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Abstract

Based on a unique panel data-set of actual voter turnout covering 58 ballots and 12 years in the canton of Geneva, Switzerland, we analyze political participation from a longitudinal and contextual perspective. Focusing on a small number of individual sociological factors we hypothesize about how the impact of these factors varies over time and as a function of different institutional ballot characteristics. By applying multilevel models for growth, we find suggestive evidence for three age effects: period, aging, and cohort. While the data exhibit the expected convergence in turnout between Geneva and non-Geneva citizens over time, the results suggest that women had already caught up with men by the beginning of our study. The results are less straightforward, but not less interesting, with regard to institutional variables, which interact with age, but not with sex or citizenship status.

Keywords

political participation, Switzerland, actual data, multilevel model for growth

1. Introduction

Who votes and for what reasons? These questions lie at the heart of electoral research and have given rise to an extensive literature. Since the pioneering studies of the 1950s, electoral research has highlighted a series of individual resources and capacities that influence political participation, such as socioeconomic status (Lazarsfeld et al., 1944), political competence (Campbell et al., 1976), civic culture and political motivation (Almond and Verba, 1963; Dalton et al., 1984), and social integration (Verba and Nie, 1972). However, the bulk of the literature on individual turnout is based on cross-sectional survey data and, therefore, focuses on the impact of factors influencing the *level* of voter turnout at a given point in time or in a given contest. Only a few studies examine

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how this impact *varies* across time or as a function of the institutional characteristics of the ballot. This article helps fill this gap by analyzing the individual determinants of participation in a dynamic and contextual perspective.

To this end, we shall use a unique data-set comprising panel data on actual (or 'validated') turnout that covers 12 years (1996–2007) and 58 ballots in the canton of Geneva, Switzerland – the only canton in which such data are collected. As a medium-sized canton, with a participation rate close to the national average, Geneva is fairly representative of Switzerland at large. For each of the 58 ballots our data-set comprises roughly 165,000 citizens (the size of the electorate in the canton of Geneva) and provides information about whether citizens voted or abstained, together with some basic information regarding their socio-demographic profile (sex, age, marital status, citizenship status, and number of years of residence). In addition, and more importantly, each citizen is identified through a numeric code, which appears as many times in the data-set as the number of ballots held. One can thus track the evolution of his or her participation over time and across all ballots.

This data-set offers an exceptionally rich basis from which to study political participation. First, its panel structure is ideally suited to a longitudinal analysis of turnout. To take an example, we can test whether the difference in turnout between well-established Geneva citizens and newcomers decreases over time, as 'assimilation theory' would suggest (Tossutti, 2007). Second, taking advantage of the 'Swiss laboratory' with respect to both federalism and direct democracy, we can situate the analysis of voter turnout within its institutional context. Swiss citizens do not only vote in periodic elections held at the three levels of the federal state. In addition, Swiss citizens vote several times a year on specific policy proposals (referendums or popular initiatives), again at the national and at the local (cantonal or communal) level. Consequently, the 58 ballots included in our study differ along two institutional dimensions: their institutional *type* (that is, according to the fundamental distinction between elections and direct democratic votes)¹ and their institutional *level* (that is, national or local). The combination of these two institutional dimensions (type and level) results in a fourfold categorization of ballots and allows for an analysis of how ballot characteristics and individual characteristics interact. Taking again the example of difference in turnout between long-term Geneva citizens and recently established citizens, it is possible to evaluate whether this difference varies by the institutional type or level of the ballot. The institutional variety of votes offered by the Swiss case is likely not only to increase the exportability of our results, but also to provide a novel contribution to the participation literature. Whereas the existing participation literature tends to focus on elections and to treat referendums and elections as two separate forms of political participation, we take both forms into account and we investigate whether they are influenced by the same sets of individual determinants.

It should also be noted that our data-set is limited in one respect: it includes only a handful of socio-demographic variables. This prevents us from looking at the broader set of individual determinants that are said to influence political participation. For example, the data-set provides no information regarding voters' socioeconomic status or level of education. There is also no information on the subjective and attitudinal determinants of participation such as interest in politics or trust in the political system. However, the variables included in our data-set are indeed key factors in participation research and all relate to the aforementioned determinants of turnout. Thus, empirical studies in Switzerland show that women's lower electoral turnout is partly due to compositional effects, namely, their overrepresentation among citizens who are little interested in politics and who do not identify with a party, and their underrepresentation among competent citizens (Engeli et al., 2006). Similarly, age is associated with social integration in various ways, whereas citizenship status and residence duration are central variables in the integration literature.

While the low number of variables is admittedly a weakness, the originality of our article stems from the systematic nature of the tests we provide. These tests assess variation in the determinants of voter turnout across time and across institutions. Methodologically, such tests require sophisticated estimation techniques taking full advantage of panel data. Here we innovate by using multi-level models for growth. In these models, citizens are defined by their individual characteristics (that is, sex, age, marital status, citizenship status, and residence duration) at the outset of the study, and classified with respect to two time-varying factors, namely, time and the institutional characteristics of the ballot. This modeling helps us to estimate whether and to what extent the individual determinants of turnout vary across time and as a function of the different characteristics of ballots.² The fact that these estimations will be based on *actual* participation data is, of course, an added value, since our data escape the selection and overestimation bias hampering *estimated* turnout data gathered through survey methods. Additionally, the huge number of observations in our data-set allows for sophisticated models with several interaction terms. This would hardly be possible with survey data.

This article is structured as follows. In the second section, we develop our theoretical framework regarding the varying impact of individual variables on political participation across time and ballots. We then present our data and model, together with some background information regarding turnout in Switzerland and the representativeness of our case study in that respect (Section 3). This sets the stage for our empirical tests, which appear in Section 4. In the conclusion, we summarize the main contributions of our study and the broader implications of our results. We also sketch possible avenues for further research.

2. Theoretical framework

There are three main variables in our data-set: sex, age, and citizenship status or residence duration. In this section, we briefly review the related literature. This review is used to formulate hypotheses suggesting how each of these factors is likely to influence the evolution of turnout across time and as a function of the institutional characteristics of the ballot. We do this first with respect to *gender* and then turn to age and citizenship status or residence duration.

According to the literature, three types of factors are conducive to a 'gender gap' in voter turnout (Milbrath and Goel, 1977; Norris, 1991): resources, motivation, and social integration. First, since the classic study of Verba and Nie (1972), political resources have ranked high among potential explanations of turnout differences in general and of turnout differences between genders in particular. From this perspective, women's lower endowment of resources such as education, income, and socioeconomic status accounts for their lower turnout. A second strand of literature argues that lower turnout among women results from their weaker political motivation, that is, their weaker interest in politics, weaker party identification, and so on. Third, both the classical literature on social integration and the more recent literature on social capital emphasize the importance of social ties, contacts with primary and secondary groups, and membership of cultural, social, and political associations (Bühlmann and Freitag, 2006; Paxton, 2002; Verba et al., 1978). In this view, it is mainly the survival of a traditional division of labor between the genders, and more specifically the confinement of women to their threefold role of life partners, mothers, and housewives in the private sphere, that is responsible for their low political participation.

In sum, according to these three sets of factors it is the overrepresentation of women in social groups that vote less that is responsible for the gender gap, and not the fact of being a woman per se. In addition to this, the Swiss literature on turnout puts forward an institutional argument. Women were granted voting rights only in 1960 in the canton of Geneva and in 1971 at the federal level.

This is said to have significantly weakened the political socialization of women and, therefore, their political participation (Ballmer-Cao and Sgier, 1998; Kriesi, 2005; Sciarini et al., 2001; Wernli, 2001).

However, more recent studies have questioned this classic view of gender difference. According to the 'revisionist account' (Norris, 1991), dramatic social changes have occurred in western societies since the 1950s. These changes include women's improved access to higher education and the job market, and also their related gains with respect to income, occupational status, and social integration. From this perspective, these changes have served to level out the gender gap in political participation (Inglehart and Norris, 2000).

The empirical record lends support to the 'revisionist account': in most countries in Europe and in North America, women have caught up with men and, since the 1980s–1990s, turnout among men and women has been more or less equal (Norris, 2003). Switzerland partly conforms to this trend. On the one hand, the difference in turnout between men and women has decreased over time, especially in direct democratic votes (Kriesi, 2005): according to the 'VOX-surveys' carried out after each national popular vote, this difference was lower in the 1990s than in the 1980s, and it vanished in the 2000s. On the other hand, while the gender gap has also narrowed in national elections (from 20 percent in the early 1970s to roughly 10 percent in the 1990s), recent surveys show that it has not completely disappeared (Engeli et al., 2006; Lutz, 2008). While there is no systematic data for the canton of Geneva, the existing figures suggest that a similar catch-up process has also been at work. According to a study of validated data regarding two cantonal elections and two cantonal referendums held in 1965 (that is, five years after women gained suffrage), the average difference in turnout between men and women amounted to 18 percent (Girod, 1971). In a more recent study of four national popular votes held in 1992–93, also based on validated data, the gender difference amounted to 8 percent (OCSTAT, 1994). Based on these observations we formulate our first hypothesis that the difference in turnout between men and women has further decreased during the period under study.

In addition to the expected convergence in turnout between men and women over time, we also assume that gender differences depend on the institutional type of the ballot. We proceed by elaborating on the differences likely to be observed when the level of the ballot (federal or local) varies. Our first argument relates to women's belated access to suffrage and its durable impact on their political participation. Given the importance of the so-called 'training period' in voting rights (Mossuz-Lavau, 1997) and the fact that women got their voting rights 10 years earlier at the cantonal level than at the federal level, it is likely that women still show a preference for local ballots over national ones. Second, while we mentioned above that women are less integrated into social networks and political associations, this does not necessarily mean that they are underrepresented in all forms of organizations. In fact, it has been shown that there is differential involvement between men and women, with the former being more committed to classic organizations such as political parties or unions and the latter being more active in local networks of a social and cultural character (Inglehart and Norris, 2003). These two arguments lead us to our second hypothesis that, in comparison to men, women turn out more in local than in national ballots.³

Applying the same line of reasoning to the institutional type of the ballot does not result in the formulation of a similarly straightforward hypothesis. On the one hand, voting rights hold for both elections and referendums. Consequently, there is no reason to expect that women's belated access to suffrage at the national level results in a difference in turnout between elections and referendums. On the other hand, the network argument is likely to play a role. If women feel more distant from political parties than men and are also more integrated into nonpolitical networks, then we can assume that women tend to disregard elections more than referendums, where they can voice

their opinion on specific issues. Similarly, the fact that women are still (strongly) underrepresented in parliaments and governments at all three levels of the Swiss political system may also reduce the incentives for female voters to take part in elections. Thus, with this, albeit rather thin, theoretical underpinning, we expect that women, in comparison with men, vote less in elections than in direct democratic votes (Hypothesis 3).

The literature has identified three types of *age* effects on political participation (Brunner, 1998; Palmore, 1978; Riley et al., 1989). Age effects may first result from a combination of the natural process of biological and psychological *aging* and from a changed position in the *life cycle* at the family, social, or professional level. It is generally accepted that advancing age is accompanied by an increase in social integration and political experience, both of which promote political participation. Inclusion in the workforce or withdrawal from it, the acquisition of responsibilities, marriage, the birth of children and their education are factors which structure a person's life course and influence political behavior. This translates into an increase in turnout with age, up to a certain threshold where, due to health problems, reduced mobility, or social isolation, turnout starts to decline. The underlying idea is that age does not directly influence participation, but does so indirectly, through other variables closely related to age. Our fourth hypothesis concerns the likely effects of aging and the life cycle. It posits that over the period 1996–2007 turnout increases among younger cohorts and decreases among the oldest cohort.

Second, *cohort* (or generational) effects can result from particular historical, economic, cultural, or political events marking one or several specific generations. From this perspective age is less important than an individual's year of birth and specific experiences shared with people from the same generation. These shared experiences are said to promote the internalization of common values and norms, and contribute to the shaping of political behavior. With regards to turnout, we expect that ballot characteristics produce varying effects across cohorts. As a result of the rise of individualism in western societies over the past 30 years, the relationship of younger generations toward politics has changed. First, there is a weaker sense of civic duty. Second, younger generations tend to mistrust political parties and to opt, instead, for other forms of political participation such as new social movements, militancy associations, or demonstrations. As a result, young people are expected to be less interested in elections than in popular votes. The reason for this is that elections are closely linked to the traditional politics of political parties. In popular votes, however, young people can decide on concrete policy proposals. Conversely, among older generations both the persistence of civic duty and a long-lasting experience with conventional politics are likely to foster participation in elections. According to our fifth hypothesis, then, in comparison with old citizens, young people are expected to participate less in elections than in popular votes.

Furthermore, the limited integration of the younger cohorts in social and political networks together with their 'cosmopolitan orientation' and their geographical mobility (see, for example, Belot, 2005) are also likely to translate into a lower interest in local issues. Hence, our sixth hypothesis is that, in comparison with older age-groups, younger cohorts exhibit greater turnout in national than in local ballots.

Third, *period* effects can be produced by social, economic, or institutional changes (for instance, a severe economic crisis or the introduction of postal voting), indiscriminately affecting all age-groups. In the past 15 years, the growing polarization of Swiss politics has gone hand in hand with a '*politisation*' of the public (Giugni and Sciarini, 2009). This should translate into an overall increase in turnout across the 12 years that we are studying. However, given that this argument is of a more empirical than theoretical nature, we refrain from formulating a hypothesis.

Finally, *citizenship status* and *individual mobility* are powerful determinants of social and political integration. Citizens who have lived in the same place for a long time are more socially

integrated and display a higher attachment to political institutions, whereas mobility is associated with the loss of neighborhood networks. A fortiori, newly naturalized citizens suffer from less integration than long-time nationals (Tossutti, 2007). Several studies have shown that participation levels are lower for recent immigrants (Nevitte et al., 2000), for naturalized citizens (Bass and Casper, 2001), for citizens from another geographical region (Clark, 2003), and for people who have experienced residential mobility (Cassel and Hill, 1981; Squire et al., 1987; Verba and Nie, 1972).

However, according to assimilation theory, as time passes the behavior of immigrants and citizens from other regions tends to become closer to that of the majority group (Tossutti, 2007). According to this theory, the sense of belonging, of social integration and of identification with a municipality or a region develops over time, which has a positive effect on political participation. In fact, it has been shown that participation increases with duration of residence (Bass and Casper, 2001; Squire et al. 1987). From this, we derive our seventh hypothesis: that the difference in turnout between long-term citizens and new citizens decreases over time.

Moreover, we also expect differences in participation by type and level of voting. Because new citizens are poorly integrated into local networks (Kasanda and Janowitz, 1974), unfamiliar with their new political environment (Hoffmann-Martinet, 1992), and little interested in local issues (Guterbock, 1980), these individuals are, in comparison with long-term citizens, more likely to abstain from voting in local (cantonal and municipal) ballots than in national ballots (Hypothesis 8). Lack of integration may also be accompanied by a lack of familiarity with politics and political actors (parties, politicians, and candidates) and is, therefore, likely to affect electoral participation. Thus, compared with well-established citizens, we hypothesize that new citizens participate less in elections than in popular votes (Hypothesis 9).

3. Data, operationalization, and model

Our data are taken from the canton of Geneva, which is a medium-sized canton in terms of population. Geneva is more urbanized and cosmopolitan than many Swiss cantons, but it is fairly representative with respect to turnout (see Figures 1 and 2). While substantial cross-cantonal variation in turnout exists (see the curves for the cantons with the highest and lowest turnouts in Figures 1 and 2), the level of turnout in the canton of Geneva is close to the national average. This is true for both national referendums and national elections.

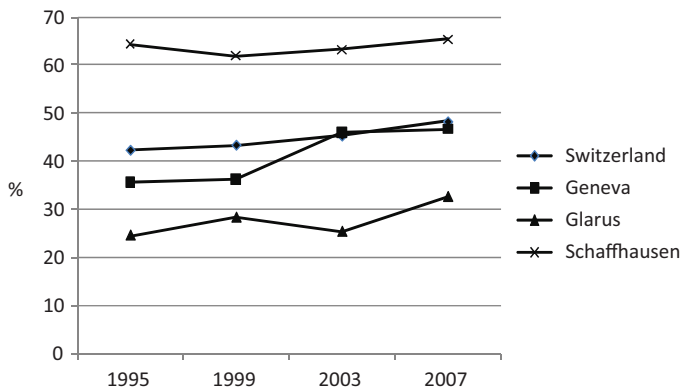


Figure 1. Turnout in National Elections in Switzerland (%)

Source: Federal Statistical Office.

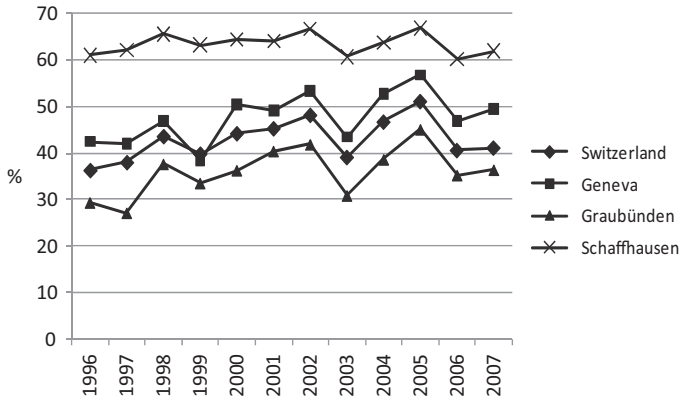


Figure 2. Turnout in National Referendums in Switzerland (%)

Source: Federal Statistical Office.

From a comparative perspective these figures also remind us that Switzerland is a country with a very low electoral turnout (Franklin, 1997). Note, however, that while Switzerland has, like most other OECD countries, suffered from a long-lasting decline in turnout (Wattenberg, 2000), a slight increase has occurred during the past 10–15 years. This upward trend is shown in Figures 1 and 2, and hence holds for both elections and referendums (Giugni and Sciarini, 2009).

Since 1996, the Service of Popular Votes and Elections of the Genevan state has systematically collected data on political participation in the canton. For each ballot (referendums and elections at the federal, cantonal, and local levels) the participation of every citizen is coded in electronic form, along with some basic socio-demographic information (sex, age, marital status, citizenship status, and date of arrival in the canton). In addition, an anonymous identification code renders it possible to track how the participation of each citizen of Geneva evolves over time and across all the 58 ballots held between 1996 and 2007. To our knowledge, this collection of panel data on actual turnout is fairly unique.

At the time of the first ballot (in 1996), the number of registered citizens was 164,315. Given that we follow the evolution of the participation of this initial population, each voter is present in the data-set as many times as there were popular votes and elections. This results in a very high number of observations that exceeds the capabilities of the software we use (MLwiN 2.20). Therefore, we selected a random sample representing 10 percent of the panel. This leaves us with 16,366 citizens and 811,330 observations. For 70.8 percent of these citizens, we have information about their participation or abstention in all 58 votes, that is, 29.2 percent of the sample died or moved to another canton or country between 1996 and 2007 (for 0.3 percent of the sample, we have information about the first ballot only).

The dependent variable in our analysis is a dichotomous variable measuring participation (or abstention) for each of the 58 ballots. Four independent variables are fixed at the first ballot in 1996: sex, age-group, citizenship status, and marital status. The age-group (18–30 years, 31–45 years, 46–60 years, 61–75 years, and more than 75 years) was coded according to the age of an individual in the first ballot in March 1996. Our indicator of citizen status has three categories. It is first based on the distinction between persons who are citizens of Geneva and those who are not (that is, those who are citizens of another canton, but entitled to vote in Geneva). Among the latter, we further differentiate between citizens who have lived in the canton for 10 years or more

and those who have lived in Geneva for less than 10 years. Note, however, that the Genevan citizen category includes both people born in Geneva, or at least having Geneva ancestry, as well as naturalized citizens (that is, former foreigners and Swiss from other cantons who have 'naturalized' as Geneva citizens). This is likely to mitigate the effects of our measure of citizen status on participation.

Finally, the variable of marital status distinguishes single, married, separated or divorced, and widowed persons. The marital status of citizens has been fixed at the first ballot and is used as a control variable in our model. More specifically, it will help to control for life-cycle effects, as marriage, divorce, and widowhood are associated with varying levels of social integration.

The structure of the panel data allows for modeling time at the individual level. We innovate by using a variant of conventional multilevel models, that is, by using multilevel models for growth, which are particularly suited for the analysis of longitudinal data (Bickel, 2007; Bressoux, 2008; Bryk and Raudenbush, 1987; Singer and Willett, 2003). These models allow the study of trends and changes over time and take full advantage of panel data. The effects of explanatory variables can be modeled as both fixed and random at different levels. A growth model is divided into two sub-models: a level-1 model which describes how each individual changes over time and a level-2 model which describes how these changes differ across individuals (Singer and Willett, 2003).⁴

The characteristics of individuals are level-2 variables (for example, sex or age-group) and have fixed values. We assume that they affect only the level of participation across individuals, and not the changing level of participation over time. Characteristics that are likely to change from one ballot to another are time dependent. These level-1 variables are used to model the changing patterns of participation at the intra-individual level. There are two time-varying predictors in our model. The first is time itself, that is, time as a fraction of years that have elapsed since the first ballot included in our database. Thus, this variable takes the value $t = 0$ for the first vote on 10 March 1996, $t = 0.25$ for the ballot on 9 June 1996, ..., $t = 11.77$ for the last ballot on 16 December 2007.

The second time-varying predictor measures the institutional characteristics of the vote, namely, the type of ballot (election or popular vote) and its level (national or cantonal/communal). For the sake of parsimony, we grouped the wide variety of ballots in our existing database into four major categories: federal elections, cantonal or communal elections, cantonal popular votes, and federal popular votes (the most frequent type). In Geneva, elections, whatever their level, are always held separately. In contrast, citizens frequently vote on the same day on several referendums (on various issues) and at both the federal and cantonal levels ('multi-pack votes'). For the votes comprising proposals from both levels (federal and cantonal), we have given precedence to the higher level. When a federal and a cantonal referendum were held on the same day, the ballot has been categorized as a federal vote. In most cases, federal ballots take the lead during the referendum campaign and act as the driving force behind political participation.⁵ We are thus left with 3 federal elections, 13 cantonal or communal elections, 6 cantonal popular votes, and 36 federal popular votes. Note that the inclusion of both elections and referendums, together with the 'multi-pack' character of several ballots, prevents us from developing additional measures of the context such as the closeness of the race, the intensity of the competition between parties, or the specific policy issue at stake.

Finally, we also include interactions between level-1 variables and level-2 variables ('cross-level interactions'). Thus, while the age-group is time invariant and, therefore, takes the same value from one ballot to the next, the aging of cohorts is measured by an interaction term between the age-group and the time variable. This allows us to measure both the level of participation of different age cohorts (at the beginning of the study) and the effects of aging on the participation of each cohort during the 12-year period.

Complex variance at the individual level is modeled by allowing a random time slope. This helps to assess whether the effect of time on participation varies between citizens or, in other words, if there is variability in the growth rate (or ‘rate of change’) across citizens. Because the dependent variable is a dichotomous variable, we use multilevel logit models. We therefore model the propensity of citizens to participate and the evolution of this propensity over time, depending on the characteristics of citizens.

Following the notation of Singer and Willett (2003), the equation of our formal growth model can be written as follows.

$$\text{Logit}(P_{ij}) = \gamma_{00} + \gamma_{10} \text{TIME}_{ij} + \gamma_{20} X_{ij} + \gamma_{01} Z_i + \gamma_{11} Z_i \times \text{TIME}_{ij} + \gamma_{21} Z_i \times X_{ij} + \zeta_{0i} + \zeta_{1i} \text{TIME}_{ij} + \varepsilon_{ij}$$

The indices ij are used to denote the measurement made at time j , nested within individual i . X_{ij} represents the explanatory variables measured at level 1 (intra-individual) and Z_i those at level 2 (interindividual). γ_{00} indicates the starting point of the line describing the temporal evolution of the dependent variable. Finally, ε is used for the error term of level 1 and ζ is used for the error term of level 2.

4. Results

Our results appear in Table 1. Model 1 is the unconditional (null) model, from which we can calculate the variance distribution (see Snijders and Bosker, 1999). The interindividual variance amounts to 34.3 percent of the total variance. Model 2 is the unconditional growth model, with *TIME* as the only level-1 predictor. We allow the effect of *TIME* to vary randomly across individuals in the population. The related parameter is statistically significant,⁶ which permits the inclusion of level-2 predictors. The positive nature of the parameter further shows that turnout has increased overall during the past 12 years. It thus points to a ‘period effect’ that is in line with recent studies emphasizing the ‘*politisation*’ of the Swiss electorate since the mid-1990s (for example, Giugni and Sciarini, 2009; see also Figures 1 and 2 above).

Model 3 reports results from the complete model, which includes our four time-invariant, level-2 predictors (age, sex, marital status, and cantonal origin or residence duration), our two time-varying, level-1 predictors (*TIME* and the institutional characteristics of the ballot),⁷ as well as cross-level interactions between the level-1 and level-2 predictors. The coefficients regarding the institutional characteristics of the ballot indicate that for the reference category (that is, a single male citizen of Geneva aged 18–30 in a federal referendum) turnout is highest in federal direct democratic votes, followed by local popular votes, then federal elections, and finally local (cantonal and communal) elections.

Starting with differences between the genders, Model 3 shows that women participate less than men. This transpires from both the separate term regarding women, which measures their turnout level in comparison with men in federal votes, and the interaction terms between women and the other institutional types of ballots (of which, more below). Further, Model 3 also shows that the gender difference in turnout does not decrease over time: the coefficient of the interaction term between gender and *TIME* is negative, but it is not significant. In Figure 3, we report the predicted probabilities of the turnout among men and women across our 12-year study, while setting the other variables at their mean or at their reference value. We see that the average gender difference amounts to 3 percent and that it is highly stable across time. Owing to the very high number of observations on which our estimations are based, the difference in turnout between men and women is statistically significant. However, the amplitude of the difference is low, which suggests that the gender gap had already closed at the outset of our study. This result is compatible with the

Table 1. Multilevel Logistic Regression Coefficients (Unstandardized Coefficients and Standard Errors)

	Model 1	SE	Model 2	SE	Model 3	SE
Fixed part						
Constant	-0.169	0.011	-0.299	0.012	-0.589	0.032
<i>TIME</i>			0.023	0.001	0.025	0.003
Ballot type (ref. = federal referendums)						
Federal elections					-0.329	0.029
Local elections					-0.439	0.016
Local referendums					-0.265	0.021
Gender (ref. = men)						
Women					-0.110	0.024
Age-groups (ref. = 18–30 years)						
31–45					0.354	0.037
46–60					0.824	0.040
61–75					1.079	0.045
75+					0.399	0.065
Citizenship (ref. = Geneva)						
Non-Genevan ≥ 10 years					-0.264	0.025
Non-Genevan < 10 years					-0.549	0.043
Marital status (ref. = single)						
Married					0.249	0.030
Separated/divorced					-0.402	0.039
Widowed					-0.354	0.057
Women * <i>TIME</i>					-0.001	0.002
31–45 * <i>TIME</i>					0.005	0.003
46–60 * <i>TIME</i>					0.012	0.003
61–75 * <i>TIME</i>					-0.017	0.003
75+ * <i>TIME</i>					-0.074	0.006
Non-Genevan > 10 * <i>TIME</i>					0.010	0.002
Non-Genevan < 10 * <i>TIME</i>					0.018	0.004
Women * federal elections					-0.077	0.022
Women * local elections					-0.092	0.012
Women * local referendums					-0.034	0.016
31–45 * federal elections					0.068	0.032
31–45 * local elections					0.229	0.017
31–45 * local referendums					0.040	0.023
46–60 * federal elections					0.138	0.032
46–60 * local elections					0.188	0.017
46–60 * local referendums					-0.007	0.023
61–75 * federal elections					0.238	0.037
61–75 * local elections					0.267	0.020
61–75 * local referendums					-0.029	0.027
75+ * federal elections					0.375	0.067
75+ * local elections					0.311	0.035
75+ * local referendums					0.101	0.050
Non-Geneva ≥ 10 years * federal elections					0.008	0.023
Non-Geneva ≥ 10 years * local elections					-0.084	0.012
Non-Geneva ≥ 10 years * local referendums					-0.038	0.017

Table 1. (Continued)

	Model 1	SE	Model 2	SE	Model 3	SE
Non-Genevan < 10 years * federal elections					0.044	0.042
Non-Genevan < 10 years * local elections					-0.115	0.023
Non-Genevan < 10 years * local referendums					-0.062	0.031
Random part						
Level: individuals						
Cons/cons	1.721	0.02	1.889	0.025	1.873	0.025
TIME/cons			-0.035	0.002	-0.038	0.002
TIME/TIME			0.006	0	0.008	0
Level: TIME						
Bcons × I/bcons × I	1	0	1	0	1	0
Units: individuals	16,366		16,366		16,366	
Units: TIME	811,330		811,330		811,330	

figures pertaining to Geneva that were presented above. In 1992–93, the gender difference in turnout was already down to 8 percent according to a simple bivariate analysis. Our own estimations, which control for compositional effects associated with age, marital status, and citizenship status, show that the difference did not exceed 3 percent in 1996, and that it remained stable subsequently. This result is not in line with Hypothesis 1, which stated that women have caught up with men during the past 12 years, but it is nevertheless compatible with the catching-up thesis. Indeed, it leads us to conclude that in Geneva the gender difference in turnout had almost disappeared *before* the start of our study. This finding is especially interesting since it is partly at odds with survey-based studies carried out at the national level. As aforementioned, while the gender gap in turnout was weakening it was still present in national popular votes in the 1990s and closed only during the 2000s. Additionally, there is still a gender gap in turnout in national elections (Engeli et al., 2006; Lutz, 2008). In other words, according to our data, the gender gap narrowed earlier or at a higher speed (or both) in Geneva than in Switzerland as a whole. This, of course, raises the question of the representativeness of Geneva with respect to the gender gap, an issue to which we shall return in the conclusion.

The coefficients regarding the interaction terms between gender and the institutional characteristics of ballots are all significant and negative, which means that, in comparison with men, women participate less in national elections, in cantonal or communal elections, and in cantonal referendums than in federal referendums. The difference is greatest for cantonal or communal and federal elections, whereas the coefficient is significant only at the 0.05 level for cantonal popular votes. To get a clearer view of the differences between genders, we calculate the average predicted probabilities of the turnout among men and women over the period 1996–2007 in each of the four institutional forms of ballots. These probabilities show that the ordering of participation is similar among men and among women. Both genders participate more in federal popular votes, followed by cantonal votes, then federal elections, and finally cantonal elections. In addition, the differences in turnout across different ballot characteristics are also highly similar among men and women. Against Hypothesis 2, women do not turn out proportionally more than men in local ballots than in national ballots, and this remains true even if one focuses on a specific ballot type.⁸ The difference in participation between federal referendums and cantonal referendums is very similar in both

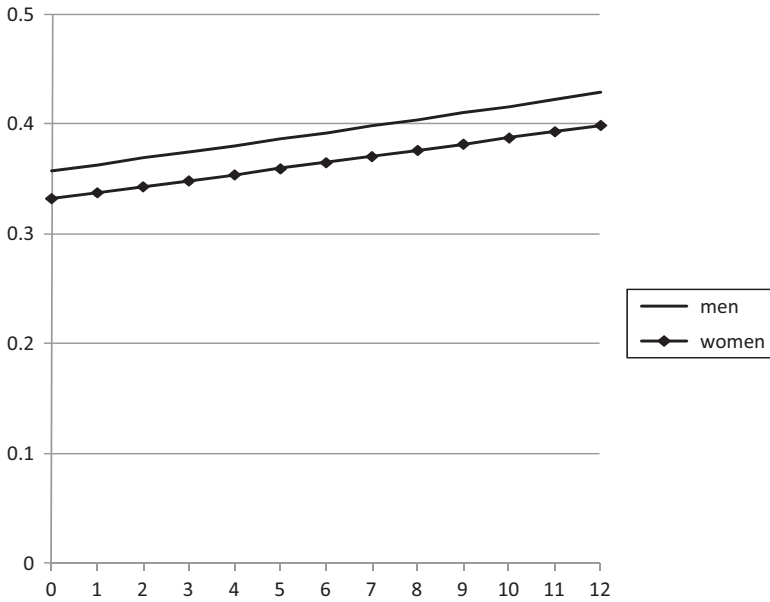


Figure 3. Gender Differences in Turnout Over Time: Predicted Probabilities

gender groups (7 percent and 6 percent, respectively). The same holds for the difference in turnout between federal elections and cantonal elections (2 percent and 2 percent). Similarly, against Hypothesis 3, the difference in turnout between direct democratic votes and elections is only slightly higher among women than among men. The difference in turnout between cantonal Referendums and cantonal or communal elections amounts to 5 percent among women and 4 percent among men, whereas the difference between federal referendums and federal elections amounts to 8 percent among women and 7 percent among men. In sum, neither the ballot level (that is, the distinction between referendums and elections) nor the ballot type (that is, the distinction between elections and referendums) make any difference between men and women. These findings contradict our hypotheses, but they are compatible with our previous result, which suggested that the gender gap had almost disappeared at the outset of our study. If there was no longer a gender gap overall, then there was no reason to expect gender differences across institutions.

With respect to age, Table 1 above shows that at the outset of the study in 1996 the level of turnout was significantly higher in each age-group than in the reference category (18–30 years). Controlling for the other variables, the level of turnout at the first ballot in 1996 amounts to 36 percent among 18–30 year olds, 44 percent among 31–45 year olds, 56 percent among 46–60 year olds, 62 percent among 61–75 year olds, and 45 percent among citizens older than 75. These findings confirm the existence of age- or cohort-related effects, or both (Milbrath and Goel, 1977).

The coefficients for the interaction terms between age-groups and *TIME* are significant, except for the 31–45 category. While the coefficient regarding the 46–60 age-group is positive, those regarding the older groups are negative. Figure 4 helps to evaluate the amplitude of the effects. Between 1996 and 2007 turnout increased to a similar extent among citizens aged 18–30 and 31–45 years. The corresponding rise is slightly steeper among 46–60 year olds. By contrast, turnout has remained fairly stable among individuals aged 61–75, whereas it has markedly decreased among the oldest category (over 75). These results lead to a refinement of Hypothesis 4. The

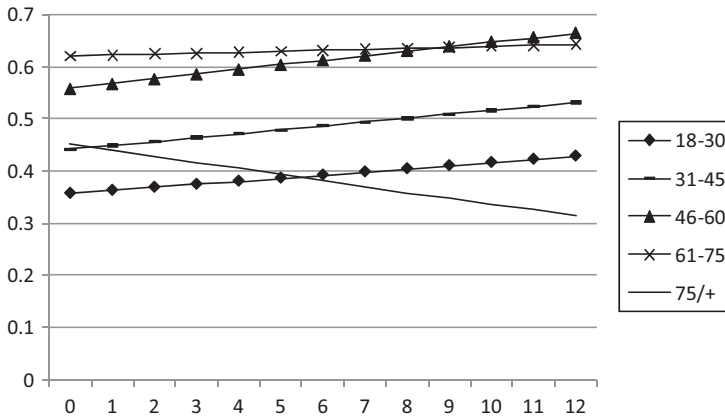


Figure 4. Turnout Differences Across Age and Time: Predicted Probabilities

increase in turnout mainly holds for the mature 46–60 category, presumably, because these individuals are the most socially and professionally integrated. However, in line with Hypothesis 4, participation declines most abruptly among the oldest cohort.

With respect to the different institutional characteristics of ballots, several significant effects across age-groups transpire from Table 1. However, given the high number of interaction terms between cohorts and ballot characteristics, these effects are again easier to interpret based on the predicted probabilities (see Figure 5).

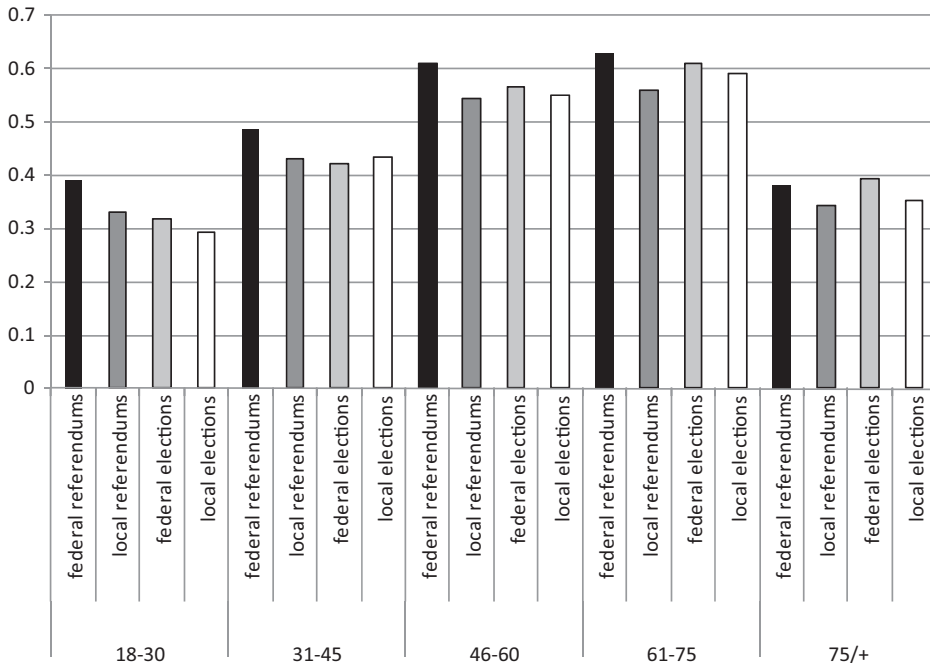


Figure 5. Turnout Differences Across Age and Ballot Characteristics: Average Predicted Probabilities Over 12 Years

Overall, Figure 5 demonstrates that age and the different institutional characteristics of ballots interact and jointly influence participation. Interaction effects appear most clearly if we compare the youngest and the oldest cohort. Among 18–30 year olds, there is a hierarchy across institutional forms, with turnout being highest in federal referendums, followed by cantonal referendums, then federal elections, and finally local elections (the difference between federal votes and local elections amounts to 10 percent). In sharp contrast, among the age-group that is over 75, turnout is highest in national elections, followed by federal referendums, then cantonal elections, and finally cantonal referendums. The patterns of participation among the other three cohorts are somewhere between those of these two extreme groups.

These results are in line with Hypothesis 5. Focusing on the same ballot level, young citizens turn out more in referendums than in elections. Conversely, the oldest citizens vote more in elections than in referendums. The result is most obvious for federal ballots, where the difference in turnout between elections and referendums deepens as one moves from the oldest cohort to the youngest. Among those over 75, there is a 1 percent difference in favor of federal elections. The difference in favor of referendums (not elections) is 2 percent for the 61–75 age-group, 5 percent for the 46–60 age-group, 6 percent for the 31–45 age-group, and up to 8 percent for 18–30 year olds. Hypothesis 6 is also partially confirmed. The difference in turnout between federal referendums and local referendums (in favor of the former) is greater among young citizens than among old citizens. In addition, young citizens also participate more in federal elections than in local elections. However, contrary to Hypothesis 6, the difference in turnout between federal elections and local elections (in favor of the former) is even greater among the oldest cohort.

In conclusion, the interactions between age and the level and type of the ballot suggest that cohort effects are at work. Generational changes in political attitudes in general, and in attitudes toward conventional politics and elections in particular, presumably account for these differences between young and old age-groups. The attractiveness of referendums among younger generations is in line with their low interest in conventional politics and their preference for votes on concrete issues, whereas the high mobilization of the oldest cohort in elections is consistent with a persistent sense of civic duty and identification with the traditional party system. The integration deficit of younger citizens, together with the biological aging of those aged 75 or more,⁹ presumably add up to this generational effect.

Finally, turnout is higher among Geneva citizens than among non-Geneva citizens who have lived in Geneva for more than 10 years, and even more so than among non-Genevese citizens who have lived in Geneva for less than 10 years. More importantly, however, the difference in turnout between Geneva and non-Geneva citizens decreases over time. Both the interaction terms between non-Geneva citizens of more than 10 years' residency and *TIME* and between non-Geneva citizens of less than 10 years' residency and *TIME* are significant and positive. This lends support both to Hypothesis 7 and to assimilation theory. The larger size of the coefficient for the non-Geneva citizens who have lived in Geneva for less than 10 years, as compared with that for non-Geneva citizens living in Geneva for more than 10 years, means that turnout increases at a higher rate among the former than among the latter.

Figure 6 confirms that non-Geneva citizens are catching up with Geneva citizens and that this holds especially for non-Geneva citizens who have only recently begun living in the canton. Among the latter, the increase in turnout amounted to 11 percent between the first ballot in 1996 and the last ballot in 2007. This can be compared with an increase of 9 percent among non-Geneva citizens who have lived in the canton for a long time and with a 7 percent increase among Geneva citizens. In other words, while still lagging behind, non-Geneva citizens are indeed catching up. Even if the difference between these categories has not disappeared during the 12 years under study, the convergence trend is convincing, especially given the crudeness of our citizenship measure.¹⁰

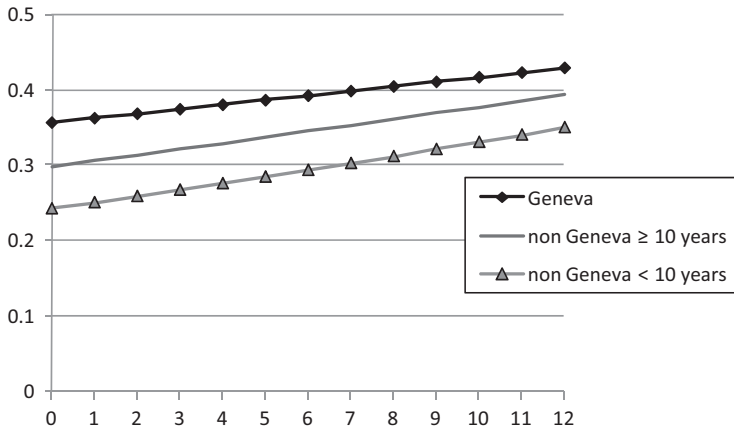


Figure 6. Turnout Differences Across Citizenship Categories and Time: Predicted Probabilities

While citizenship displays the expected pattern of influence on turnout across time, this is not the case for the interactions between citizenship and ballot characteristics. Very few coefficients are significant and the ordering of ballot categories with respect to turnout is the same for the three groups of citizens. Predicted probabilities of turnout reveal that the level of the ballot does not matter much: the difference in turnout between federal referendums and cantonal referendums is highly stable from one category of citizens to the next. Only the difference between national elections and cantonal or communal elections displays some (weak) variation. It increases from 2 percent among Geneva citizens to 4 percent among long-term non-Geneva citizens and to 5 percent among non-Geneva citizens who have lived in the canton for only a short period of time. Results are even less conclusive with respect to ballot type. The difference in turnout between cantonal referendums and cantonal elections is the same across the different categories of citizens (4 percent), and the corresponding difference is also highly similar with respect to national ballots. Given this, it is safer to admit that our empirical tests fail to support Hypotheses 8 and 9.

5. Conclusion

In this article, we have examined the individual determinants of turnout in a longitudinal and contextual perspective. Our contribution to the existing literature is threefold. First, while most studies carried out at the individual level have analyzed the determinants of turnout at a given point in time, we have adopted a dynamic perspective and assessed variation in the determinants of turnout over time. Similarly, unlike studies focusing on a single contest, we have looked at how the impact of individual factors fluctuates as a function of the institutional characteristics of the ballot. This was rendered possible by the uniqueness of the data at our disposal, which has helped us to model the evolution of individual turnout across 12 years and 58 ballots. Second, with its mix of direct and representative democracy, combined with its strongly decentralized federalism, Switzerland is characterized by an exceptional variety of ballot types (elections and referendums) and ballot levels (national and cantonal or communal). It is therefore an excellent case for the analysis of institutional impacts, and one that should appeal to a wider international audience. Below we highlight the broader implications of our findings and discuss whether and to what extent they can be generalized.

Finally, our third contribution is methodological. The resort to multilevel models for growth has enabled us to take full advantage of the panel nature of our data and to identify important

interactions between individual fixed factors and time-varying variables. While the effects of the variables included in our study (age, gender, and citizenship status) are well known, we have been able to shed new light on how these effects vary across time and how they are mediated by the institutional context. Overall, we found considerable variation across time and more moderate variation across institutions.

Our dynamic perspective has proven especially rewarding with respect to age. Variation of participation across age is a classic result of participation research. However, we have gone one step further than earlier studies. Thanks to our longitudinal approach we have partly disentangled three age effects. First, in line with the recent '*politisation*' of the Swiss electorate, the overall turnout increase suggests that a *period effect* has occurred during the past 12 years. Second, our data show a rise in turnout among younger cohorts, and especially among the middle-aged (46–60). This result is consistent with the argument that *aging* is associated with growing social integration. The idea behind this association is that progress in one's professional career and in other important steps of the *life cycle* fosters growing social integration which, in turn, fosters political participation. Third, both the residual, but strong, difference in turnout existing between younger and older cohorts and the interactions between age-groups and ballot type point to a *generational* (or *cohort*) effect.

Given that age is a standard determinant of turnout and that it exerts a similar influence irrespective of the context, there are good reasons to believe that our results regarding the aging or life-cycle effect and the generational or cohort effect can be generalized. Here again, we wish to emphasize the strength of our data. Generational effects have been assumed in several studies, but have only rarely been adequately tested with (validated) panel data.

While time interacts strongly with age, it does not do so with gender. Our hypothesis that turnout differences between men and women have weakened during the 12 years under study is not borne out by our data. According to our estimations, the gender gap was in fact already very low (3 percent) in 1996. In our view, this finding suggests that in Geneva the gender gap had closed prior to our study. This interpretation is, however, not consistent with recent studies based on national survey data. These studies argue that the gender gap continued to close throughout the national referendums held in the late 1990s and early 2000s, and that the catching-up process in national elections ground to a halt in the mid-1990s. A possible explanation for this inconsistency is simply that survey data overestimates the gender gap – a hypothesis that we intend to investigate further in future research, by more systematically comparing survey and actual data. A second and more substantial explanation is that on this specific gender issue the canton of Geneva is not fully representative of Switzerland at large. Indeed, because Geneva is more urban, more internationally oriented, and has a higher share of highly educated citizens than most other Swiss cantons, it is likely that here the convergence in turnout between men and women occurred earlier or at greater speed (or both). Additionally, the fact that women gained voting rights earlier in Geneva than in most other cantons may also have played a role. In other words, with respect to the gender gap the case of the canton of Geneva is presumably closer to that of most other western democracies than to that of its own home country.

The evolution of turnout among our three categories of citizens confirms the findings of studies carried out in other countries, such as Canada, and therefore helps to generalize the core argument of assimilation theory. In agreement with this theory, turnout differences between Geneva citizens and non-Geneva citizens decrease over time, and this occurs especially among non-Geneva citizens who have recently moved to Geneva.

While our results regarding the time-dependent effects of age, gender, and citizenship status are fairly conclusive, those regarding differences in the institutional characteristics of ballots are more

mixed, but not necessarily less interesting. Only the interactions with age-groups display the expected effects and point to a likely generational (or cohort) effect. Given the institutional variety and high number of the ballots under study, we can be confident that this generational effect is not context specific. For example, it would be interesting to check whether this finding also holds in US states, where there is a similar mix of representative and direct democracy.

By contrast, neither the differences in turnout between genders nor those between our three citizenship categories vary significantly according to ballot characteristics. This absence of variation runs counter to our expectations, but it is also a major result, since it suggests that the impact of gender and citizenship status on turnout does not depend on voting institutions. Again, the fact that these findings hold across a range of votes increases their validity above and beyond Switzerland. In particular, these findings suggest that from a gender or citizenship (but not age) perspective, turnout in elections and turnout in referendums are two sides of the same coin.

With respect to gender, our results regarding the role of institutions is fully in line with the results regarding the evolution of the gender gap across time. To the same extent that there were no longer overall differences in turnout between men and women at the outset of our study, there were no longer differences across institutions. Our Swiss study thus leads to the conclusion that once the gender gap has vanished overall, one can be confident that it has vanished for any kind of ballot type or ballot level.

We are less sure about our results regarding the absence of differences in turnout across voting institutions between Geneva citizens and non-Geneva citizens. Here, we wish to mention again the crudeness of our citizenship measure. This measure does not distinguish between 'true' native Geneva citizens, naturalized citizens living in Geneva when they became Swiss, and citizens of other cantons who have acquired Genevan citizenship. Finally, we also wish to point to another limitation of our study, which concerns our measure of the voting context. The 'multi-pack' character of ballots in Switzerland, that is, the fact that several referendums frequently take place on the same day and at both the cantonal and federal levels, results in a considerable mix in voting level and issue content. As mentioned in the data section, this not only reduces the quality of our measure of the ballot level, but also hinders the development of finer-grained indicators of context. Development of this aspect is nevertheless an endeavor that we wish to undertake in future research, by measuring factors that are known powerful determinants of turnout, such as the closeness of the race or the intensity of referendum and election campaigns. This will certainly provide additional insight into the determinants of turnout, and will also shed light on the sensitivity of these determinants to ballot characteristics.

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Notes

1. There are three basic direct democratic institutions in Switzerland at the federal, cantonal, and communal levels: popular initiatives, compulsory referendums, and optional referendums. However, we do not take this distinction into account in the present article, since we have no compelling theoretical reasons to do so.
2. In so doing, we conform to current developments in electoral research. In a recent journal issue that presented the state of the art and highlighted gaps to fill in future work, several authors argued that one should better take into account the political and institutional context in which elections take place.

These authors therefore recommended looking at elections in a comparative cross-national or temporal perspective or resorting to multilevel research designs, or both (Curtice, 2002; Marsh, 2002).

3. Note that this hypothesis, like the subsequent ones, is formulated in relative, not absolute, terms. We do not assume that women vote more at the local level than at the national level, but that among women the difference in turnout between local and national ballots is more favorable to the former than it is among men. This does not exclude the possibility that women, like men, vote more in national than in local ballots.
4. Unlike usual hierarchical models, in which individuals constitute the first level and the context the second level, in our model, citizens are located at the second level and measurements at the first level. It is also important to note that multilevel growth models allow for more flexibility than conventional longitudinal designs (Bressoux, 2008; Singer and Willett, 2003). Among other things, the multilevel method is not very demanding on the number of repeated measurements (minimum of three measurements). The number of measures need not be equal across individuals, identical spacing between measurements is not required, and it is even possible to keep those citizens who participated in only one ballot in the analysis.
5. The distinction between mixed votes (that is, votes about federal and cantonal issues on the same date) and non-mixed votes (that is, votes with objects at the same level) does not provide any significant results and needlessly multiplies the parameters of the model. Note also that we do not consider the communal level for referendums, as communal ballots are never concerned with more than two municipalities (out of forty-five). By contrast, it would be possible to distinguish communal and cantonal elections. However, this distinction does not make theoretical sense. Additional tests have also shown that this distinction does not matter empirically.
6. Level-2 variance increases as a result of the introduction of *TIME*, which modifies the interpretation of parameters. Therefore, we refrain from comparing these variance components with estimates from the unconditional (null) model (Singer and Willett, 2003).
7. Note that our model does not allow the effect of a ballot's institutional characteristics to vary over time or across individuals. We opted for a specification such that the institutional predictor can only influence the level of participation. First, we see no compelling theoretical reasons for random variations across individuals or interactions between a ballot's institutional characteristics and time. Second, this alternative specification would complicate the model excessively by adding three new components of variance and several parameters.
8. Here, as in the remainder of the article, we make a pairwise comparison of the institutional characteristics. That is, in order to test the effects of ballot type, we compare turnout in federal referendums with that in federal elections and turnout in cantonal referendums with that in cantonal elections. Similarly, when testing the effects of the ballot level, we compare federal referendums with cantonal referendums and federal elections with cantonal elections.
9. It is likely that at a certain point older citizens tend to distance themselves from specific referendums (for example, those that raise complex issues and are, hence, demanding in terms of information) and to focus on elections that fit more with the political experience they have developed during their life.
10. In relative terms, the difference in turnout between Geneva citizens and non-Geneva citizens who have lived in Geneva for more than 10 years has decreased by 40 percent. The decrease between Genevese citizens and non-Geneva citizens who have lived in Geneva for less than 10 years is 31 percent. At the pace estimated by our model, long-time residents who are non-Genevese citizens would need an additional 27 years to equal the turnout level of Geneva citizens (the corresponding figure is 31 years for short-term non-Geneva citizens). This catching-up process is slow, but would probably be faster with a more appropriate citizenship measure.

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