

# The role of trust, participation and identity in the propensity to e- and i-vote

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**Abstract:** The paper analyzes the issue of citizens' propensity to deploy automated elections as a dependent of several ascribed and attitudinal factors. Data are drawn from a computer-assisted telephone survey carried out in the Autonomous Province of Trento, which through project ProVotE sponsors the largest program of touchscreen-based voting in Italy. Alongside socio-demographic variables such as sex, age, education, and occupation, we describe how socio-political attitudes such as trust, participation, and identity affect the propensity to vote by automated means. We conclude that, based on the binomial and multinomial logistic models we implemented, our data support the hypothesis of existing divides between those who are favourable to automation in elections and those who are not, the main cleavages being age and level of education. Furthermore, a greater degree of trust in the generalised other is needed in e-voting but not perceived in i-voting, while both voting procedures appeal those who are already politically mobilized but less attached to traditions.

## 1 Introduction and research hypotheses

To the eyes of an external observer, the European electoral legislation landscape appears as a colourful and assorted patchwork of requirements, procedures, and technical tools. Some countries revoked e-voting as soon as they loss support from the electoral basis, no matter whether it was a novelty, as in Ireland [Co04a; Co04b; Co06; Lu07] or a long established habit, as in the Netherlands [Go06; Oo07]. Others are more cautious and promote trials and experimentations with or without legal value, but always on a limited scale: this is the case in Switzerland [Br04; BB06], Great Britain [FR03], Spain [Fe07], Portugal [Fa08], and Italy [Ca08]. Some countries, such as Belgium and France, currently deploy electronic machines, while a few Baltic explorers are adopting more and more innovative channels: i-voting, successfully deployed in Estonia [MM06] and debated in Lithuania [Ud06], and even m-voting, i.e., voting from a mobile phone, as recently approved in Estonia [Wo08].

For the purposes of this paper, it is necessary to distinguish between paper-and-pencil polling-place voting, which is the traditional solution adopted by the Italian legislation; electronic voting by means of a computer installed in voting booths that are not connected to any network, generally labelled as *e-voting*; and internet voting from unsupervised environments, known as RIV (Remote Internet Voting) or just *i-voting*.

E-voting generally reproduces the features of the paper ballot on a more advanced technological artefact, allowing for quicker tabulation of the results and preventing some kinds of clerical mistakes in filling in the different measures [Re04]. I-voting can be regarded as a form of absentee ballot involving a further evolutionary step of technological development and reproducing dynamics similar to those faced in mail-in balloting [PS08].

Though more and more salient in Europe and in the rest of the world, the sociological debate pro and versus automated voting rests primarily on theoretical basis. Some authors underline how electronic voting will revolutionize democracy for the better by reducing costs, by limiting errors made by voters and electoral administrators, but above all by allowing for uniform standards in the ballot format [SC05]. Besides, thanks to an immediate access to online sources of information, i-voters could express a more documented and informed choice [AH04]. Conversely, other commentators believe that by making voting too easy and convenient, one would actually diminish the percentage of voters who really care about a certain policy; therefore e- and i-voting do not substantially revolutionize democracy [Bu01]. What is more, casting a ballot online is an individual business, which might deprive balloting of its symbolic value, which is intrinsically communitarian: all men and women—regardless of their age, status, education—walk as equals into anonymous polling booths and, as equals, decide to participate in the nation's destiny. Authors wonder whether democracy as we know it can be thus individualised and removed from its public expression. Opinions, again, are divided: some believe citizens are ready to give up the liminal phase of walking into the booth [Mo06], others see it as a betrayal of the democratic traditions and standpoints [MS04; Or01], the use of the internet apparently increasing social isolation [NE00]. In addition to this, as we already anticipated, the overall quality of democracy might be seriously affected by the divide in the access to automated voting facilities, which tend to be preferred by already mobilized social groups [Ke05], though this viewpoint is being fiercely debated [PS08]. Overall, electronic and internet voting appear as a promising challenge as much as a deceitful means supported by politicians to represent themselves as “modern” [FR03].

As a consequence, an oft debated topic is, at the time being, whether electronic and internet voting might change the socio-demographic and ideological profile of the electorate by facilitating some already advantaged social groups and discriminating the minorities. Some characteristics of the population have been proved to be associated with the ability of voting with different technologies: for instance, the amount of residual votes on ballot measures is linked to the voting technologies alongside the income and the percentage of black people living in a given county, whereas age and the percentage of Latinos appear to be not significantly associated to the chosen procedure [KK08]. Similar considerations might apply to the introduction of an electronic medium to replace a long-established habit of voting by paper and pencil.

Legally binding i-voting experiences show contradictory results: surveys conducted after the Arizona democratic primary in 2000 converge on finding a significant impact of age and level of education, whereas sex should not play a role in the choice to vote online [Ke05; So01]. On the other side, they substantially diverge in their interpretation of the effect of income, which is significant at the bivariate level [Ke05; So01] or when crossing ecological rather than individual data [Gi01], but loses its power when pooled in a multivariate model [So01]. Location (urban/rural) would not exert a statistically

significant effect [So01], as well as party identification [Ke05]. While some authors insisted on the existence of a digital divide between different social classes, sex and age groups [Gi05], individual level turnout data from the 2004 Michigan democratic primaries allowed researchers to signally address campaigners' concerns. Race and class were not found to be significant and a two-step decision model clarified that their impact is limited to the choice of voting absentee: once this decision has been taken, they play no role on the selection of the preferred method (by mail or by internet) to cast the ballot [PS08].

We can therefore expect sex, age, occupation, and education to be associated with the propensity to vote over the internet or on-site, by electronic means.

Furthermore, potential disparities might be observed not just in terms of the socio-demographic composition of the e-/i-electorate, but also in its quality: sociologists and political scientists are interested in observing how much an individual is linked to her socio-political community, and whether different modes of relation between a citizen and the society might affect her interest in e- and i-voting.

As pointed out by Guerra et al. [Gu03], trust in the other is crucial in establishing relations, and it has been argued that the trust flow starts with trust in the institutions delivering the elections [XM05]. It has also been underlined that i-voting will advantage citizens of areas where political participation is higher [Bi05], i.e., will appeal those who are already mobilized [KK08]. The bivariate association between political efficacy and willingness to vote over the internet has been established by Solop [So01], though he did not specify how the index is calculated, nor control for socio-demographic variables. A further condition supporting the deployment of automated means is the sense of belonging to the community, a concept which has been referred to as "social identity" [OV05], though not implying the identification of the individual by others, as intended by Guerra et al. [Gu03], but rather the feeling of describing oneself as part of a meaningful social group.

Given these premises, we might expect that trusting institutions and the generalised other, feeling as a member of one's community, and taking part in political activities beyond voting might increase the chances of being in favour of electronic and internet balloting.

The analysis that follows will then address the following question: what circumstances—socio-demographic characteristics and political attitudes—are associated with the (un)willingness to cast one's ballot from a terminal?

## 2 Data and methods

Since December 2004, the Autonomous Province of Trento has sponsored a research plan aimed at investigating and supporting the transition to automated means of casting and counting ballots in local elections. Pilots took place in 2005, 2006, and 2008 within the largest project of electronic voting carried out in Italy so far. The local government deployed a phased-in approach as suggested, among others, by the European Commission [Ve04], with the goal of gradually substituting paper and pencil with touchscreens. At the time this paper was being written, the multi-disciplinary *équipe* working on the ProVotE project provided local authorities with detailed evaluations of the field trials and recommendations on the conditions under which the switch-over

should take place, but no final decision has been taken yet. As none of the pilots could be legally binding, and individual-level data of voters and non-voters are not available, we relied on surveys to monitor the propensity to vote electronically in a supervised environment and over the internet (as done previously, amongst others, by Gibson [Gi01] and Kenski [Ke05]). Although i-voting is not on the agenda of either the Italian government or of the local one, the growing salience of this topic in the international arena suggested that we should start a preliminary investigation in order to highlight the conditions underlying the support for and the opposition against it.

Data that will be presented in this contribution are drawn from computer assisted telephone interviews carried out at the beginning of December 2007 on a sample of 1603 adult citizens. The sample was stratified in order to be representative of sex, age, and town of residence.

The three dependent variables reflect:

- the interviewee's propensity to deploy ProVotE e-voting machine (model a),
- the general stereotype towards automated voting, i.e., whether it has more advantages or more risks (model b), and
- the propensity to vote over the internet (model c).

These three variables were dichotomized by collapsing answers that expressed favor in the new technology and those that did not, as shown in Table 1.

As independent variables, we considered a set of socio-demographic characteristics (sex, age, level of education, and type of occupation) but also some indexes<sup>1</sup> of social and the political attitudes that the above summarized literature review held as theoretically or empirically crucial.

Specifically, an index of *trust in the generalised other* was computed from three dichotomous items following the Survey Research Center's rephrasing of Rosenberg's Faith in People scale [RS85], which is still being deployed in its ten point version in the European Social Survey. Given the limited number of items available, we did not compute a quasi-cardinal measure but rather aggregated the answers in order to separate those who tend to trust others (60.5% of valid cases) from those who offer no positive answer (39.5%). Bivariate analysis showed that education is the most significant factor related to this attitude: people in their adult age tend to trust others more than youth and the elderly. Bourgeois are more confident than interviewees of the working class, whereas sex has no significant impact.

In order to tap beliefs about politicians and the political process, we computed an index of *political cynicism*<sup>2</sup> by adapting Agger, Goldstein, and Pearl's scale [AGP61]. This quasi-cardinal measure is positively correlated to age and negatively correlated to the level of education, whereas there is no significant difference between sexes and occupations.

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<sup>1</sup> A full list of the items enclosed in the survey is available upon request.

<sup>2</sup> Given the nature of the data gathering method (CATI), we offered just five modes of response instead of the original six. The standardised index has been computed using five of the six items, thus obtaining good internal consistency (Cronbach's  $\alpha = 0.63$ ). The median is 0.24, skewness is -0.566, kurtosis is 0.720 and range is 6.266.

A further index of *trust in the local institutions*<sup>3</sup> was computed by translating Craig, Niemi, and Silver's incumbent-based trust scale [CNS90], supplementing it with two items from Bennett's governmental attentiveness scale and ANES studies [RSW91], and adapting their wording for the local dimension. This attitude is actually cross-sectional and unrelated to sex, age, education, and occupation.

A second crucial dimension, *political participation*<sup>4</sup>, is represented by political activities: an index was computed from nine dichotomous items deployed within the Italian National Election Study [It06] and Verba and Nie's Participation in America Survey [Br99].

*Voting in the last general election* was retained as a separate control variable: 86.7% of the respondents declared they voted, an estimate which is consistent with the turnout of 2006 political elections in the region Trentino-Alto Adige, where the recorded participation rate was 87% [Mi09].

The third social dimension taken into consideration is the feeling of *territorial identity*, the sense of belonging to a local community that shares the same heritage and identifies itself in both symbols and actions. The indicators chosen to elicit this concept were only in part inspired by ANES studies and adapted to the local reality, so the resulting typology is original and not yet tested for external validity. We distinguished five types of interviewees:

- enthusiastic (26.4%) are proud of whatever concerns their land, possibly even edging toward chauvinism. Within this group women are more represented than men, as well as lower grades of education and people over their fifties;
- un-socialised (17.0%), though they define themselves as "trentini", they do not know the anthem, which is usually taught at school and sung at local festivities. As just one out of four was born outside the province, it is likely that people within this group are less integrated than those providing on-average or even enthusiastic answers. More women than men belong to this type, and seven out of ten are below fifty years of age;
- disillusioned (10.2%) said they feel little attached to at least one of the symbols taken into consideration. Disillusion is more common amongst young men and higher-grade white collars;
- strangers (11.0%) declared they do not feel themselves to be citizens of the Autonomous Province of Trento, or didn't answer to the identity-related questions. Interestingly, this attitude is more common amongst middle-aged professionals and those with higher education level: no surprise that just one out of four was born in the province;
- the remaining 35.4% gave intermediate answers and were labelled as "middlemen".

Given the nature of the dependent variables, we deployed multinomial and binary logistic regression and report the regression parameters (B), their Wald test significance

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<sup>3</sup> In its original version this scale was deployed with dichotomous items, while our version has five possible answers. The index is standardised, with median of 0.08, skewness -0.007, kurtosis -0.302, and range 6.002.

<sup>4</sup> The summation index has been standardised and has a median of 0.13, skewness 0.683, kurtosis 0.052, range 4.654. The resulting Cronbach's alpha is 0.64.

and their standard errors. Odds ratios can be easily computed by raising the base of the natural log to the  $B^{\text{th}}$  power.

**Table 1 – Propensity towards the automation of voting procedures**

<b>a. Propensity to e-vote</b>		<b>b. Electronic voting has...</b>		<b>c. Propensity to i-vote</b>	
	%		%		%
very much in favour	25.8	more advantages than risks	36.3	very much in favour	16.0
quite in favour	30.0	more risks than advantages	35.7	quite in favour	23.9
neither in favour nor against	11.6			a little/not much in favour	17.5
quite against	14.7			not at all in favour	36.6
very much against	11.8				
<i>Total valid cases</i>	93.9	<i>Total valid cases</i>	72.0	<i>Total valid cases</i>	93.9
did not answer	0.4	did not answer	0.3	did not answer	0.2
did not know	5.7	did not know	27.7	did not know	5.9
<i>Total</i>	100.0	<i>Total</i>	100.0	<i>Total</i>	100.0
<i>N</i>	1603	<i>N</i>	1603	<i>N</i>	1603

### 3 Discussion of the results

Consistently with the reviewed literature on cyber-trust, remote i-voting elicits less support than polling-place e-voting: the latter is approved by 55.8% of the interviewees, whereas the former by 39.9% [Table 1]. The data support the hypothesis of an incremental deployment of technology, which sees e-voting as a step in an evolutionary process in which paper and pencils yield to remote internet voting: there is just a limited amount of respondents who would accept i-voting but not e-voting (3.7%), likely because of the added value of voting remotely rather than by the deployment of technology [Table 2].

But what is the profile of voters who would support automated elections? How much do socio-demographic characteristics affect the propensity to vote on a touchscreen or over the internet? Is there an impact of socio-political attitudes on this choice?

**Table 2 – Attitudes towards different solutions for voting automation**

% Electronic voting has...	<b>a. Propensity to e-vote</b>			<b>b. Propensity to i-vote</b>		
	no	yes	Total	no	yes	Total
more advantages than risks	29.7	17.0	46.7	38.1	12.1	50.1
more risks than advantages	3.5	49.8	53.3	16.9	32.9	49.9
Total	33.2	66.8	100.0	55.0	45.0	100.0
	<i>r = .603 (sig=.000)</i>		<i>N=1021</i>	<i>r = .422 (sig=.000)</i>		<i>N=1111</i>

% Propensity to i-vote	<b>c. Propensity to e-vote</b>		
	no	yes	Total
no	29.0	25.3	56.4
yes	3.7	42.0	43.6
Total	32.7	67.3	100.0
	<i>r = .482 (sig=.000)</i>		<i>N=1260</i>

### 3.1 Socio-demographic characteristics

The analysis carried out by means of a multivariate logistic regression model allows us to compare the characteristics of those who answered favourably, those who are against, and those who provided no opinion on the subject matter, which gives us some insight into the potential non-response bias affecting surveys on e- and i-voting [Table 3]. We thus observe that interviewees who do not take a stand on the issues are also less likely to provide personal details, especially with regard to their occupation, while missing information on age is related to missing information on i-voting.

The model also shows that sex impacts significantly on the chances to see more risks than advantages in automated voting, but women are more sceptical than men also with reference to the ProVotE stand-alone machine and to i-voting. Age has a non-linear effect: consistently with previous research (e.g., Gibson [Gi05]) we find that automated elections are more supported by people in their middle age than by the youngsters and the elderly. The level of education contributes to the interest for these innovations in the electoral procedures: all factors being equal, the chances that a graduate supports i-voting are nearly twice as much as those of a person with a lower degree. Finally, there is no direct effect from occupation, which nonetheless is retained in the following analysis as a control variable.

**Table 3:** Effects of socio-demographic characteristics on the propensity to automation in electoral procedures

	a. Propensity to e-vote				b. Electronic voting has more advantages				c. Propensity to i-vote			
	yes		indifferent / DA / DK		yes		DA / DK		yes		DA / DK	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
<b>Sex</b>												
male	0.15	0.123	-1.08	0.788	0.46***	0.122	0.13	0.132	0.20	0.112	0.13	0.224
female <sup>a</sup>												
<b>Age</b>												
missing	1.06	0.671	1.08	0.788	1.02	0.770	1.31	0.697	1.63*	0.641	2.17*	1.063
age	0.07***	0.020	0.02	0.025	0.05**	0.021	-0.01	0.021	0.08***	0.020	0.05	0.036
age*age	-0.01***	0.001	-0.01	0.001	-0.00**	0.000	0.01	0.001	-0.01***	0.000	-0.01	0.000
<b>Education</b>												
missing	0.02	0.864	0.20	0.978	0.40	1.049	0.45	0.934	0.07	0.902	-0.30	1.197
min. 4 yrs univ. degree	0.64*	0.301	0.36	0.402	0.82**	0.310	-0.61	0.342	1.26***	0.303	-1.48	0.812
high school / BA	0.75**	0.234	0.76**	0.288	0.57*	0.256	-0.09	0.242	0.90***	0.255	-0.40	0.386
mid. school / prof. educ	0.39	0.214	0.65*	0.257	0.22	0.243	0.11	0.217	0.37	0.247	0.01	0.330
no title / elem. school <sup>a</sup>												
<b>Occupation</b>												
missing	-0.01	0.212	0.50*	0.251	0.26	0.225	0.48*	0.218	-0.13	0.214	0.67*	0.326
bourgeoisie	0.27	0.277	-0.56	0.448	-0.22	0.264	-0.41	0.325	0.53*	0.252	0.01	0.645
petite bourgeoisie	0.37	0.221	0.41	0.278	0.22	0.214	0.26	0.227	0.30	0.195	-0.09	0.423
white collars. high skilled	0.16	0.193	0.32	0.250	-0.14	0.190	0.32	0.201	0.08	0.172	0.36	0.353
white collars. low skilled	-0.07	0.184	0.16	0.238	0.28	0.184	0.22	0.202	0.26	0.170	0.53	0.320
working class <sup>a</sup>												
<b>Constant</b>	-1.27*	0.492	-1.87**	0.632	-1.81	0.508	-0.90	0.524	-2.25***	0.490	-3.52***	0.944

<sup>a</sup> reference category. Multinomial logistic regression models. DA = does not answer, DK = does not know. \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

model a.: N=1603. Model  $\chi^2(df)^{sig} = 122.192(26)^{***}$ . -2LL = 2530.168; Pseudo R<sup>2</sup> Cox&Snell = 0.073, Nagelkerke = 0.085, McFadden 0.039.

model b.: N=1603. Model  $\chi^2(df)^{sig} = 140.702(26)^{***}$ . -2LL = 2628.343; Pseudo R<sup>2</sup> Cox&Snell = 0.084, Nagelkerke = 0.095, McFadden 0.040.

model c.: N=1603. Model  $\chi^2(df)^{sig} = 224.639(26)^{***}$ . -2LL = 1976.318; Pseudo R<sup>2</sup> Cox&Snell = 0.131, Nagelkerke = 0.159, McFadden 0.081.

### 3.2 Social and political attitudes

To ascertain the role of the three socio-political dimensions described in section 2 (trust, participation, identity), we ran different binomial logistic models and found that the sign, the magnitude, and the significance of the coefficients did not substantially differ from what we observed in a single all-encompassing model, which is presented in Table 4.

Within the first dimension, we expected that *trust in the generalised other*—as a feeling that contrasts with, for instance, complot theories—would enhance the chances to accept automated elections. All other factors being held constant, this index was found to be relevant as long as voting in a supervised environment is concerned (model a and b) but negligible in the i-voting model. A possible interpretation of this result might take into account the relative safety of the voting environment as perceived by the elector: whereas automated voting as presented in the first two questions can be easily prefigured as quite similar to the present way of casting a ballot—where the computer takes over the paper and pencils—the third question suggests a totally different and much individualised location. The generalised other then is not the technician, the programmer, distant, invisible and perhaps even transparent to the eyes of the voter, but she is rather the returning officer, the member of the board of the scrutinizers, who support the elector in exerting her right to vote.

*Political cynicism* does not have much impact on the prejudice against automated voting (does it have more risks or more advantages) nor on the imaginary of remote voting, but rather it does on its practical application: interestingly enough, the cynical elector welcomes ProVotE, likely as a possible solution to potential frauds at the very local level. A large scale complot, as envisioned by activists in other countries with regard to i-voting, seems not to be foreseen by our interviewees.

Finally, we found no support for the common rhetoric that holds automated voting as better accepted by citizens who trust the local government. Controlling for all other socio-demographic and socio-political factors, *trust in the local administration* appears to be cross sectional: the coefficients are weak and non significant, though the sign of the relationship is consistent with our research hypothesis.

The second dimension we considered is *political participation*, which encompasses a set of political actions, such as signing up for a petition or a referendum, writing to candidates, trying to convince someone to vote for a party and so on. Our data bring further evidence to an already consolidated literature stressing how e- and i-voting appeal to citizens who are already politically mobilized. But we also found a small effect related to voting in past elections: those who did not cast a ballot have more chances to be in favour of automated means and especially remote voting appears significantly attractive. These results support what we already anticipated: the attraction of this innovation is given by the possibility to vote comfortably from an individually chosen location rather than by the deployment of technology *tout court*.



**Table 4: Effects of socio-political attitudes on the propensity towards voting automation**

	a. Propensity to e-vote		b. Electronic voting has more advantages		c. Propensity to i-vote	
	B	SE	B	SE	B	SE
<b>Sex</b>						
male	0.17	0.127	0.47***	0.125	0.20	0.114
female <sup>a</sup>						
<b>Age</b>						
missing	1.03	0.706	1.12	0.845	1.64*	0.664
age	0.07**	0.021	0.05*	0.022	0.07***	0.021
age*age	-0.01***	0.001	-0.01*	0.001	-0.01***	0.000
<b>Education</b>						
missing	-0.31	0.895	0.22	1.178	-0.11	0.913
min. 4 yrs university degree	0.56	0.317	0.76*	0.321	1.02**	0.311
high school / BA	0.69**	0.243	0.53*	0.263	0.75**	0.260
middle school / professional edu	0.35	0.221	0.20	0.248	0.30	0.250
no title / elementary school <sup>a</sup>						
<b>Occupation</b>						
missing	-0.01	0.220	0.29	0.234	-0.19	0.220
bourgeoisie	0.14	0.283	-0.30	0.273	0.49	0.258
petite bourgeoisie	0.29	0.228	0.14	0.221	0.24	0.199
white collars. high skilled	0.11	0.200	-0.22	0.196	0.05	0.177
white collars. low skilled	-0.13	0.189	0.27	0.189	0.26	0.173
working class <sup>a</sup>						
<b>Trust</b>						
missing trust in the other	0.34	0.180	0.42*	0.183	0.01	0.165
trust in the other	0.53***	0.141	0.65***	0.141	0.248	0.132
missing political cynicism	-0.11	0.160	-0.03	0.166	0.15	0.149
political cynicism	0.15*	0.073	0.05	0.071	0.06	0.066
missing trust in local gov.	-0.08	0.142	-0.02	0.144	-0.21	0.133
trust in local government	0.08	0.078	0.05	0.074	0.06	0.069
<b>Political participation</b>						
missing political activities	0.81**	0.276	0.45	0.253	0.28	0.215
political activities	0.18*	0.070	0.06	0.069	0.27***	0.063
missing voting	-0.33	0.480	-1.15	0.638	0.12	0.441
voting in last elections	-0.14	0.209	-0.20	0.203	-0.35	0.189
<b>Territorial identity</b>						
enthusiastic	-0.11	0.233	-0.15	0.227	-0.35	0.208
middlemen	-0.20	0.224	-0.14	0.217	-0.30	0.197
disillusioned	-0.50	0.272	0.27	0.268	-0.25	0.241
un-socialised	0.12	0.248	0.16	0.237	-0.06	0.217
strangers <sup>a</sup>						
<b>Constant</b>	-1.28*	0.563	-1.94**	0.578	-1.71**	0.543

<sup>a</sup> reference category. Binomial logistic regression models.

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

model a.:  $N=1319$ . Model  $\chi^2(df)^{sig} = 119.025(27)^{***}$ .  $-2LL = 1537.538$ ;

Cox&Snell  $R^2 = 0.086$ , Nagelkerke  $R^2 = 0.121$ . Overall % of predictability = 70.7%

model b.:  $N=1154$ . Model  $\chi^2(df)^{sig} = 84.499(27)^{***}$ .  $-2LL = 1515.616$ ;

Cox&Snell  $R^2 = 0.071$ , Nagelkerke  $R^2 = 0.094$ . Overall % of predictability = 59.1%

model c.:  $N=1505$ . Model  $\chi^2(df)^{sig} = 228.520(27)^{***}$ .  $-2LL = 1822.873$ ;

Cox&Snell  $R^2 = 0.141$ , Nagelkerke  $R^2 = 0.199$ . Overall % of predictability = 65.7%

The last dimension under analysis concerns the operationalization of identity according to the typology described in section 2. Though not statistically significant (which might be due, amongst other reasons, to the sample size), the sign and the magnitude of the coefficients suggest us some ideas about the effect of identity on the propensity to deploy automated means for voting. Quite interestingly, people who are more integrated in their community are less inclined to e- and i-voting: a conservative or traditionalist attitude, the pride of belonging to the community (though the same one which crafted the voting device) do not reinforce the willingness to vote automatically, but rather inhibit it. This finding goes in the opposite direction of our initial research hypothesis, according to which we expected that being a protagonist of such an innovation would be associated with a higher propensity to deploy the ProVotE machinery, in a sort of Hawthorne

factory effect [Ma33]. We can try to interpret this tendency in the light of the Durkheimian notion of community, which requires the members' co-presence in order to elicit, through rituals, that feeling of effervescence that recalls and forwards the shared values and norms.

## 4 Conclusions

The governments' preoccupation with the increasing disenfranchisement of the electorate brought about numerous attempts to restore citizens' participation in elections. Alongside reforms in the traditional paper-based electoral systems, many countries show a growing interest in automated means for casting ballots and tabulating the results. Automated elections promise a simplification of procedures, thus eliminating voters' fatigue (which is one of the causes of undervoting), clerical mistakes, and, possibly, low turn-out [KK08]. Nonetheless at the time being, empirical evidence is scarce if not anecdotal: literature draws on different sources of data and contexts that do not allow generalization.

Rather than on certainties on the feasibility and the advantages of e- and i-voting, most national experiences converge on the preoccupations advanced by pressure-groups and by some researchers: do automated elections change the composition of the electorate and thus the quality of democracy?

Our data showed that age and education level are significant predictors of the propensity to vote remotely or in electronic booths, the effect of age being actually non-linear, thus suggesting that youth, as well as the elderly, will not be attracted to polls, should e-voting be introduced, neither will people with low levels of education.

But we also considered how the voters' profile will change according to their socio-political attitudes, signally with reference to trust, political participation, and identity.

We found further evidence to Xenakis' and Macintosh's [XM05] suggestion that in the chain of inherited trust, citizens do not realize they implicitly give credit to someone who is unknown, not just to them, but even to the same authorities delivering the elections. I-voting propensity is actually unrelated to both trust in the local government and trust in the generalised other; in other words prospect i-voters experience different kinds of concerns than those sensed in other e-transactions, while trust in the other is significant when voting in a supervised environment. Our data therefore support Oostveen's and Van den Besselaar's statement, according to which "people should not just have to trust in the integrity of a voting system or the people who designed, developed and implemented it" [OV04], thus implying that more observation opportunities might be introduced to enhance the feeling of security. It is then advisable that on one side citizens should be enabled and encouraged to observe procedures at the polling booths, but on the other side they should also be made aware of the role of technology (and of the people in charge of designing and managing it) should i-voting be introduced.

Furthermore, as participation in political activities proved significant for both e- and i-voting, our data suggest that in the Italian context, and signally in Trentino, the conclusions drawn by Prevost and Schaffner [PS08] cannot be totally corroborated: if mobilization only influences the choice to vote remotely, but not the medium through which the ballot is cast, we should not have found political participation to be a

significant predictor in the e-voting model as well. We can therefore conclude that there is a substantial divide in the propensity to deploy automated means of elections: people who are already politically mobilized are more in favour of automated elections—as suggested, amongst others, by Kimball and Kropf [KK08], Kenski [Ke05], Birdsall [Bi05]—no matter whether voting takes place from a remote location or in a supervised environment. Nonetheless, we also found evidence that automated voting, especially in its i-form, might appeal those who did not participate in the last political elections. Finally, we learnt that even though most i-voting initiatives have been developed at the local level by local contractors [Kr08], pride for belonging to the same community that crafted this innovation does not enhance the chances of being in favour of deploying the i-voting mechanisms, but on the contrary, a higher degree of integration inhibits the propensity to i-vote. We tried to interpret this attitude with reference to the Durkheimian theory of collective effervescence, which is elicited by ritual events such as elections. The seeming contradiction between the positive impact of political participation and the negative, though not significant, impact of integration is a paradoxical finding that calls for further research. It is likely that mobilization is not disjoined from progressive individualization of conventional political behaviours, which would account for both the positive effect of participation and the irrelevant effect of integration, but a more complex model is needed to account for these relations, which goes far beyond the scope of this paper. Further investigations are also needed in the direction of the feeling of security and privacy that different media convey: for instance, how i-voting will eventually overcome the tension between the need for privacy and the requisite of identity recognition is still to be ascertained. We also acknowledge the limitations related to the method of data gathering we deployed: should similar data be available in real experimental settings, we will be able to confirm whether attitudes towards e- and i-voting match with actual behaviours or not. The next steps of our analysis will signally address the effect of the technological artefact and take into consideration the voters experience with current voting procedures and with technology in general, through scales that can be computed within the same dataset presented here. At the time being, our research suggests that greater attention should be paid to the quality of the electorate that e- and i-vote engage: based on the binomial and multinomial logistic models we implemented, our data support the hypothesis of existing divides between those who are favourable to automation in elections and those who are not, the main cleavages being represented by age and education, but also by socio-political attitudes.

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