties from 2010 (Spierings and Jacobs, 2013) and a similar dataset was created on all 531 of the candidates from the 11 parties in 2012. We carried out OLS (ordinary least squares) regression analyses to test for the impact of social media on the share of preference votes that candidates received. Non-linear effects are modelled by using quadratic and interaction terms of the independent variables (see below). Some of the candidates participated in both the 2010 and the 2012 election. These 210 candidates can be considered to form a panel data set since we measurement on the same variables and people for two different time points. In the descriptive analyses, this sub-sample will give a unique insight into the diffusion of Twitter and its usage.

### *B. Dependent Variable: Share of preference votes*

In the Dutch system the large majority of the people first determine which party they want to support. Once that choice has been made they might consider to vote for a specific candidate (other than the list puller), because they know that candidate; want to support a woman, a person from a certain ethnic group or region; or because that person has a strong track record on a specific policy issue.<sup>15</sup> Consequently, the (potential) number of votes a candidate receives is to a large extent determined by the support the party as a whole gets. To take this into account we use the share of votes of the total number of votes for a party: the number of preference votes of the

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<sup>13</sup> These parties received at least one seat in 2010 and 2012: VVD, PVDA, Partij voor de Vrijheid, CDA, SP, D66, GroenLinks, ChristenUnie, SGP, Partij voor de Dieren. The party 50Plus got seats in only 2012 ([www.kiesraad.nl](http://www.kiesraad.nl)).

<sup>14</sup> In 2010, the Netherlands had some 16.8 million inhabitants ([www.cbs.nl](http://www.cbs.nl)). Just like in other West-European countries, the Dutch internet penetration rate is fairly high (92.9 % as of 30 July 2012; <http://www.internetworldstats.com>). Twitter had some 2.5 million users in 2010 and was estimated to have approximately 3.3 million in 2012 (Oosterveer, 2013).

<sup>15</sup> For instance, in the Dutch Election Survey of 2010, 84% of the respondent casted a vote on the list puller, and of these 75% say it was a party votes, and of the other 25%, 92% would have selected another candidate if the list-puller was not on the same list. Of the 16% voting for another candidate that percentage is 97% percent. Adding this up, 97% of the respondents indicate that the choice of party is dominant over the choice of candidate.

candidate is divided by the number of votes the party as a whole receives, multiplied by 100.<sup>16</sup> The first candidates on a list, the so-called list pullers, received by far most of the votes: between 65% (Haersma-Buma, CDA 2012) and 95% of their party's votes (Wilders, PVV 2010).<sup>17</sup> Descriptive information on the dependent and independent variables can be found in Appendix 1.

### *C. Main independent variable: Twitter usage*

For our main independent variable, Twitter usage, we registered whether a candidate had a Twitter account before the elections (presence), the number of Twitter followers each of the candidates had (public), and the number of messages the candidate has posted leading up to the elections (activity). The number of followers in the 2012 elections was measured at 10 or 11 September. The number of tweets sent out during the 2012 campaign was measured by counting the posts in the month leading up to the elections (August 11, 2012 to September 11, 2012).<sup>18</sup> For 2010, we use the data from Spierings and Jacobs (2013). For both elections the number of tweets was transformed to a daily average to make the data fully comparable. The number of followers was divided by 1,000. Having a Twitter account is obviously necessary for having followers and actively using it: if a candidate has no Twitter account she scores '0' on the other two variables. These scores of '0' are not included when calculating the average number of users and average

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<sup>16</sup> Another way to solve the problem of different number of votes per party, without transforming the dependent variable to proportions of votes, would be to estimate multilevel models with random intercepts at the party level and at least random slopes for the being list puller (this is equivalent to the interaction effects we included in our current models). We estimated these kinds of models as well. The main conclusion are similar: there is a positive interaction between the number of followers and number of tweets; once candidates have enough followers, the number of tweets have a positive effect on the number of preference votes; the strength of the effect is stronger for candidates with many followers in 2010, but the positive effect is significant for a lower number of followers in 2012. (It is significant from a higher number of followers in the multilevel models than in the models presented here though.) The main difference between the two types of models is that we did not find a significant quadratic term for the number of tweets in 2012, which are statistical significant, though substantively negligible, in the models presented in this paper. In sum, only the conclusions on diminishing returns seem less robust. We take this into account when discussing our results.

<sup>17</sup> To take this into account, the models include party dummies and interactions of the party dummies with the list puller position. These instrumental variables filter out any bias caused by having a particularly (im)popular list puller.

<sup>18</sup> This was measured after the elections, as is possible since Twitter makes older messages accessible. However 11 candidates have Tweeted so much after the elections, that their Tweet archive does not go back for enough: Rob Hompe, Peter Kwint, Renske Leijten, Remco van Mulligen, Pieter Omtzigt, Diederik Samsom, Pim Siegers, Michel Verkoulen, Sabine Verschoor, and Paul Ulenbelt. These candidates were given a number of Tweets of 5,000, which is close to the highest number of Tweets of whom the history did allow a count (Attje Kuiken). Leaving out the candidates with missing data would lead to a strong systematic bias, since these are mostly highly visible politicians who tweet a lot, which is reason we have not exact Tweet count. Moreover, the data are not missing completely; we do know that all these candidates are very active on Twitter, which justifies the approach taken here. Nevertheless, it does affect the reliability of our variable.

number of tweets.<sup>19</sup>

To measure the combined effect of followers and Tweets (Hypothesis 2) interaction terms between the two are calculated. In the theoretical section we also mentioned that the effects might not be linear. To take that into account quadratic terms of both the number of followers and the number of tweets are created. Since we include both quadratic terms and interaction terms, we also include interactions of the base variables (number of tweets, number of followers) with the quadratic terms, as well as the interaction between the two quadratic terms. Overall, this leads to rather complex models in terms of interpretation. To make the interpretation easier, we start by estimating the models with all those variables, but present the most parsimonious models by taking out the higher order terms if they are not statistically significant.<sup>20</sup> Additionally, we will plot the effects of the number of Tweets on the proportion of party votes, varying the number of followers, based on the final models, That will show the actual shape the relationships.

#### *D. Control variables: campaigning and ballot position*

As mentioned above, it is extremely important to avoid spuriousness when studying the impact of Twitter. Therefore, we include a battery of control variables derived from the campaigning and political communication literature and the preference voting literature. The regression analyses for 2010 and 2012 will be controlled for these variables and to obtain optimal comparability between the two years we follow the data gathering procedures and operationalization of the two basic groups of control variables used in Spierings and Jacobs (2013), including campaigning and ballot position factors as discussed earlier. We updated the 2010 data (Spierings and Jacobs, 2013) and added new data on the 2012 elections.

Ballot position - We included a candidate's position on the list, and dummies for ballot positions that have a special meaning in the Dutch context: whether the candidate was list-puller and whether the candidate occupied the (next-to) lowest position on the list, because Dutch parties often assign local celebrities or party legends to these positions. Dummy variables for each party

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<sup>19</sup> The models as presented in Table 2 have also be rerun on the samples with only politicians that have a twitter account. In those models, both the p-values and effect sizes do not change substantially and would lead to exactly the same conclusions.

<sup>20</sup> Base terms cannot be excluded if they are not statistically significant, if the higher-order term is. This will become evident in the results section.

and interaction terms of these dummies with the list-puller positions were included as well. This captures party-specific effects, including the number of listed candidates and the popularity of the specific list-puller. Based on the literature, we also expect that a substantial number of voters cast preference votes on the first woman on the list or the first candidate of a non-white ethnic group (Thijssen and Jacobs 2004; Wauters, Weekers and Maddens 2010).<sup>21</sup> We included four additional dummies: for being a woman; for being the first woman on the list; for having a non-white ethnicity; ne for being the first person on the list with a non-white ethnicity.

Campaigning factors – Our operationalizations of the overall experience of the candidate, the media attention for candidates, and campaigning activities (Thijssen and Jacobs 2004; Gibson and McAllister 2012; Spierings and Jacobs, 2013) overlap to some extent, but since we use them as control variables that is not a problem, as long as we capture most variation. *Experience* is included by a variable on incumbency: (1) was Member of Parliament after the previous elections (2006 or 2010) or minister in the last government; (0) not. Campaigning experience was also measured by whether the candidates stood for election during the previous elections (1=yes). *Media attention* was captured by two measurements of coverage in the national newspapers.<sup>22</sup> One variable measures the number of articles in which the candidate has been mentioned during the election campaign<sup>23</sup> tapping into campaign effectiveness and the success of a candidate's campaign activities. The second measures the same but for the year before the campaign<sup>24</sup> tapping into the general name recognition. We also included a dummy for being well known more generally (1=yes). After all, some well-known people do not appear in newspapers. We coded candidates as 'well known' if they were politician with specific positions (president of parliament, chair of parliamentary research committee, spokesperson on topical debates, party leaders, party presidents, executive member of a local government of a major city, mayor); presidents of a highly visible NGO, labor union, or employer's organization; TV presenters or

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<sup>21</sup> In both elections the first woman on the list was the list puller for two out of 10 or 11 parties: GroenLinks and Partij voor de Dieren.

<sup>22</sup> The following newspapers were included in our measurement in 2010: AD/Algemeen Dagblad; Algemeen Dagblad; Boerderij Vandaag; Dag; Dagblad De Pers; De Volkskrant; Het Financieel Dagblad; Het Parool; Metro (NL); Nederlands Dagblad; NRC.NEXT; NRC Handelsblad; Reformatorisch Dagblad; Spits; Trouw. Between 2010 and 2012 LexisNexis expanded the Dutch National Newspaper collection with Cobouw; De Telegraaf; Quotenet.

<sup>23</sup> For 2010 the start point was April 27<sup>th</sup>, the day the parties handed in their lists. For 2012 the day of the first nationally broadcasted TV debate with the list pullers of the 8 largest parties in parliament (August 22<sup>nd</sup>).

<sup>24</sup> Covering the year before the start of the measurement of the other newspaper variable. For the 2010 elections this means 27/04/2009 to 26/04/2010; for 2012 22/08/2011 to 21/08/2012.

anchorpersons; and opinion leaders and prominent activists.<sup>25</sup> Last, online *campaigning activities* are measured by a dummy variable for having a personal website or webpage (1=yes).

## 6. Descriptives: Twitter in the 2010 and 2012 parliamentary elections

The presence, public and activity of candidates on Twitter in 2010 and 2012 (and the panel) are summarized in Table 1. The mere number of candidates that have a Twitter account has changed impressively. While only 34.1% of the candidates had Twitter in 2010, 2 years later this figure more than doubled and skyrocketed to 75.5%. Similar figures are found among the 210 people that were candidate in both elections. Even more telling is that of these 210 candidates, 75 had an account in both elections and 87 opened an account in between the elections, while none of them took their account offline.<sup>26</sup>

Not only did more candidates have a Twitter account, the Tweeting candidates were also far more active on the platform. The average number of daily tweets almost tripled (from 3.6 to 9.7) among all tweeting candidates. This is partly due to a few extremely active candidates in 2012, as suggested by the maximum number of daily tweets: the most active tweeting candidates posted 22 tweets on average very day in 2010, while in 2012 this was 164 tweets a day. Moreover, the four or five most tweeting candidates in 2012 produced more Tweets a day than all 168 candidates together would in 2010. The median ‘corrects’ for these very active candidates and focuses on the more typical candidate. Yet again a clear increase of over 40% in the number of daily tweets is visible. The panel data show an almost identical picture on all fronts, suggesting that the new candidates do not differ much in their Twitter activity than the ones with campaigning experience. While the presence and activity of candidates on Twitter indicates a widespread diffusion of Twitter amongst politicians, this does not mean that the number of followers rose as sharply as well. At first glance, it even seems that the Twitter audience *shrunk*: from an average number of followers of 4,807 in 2010 to 4,163 in 2012. However, it can be

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<sup>25</sup> The inter-coder reliability was 97.3% in 2010 (Spierings and Jacobs, 2013:9) and 98.2% in 2012. Given the availability of explicit and fairly objective coding criteria, this high score is not surprising. Final decisions on initial disagreement (mainly opinion leaders, high-profile business people, and some lower ranked politicians) were taken by consensus.

<sup>26</sup> One could retort that inactivity should be equated with stopping. Yet only a tiny minority of the candidates stopped tweeting: of the 162 candidates with an account in 2012, just 13 did not tweet in the last month leading to the 2012 election, of which only two already had an account in 2010. Moreover, of these 13 several tweeted before and after that month, so were still active on Twitter.

expected that the total audience has increased since that the number of tweeting candidates more than doubled. As is shown by the panel data, the average number of followers among candidates that run in both elections has increased by more than 2,700 and if we focus on the 75 candidates that run in both elections and Tweeted in both we find an increase from 5,109 to 11,883. Only one of them lost followers: Halbe Zijlstra (VVD), who is one of the two people that effectively stopped Tweeting since 2010. Nevertheless, the broad diffusion amongst politicians is not matched by an equally rapid diffusion amongst the broader Dutch public.<sup>27</sup> Many more candidates have entered the Twitter arena, but the pool of voters has not increased proportionally: it seems the competition for votes has become much fiercer in between 2010 and 2012.

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<sup>27</sup> Between 2010 and 2012, the number of Dutch people who had a Twitter account only modestly increased from approximately 2.5 million to approximately 3.3 million (Oosterveer, 2013).

Table 1: Twitter usage in 2010 and 2012

	All candidates		Candidates running in both elections		
	2010	2012	2010	2012	2012 (for cand. who already tweeted in 2010)
Twitter account (%)	168 of 493 (34.1%)	401 of 531 (75.5%)	75 of 210 (35.7%)	162 of 210 (77.1%)	n.a.
Daily tweets					
Average	3.6	9.7	4.1	10.9	14.9
Median	1.9	2.7	2.3	3.2	5.5
Maximum	21.7	164.1	20.6	164.1	164.1
	(n=168)	(n=401)	(n=75)	(n=162)	(n=75)
# of followers					
Average	4,807	4,163	5,109	7,881	11,883
Median	926	547	1,584	2,002	4,183
Maximum	122,370	266,478	85,707	208,534	163,027
	(n=168)	(n=401)	(n=75)	(n=162)	(n=75)

Source: [www.ru.nl/VIRAL](http://www.ru.nl/VIRAL);

## 7. Explanatory analyses: The changing effect of Twitter?

Table 2 shows the regression models for both elections. For both years we will discuss the model as well as the plots derived from it (Figure 1 for 2012 and Figure 2 for 2010). Afterwards, we will focus on the differences and similarities in the models (see also Figure 3). We shall begin with the most recent election in which Twitter was broadly used.

Before we move to the variables of interest, we first want to discuss the control variables, as they also give an insight in how the model performs overall. The control variables that have significant and strong effects are those that are generally considered to be the most important in the literature as well: The list pullers and the first women on the list receive considerably more votes than any other candidate, and in 2010, women in generally had a small advantage. Of the campaigning variables, being well-known gives a boost to the number of votes and having a lot



of newspaper coverage during the campaign has a positive effect as well.<sup>28</sup>

*A. 2012: Positive effect of Tweeting and stronger effect when number of followers is larger*

For 2012, the quadratic terms and an interaction with them are statistically significant, making the model at first sight rather complex. That the main effects are not significant does not tell us much, as the main coefficient of the number of followers only holds for the candidates who post zero tweets a day (because of including the interaction term) and the effect of followers itself will also increase and become significant (due to the positive quadratic term). To make the model comprehensible we shall interpret it in parts, leading to three major observations, and these will then be visualized and studied in more detail in the figures.

First, the effect of the number of followers and its quadratic term are statistically significant and positive, indicating that having more followers is (increasingly) associated with more preference votes, becoming significant as the number of followers increases. Thus candidates with more followers have received a larger vote share. As discussed in the theoretical section, it seems very unlikely that this is a causal effect and more likely that the number of followers taps into being well known leading to a spurious relationship.

Second, the number of tweets' main and quadratic effect are both statistical significant. The first is positive, the second is negative, indicating a positive effect with diminishing returns: candidates that tweet more receive more votes, but the effect decreases with the number of tweets. However, followers do not seem to be annoyed easily, since the models estimate the tipping point at around 77 tweets a day. Hardly any candidate tweets that much.

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<sup>28</sup> For 2012, a small negative effect for the number of newspaper articles a year before the campaign was found. This seems to be a small residual effect after controlling for the number of newspaper articles in the campaign period. Since the two variables correlate highly (0.898;  $p < 0.001$ ), the most probable explanation for this negative coefficient is multicollinearity (Allison, 1999).

Table 2. Explanatory analysis

	<u>Model 1:</u> <u>Widespread use (2012)</u>		<u>Model 2:</u> <u>Early adopters (2010)</u>	
	Coef.	Stand. coef.	Coef.	Stand. coef.
(Constant)	.241	.135	-.049	.109
Twitter followers (per 1,000)	-.008	.017	-.131**	0.50
Twitter followers (per 1,000) [quadratic term]	.002***	.000	.004*	.002
Tweets per day	.016*	.007	-.029	.027
Tweets per day [quadratic term]	-1.043E-4**	.000	.001	.002
Followers (per 1,000) * Tweets per day	.001**	.000	.047***	.010
Followers (per 1,000) * Tweets per day – quadratic term	[NS] <sup>(4)</sup>		-.002***	.001
Followers (per 1,000) – quadratic term * Tweets per day	-6.305E-5***	.000	-.001**	.000
Followers (per 1,000) – quadratic term * Tweets per day – quadratic term	[NS] <sup>(4)</sup>		[NS] <sup>(4)</sup>	
Incumbency (1=yes)	.133	.119	.030	.126
Well-known (1=yes)	.308*	.122	.513***	.117
# Newspaper art. (1) (year before campaign)	-.005***	.001	.000	.000
# Newspaper art. (2) (campaign period)	.094***	.009	.009**	.003
Personal website	.069	.066	.066	.070
Campaign experience	.055	.078	-.003	.087
Position list	-.004	.002	-.003	.002
End of list	.088	.144	-.155	.142
List-puller <sup>(1)</sup>	- <sup>(3)</sup>		87.251***	1.811

First woman	5.216***	.267	3.238***	.239
Woman	.050	.060	.136*	.058
First ethnic non-white cand.	.271	.257	.377	.242
Ethnic non-white cand.	-2.336E-6	.113	.128	.127
Adjusted R <sup>2(2)</sup>		0.997		0.998
N		531		493

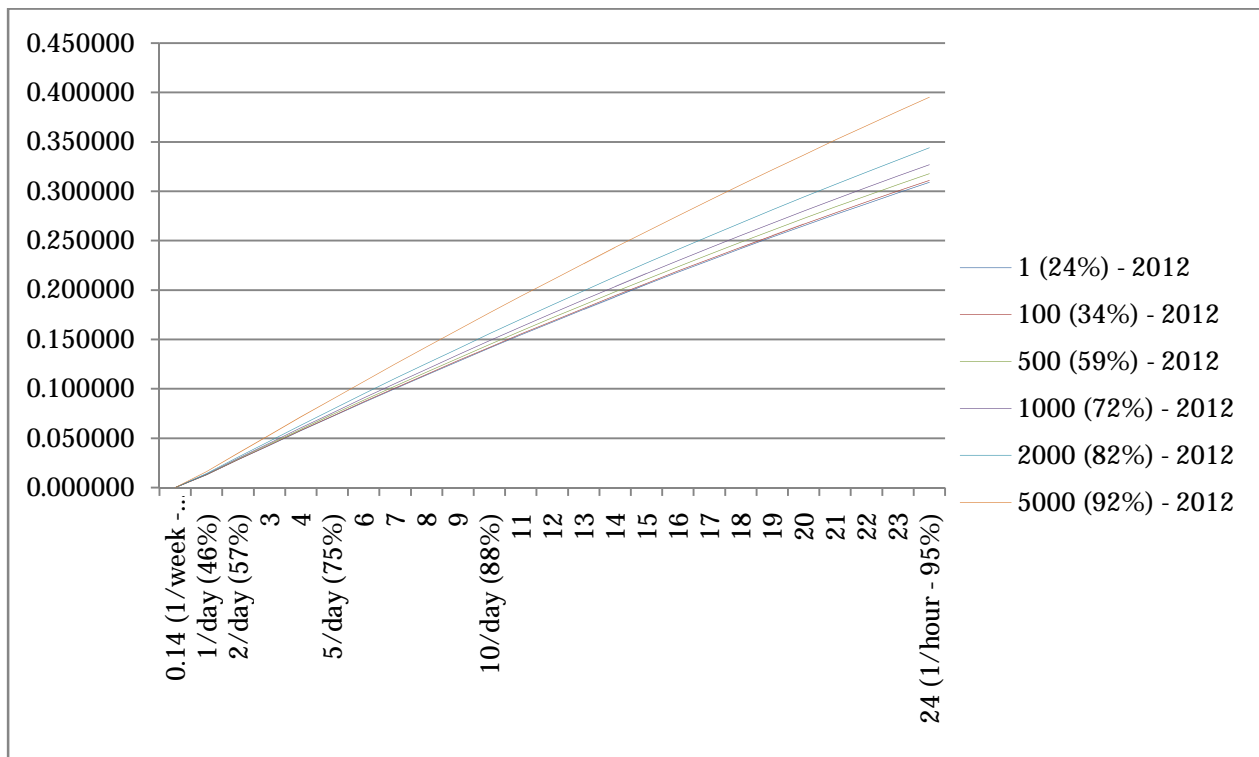
\* =  $p < 0.05$  \*\* =  $p < 0.01$  \*\*\* =  $p < 0.001$

Notes: (1) We included party dummies and interactions between the party dummies and the list-puller variable as a set of instrumental variables to filter out the party effects. The given coefficient for list-puller basically measured the effect for one of the parties. Nevertheless, we find a strong list-puller effect for each and every party. The coefficients are available upon request; (2) As most of the variance is due to the list-pullers, which we filter out completely (see Note 1), the R squares are extremely high and should not be given too much attention; (3) Due to multicollinearity, the model excludes 'list-puller', since the inclusion of the interaction terms between parties and list pullers and the dummy for being first woman on the list overlap leading to perfect multicollinearity for one of the list pullers. This has no consequences for the other variables. Most importantly, the list puller effects are filtered out; (4) in models including these higher-order terms they were not significant and are excluded in the models presented here.

Sources: Self-collected data; Spierings & Jacobs (2013)

Third, the statistically significant and positive interaction effect between the number of tweets and number of followers suggest that the effect of the number of tweets a candidates posts is more effective if the candidate has more followers. This seems a more plausible causal influence of the number of followers. The statistically significant interaction term of the number of tweets and the quadratic term of the number of followers indicates that the difference between candidates with many followers and candidates with fewer becomes less important when they tweet more. As the relative effect sizes of these coefficients are not easily derived from the model, we plotted the vote share for different values of number of followers and number of tweets.

**Figure 1. Estimated effects of tweets and followers on the vote share (2012)**



Notes: (1) The y-axis shows the vote share (in percentages). The x-axis shows the number of tweets. At a selection of data points, the figure includes how many candidates tweet that much or less. For instance, from 0.14 to 10 tweets a day captures 88% of the candidates in our sample; the maximum number of tweets in this figure (24 a day) captures up to 95% of the real-life candidates. (2) In order not to clutter the figure with too many lines, we selected six different numbers of followers. Again, to help interpret how many candidates are represented by the lines we include the cumulative percentage of real-life candidates that have this number of followers or less. For instance, the 92% at the 5000 line tell us that 92% of the candidates has 5000 followers or less. (3) No main effect of followers is included as this most likely reflects a spurious relationship. Consequently, it is much easier to see how the slopes of the lines differ. In sum, the figure shows the effect of the number of Tweets and how this differs by the number of followers.

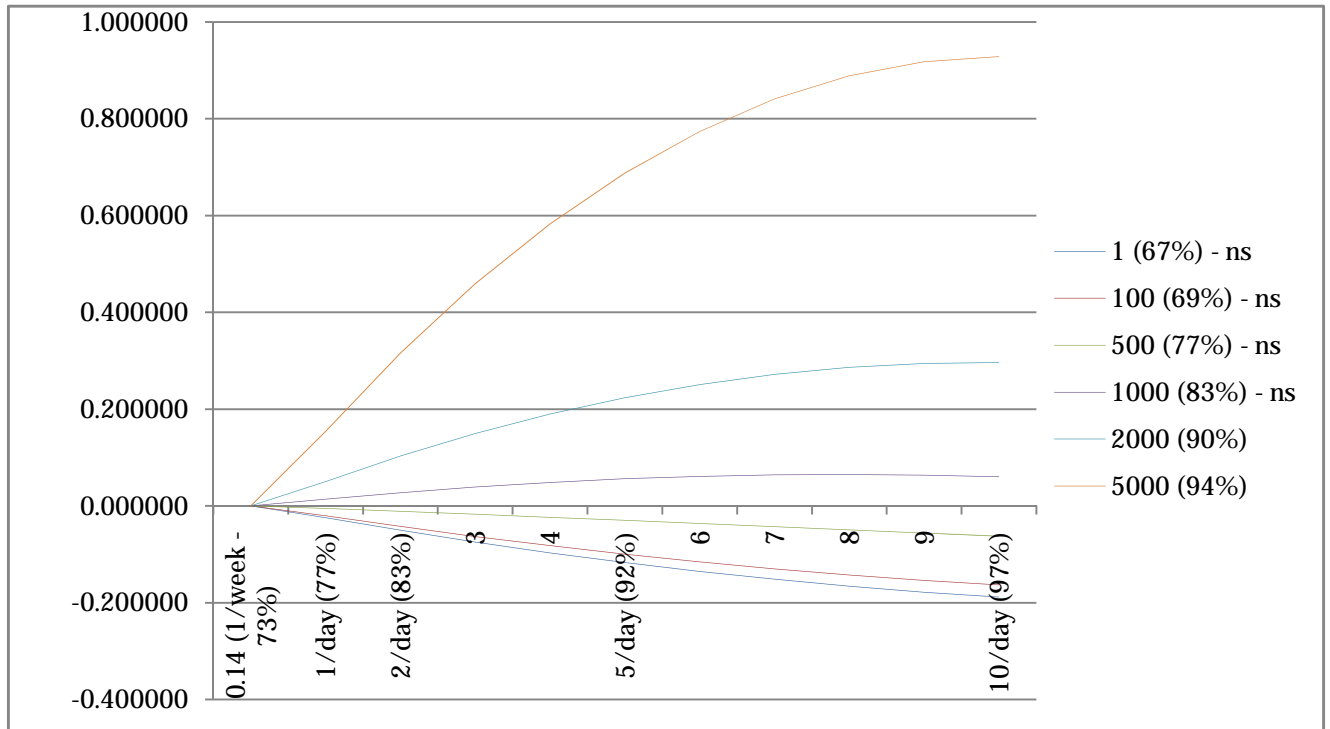
Figure 1 shows a clear positive effect of the number of tweets, but the slopes curve downward very slightly. For a candidate with 100 followers Tweeting becomes counterproductive from the 77<sup>th</sup> Tweet and for a candidate with 5,000 followers from the 97<sup>th</sup>. Unless a candidate tweets really excessively, each additional tweet has a (tiny) positive effect. The third point discussed above is also shown in the figure: the effect of the number of Tweets is stronger for a candidate with more followers. However, this difference is relatively limited compared to the general effect of the number of tweets.

Now let us assess the overall impact of using Twitter. If we use the model to estimate the number of votes gained for candidates on the list of the 3<sup>rd</sup> (PVV) and 4<sup>th</sup> party (D66) (both receiving about 9 tot 10 percent of all votes cast), having 5,000 followers, we would predict about an additional 3,600 for Tweeting every hour (only 5% of the candidates Tweet that much). As the number of votes needed for direct election was 15,708; Twitter is clearly no golden ticket to a seat in parliament, but can contribute to it if a candidate is highly active on Twitter.

*B. 2010: Followers increase the impact of tweeting, which in turn has decreasing returns*

For 2010, when Twitter use was still relatively limited, the effects seem to show similar directions to the effects in 2012 (cf. Table 2). Nevertheless some differences pop up. Focusing on the effect of the number of Tweets and its interplay with the number of followers, we see the number of tweets has an insignificant negative main effect (-.029), and a significant interaction with the number of followers (.047). This means that candidates who only have relatively few followers (up to about 1,000) do not benefit from twittering. When the number of followers increases, the impact of the number of tweets grows and the effect becomes statistically significant, as can be seen in Figure 2.

Figure 2. Estimated effects of tweets and followers on the vote share (2010)



Note: Technicalities are similar to figure 1. To indicate that the first four lines represent effects that are not significant, we added 'ns'.

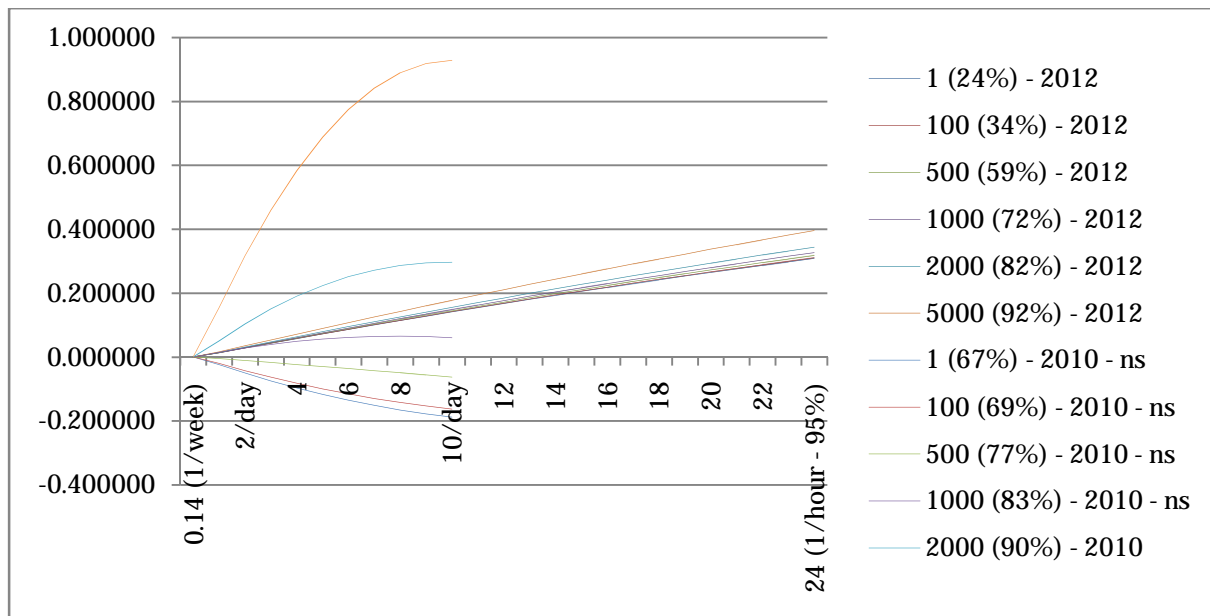
The main effect of the association of votes with the number of followers is negative and the quadratic term positive. Both are significant. Again, the number of followers in itself is unlikely to have causal effect. The interaction effects with the follower variables are more important. Together they show that the effect of the number of tweets increases when a candidate posts more tweets.<sup>29</sup> The relative effect sizes of the interaction coefficients determine what all these effects exactly mean for the effect of the number of tweets, and Figure 2 shows this nicely. The figure is comparable to Figure 1, but the range of the number of tweets has been lowered to reflect empirical reality, as the candidates tweeted far less in 2010. The figure shows that once a candidate has enough followers, the number of tweets s/he send out has a positive effect (with diminishing returns) on the share of votes.

<sup>29</sup> This is indicated by the positive quadratic term, the negative interaction between the quadratic term and the number of followers, and the negative interaction term of the quadratic term with the quadratic term of the number of followers.

*C. Comparing 2010 to 2012: gaining prominence, losing power*

Comparing the analysis of 2010 and 2012, we find roughly similar effect in terms of direction, but rather different in effect size. This is illustrated in Figure 3, which combines the information of both elections. First of all, it clearly shows that among people with many followers (2,000 or more) the effect of Tweeting was much stronger in 2010 than in 2012. However, in 2012 the candidates who had fewer followers also benefited from tweeting, something they did not in 2010. So while the effect was potentially bigger in 2010, using Twitter ‘helped’ more candidates in 2012. In addition the weakening interaction suggest that the indirect and multiplicative effect has become stronger in 2012, which supports the contention that Twitter use is integrated more broadly in society.

Figure 3: Comparing Twitter effect of 2010 and 2012



Note: For technicalities see Figures 1.and 2

These results support our first two general hypotheses: overall, the more tweets a candidate sends out the more votes she gets. Though there are diminishing returns to this, most evidently in 2010. The second general hypotheses pertained to the larger effect of the number of tweets for candidates with more followers. It was corroborated unconditionally in both elections. Regarding the hypotheses on how the impact of Twitter might change because the medium move from an

early-adoption phase to being broadly used, our analyses showed that the 2010 effect was no temporary blip: the effects did not disappear (Hypothesis 3). Actually, it turns out that both hypothesis 4a and 4b, predicting weak and stronger effects respectively, seem to be true. For candidates who had few followers the effect of Twitter became stronger, while candidates with a lot of followers benefitted less from Twitter in 2012 than in 2010.

## **8. Conclusion**

For a long time scholars of preference voting focused only on the position a candidate had on the ballot, ignoring campaign aspects. The higher on the ballot list, the more votes a candidate was expected to get (Lutz, 2010). More recent research added campaign and media related variables to the set of explanations (Thijssen and Jacobs, 2004; Gibson and McAllister, 2012). Even more recently, in the context of broader research on the role of new social media on political communication, some researchers have shown a modest but significant association between Twitter use and the number of preference votes a candidate gets (Kruikemeier, Van Noort and Vliegenthart, 2013; Spierings and Jacobs, 2013). While there are reasons to be sceptical about whether this association also implies causality, especially the finding that active use and interaction with followers is associated with higher shares of preference votes is relatively strong evidence in favour of a causal impact.

This study makes several contributions to the debate about the impact of social media use and preferences voting, and more generally, electoral gains. First, this study is the first to include tests under circumstances of widespread use of Twitter. Sceptics might rightfully retort that even if there is a modest causal effect of Twitter use, this may just be very temporary. The central question of this paper therefore was: does the positive effect of Twitter on preference voting disappear when most politicians use it? To answer this question we examined the effects of Twitter use during the 2010 and 2012 Dutch national election campaigns. In 2010 early adopters only used Twitter, but within two years it became widespread amongst politicians. However, the effect of Twitter did not disappear and as such our central question needs to be answered negatively: the potential preference vote bonus decreased, but remained. Secondly, we assessed what shape the effect took and how it changed over time. While the overall potential gains decreased, we showed that the positive effect by itself became more widespread: in contrast to 2010 where only the new-media big shots had something to win by using Twitter, the less active and less followed 2012 candidates potentially benefitted from Twitter usage as well. For such



candidates it became stronger. Twitter will most likely not win you an election, but for a candidate who is close to the preference vote threshold it might be that little extra that gets her a seat. Third, our study contributes to a growing literature showing a modest effect of social media on preference voting and electoral outcomes. It also broadens the empirical evidence to a new case (the 2012 Dutch elections) and uses multiple estimation techniques and operationalizations of the main variables that have not been applied before in the field - as discussed above in amongst others footnotes 14 and 15.

The results obviously do not definitively prove causality. Research that specifically zooms in on the causal mechanisms is needed. Triangulation with experiments, voter studies, qualitative assessments, and panel data can all contribute to further research on causality. The broader question of the impact of social media on political communication and electoral outcomes more in general deserves more attention. While we find modest effect on preference voting, social media can have other important effects, such as mobilizing protesters and party activists, building the credibility of party brands and ultimately increasing the vote shares of parties and might even increase peoples' overall trust in politics. Our research contributed to this growing body of literature by showing that the focus should be on the combined effect of social media activity and the number of followers, not simply on either the politicians, their activity or the public as receivers separately. Our study suggests that in general terms, social media are not the political goose that lays golden eggs, but in some cases it might be that little bit extra that is needed to tip the balance.

## Appendix 1. Descriptive statistics

	2012				
	N	Minimum	Maximum	Mean	Std. Deviation
Proportion of party's votes obtained by candidate	531	.00	93.27	2.0716	11.70097
Number of followers in thousands	531	.00	266.48	3.1435	18.06574
Tweets per day	531	.00	164.10	7.3113	24.32723
Incumbency (1=yes)	531	0	1	.19	.393
Well-known (1=yes)	531	0	1	.11	.307
# Newspaper art. (1) (year before campaign)	531	.00	3000.00	53.0904	222.78303
# Newspaper art. (2) (campaign period)	531	.00	597.00	7.6911	45.39810
Personal website	531	.00	1.00	.4200	.49402
Campaign experience (1=yes)	531	.00	1.00	.3955	.48941
Position list	531	1	75	27.07	17.770
End of list	531	.00	1.00	.0414	.19947
List-puller(1)	531	.00	1.00	.0207	.14256
First woman	531	0	1	.02	.136
Woman	531	.00	1.00	.3390	.47381
First ethnic non-white cand.	531	0	1	.02	.122
Ethnic non-white cand.	531	.00	1.00	.0791	.27014

	<b>2010</b>				
	N	Minimum	Maximum	Mean	Std. Deviation
Proportion of party's votes obtained by candidate	493	.00	94.67	2.0284	11.97186
Number of followers in thousands	493	.00	122.37	1.6381	8.30149
Tweets per day	493	.00	21.71	1.2159	3.14652
Incumbency (1=yes)	493	.00	1.00	.2617	.43999
Well-known (1=yes)	493	.00	1.00	.1501	.35753
# Newspaper art. (1) (year before campaign)	493	.00	4001.00	67.3347	272.77124
# Newspaper art. (2) (campaign period)	493	0	886	14.17	75.897
Personal website	493	.00	1.00	.3529	.47837
Campaign experience (1=yes)	493	.00	1.00	.3408	.47445
Position list	493	1	75	28.64	18.896
End of list	493	.00	1.00	.0406	.19749
List-puller(1)	493	.00	1.00	.0203	.14111
First woman	493	.00	1.00	.0183	.13401
Woman	493	.00	1.00	.3367	.47307
First ethnic non-white cand.	493	.00	1.00	.0162	.12648
Ethnic non-white cand.	493	.00	1.00	.0629	.24299

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