

Intra-party politics in 140 characters

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12 **Abstract**
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43 **Keywords**
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46 Intra-party politics, estimating policy positions, social media, Twitter, Wordfish
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3 Although some scholars claim that unity is a source of party's strength (McGann, 2002), we hardly
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5 ever observe perfect cohesion within political parties (Greene and Haber, 2016; Kölln and Polk,
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7 2016; Somer-Topcu, 2016). The party is by no means a monolithic structure as it is composed by
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9 politicians retaining similar but non-identical preferences. Those sharing the most similar views
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11 often cluster together and form party factions, in order to shape the party strategy and maximize
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13 their own share of benefits. Given this premise, the fact that many parties all over the world are
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15 factionalized comes as no surprise, particularly because factionalism is not necessarily damaging to
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17 the party's fortune (Boucek, 2009).
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21 Scholars started to investigate the impact of intra-party politics showing that factional preferences
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23 and the different policy views of individual politicians affect party platform, policy agenda and
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25 parliamentary policy-making, coalition formation, and portfolio allocation (e.g. Ceron, 2012;
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27 Giannetti and Benoit, 2009; Greene and Haber, 2014, 2016). Furthermore, intra-party differences
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29 also explain the voting behavior of MPs, intra-party competition during primary elections or
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31 phenomena like party switch and party fission (Bernauer and Braüninger, 2009; Ceron, 2015;
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33 Giannetti and Laver, 2009; Heller and Mershon, 2008; Medzihorsky et al., 2014). Factional
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35 affiliation and individual preferences are also crucial to enhance a politician's career.
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40 Despite the relevance of this topic, the research on intra-party politics has remained underdeveloped
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42 for many years, mainly because assessing the preferences of politicians and party factions is a
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44 difficult task. Recent advances in quantitative text analysis allow to fill this gap and scholars
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46 started to evaluate the degree of ideological heterogeneity by focusing on parliamentary speeches
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48 (Bäck et al., 2011; Benoit and Herzog, 2015; Bernauer and Braüninger, 2009), debates held at party
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50 conferences or party rallies (Greene and Haber, 2014, 2016; Medzihorsky et al., 2014) and
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52 documents drafted by intra-party subgroups (Ceron, 2012; Debus and Braüninger, 2009; Giannetti
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54 and Laver, 2009).
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3 In this regard, the rise of social networking sites (SNS), such as Facebook and Twitter, represents a
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5 new opportunity to extract information on the degree of heterogeneity related to the policy views of
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7 party factions or individual politicians and can be of use to answer a variety of questions involving
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9 intra-party dynamics.
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12 The present paper tests whether social media messages published by politicians are a suitable source
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14 of data. The first section reviews the literature on estimating the position of political actors and
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16 describes the methodology used herein. The next three sections present three different applications
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18 that show how quantitative text analysis of public statements released, by Italian politicians, on
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20 social media and SNS can be informative of intra-party politics. In particular, we will illustrate that
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22 intra-party differences can explain: (a) a politician's choice to endorse one or another candidate who
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24 ran for the nomination in the 2012 primary election of the centre-left; (b) a politician's likelihood to
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26 switch off from his/her party in the aftermath of 2013 Italian election; (c) a politician's probability
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28 to be deemed as a credible candidate for a ministerial position, by the media, or to be actually
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30 appointed as a minister of the Renzi cabinet in 2014. The implications in terms of transparency and
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32 accountability are discussed in the last section.
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41 **Estimating policy positions from social media**

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44 The growth of the internet audience made the web attractive to parties and candidates to inform,
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46 mobilize, and cultivate personal votes. Scholars analyze the content broadcast on the official SNS
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48 accounts of politicians and parties in order to study electoral campaigns (e.g., Ceron and d'Adda,
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50 2015; Conway et al., 2013). However, SNS data can be interesting even when general elections are
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52 faraway. As long as users publish online information on their tastes and opinions, several scholars
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54 suggest that the analysis of social media allows to scale – on an ideological axis – the position of
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56 citizens and politicians. These studies adopt two different methodologies: some of them follow a
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3 network approach (Barberá, 2015; Bond and Messing, 2015; Ecker, 2015; Hanretty, 2011; King et
4 al., 2011; Livne et al., 2011), while others focus on the content of social media posts (Boireau,
5 2014; Boutet et al., 2013; Conover et al., 2011; Livne et al., 2011; Sylwester and Purver, 2015).

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10 The information available on the web is particularly suitable to estimate the preferences of ‘hidden
11 actors’, like formal and informal intra-party subgroups or individual politicians belonging to rival
12 party factions, whose ideological viewpoints may be not formally recorded in official documents or
13 displayed through parliamentary behavior.

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20 Party competition creates pressure to display cohesion in the eyes of the voters as unity may
21 enhance a party’s electoral fortune (McGann, 2002), therefore members supporting contrasting
22 views about the party line and strategy should try to work out their disagreements before party
23 positions are defined (in party manifestos or in legislative votes).

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30 Whether the solution stems from consensual bargaining and compromise or from loyalty and
31 enforced discipline does not really matter for our purpose, as in both cases we would fail to observe
32 disunity and we lack the information necessary to estimate the internal heterogeneity of policy
33 views.

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39 The display of party unity may hide internal division and it does not imply perfect cohesion. But
40 even when we observe conflict and splits, for instance in roll call votes, the extent of disagreement
41 inside the party could be misestimated.

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47 So far, several sources of data have been used to account for intra-party ideological heterogeneity
48 (for a review: Proksch and Slapin, 2015). Some scholars (e.g. Giannetti and Benoit, 2009) suggest
49 to rely on what intra-party actors say (the declared preferences) instead of on what they do (the
50 actual behavior). Since talk is cheap heterogeneous declarations are less damaging to the party
51 compared to the cost of non-cohesive behavior. This is even more true in the internet age when
52 politicians can take advantage of the new media to spread their ideas and to comment over any
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3 political event, virtually in real time. Then, ‘politicians may often toe the party line while at the
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5 same time generating texts that show far less subservience to the mechanisms of party discipline’
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7 (Giannetti and Benoit, 2009: 233). The analysis of political texts allows discriminating contrasting
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9 preferences even when actors behave in the same manner (e.g. cast the same vote or endorse the
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11 same candidate) and therefore it is well suited to study intra-party politics.
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14 Accordingly, several studies measured the degree of intra-party heterogeneity by analyzing
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16 parliamentary speeches (Bäck et al., 2011; Benoit and Herzog, 2015; Bernauer and Braüninger,
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18 2009). However, it has been argued that speeches released during legislative debates are the
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20 outcome of an interplay between the party leader and backbenchers: Proksch and Slapin (2012: 16)
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22 analyzed MPs’ discourses showing that they tend to misrepresent ideological polarization, hence are
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24 not the best source to catch intra-party divisions. In fact, speeches delivered in public and highly
25
26 institutionalized arenas (like national parliaments) are easily observable and therefore subject to
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28 party whip. Different electoral systems alter the leader’s propensity to employ the whip in order to
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30 impose discipline and affect MPs’ incentives to express their sincere positions during the debate.
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32 Since the leader can decide whether to leave the floor to MPs or not, in competitive political
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34 systems where the value of party unity is higher (e.g. closed-list PR) she will be more likely to
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36 deliver the speech on his/her own or to give way to one of his/her followers. As a consequence,
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38 parliamentary speeches are subject to selection effects and ‘may not reflect the true distribution of
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40 preferences’ (Proksch and Slapin, 2012: 3) so that the analysis will overestimate party cohesion.
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42 Furthermore, selection effects can also occur due to alternative legislative rules (Giannetti and
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44 Pedrazzani, 2016).
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51 For these reasons, the analysis of debates held at party conferences or party rallies (Greene and
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53 Haber, 2014, 2016; Medzihorsky et al., 2014) or documents drafted by intra-party subgroups
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55 (Ceron, 2012; Debus and Braüninger, 2009; Giannetti and Laver, 2009) has gained relevance in the
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57 literature on intra-party politics. During intra-party debates the whip should only slightly bind the
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3 sincere expression of preferences, compared to the discussions held in the parliamentary arena.
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5 Investigating these debates by means of content analysis on texts drafted by intra-party groups
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7 could be useful to identify their preferences (Benoit et al., 2009). Through documents like factional
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9 motions, i.e. omni-comprehensive policy documents issued by factions during party congresses, any
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11 internal subgroup is (almost) completely free to present its idea about how party position and
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13 strategy ought to be. Given that their content should be minimally affected by leaders' control,
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15 some authors analyzed these programmatic documents that express 'opposing views on the
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17 ideological direction of the party' (Giannetti and Laver, 2009: 154) to map the distribution of
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19 preferences within the party.
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24 Beside party conferences, social media represent another fruitful source of data on the preferences
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26 of individual politicians and intra-party subgroups. Furthermore, these kind of data also retain some
27
28 specific advantages. First, social media are unmediated and self-expression oriented tools in which
29
30 users release unsolicited (and sometimes impulsive) statements: this increases the likelihood that
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32 public declarations posted on-line reflect the true preferences of political actors (Schober et al.,
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34 2015), particularly when these statements are perceived as being free preliminary personal opinions
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36 not subjected to party whip and not damaging for party unity. Although some statements could be
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38 instrumental, the extent of strategic behavior on-line should be lower if compared to what happens
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40 off-line in more formal environments. Texts written on-line are also more spontaneous compared to
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42 the content of interviews released to the media where politicians face direct (and sometimes
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44 unwanted) questions to which they must answer.
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48 Second, while the analysis of party congresses display the preferences in a single point in time,
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50 social media data allow to record changes that happen between one congress and the following one
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52 and therefore is suitable to predict party fission or party switch; this point is particularly crucial in
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54 low-institutionalized contexts and inside new or fluid parties where subgroups are not steady and
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3 party members often make and break factions, shaping and reshaping the intra-party structure
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5 (Ibenskas and Sikk, 2016).
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8 In light of this, the next sections will describe three applications that employ social media data to
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10 investigate intra-party dynamics. Focusing on the Italian case, we will use *Wordfish*, an automated
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12 scaling technique of text analysis (Proksch and Slapin, 2009; Slapin and Proksch, 2008), to measure
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14 the ideological position of politicians and factions as it emerges from the comments published on
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16 blogs, or official Facebook and Twitter accounts.
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19 By doing that, we will test whether the ideology of politicians and their agreement with the line of
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21 the party leadership affect a variety of real world political outcomes and play a role in events such
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23 as primary elections, party splits and politicians' career.
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26 The three analyses differ from each other with respect to the source of data (Twitter only or all the
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28 social media together), the time span (3 months of data for the two most recent analyses versus 4
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30 years of data for the oldest one) and the unit of analysis (selected accounts of factional leaders,
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32 randomly selected accounts of politicians or the whole population of social media accounts of
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34 politicians belonging to one party).
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37 In the Wordfish analyses (see Appendix for details), however, some common guidelines have been
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39 followed. First, we retained only the posts with a political content, meaning that we excluded
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41 'technical' messages that merely announce participation to meetings or television debates (e.g.
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43 '*tonight I will be interviewed live on public television*').
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46 Second, retweets, replies and (public) direct messages have been analyzed too, under the
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48 assumption that the politicians intentionally carried out such actions. For instance, politicians are
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50 free to ignore messages sent to them when they are not willing to reply (indeed, the literature
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52 illustrates that politicians follow a top-down approach on social media: Larsson, 2013).
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55 Analogously, they should retweet messages only when they want to spread the content of the
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57 original message or to signal a link with the original author.
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3 Third, no preprocessing (e.g. stemming) has been performed given that in the Italian case
4 preprocessing tends to produce estimates that are highly correlated (Greene et al., 2015). Indeed, in
5 the present paper the correlation between our estimates and the estimates obtained after stemming
6 words is above 0.9.
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11 12 13 14 15 16 **Endorsing the party leader: Social media in the wake of 2012 centre-left primary election**

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18 To date, more than 70% of Italian MPs have a SNS account. This share has dramatically grown in
19 the last years, starting from the 2012 centre-left primary election when thousands messages have
20 been posted by politicians, party activists, or common citizens to debate on the campaign.
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24 The primary election was called to select the leader of the centre-left coalition in view of the 2013
25 general elections. Five candidates ran for the nomination but only two had a real chance to win the
26 race: the frontrunner and party leader, Pierluigi Bersani, was challenged by the young mayor of
27 Florence, Matteo Renzi. In December 2012, Bersani won the election and got appointed as leader of
28 the coalition. Bersani and Renzi were the head of two different factions affiliated with the
29 Democratic Party (PD). At that time, however, the internal life of the PD was not that simple.
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33 By defining factions as ‘subunits which are more or less institutionalized and who engage in
34 collective action in order to achieve their members’ particular objectives’ (Boucek, 2009: 468), in
35 2012 we can classify up to 11 distinct subgroups within the PD: *A Sinistra* (factional leaders: Livia
36 Turco and Vincenzo Vita), *AreaDem* (Dario Franceschini), *Bersaniani* (Bersani), *Dalemiani*
37 (Massimo D’Alema), *Democratici Davvero* (Rosy Bindi), *Giovani Turchi* (Stefano Fassina),
38 *MoDem* (Walter Veltroni and Paolo Gentiloni), *Prossima Italia* (Giuseppe Civati and Debora
39 Serrachiani), *Rottamatori* (Renzi), *Trecentosessanta* (Enrico Letta), *Vivi il PD* (Ignazio Marino).
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53 The policy position of each faction has been measured by applying Wordfish to analyze blogs,
54 Facebook accounts and Twitter profiles of their factional leaders.¹ We downloaded the comments
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published during the XVI Legislature, between April 2008 and December 2012. When there was no web content available for a leader or when the amount of information was insufficient to carry out a reliable analysis we compensate using data related to other prominent politicians belonging to the same faction.² Overall 21 PD leaders have been considered and their individual positions, measured through another Wordfish analysis, are on average strongly correlated with the position of the faction (0.90).³ The placement of words on the latent dimension is in line with their substantial meaning in the Italian political language. Terms like ‘*redistribuire*’ (redistributing) and ‘*uguaglianza*’ (equality) are located on the left as well ‘*disoccupazione*’ (unemployment). Concerns about ‘*inflazione*’ (inflation) are instead typical of the right of the party likewise support for the ‘*#agendamonti*’ (a platform of reforms proposed by the former centrist premier Mario Monti).

Figure 1 displays the placement (with 95% confidence interval) of factions along the latent dimension, which can be interpreted as an ideological left-right scale. The vertical axis represents the mean of the individual positions of factional leaders.

Figure 1

The policy positions of party factions are in line with the expectations. On the left side we find factions like *Vivi il PD*, *Giovani Turchi*, and *A Sinistra* that usually expressed left-wing positions. The *Bersaniani*, followers of the party leader, are still on the left though on a more moderate position and all the other factions that supported Bersani (*AreaDem*, *Bindiani*, *Lettiani*, and *Dalemiani*) are quite close as well. The position of the *MoDem* is more centrist and statistically different from that of the mainstream factions rallied behind Bersani. Finally, liberals and reformist subgroups like *Rottamatori* and *Prossima Italia* (a splinter group of *Rottamatori*) are on the right wing. The positioning of *Bersaniani* and *Rottamatori* is similar to that based on the analysis of policy platforms presented by Bersani and Renzi during the 2012 primary election.

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3 To double-check the validity of the estimates, we also performed content analysis of the textual
4 documents considered and we observed that the distance between the position of each factional
5 leader and the party leader Bersani is positively correlated (0.7) with the number of negative
6 messages written against Bersani and posted online by politicians.⁴
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11 Accordingly, we employ these estimates to test whether the online ideological alignment of
12 factional leaders can explain their offline behavior. We hypothesize that:
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18 *Hypothesis 1 – The likelihood to endorse one candidate is higher when the position of the*
19 *politician/factional leader is closer to that of the candidate.*
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26 We focus on the choice to openly endorse Bersani in the primary election campaign, drawing
27 information from a list of endorsements made by PD politicians on the media (Seddone, 2012). The
28 list has been gathered considering all the official declarations publicly released in national
29 newspapers in the last weeks before the primary election.
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36 Our dependent variable is *Endorsement*, which is equal to 1 when the politician supports the party
37 leader Bersani, and takes the value 0 when not.⁵ In Model 1 we focus on the individual ideological
38 placement of factional leaders considered in the Wordfish analysis and we assess its effect on
39 *Endorsement* through logistic regression. In Model 2 we extend this analysis by taking into account
40 also the PD politicians who are included in the endorsement list (Seddone, 2012); factional
41 affiliation of each politician was assessed based on personal biography or membership in one of the
42 rival intra-party associations and we test the impact of their faction's ideological placement on
43 *Endorsement*, through a multilevel logit. Our main independent variable is *Distance*, which records
44 the absolute distance between the policy position of Bersani and that of politician *i* (Model 1) or
45 that of his/her faction (Model 2). We also include *Experience*, which accounts for the number of
46 years spent in parliament, as a control variable.⁶ The results are shown in Table 1.
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Table 1

The results confirm that the ideological preferences estimated through the analysis of posts published on social media can explain a politician's choice to endorse or not the party leader Bersani in the primary election. Factional leaders whose position is closer to that of Bersani, or PD politicians affiliated with a faction ideologically tied to him are more likely to openly endorse Bersani in the press and this likelihood decreases as *Distance* grows: from Model 1, a change in *Distance* by one standard deviation from its mean decreases the probability of *Endorsement* by 24.2 points (41.9%). Notice that when considering the effect of the distance from Renzi on the likelihood of endorsing Renzi, we obtain very similar results.

Factions, fission and switch in the aftermath of 2013 elections

Although parties should try to hide the conflict, they often end up washing their dirty linen in public. This happened, for instance, in the aftermath of the 2013 general elections, when all the main Italian parties were dealing with internal rivalries and dissent between the leadership and the backbenchers. Often, these conflicts became directly observable, through SNS or through debate and interviews made on television and newspapers, and intra-party rivalries often produced a party breakup.

The occurrence of party fissions (Ceron, 2015) has dramatically altered the shape of the Italian party system. Indeed, both small and large parties were (repeatedly) hit by party fissions or by switch of Members of Parliament (MPs). For example, a splinter group of the left-wing party ('Left, Ecology and Freedom') broke up to join the PD. Similarly, some MPs belonging to Civic Choice (SC), the new party created by the incumbent premier Mario Monti, rejoined the PD while others merged with a splinter group of a small centrist party to create a new one. Intra-party divisions also

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3 produced the split of one party that has long been considered homogenous: some MPs tied to a local
4 party leader (Flavio Tosi), in fact, switch off from the Northern League (LN) to create their own
5 party. Party switch and party fission also involved the three main parliamentary party groups. Beppe
6 Grillo, the leader of Five Stars Movement (M5S) repeatedly decided to expel some rebels from the
7 party, and in January 2015 a large number of MPs broke away to create an autonomous group.
8 Berlusconi's Forza Italia (FI), which was already hit by two party fissions in 2010 and 2012, broke
9 again in the Autumn 2014 when the Minister of the Interior (Angelino Alfano) contested
10 Berlusconi's choice to withdraw the support to the cabinet and created a moderate party called New
11 Centre-Right (NCD). Forza Italia, was hit by two additional party fissions in June and August 2015,
12 when party members loyal to Raffaele Fitto and Denis Verdini split.
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16 Finally, in the highly heterogeneous PD, factional conflicts erupted when the leader of the minority,
17 Matteo Renzi, won the congress and became the new party leader. The divisions inside the PD
18 became particularly sharp after the labour market reform and the school reform, when a few MPs
19 (including some factional leaders like Fassina and Civati) switch off the PD as a sign of
20 disagreement.
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Scholars highlighted the link between the policy views of politicians and their propensity to leave the party (Ceron, 2015) or switch off from the parliamentary party group (Heller and Mershon, 2008). Accordingly, we want to assess whether the declarations published by MPs on social media allow to predict the occurrence of a party switch. We hypothesize that:

Hypothesis 2 – Politicians located far away from the party leader are more likely to leave the party.

Focusing on the three main parliamentary groups, PD, M5S and FI, we collected and analyzed the tweets written by 90 randomly chosen politicians, belonging to these parties. Per each party we selected 15 politicians representing the majority of the party (respectively: *Renziani* faction, within

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3 the PD; members of *Direttorio* loyal to the leader Beppe Grillo, within the M5S, and *Berlusconiani*
4 inside FI) and 15 politicians belonging to minority groups (in detail: *Sinistra PD* and *Civatiani*,
5 within the PD; *Dissidenti* within the M5S;⁷ *Fittiani* and *Verdiniani* within FI). We gathered tweets
6 published in the official Twitter accounts during the last three months of 2014 and we tried to
7 predict switches occurred in 2015. Tweets were analyzed through Wordfish. All the tweets written
8 by the same politician were pooled together to produce an estimate of the individual position of that
9 politician. In addition, we also pulled together tweets written by MPs belonging to the same
10 subgroup in order to estimate the ideological placement of these 6 groups: *Renziani*, *Sinistra PD*
11 and *Civatiani*, *Direttorio M5S*, *Dissidenti M5S*, *Berlusconiani* and *Fittiani-Verdiniani*.⁸ Once again,
12 the placement of words on the latent dimension is in line with their substantial meaning in the
13 Italian political language: indeed, left-wing words (e.g., ‘*redistribuire*’/redistribution, or hashtags
14 such as ‘*#giustiziasociale*’/social justice and ‘*#democraziapartecipativa*’/participatory democracy)
15 have been discriminated from right-wing ones (e.g., ‘*chiesa*’/church, ‘*patria*’/motherland, or
16 hashtags like ‘*#bastatassesullacasa*’/stop house tax). This seems to confirm that the political
17 language is largely ideological in nature, even on Twitter, and can be used to detect ideological
18 differences (Sylwester and Purver 2015).
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39 Figure 2 displays the position of 90 individual politicians on the latent dimension, along with the
40 placement of the 6 groups (95% confidence interval of the estimate).
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Figure 2

The policy positions of these subgroups are in line with the expectations:⁹ the minority faction of
the Democratic Party (*Sinistra PD*) stands on the left of *Renziani* and it lies quite far away. The
difference between the supporters of Grillo and the dissidents of M5S is quite large as well; the
leadership of M5S appears to be slightly more conservative on the latent scale while the dissidents

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3 seems more left-oriented. This is in line with the expectations: so far, the elected officials of the
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5 M5S tend to be more leftist than the leadership and the party leader Grillo complained about this.
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7 The reason is that, due to internal rules of candidate selection, only early party activists (who were
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9 more left-oriented: Pedrazzani and Pinto, 2015) got access to the party list in 2013. Conversely, the
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11 distance between the subgroups of FI is very tiny, and this might suggest that the difference
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13 between the two factions is not primarily related to policy issues. What is more, the alignment of
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15 the three parties is coherent ($r = 0.93$) with the analysis of 2014 parliamentary debates (Ceron and
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17 Curini, 2014), with the RILE scale ($r = 0.99$) provided by the Comparative Manifesto Project
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19 (Lehmann et al., 2015), with the left-right economic scale ($r = 0.89$) from Chapel Hill (Bakker et al.,
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21 2015) expert survey and with many other data sources (see Appendix). Accordingly, we can
22
23 interpret the latent dimension as a left-right scale.
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28 Based on this, we measure the *Distance* between each politician and the party leader (Matteo Renzi,
29
30 Beppe Grillo and Giovanni Toti) to assess whether it affects a politician's choice to *Switch* off the
31
32 party. The dependent variable *Switch* is equal to 1 when the politician decides to switch and equal to
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34 0 when not (we observed 25 switches in our sample); we also control for the level of parliamentary
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36 *Experience*, and given that observations are nested within parties, we include party dummies.
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Table 2

43 The results confirm that the ideological preferences estimated through social media analysis are
44
45 informative of the occurrence of a party switch (for a similar result: Ecker, 2015). The higher the
46
47 distance from the party leader, the stronger the probability that a politician leaves the party: a
48
49 change in *Distance* by one standard deviation from its mean increases the probability of *Switch* by
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51 16 points (59.2%).
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58 **Ministerial selection in the age of Twitter: The formation of Renzi cabinet in 2014**
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3 The last application focuses on ministerial selection. Taking the cue from recent studies (Kam et al.,
4
5 2010; Fleisher and Seyfried, 2015), we want to analyze whether the distance between a politician
6
7 ideal point and the core of the party impinges on his/her political career and on the likelihood to be
8
9 appointed as a minister (or junior minister). We hypothesize that:

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11
12 *Hypothesis 3 – Politicians closer to the official party position are more likely to be appointed as*
13
14 *minister/junior minister (and to be deemed ‘ministrable’ by the media).*
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20 To test this claim we focus on the PD during the formation of the Renzi cabinet, in February 2014 .
21
22 We considered the party in central office (PCO), which was renewed in December 2013 after that
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24 Renzi won the direct election and became party leader, and therefore constitutes a suitable
25
26 ‘recruitment pool’. We gathered data on 122 out of 179 members of the Executive body of the PD
27
28 (*Direzione*), i.e. the whole population of members that retained a Twitter account (68% of PCO).
29
30 We downloaded all the tweets published by PCO members between 8th December 2013 and 22nd
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32 February 2014. Furthermore, during the same time lapse, we collected all the tweets published by
33
34 the official Twitter account of the party (*@pdnetwork*).¹⁰ These documents have been scaled
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36 through Wordfish in order to produce a matrix of similarities between PCO members and the
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38 *@pdnetwork* account, which lies at one extreme of the scale.
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44 Based on this, and under the idea that nowadays Twitter can be a device to signal its own loyalty to
45
46 the party by broadcasting the party line as much as possible to the followers, we argue that the
47
48 latent dimension can provide insights on how strong is a politician’s loyalty toward the official
49
50 party line. Such interpretation is confirmed when looking at the discriminating power of each word.

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52 The list of words used to express loyalty, reducing the distance between the MP and the party
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54 account, includes references to the party itself (*‘partito’*/party and *‘democratico’*/democratic) to its
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56 social media accounts (the Twitter account *‘@pdnetwork’* or *‘youdem’*, the online TV channel of
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3 the party), to its leadership (the Twitter account '@matteoreenzi' or the Twitter question time
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5 '#matteorisponde') as well as terms mentioning other institutional party arenas, such as the PD
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7 assembly (#assembleapd) or the PD executive body (#direzionepd). These words suggest that the
8
9 MPs are closer to the party account when they broadcast the party line to spread the party message
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11 rather than expressing personal views and, by doing this, they can signal their loyalty and their
12
13 willingness to cooperate once in office.
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16
17 Figure 3 displays the placement of each PCO member and his/her distance from the position of
18
19 @pdnetwork. Observations are clustered in three different groups: those who were deemed as
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21 potential ministers by the media (circle),¹¹ those who actually became ministers (diamond), and
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23 those who were not judged appointable neither by the media nor by the premier (triangle).
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Figure 3

The distribution of ministers and potential ministers is closer to the party compared to that of all
others politicians. The distance between each politician and the party is slightly correlated (0.4)
with the results of a content analysis performed on the tweets of a subsample of politicians, made to
assess the share of sentences written to support the new party leadership.

We then evaluate whether the variable *Distance*, normalized on a 0-10 scale, affects one of the two
following dependent variables: a) *Ministerial Appointability* (Model 1), a dummy variable equal to
1 when the politician is considered as a favorite for ministerial appointment (also for a junior
position), and equal to 0 when not; b) *Ministerial Appointment* (Model 2), a dummy variable equal
to 1 when the politician has been actually appointed as minister (or junior minister), and equal to 0
when not. Table 3 displays the results of the logistic regression, while controlling for the degree of
parliamentary *Experience*.

Table 3

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5 Once again, the results confirm the role of social media analysis as a source of information and
6
7 highlight the potential role of Twitter as a ‘signal’, useful to boost a politician’s career. The higher
8
9 the distance from the content of the official PD Twitter account, the lower the probability to be
10
11 considered as a potential minister or to be appointed in office: a change in *Distance* by one standard
12
13 deviation from its mean decreases the probability of *Ministerial Appointability* by 7.7 points
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15 (48.1%) and that of *Ministerial Appointment* by 5.2 points (37.2%). This finding applies only to
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17 politicians active on Twitter therefore, in Models 3 and 4, we extend the analysis to all the 179
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19 members of the Executive body. To evaluate the impact of *Distance* when considering also
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21 politicians without a Twitter account, we imputed missing data (King et al., 2001) estimating what
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23 would have been their value of *Distance* if they had had a Twitter account. In addition, to control
24
25 for alternative explanations, we assessed factional membership of each politician to evaluate
26
27 whether they belonged to the *Renziani* faction or not, and we include this dummy variable into the
28
29 model.¹² The results confirm that, net of factional affiliation, the probability to be appointed or to be
30
31 deemed appointable decreases with the *Distance* from the party, while factional membership, per se,
32
33 has no effect. Finally, it could be argued that the decision to be active on Twitter is subjected to a
34
35 self-selection that can produce a sample bias. Actually, we did not find any difference between the
36
37 two groups (with or without a Twitter account) concerning gender, education, factional membership
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39 or *Experience*, except for a (slight) difference related to age. Nevertheless, to take into account this
40
41 issue, we estimated a probit selection equation and we included the inverse Mills ratio drawn from
42
43 such model in new probit regressions built as in Models 3 and 4. By doing this, we can control for
44
45 the hypothetical bias in Twitter usage. Once again, our results hold the same.¹³
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Discussion

The present paper evaluates whether social media messages published by politicians are a suitable source of data on intra-party politics and tests whether the ideology of politicians (expressed online) as well as their agreement with the line of the party leadership allow us to anticipate the behavior of political actors in real world political events, such as primary elections, government formation and party splits.

By exploiting data available on SNS to extract information on the ideological placement of political actors like parties, factions and individual politicians, this paper confirms the promising results obtained by previous studies (e.g. Barberá, 2015; Bond and Messing, 2015; Ecker, 2015) and provides a further contribution by showing that the content of comments published online is highly informative too (see also: Sylwester and Purver, 2015).

Three applications of automated text analysis to the posts published by Italian politicians on blogs, Facebook and Twitter, between 2008 and 2014, have been presented. The results shed light on how online measured intra-party heterogeneity can explain several intra-party dynamics and in particular: (a) a politician's choice to endorse one or another candidate during primary election, (b) a politician's likelihood to switch off from his/her party, and (c) a politician's probability to be deemed as a credible candidate for a ministerial position, by the media, or to be actually appointed as a minister. Indeed, the ideological distance from the party leadership explains a politician's decision to support the leader in a party primary and to switch to another parliamentary group, as well as her/his probability to be appointed as minister/junior minister.

In this regard, as politicians take clear positions on SNS, intra-party dynamics become less hidden and the gears of political systems may appear more transparent. In turn, politicians and political actors can be made accountable for their actual behavior, in light of the positions expressed online.

Table 4 summarizes the features and the results of the three analyses.

Table 4

The selection of cases varies, ranging from the choice of selected accounts (those of factional leaders) to the random selection of accounts (with a mix of leaders and backbenchers representing both the majority and the minority faction of the party), up to the attempt of analyzing the whole population of PCO members with a Twitter account. In all the three analyses we tried to validate our estimates through a comparison with hand-coding and manual content analysis (for a similar approach: Klüver, 2009), finding a proper correlation in each analysis and reaching a satisfactory validation of data in at least two cases. Several statistical analyses show that the degree of intra-party heterogeneity measured through social media analysis has indeed an effect on a variety of topics and the magnitude of such effect seems quite relevant. Although social media are affected by some limitations and could not be able to substitute other types of data, these results suggest that social media can be a promising and precious sources of information on intra-party politics. Future research should investigate whether text analysis techniques can be profitably mixed with other methods based on network analysis in order to provide more valid estimates that can enhance our understanding of intra-party dynamics. Furthermore, future studies could attempt to continuously monitor the evolution of ideological preferences over time; by providing data on the preferences of individual politicians the analysis of SNS can contribute to study political careers (and allows us to perform cross-country comparisons). Finally, social media analysis should be extended to study internal polarization across parties and countries, in a comparative perspective. In light of this, social media data can also be used to estimate the position of citizens and influent opinion makers, like bloggers, journalists and media, in order to assess the congruence of preferences between parties, activists, voters, media, and interest groups.

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¹ Until 2012 the use of SNS by Italian politicians was still in its infancy. Politicians were active on different SNS and it was difficult to focus on a single one. Therefore, we relied on all the available sources of data. Furthermore, for the sake of maximizing the length of texts, we extended the range back to 2008. Conversely, in the rest of the paper, we will analyze only Twitter (which seems to have a less ‘personal’ content compared to Facebook).

² For instance, to supplement Enrico Letta we analyzed declarations issued by Francesco Boccia (who can be considered his ‘man-Friday’) and similarly, to account for the position of Dalemiani we retained texts written by Nicola La Torre, the ‘spokesman’ of Massimo D’Alema.

³ In both analyses the number of unique words is 31,015. Given the long time frame of data collection (4 years) and the fact that we also collected long texts like blogs, the average number of words per document is quite huge: 20,465 words when considering the 21 individual documents and 39,070 when considering the 11 factional documents.

⁴ Here is an example of a negative messages written against Bersani: ‘*We can’t travel to the future with Bersani who has never written a single page talking about the future in the last years*’.

⁵ Bersani and Renzi have been excluded from the analysis. Note that a few politicians explicitly declared their non-endorsement for both candidates.

⁶ We control for *Experience* in all the three applications. Note that our results remain robust when including additional control variables like age or gender.

⁷ Members of *Dissidenti* were identified from a list of MPs who did not fulfill the obligation to render account of their parliamentary expenses (the list was made available on the blog of the party leader, Beppe

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4 Grillo, [http:// www.beppegrillo.it/tirendicono.it/trasparenza/](http://www.beppegrillo.it/tirendicono.it/trasparenza/)). The *Direttorio* includes the five MPs selected
5
6 by the party leadership as members of the executive party body and a random sample of 10 MPs who did not
7
8 appear in the previous list.

9
10 ⁸ The number of unique words is 24,135. On average, each politician's Twitter account includes 2,015 words,
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12 which is large enough to perform a reliable analysis. The six textual documents of subgroups contain
13
14 approximately 30,218 words each.

15
16 ⁹ The position of each group and the average position of the politicians belonging to that group are strongly
17
18 correlated (0.95).

19
20 ¹⁰ The number of unique words is 17,167. Each politician's Twitter account, on average, is 1,032 words long.

21
22 ¹¹ To assess which PD politicians were deemed appointable by the media we scrutinize newspapers (both in
23
24 paper and digital edition) as well as newswire agency's data from the resignation of the Letta cabinet
25
26 (February 14th) until the announcement of the Renzi cabinet (February 22nd). All the main newspapers (*La*
27
28 *Repubblica*, *Il Corriere della Sera*, *Il Fatto Quotidiano*, *Quotidiano.net*, *Il Sole 24 Ore*, *Il Giorno*, *Il*
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30 *Giornale*, *Liberio*, *Il Tempo*, *La Stampa*) and newswire agencies (*Agi*, *Asca*, *Ansa*, *Adnkronos*, *Italtpress*) were
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32 considered.

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34 ¹² Excluding this variable from the analysis does not alter the results.

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36 ¹³ Data available on request. Notice that all the datasets and replication files will be available at
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38 <http://andreaceron.com>

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Tables

Table 1 – Logit regression of Endorsement

Parameters	(I)	(II)
Distance	-1.823* (1.058)	-2.377*** (0.590)
Experience	0.011 (0.074)	-0.030 (0.049)
Constant	1.580 (1.216)	2.681*** (0.563)
N	19	85
% Correctly Predicted	63.2	87.1

Significance (two tailed): *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses

Table 2 – Logit regression of Switch

Parameters	(I)
Distance	1.936** (0.870)
Experience	-0.051 (0.251)
Constant	-1.299*** (0.438)
N	87
% Correctly Predicted	73.6

Significance (two tailed): *** p<0.01, ** p<0.05, * p<0.1
Robust standard errors in parentheses. Party dummies
embedded.

Table 3 – Logit regression of ‘Appointability’ and Ministerial Appointment (with or without imputation)

Parameters	(I)	(II)	(III)	(IV)
Distance	-0.399*** (0.144)	-0.279** (0.139)	-0.364*** (0.126)	-0.235** (0.117)
Experience	0.498*** (0.182)	0.615*** (0.189)	0.445*** (0.144)	0.527*** (0.139)
<i>Renziani</i> Faction			-0.768 (0.501)	0.492 (0.567)
Constant	0.856* (0.520)	-1.639*** (0.564)	-0.727 (0.622)	-2.062*** (0.727)
N	122	122	179	179
Imputations			5	5
% Correctly Predicted	82.0	84.4	84.9	83.0

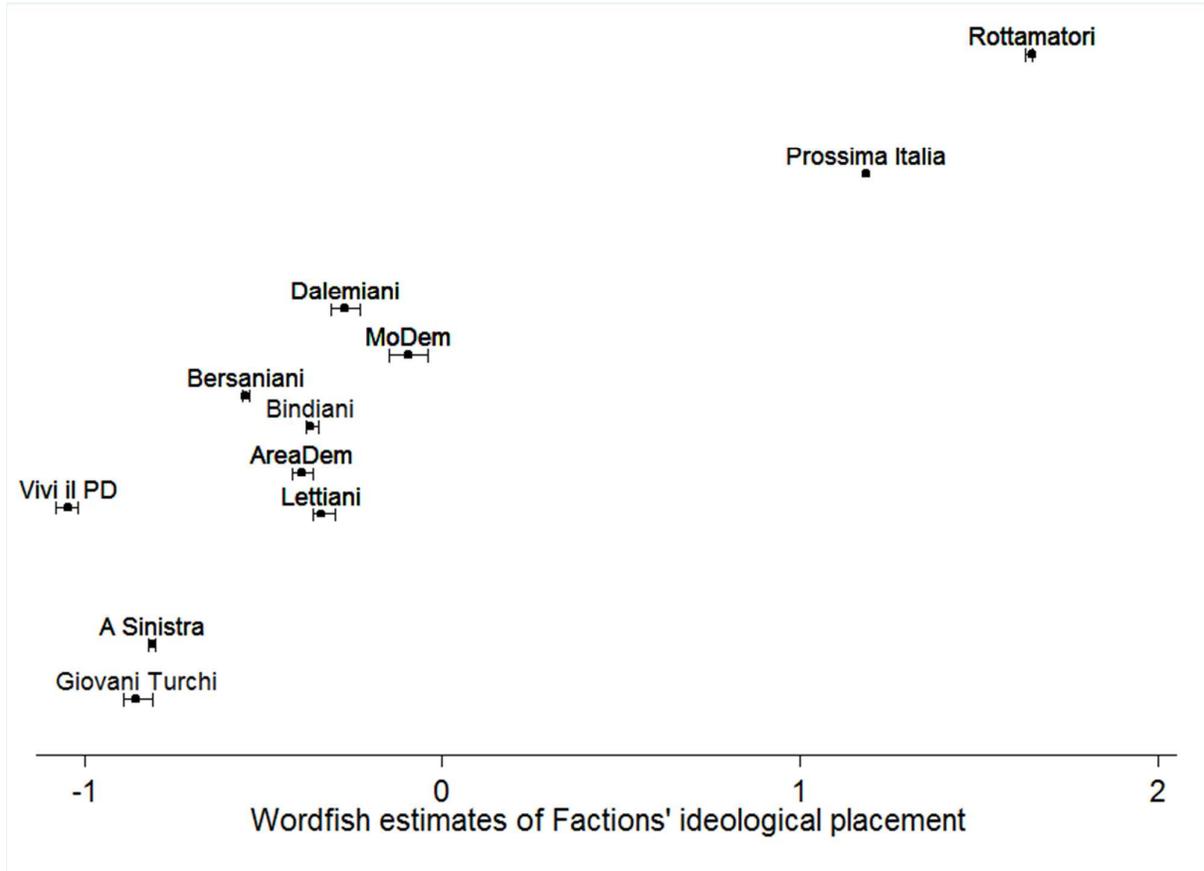
Significance (two tailed): *** p<0.01, ** p<0.05, * p<0.1; Robust standard errors in parentheses

Table 4 – Summary of the analyses

	Endorsement	Switch	Ministerial Appointment
Party	PD	PD, M5S, FI	PD
Source	Blog, Facebook, Twitter	Twitter	Twitter
Time Span	4 years	3 months	3 months
Case selection	Selected accounts	Random	Population
Validity of estimates	0.7	0.9	0.4
Significant effect	*/***	**	**/**
Magnitude of impact	41.9%	59%	37%-48%

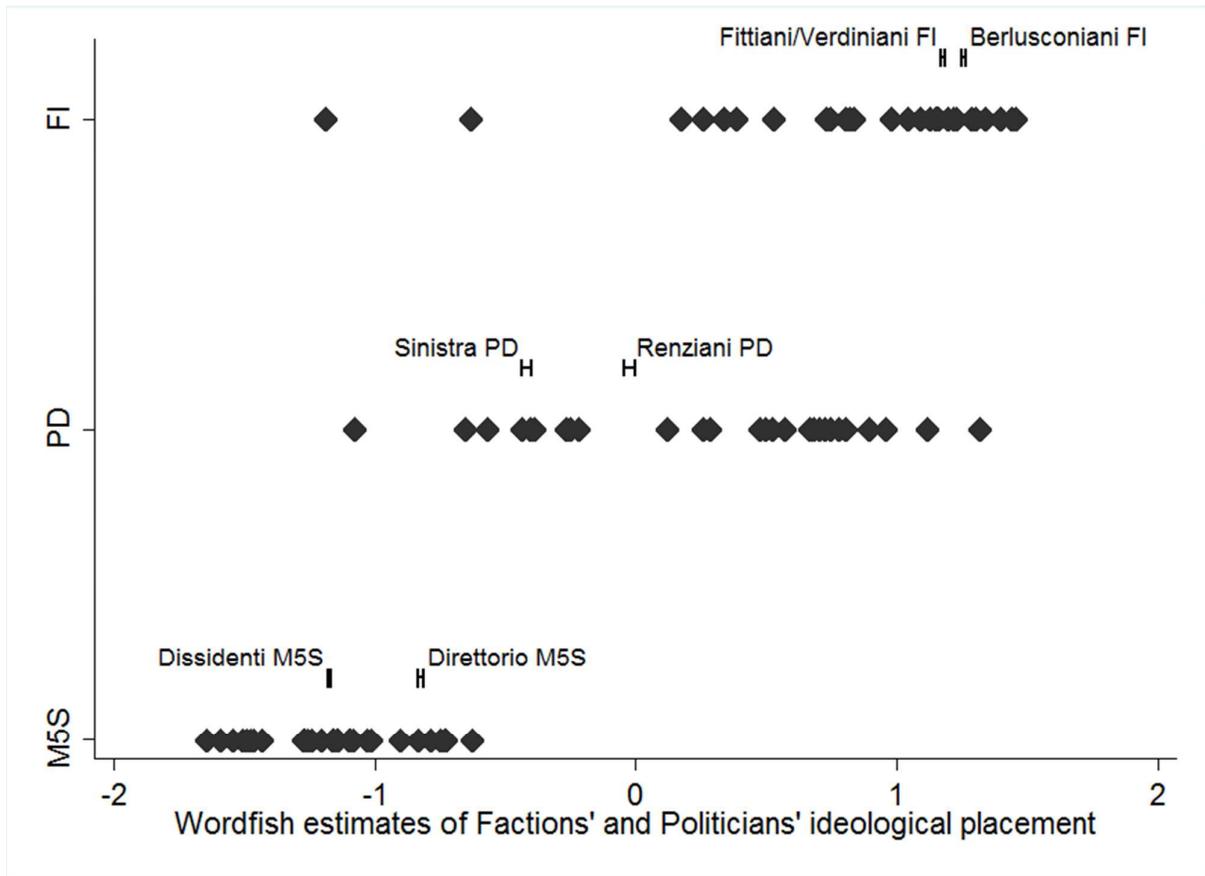
Figures

Figure 1 – Ideological placement of PD factions at the end of 2012



view

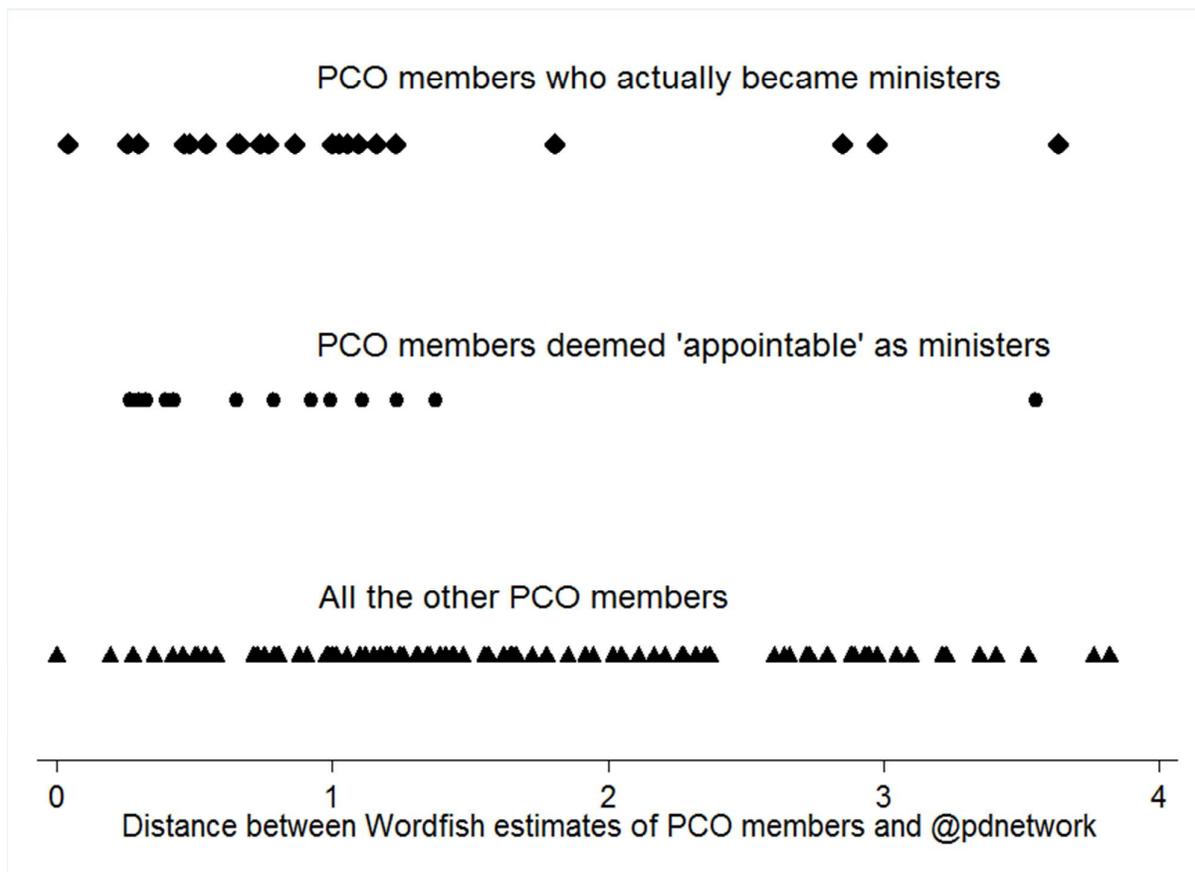
Figure 2 – Ideological placement of politicians and factions at the end of 2014



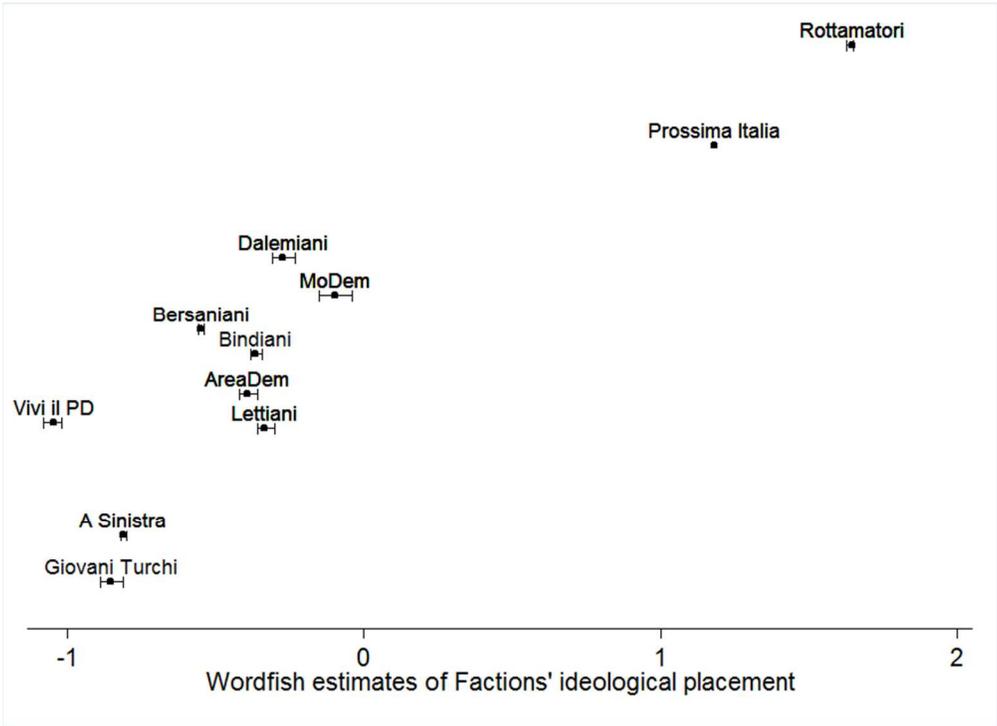
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Figure 3 – Distance between the estimates of PCO members and the PD Twitter account.

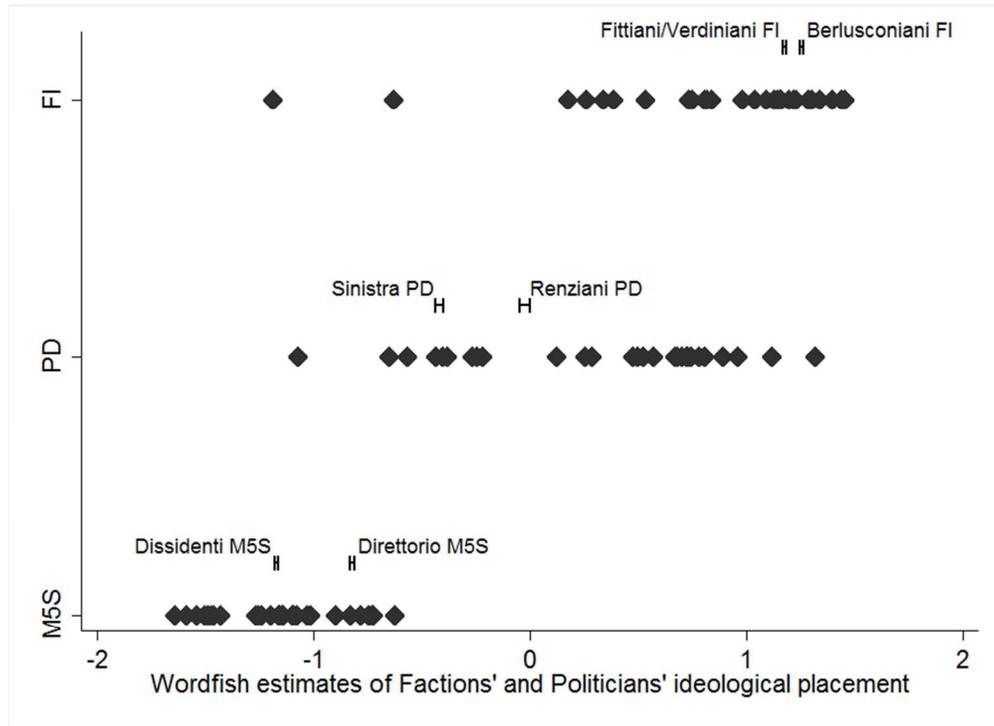


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Ideological placement of PD factions at the end of 2012
308x224mm (72 x 72 DPI)

Review

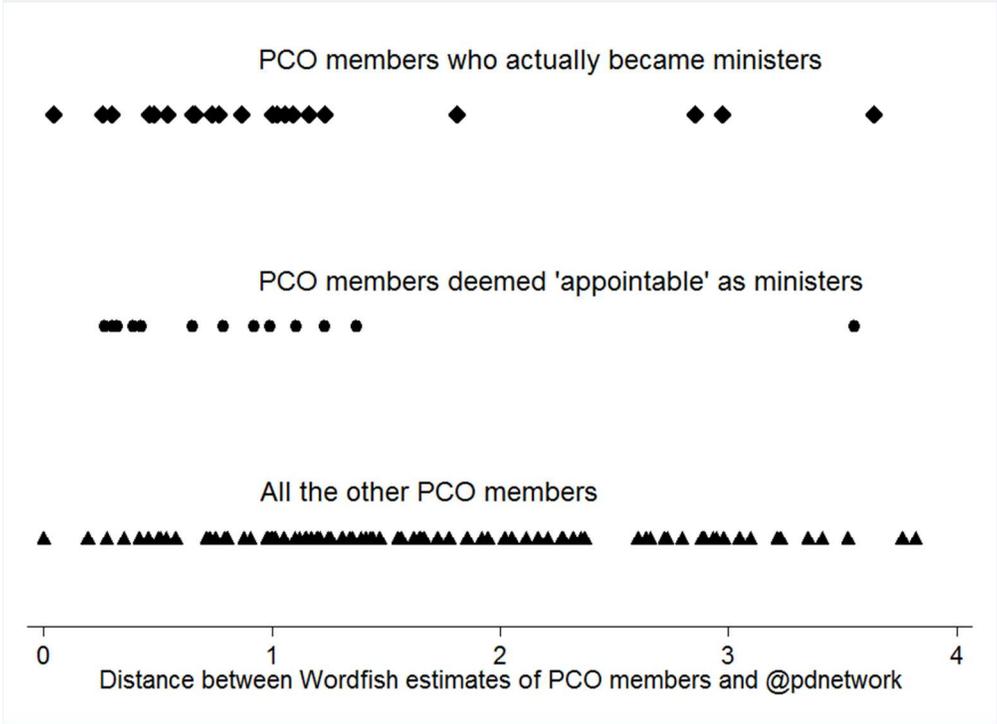


Ideological placement of politicians and factions at the end of 2014
308x224mm (72 x 72 DPI)

Review

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Distance between the estimates of PCO members and the PD Twitter account
308x224mm (72 x 72 DPI)

Review

Online Appendix

A1. Data: Details on Wordfish analyses

Table A1 – Details on Wordfish analyses

	Primary Endorsement		Party Switch		Ministerial Appointment
Party	PD		PD, M5S, FI		PD
Source	Blog, Facebook, Twitter		Twitter		Twitter
Time Span	4 years		3 months		3 months
Case selection	Selected accounts		Random (with constraints)		Population
Validity of estimates	0.7		0.9		0.4
Unit of analysis	Factions	Individual Politicians	Factions	Individual Politicians	Individual Politicians
Documents	11	21	6	90	122
Unique Words	31,015	31,015	24,135	24,135	17,167
Words per document	39,070	20,465	30,218	2,015	1,032
Text Preprocessing	None		None		None
Stemming words	r = 0.9		r = 0.9		r = 0.9
RT	Yes		Yes		Yes
Reply	Yes		Yes		Yes
Direct messages	Yes		Yes		Yes

A2. Data: Summary statistics for the variables employed in the empirical analyses

Table A2 – Summary statistics

Parameters		Endorsement		Switch	Ministerial Appointment			
		(I)	(II)	(I)	(I)	(II)	(III)	(IV)
Dependent Variable	Mean	0.729	0.729	0.287	0.162	0.179	0.162	0.179
	SD	0.447	0.447	0.455	0.369	0.384	0.369	0.384
Distance	Mean	0.735	0.578	0.388	3.581	3.581	3.552	3.552
	SD	0.577	0.752	0.379	2.267	2.267	2.251	2.251
Experience	Mean	5.214	5.214	0.955	1.297	1.297	1.318	1.318
	SD	6.299	6.299	0.389	1.434	1.434	1.432	1.432
Renziani Faction	Mean						0.771	0.771
	SD						0.420	0.420

A3. Validity: The position of PD, PDL and M5S according to different sources of data

Table A3 – Position of M5S, PD and PDL: Correlation between Wordfish estimates and other data sources

Data Source (Reference)	Scale	Wordfish Position (Party Leader)	Wordfish Position (Politicians Average)
Comparative Manifesto Project (Lehmann et al., 2015)	RILE	0.997	0.998
Comparative Manifesto Project (Lehmann et al., 2015)	Economic	0.996	0.997
Italian Legislative Speeches Dataset (Ceron and Curini 2014)	RILE	0.931	0.926
Italian Legislative Speeches Dataset (Ceron and Curini 2014)	1 st Factor of PCA	0.980	0.982
EuVox Expert Survey (Ceron and Curini 2016)	1 st Factor of PCA	0.712	0.703
Italian Expert Survey (Di Virgilio et al. 2015)	1 st Factor of PCA	0.647	0.637
Chapel Hill Expert Survey (Bakker et al., 2015)	Economic Left- Right	0.898	0.892
Chapel Hill Expert Survey (Bakker et al., 2015)	General Left-Right	0.432	0.420
Chapel Hill Expert Survey (Bakker et al., 2015)	Galtan	0.697	0.687
Chapel Hill Expert Survey (Bakker et al., 2015)	1 st Factor of PCA	0.980	0.982

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