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Landholding Inequality, Social Control, and Mass Opposition to Suffrage Extension

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Abstract
Does landholding inequality undermine democratization? Recent contributions have challenged the argument that landholding elites oppose suffrage extension if geographically fixed assets are unequally distributed. We advance research on this long-standing question by exploiting exogenous variance to reinvestigate the relationship. Using multiple instruments, we find that landholding inequality decreases support for suffrage extension. By focusing on traditional patterns of social control, we explore an empirically neglected mechanism linking landholding inequality and democratization. Taking advantage of four direct democratic votes between 1866 and 1877 in Switzerland, we demonstrate that landholding inequality also influences the political preferences of ordinary citizens who do not control these resources. This paper shows that high levels of landholding inequality provide local elites with the incentive and the means to align the local population's voting behaviour with their political goals. Supplementary analyses using qualitative and quantitative data further substantiate this social control mechanism.

Keywords: landholding inequality; democratization; social control; direct democracy; instrumental variable estimation

In four direct democratic votes in the late nineteenth century, Swiss citizens had the opportunity to democratize the political system further. Approximately 80 per cent of all adult male citizens were asked to cast a binding vote on suffrage extension for the remaining 20 per cent. However, in all four votes, narrow majorities rejected suffrage extension. As we show below, the opposition was particularly strong in areas characterized by high levels of landholding inequality. How can we account for these developments?

A large body of research argues that geographically concentrated resource endowments undermine democratization. Emphasizing distributive conflicts in the transition to democracy, this literature suggests that wealthy elites with immobile assets support autocratic rule to shield themselves from the threat of taxation. A key example of immobile assets is high levels of landholding inequality, which has been shown to promote autocratic rule, cause corruption, and hinder state building (Acemoglu and Robinson 2006; Boix and Stokes 2003; Dunning 2008; Ross 2011; Sokoloff and Engerman 2000; Ziblatt 2008).

In recent years, however, the consensus on the detrimental effects of concentrated ownership of immobile assets has begun to give way. First, there is no consensus on the mechanisms linking concentrated resource endowments to these outcomes. In particular, there is little research on how elites can actualize their political preferences through the behaviour of non-elites (Mares 2015; Montalbo 2023; Ziblatt 2009). Second, a growing literature has raised endogeneity

concerns. While immobile assets might undermine attempts to democratize, resource concentration can also result from autocratic policies (Albertus 2015; Brooks and Kurtz 2016; David and Wright 1997; Ramsay 2011; Stijns 2006). Finally, several researchers have questioned the importance of inequality for democratization altogether (Ahlquist and Wibbels 2012; Haggard and Kaufman 2012; Houle 2009; Treisman 2020).

This paper adds to the literature on landholding inequality and democratization in two ways; first, by addressing endogeneity concerns and second, by examining a hitherto neglected mechanism, namely traditional patterns of social control.

First, our statistical analysis relies on multiple instruments based on topography, climate, and soil characteristics as exogenous measures of landholding inequality. A large literature has shown that natural conditions constrain the type of crops that can be planted, which affects landholding inequality (Baten and Hippe 2018; Baten and Juif 2014; Cinnirella and Hornung 2016; Easterly 2007). For instance, agricultural crops associated with economies of scale (for example, cotton and sugarcane) promote high levels of landholding inequality, whereas geographical characteristics associated with commodities grown on family farms (for example, wheat) promote the growth of a large middle class (Frankema 2010; Sokoloff and Engerman 2000). In the empirical analysis, using district-level data, we show that regional differences in climatic suitability for wheat, soil quality, and ruggedness have generated changes in the concentration of land ownership over time and that high levels of landholding inequality reduce popular support for suffrage extension.

Second, we explore how local elites made ordinary citizens oppose further democratization. Whereas the existing literature typically expects elites to neutralize mass political behaviour and exercise direct control over political processes (Boix 2003; Mares 2015; Ziblatt 2009), we focus on the behaviour of ordinary citizens in four direct democratic votes on suffrage extension held between 1866 and 1877 in Switzerland. Generally, the literature assumes that the masses will always favour democracy. However, mass support for democratization cannot be taken for granted (Caughey 2018; Welzel and Inglehart 2008). Following the literature on traditional patterns of social control (Montalbo 2023; Rueschemeyer, Huber, and Stephens 1992; Ziblatt 2008), we argue that high levels of landholding inequality create the incentives and the means for local elites to influence ordinary voters through economic and political pressure. In this way, landholding inequality influences the political preferences of citizens who do not control these resources. Hence, although the literature emphasizes the conflicting economic interests of the elites and the rest of the population, local elites often have the means to make the masses vote in line with their economic interests.

Supplementary analyses show that districts with higher levels of landholding inequality have lower voter density, invest less in public education, and feature fewer civil society organizations. All these factors are associated with traditional patterns of social control. Moreover, qualitative historical research suggests that processes of social control were used to align the local population's voting behaviour with the wealthy elite's interests. For instance, we show how local elites relied on educational and religious institutions to socialize citizens to obey political authorities and bow to local social hierarchies. By contrast, analyses of the size of the excluded population, domestic migration movements, poverty levels, turnout data, and official complaints about electoral fraud indicate that pressure from below, the economic concerns of local residents, and electoral fraud are unlikely to account for this voting behaviour.

This paper is organized as follows. The following two sections review the literature on inequality and democratization and forward our argument about traditional patterns of social control. After discussing our case selection and research design, we present the results from our quantitative analysis. We provide additional qualitative evidence in the appendix. The final section concludes.

Landholding Inequality and Democratization

What is the effect of inequality on democratization? We follow the rich literature that views democracy as an instrument to redistribute resources (Acemoglu and Robinson 2006; Albertus 2017;

Boix and Stokes 2003; Przeworski 2009). Given that poor voters outnumber wealthy ones, we should expect that suffrage extension to poor voters will result in more redistribution. Regarding regime change, this literature suggests that low levels of inequality further the democratization process. When societies become more equal, there are fewer redistributive demands from the poor. Thus, the economic and political elites face lower relative costs for tolerating democracy. When the tax elites would have to pay in a democratic system falls below the costs of the repression needed to maintain authoritarian rule, the elites accept democracy. By contrast, the wealthy elites' resistance to democracy increases with rising levels of inequality.

However, an important distinction between mobile and immobile assets needs to be made. Mobile assets can be moved to evade taxation. By contrast, immobile assets such as land cannot easily be shielded from the threat of taxation. Consequently, landholding inequality (or other forms of geographically concentrated resource endowments) should be a better predictor of opposition to democratization than income inequality because the latter captures mobile assets that can, at least to some extent, evade taxation (Ansell and Samuels 2014; Beramendi, Dincecco, and Rogers 2019; Boix 2003; Engerman and Sokoloff 2005; Ross 2015).

Such arguments about geographically concentrated resource endowments align with a rich tradition in the literature, which emphasizes the uniquely anti-democratic role played by large landholders because of this group's ownership of immobile assets and its economic dependence on a cheap agricultural workforce (Albertus 2017; Bateman 2018; Moore 1966; Rueschemeyer, Huber, and Stephens 1992; Stephens 1989). For instance, exploring a Prussian parliament vote on a reform that would have transformed the highly inegalitarian three-class voting system, Ziblatt (2008, 612) finds that 'representatives from electoral constituencies marked by high levels of landholding inequality were more likely to vote against democratic reforms'. By contrast, income inequality did not significantly affect the legislators' voting behaviour. Similarly, Samuels and Thomson (2021) show that, with the spread of mechanization throughout the twentieth century, the role of labour-dependent agriculture substantially declined, as did the need for the landed elites to maintain an autocratic regime that repressed agricultural workers.

However, in recent years, scholars have raised doubts about the hypothesized relationship between landholding inequality and democratization. On the one hand, several contributions have pointed to endogeneity concerns, as concentrated resource endowments might also result from autocratic policies. For instance, autocrats might assist in creating large estates to gain elite support (Albertus 2015; Brooks and Kurtz 2016; David and Wright 1997; Ramsay 2011; Stijns 2006). On the other hand, some scholars have questioned the role of distributive conflicts altogether. Instead, these contributions highlight the role of other explanations for democratization, such as international pressure, intra-elite conflicts, or incumbents' missteps (Ahlquist and Wibbels 2012; Haggard and Kaufman 2012; Houle 2009; Treisman 2020).

This paper adds to this vibrant debate by relying on a novel data set and using multiple instruments to explore the relationship between landholding inequality and democratization. However, we must first discuss the mechanism through which landholding inequality might undermine democratization.

Social Control and Mass Political Behaviour

How does landholding inequality impair democratization? The existing literature typically expects local elites to neutralize mass political behaviour and exercise direct control over political processes using electoral fraud (Lehoucq and Molina Jiménez 2002; Mares 2015; Ziblatt 2009) or outright repression (Acemoglu and Robinson 2006; Boix 2003; Wright, Frantz, and Geddes 2015). Instead, for the reasons we explain below, this analysis focuses on how local elites control the political behaviour of the resident population.

This study examines the voting behaviour of male citizens in Switzerland in four binding, direct democratic votes on suffrage extension to most of the remaining male citizens from 1866 to

1877. Importantly, as we show in the appendix, even in areas with high levels of landholding inequality, most adult males were eligible to vote (Lutz 2000, 35–6) and would have been likely to benefit from redistribution. Hence, for landholding inequality – an indicator of the economic interests of local elites – to have the expected democracy-inhibiting effect in direct democratic votes, local elites must have the means to influence the population's voting behaviour.

In general, the literature on inequality and democratization has not paid much attention to the political behaviour of ordinary citizens (one exception is Montalbo 2023). Instead, most research relies on macro-level comparisons or analyzing roll-call votes in parliament. As Welzel and Inglehart (2008, 135) note, this literature often simply assumes that the masses always favour democracy. However, mass support for democracy cannot be taken for granted (Caughey 2018; Claassen 2020; Wuttke, Gavras, and Schoen 2022).

We argue that high levels of landholding inequality not only incentivize local elites to make the masses vote in line with their economic interests, it also provides local elites with the means to exert direct economic and political pressure on ordinary citizens. Local elites can do so through processes of social control.

Social control refers to rules that keep individuals bound to conventional standards and, in this way, maintain order in a community. It is typically associated with the exercise of power by the individuals who shape these standards and have the means to enforce compliance with them. We are particularly interested in the traditional patterns of social control that do not require constant compliance enforcement because individuals have come to internalize these standards and accept the underlying power dynamics. In this form of traditional authority, individuals accept rules and standards for reasons of tradition and custom because things have always been this way, and they do not question the resulting hierarchies (Ross 2009).

A rich literature argues that landholding inequality is related to such traditional patterns of social control (Mares 2015; Moore 1966; Rueschemeyer, Huber, and Stephens 1992; Stephens 1989). For instance, Ziblatt (2008, 615) observes that 'landholding inequality, unlike income inequality, is a proxy for a particularly pernicious and robust form of preindustrial traditional social power in which prestige, power, and wealth are correlated, giving rise to social norms (for example, invidious hierarchy) that undercut democratization'. Put differently, landholding inequality is associated with forms of social organization that are fundamentally at odds with democracy.

Moreover, landholding inequality gives local elites the resources and means to block democratization efforts. Most notably, traditional patterns of social control allow local elites to protect themselves from redistributive demands by shaping the population's political behaviour.[1] How does social control work in practice? Following Lukes (1974), we can differentiate between the three forms of power that allow the landholding elites to exercise social control over the landed masses.

First, in areas characterized by high landholding inequality, the landed masses are often economically dependent on local elites (Albertus 2017; Baland and Robinson 2008; Montalbo 2023). Local elites employ landless agricultural workers; lease land to smallholders; offer loans to small farmers at high interest rates, insured by mortgages; and control access to relevant economic infrastructure. For such reasons, the landed masses often have little choice but to support the local elite's political demands.

Second, local elites typically control political offices because financial compensation for public officials is, at least historically, low, while maintaining large supporting coalitions is costly (Ziblatt 2009). In this capacity, local elites control which issues are acceptable for discussion in public

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[1]Importantly, the immobility of landed assets provides voters with no material incentives to oppose suffrage extension, because immobility makes it difficult for local elites to evade taxation. Voters have incentives to consider the interests of asset holders only if assets are mobile (Boix, 2003). As a result, arguments concerning the immobility of assets can explain why elites oppose suffrage extension, but they cannot explain why the masses oppose it.

forums. This is also true in the case of collective decision-making in public meetings prone to elite capture (Baldwin and Holzinger 2019; Hinnerich and Pettersson-Lidbom 2014). Consequently, local elites typically control the political debates in their regions.

Third, local elites can try to influence the thinking of the residents they aim to control (Gaventa 1980; Ross 2009). According to Lukes (1974), this ideological power can make people want things that are opposed to their self-interest. Acharya, Blackwell, and Sen (2018, 22) describe this process as a behavioural path dependence; 'social and political behaviours are passed down from one generation to the next through parent-child socialization and socialization within communities, schools, churches, and other kinds of local networks'. In the context of this study, churches and schools are particularly important places of socialization, where social hierarchies and the underlying power dynamics are internalized – because things have always been this way. By influencing education systems and the role of religious authorities, local elites play a key role in the socialization of the local population.[2]

We argue that such traditional patterns of social control explain why the masses adopt the local elites' political preferences and oppose suffrage extension. In the empirical section, we explore this mechanism by examining data on population density, the education system, and mutual aid societies at the local level. We expect that social control will prevent the creation of mutual aid societies and be easier to exercise in sparsely populated areas (Tilly 2004b). In addition, high levels of social control should be associated with low levels of public educational investment (Cinnirella and Hornung 2016). We provide qualitative evidence based on historical research to substantiate the plausibility of this causal mechanism in the appendix. Finally, to further boost confidence in the social control mechanism, we show that alternative mechanisms linking landholding inequality to democratization, namely electoral fraud, pressure from below, and the economic concerns of residents (rather than elites), cannot account for this relationship.

Case Selection: Direct Democratic Votes, 1866–77

This analysis relies on four direct democratic votes in Switzerland to investigate the effect of landholding inequality on democratization. Since the founding of the Swiss Federal State in 1848, full male suffrage had been enshrined in the constitution. However, the decentralized nature of the Swiss polity granted the twenty-five cantons the right to exclude citizens from national, cantonal, municipality-level elections, and popular votes. In response, the cantons created a patchwork of regulations primarily targeting low-income households.

Most notably, the cantons developed various rules that excluded Swiss citizens from voting in national, cantonal, and municipal matters if they resided in a canton other than their canton of origin. These rules were typically tied to a minimum period of residence in a given canton, but the rules differed between cantons. As we demonstrate in the appendix, in this period, domestic migration was primarily motivated by economic reasons and concerned with relocating poor individuals and families from rural areas to centres of industrialization to pursue economic opportunities. However, domestic migrants often struggled to escape poverty in their new domiciles. Given Switzerland's small size and the large rural depopulation movement, approximately 20 per cent of all male citizens over the age of twenty (the minimum voting age) were not allowed to cast a vote (Aubert 1974, 96; Boppart et al. 2013, 246; Lutz 2000, 35–6). However, there are large variations between cantons (see Fig. A3 in the appendix).[3]

Considering these cantonal rules to violate the constitution and in the absence of a constitutional court, the federal government tried to regulate suffrage rights by passing four federal acts

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[2]This implies that we are shifting the theoretical unit of analysis from asset-holders and their preferences to the geographical areas over which elite social control can be exercised. However, unlike Caughey (2018), we emphasize the political and social dominance of local elites. We thank a reviewer for bringing this to our attention.

[3]There were also other reasons for exclusion such as tax debts, criminal records, and insanity. The four direct democratic votes we analyze were not primarily concerned with these reasons.

that would have abolished these restrictions. These reform proposals, put to direct democratic votes in the period between 1866 to 1877, were part of a larger attempt to regulate and democratize the electoral process (Gruner 1978; Voutat 1996).[4] The differences between the four proposals were minimal (Linder, Bollinger, and Rielle 2010, 23–6, 38–40, 45–6). In all four cases, the government aimed to restrict the cantons' abilities to limit voting rights in national, cantonal, and municipal matters in cases of inter-cantonal mobility (that is, Swiss citizens residing in a canton different from their canton of origin). The two reform proposals in 1866 regulated voting rights at municipality level and cantonal/national level, respectively, in two separate acts, whereas the reform proposal in 1875 regulated voting rights at municipality, cantonal, and national level in one act. The 1877 reform proposal was identical to the 1875 proposal, except that it would have allowed cantons to exempt mobile citizens for up to a year as a concession to its opponents.

The federal parliament – politically dominated by liberals representing new economic elites – supported all four reforms. The precise voting results in parliament for the two 1866 acts were not recorded, but the 1875 proposal was supported with a sixty to nineteen majority in the lower chamber and the 1877 proposal with a fifty to nineteen majority. However, all four proposals were made subject to a popular vote.[5] In the political campaign before the popular vote, the conservative opponents, mostly representing landed elites, voiced concerns about cantonal autonomy and raised the possibility that the poor mobile population might outnumber and outvote established voters and thus decide on spending issues (Linder, Bollinger, and Rielle 2010, 23–6, 38–40, 45–6). Importantly, Switzerland featured an exceptionally high level of fiscal decentralization at the time. There were no direct taxes at the federal level, whereas most public spending, including spending on social matters, occurred at the subnational level (Emmenegger, Leemann, and Walter 2021, 2022).

Hence, suffrage extension might have shifted the median voter's preferences and increased the demand for redistribution. Equally problematic from the point of view of the conservative opponents, suffrage extension would have enfranchised citizens who, due to their inter-cantonal mobility, had not been subjected to the same extent to the inter-generational socialization and institutional reinforcement that characterized the long-term residents. For these reasons, the reform would have significantly increased the cost of exercising social control for local elites. Ultimately, in all four cases, the opponents' framing of the issue proved to be powerful. A narrow majority of voters followed the conservative opponents of suffrage extension. They rejected the four proposals with no-shares of 56.9 per cent and 51.9 per cent (1866); 50.6 per cent (1875); and 61.8 per cent (1877), respectively.

The Swiss case offers a unique setting to explore the relationship between landholding inequality and suffrage extension. We can examine four direct democratic votes on suffrage extension in a political context where approximately 80 per cent of all adult male citizens could cast a vote. This setting enables us to explore whether landholding inequality also affects the voting behaviour of the population that does not directly benefit from concentrated resource endowments. Like Montalbo (2023), we examine the effect of landholding inequality on mass political behaviour and thus explore whether landholding inequality can undermine democratization through social control. However, unlike Montalbo (2023), who explores electoral support for pro-democratic parties, we can directly examine mass political behaviour on the question of suffrage extension.

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[4]For instance, Switzerland adopted the secret ballot in 1872. Importantly, two of the four votes we examine took place after the adoption of the secret ballot (in 1875 and 1877). Moreover, we control for the possibility of electoral manipulation – before and after the adoption of the secret ballot – by examining complaints about electoral fraud.

[5]The two reform proposals in 1866 would have altered the federal constitution, which is why they triggered a mandatory referendum. The new constitution in 1874 gave the federal state more competencies in regulating political participation. However, the new constitution also introduced the optional referendum, which allows groups to challenge any act of parliament – subject to signature requirements and a specific collection period – and demand a popular vote. If the optional referendum is approved at the ballot box, the parliamentary act is null and void. The 1875 and 1877 laws on suffrage extension were among the first parliamentary acts, which were successfully challenged by optional referendums.

The voting population was asked a straight yes/no question in all four cases. There is thus no risk of complications due to package deals or interdependencies between different elements of the reform, which make the democratizing effect of the reform often difficult to appraise (Albertus 2017). Similarly, the four votes were not embedded in a long series of negotiations shaped by incumbency/opposition dynamics, as is often the case in roll-call votes on democratizing reforms.

This paper thus follows the recent literature that increasingly focuses on developments within single countries, which helps to reduce the number of unobservable and unquantifiable historical differences, because all units were similarly affected by broader trends (Pepinsky 2019). Hence, the focus on within-country variation increases confidence that the results are not driven by omitted variable bias or changing units of analysis. Despite providing a more homogeneous sample, we have a large number of observations, as we work with district-level data.

Research Design and Data

The empirical section investigates the relationship between landholding inequality and popular support for suffrage extension. Following the literature, we expect a linear relationship (Boix 2003), but we also consider the possibility of a non-linear one (Acemoglu and Robinson 2006). Our statistical analysis proceeds in two steps. First, we examine the link between geographical instruments, landholding inequality, and support for suffrage extension. Second, we examine how landholding inequality is linked to different mechanisms that might explain mass opposition to suffrage extension; for example, social control, electoral fraud, popular pressure from below, and economic concerns of the resident population. Tables A2 and A3 in the appendix provide the summary statistics.

Our dependent variable is the share of 'yes votes' in the four direct democratic ballots between 1866 and 1877 at the district level. We have data for all 183 Swiss districts for the votes in 1875 and 1877. For the two votes in 1866, the results could not be retrieved from the archives for the districts in the cantons of Ticino and Basel-Country, leaving us with data from 171 districts only.

The data for measuring landholding inequality at the district level comes from Switzerland's first agricultural farm census (Statistisches Bureau des eidgenössischen Departement des Innern, 1910). To capture landholding inequality, we calculated the Gini index using data on plot sizes.[6] Similar to other countries (Ziblatt 2008), the first census with detailed subnational data was conducted at the turn of the twentieth century – unfortunately, about thirty years after the popular votes on suffrage extension. However, this should not be a problem for our analysis. Research has shown that landholding inequality displays a high degree of autocorrelation over the nineteenth and early-twentieth centuries in all countries for which data is available (Mares and Queralt 2015; Vanhanen 2003). This is also the case for Switzerland, as Fig. A4 in the appendix shows (using the Vanhanen data). Unfortunately, the Vanhanen data are unavailable at the subnational level, but it is assumed that this high degree of autocorrelation also applies to the subnational level. We are thus confident that the time difference between the popular votes and the agricultural census does not pose a significant issue. Yet, even if our inequality measure is mismeasured, the OLS estimates are likely downward biased and our instruments correct for the measurement error (Hausman 2001).

A major concern for causal identification is that the relationship between landholding inequality and support for suffrage extension might be endogenous (Albertus 2015; Brooks and Kurtz 2016; Ramsay 2011). To tackle this problem, we employ different instruments that encompass geographical features. These features pose natural limits to returns to scale and increase transportation costs, thereby acting as exogenous factors for land demand and optimal farm size. More precisely, our first instrument is climate suitability for wheat production. Climatic characteristics that are associated with commodities grown on family farms (for example, wheat) have promoted the growth of a sizeable middle class, which is associated with low levels of landholding inequality

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[6]Plot size is measured in hectare using six intervals: ≥0.5 to 3, ≥3 to 10, ≥10 to 15, ≥15 to 30, ≥30 to 70, and ≥70.

(Baten and Juif 2014; Easterly 2007; Sokoloff and Engerman 2000). Conversely, poorer climatic conditions are linked to large-scale cattle husbandry (Emmenegger, Leemann, and Walter 2021). The second instrument is nutrient storage capacity as a measure of soil quality. In line with previous research (Cinnirella and Hornung 2016; Easterly 2007; Frankema 2010), soil quality is another natural constraint that affects agricultural output independently of policies. The third instrument is terrain ruggedness. An extensive literature has linked ruggedness to large transportation and construction costs (Nunn and Puga 2012), making small-scale farming more costly (Baten and Hippe 2018). Fig. 1 shows that the relationship between these geographical characteristics and landholding inequality in Switzerland aligns with the existing literature.

Valid instruments have to satisfy the exclusion restriction. Put differently, instruments must affect the outcome via a specified endogenous variable and not via another confounder. While this condition can never be conclusively proven, we can test alternative channels that might link instruments and outcomes. In this case, the geographical instruments could affect support for suffrage extension via economic development instead of landholding inequality. For instance, soil quality, terrain ruggedness, and climate might limit agricultural output and urbanization or lead to higher levels of infant mortality and rural depopulation; therefore, we provide a correlation matrix in the appendix, which shows that our instruments are unrelated to urbanization, infant mortality, and migration patterns (see Fig. A5). Given that our instruments are unrelated to indicators normally used as proxies for economic development in historical research, we are confident that the exclusion restriction holds with regard to the theoretically most prominent channel between geography, modernization, and democratization.

Fig. 2 shows the geographical distribution of landholding inequality and support for suffrage extension for the votes in 1875 and 1877. The maps for both votes in 1866 are in the appendix (see Fig. A2). The upper left map shows that landholding inequality is less pronounced in a belt stretching from Northeast to Western Switzerland. By contrast, the Alpine regions in the South and Southeast and some parts of the Northwest display high levels of landholding inequality. Support for suffrage extension is more heterogeneously distributed across the country, as the
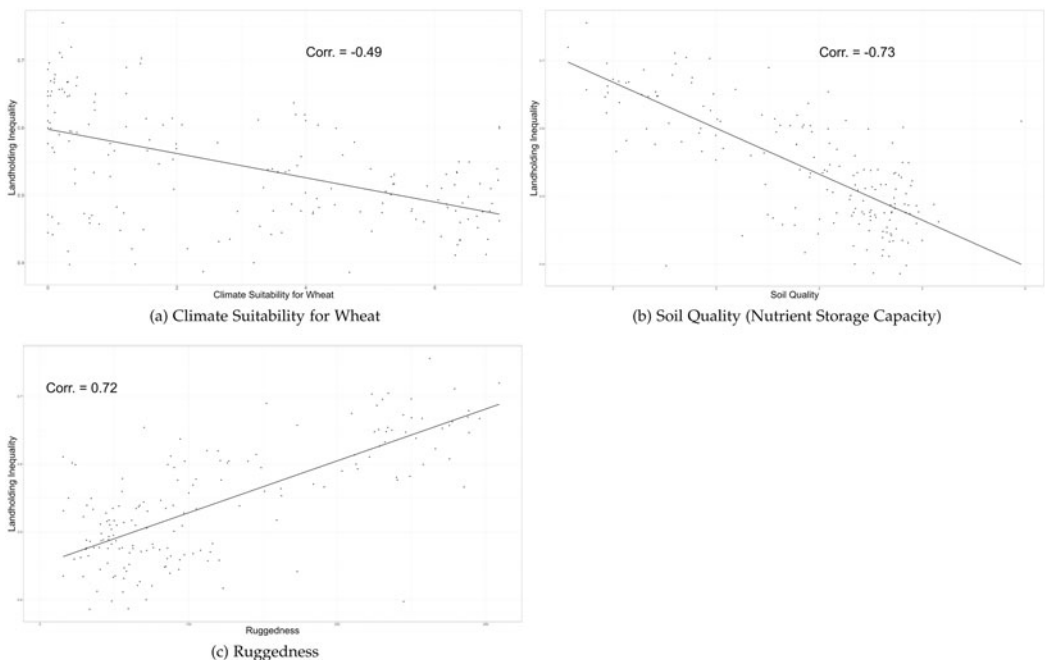

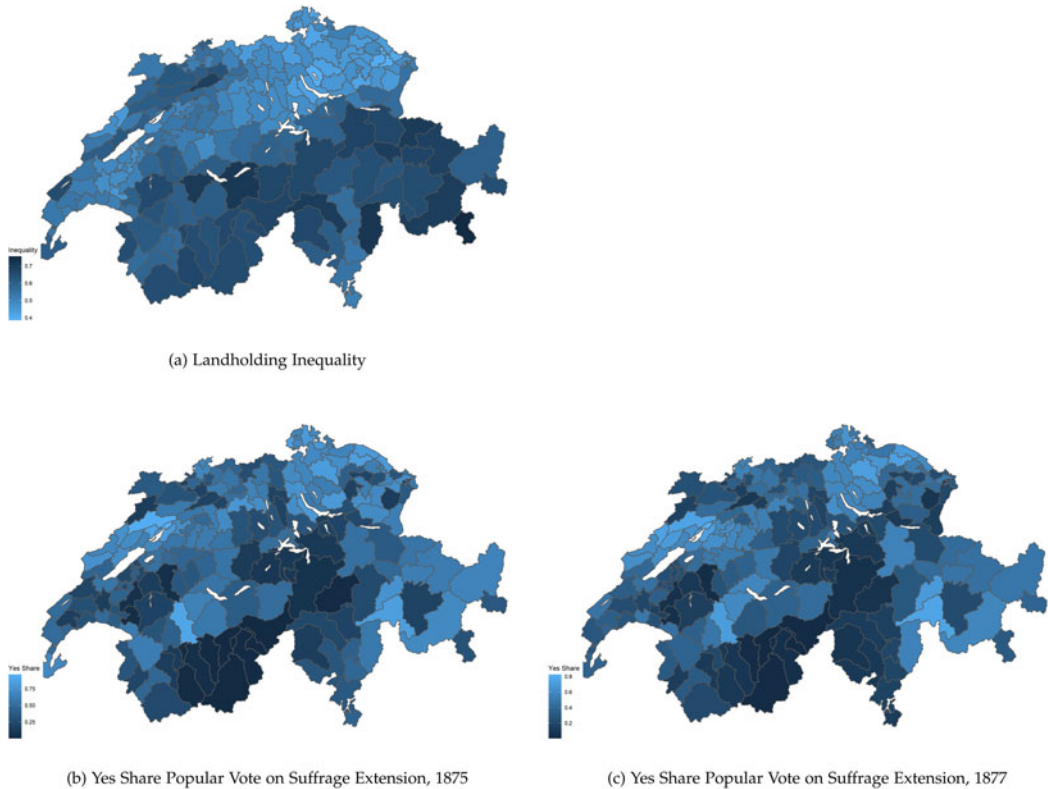Figure 1. Geography and landholding inequality in Switzerland.

(a) Landholding Inequality

(b) Yes Share Popular Vote on Suffrage Extension, 1875

(c) Yes Share Popular Vote on Suffrage Extension, 1877

Figure 2. Landholding inequality and support for suffrage extension at the district level.

two lower maps show. However, Fig. 2 clearly shows that the major opposition against suffrage extension in 1875 and 1877 came from the southern Alpine regions (see also Fig. A2 in the appendix), which runs counter to claims that the Alpine regions were the most equal areas and supportive of democratization (Boix 2003, 112–8).

Fig. 2 suggests a positive correlation between landholding inequality and popular opposition to suffrage extension. Is social control the mechanism through which landholding inequality operates? Three sets of indicators are used to shed some light on this question. First, as outlined above, landholding inequality is expected to correlate with social control. To exercise social control, landholding elites need to monitor the behaviour of ordinary citizens, which is more difficult in densely populated regions (Beissinger 2022; Caselli and Falco 2022; Gonzalez-Ocantos et al. 2020; Hirschi 1969). At the same time, population density raises the potential for collective action and organized resistance to elites (Thomson 2018; Tilly 2004b). Therefore, we use the density of eligible voters per km[2] in 1875 to gauge whether landholding inequality is linked to sparsely inhabited regions.[7]

Second, we investigate whether landholding inequality is associated with investments in education. The vast majority of the democratization literature links education to several factors that erode traditional patterns of social control, such as geographical and labour market mobility and pro-democratic attitudes (Inglehart and Welzel 2005; Lipset 1959). Thus, the landholding elites have a vested interest in keeping the local population's education level low (Baten and Hippe 2018; Baten and Juif 2014; Cinnirella and Hornung 2016; Goñi 2023). To capture the supply

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[7]In terms of voters, the districts were relatively small, containing roughly 3500 eligible voters each. However, the districts differed greatly in terms of area. We log-transform voter density because the distribution is right-skewed due to some highly urbanized districts such as Basel City.

of schooling, we explore data from Kinkelin (1875) at district level on total public school expend-iture per pupil and the share of teachers with poor training. To capture educational outcomes, we use the results of the first pedagogical examination of Swiss military conscripts from 1875–9 (Statistisches Bureau des eidgenössischen Departement des Innern, 1876). These examinations, mandatory for all males in the relevant age cohort, are the first publicly available and standar-dized measure of educational attainment, which allows education levels across the country at the district level to be compared. More precisely, we compute the average grade of all conscripts in each district across all tested subjects: reading, writing, numeracy, and history ('Vaterlandskunde'). The grades ranged from 1 (best) to 4 (worst).

Third, traditional patterns of social control should prevent the creation of civil society orga-nizations. We account for such groups by including the existence of local sections of the Grütli association ('Grütliverein') and the location of their meetings. In this period, the Grütli association was Switzerland's largest and most important mutual aid society in the country (Gruner 1968). As an organization of non-elite actors, the Grütli association was a proponent of suffrage extension. Importantly, the Grütli association did not endorse the 1877 proposal because it considered the law not far-reaching enough (Linder, Bollinger, and Rielle 2010, 45–6). Although this was primarily a tactical move to increase pressure, we focus exclusively on sections and meetings before 1875.

We also examine multiple alternative mechanisms highlighted in the existing literature to increase our confidence in the social control mechanism.

First, local elites can engage in electoral fraud (Lehoucq and Molina Jiménez 2002; Mares 2015; Ziblatt 2009). Failing to align the local population's voting behaviour with their economic interests, local elites can try to manipulate the political process to achieve the desired outcome; for example, through their control over voting officials. As a result, ballot outcomes might not accurately indicate citizen preferences.[8]

We employ two strategies to rule out electoral fraud as a mechanism at play. We examine sys-tematic differences in turnout across space. Given that nationwide majorities win referendums, there is little incentive for opponents of suffrage extension to stop citizens from voting. Rather, to overcome majorities for suffrage extension in other areas of the country, opponents of suffrage extension might use electoral fraud to increase turnout. We should, therefore, observe turnout levels to increase with landholding inequality. In addition, we examine data on com-plaints about electoral fraud in the four popular votes. Such complaints had to be directed at the federal government, which provides reports on all ballots. As a supporter of suffrage exten-sion, the government had no incentive to withhold complaints that would have undermined the political legitimacy of referendums against the government's proposals.

Second, democratization might be the result of pressure from below. Several contributions emphasize how mass support for reform and the threat of social unrest can lead to democracy (Aidt and Franck 2019; Collier 1999; Tilly 2004a); for instance, by increasing the cost of repres-sion. Importantly, citizens' demands for democratization vary with the level of inequality. When there is greater inequality, citizens have more to gain from regime change, making a push for democratization more likely. Combining citizens' demands for democracy and the elites' aversion to it (both increasing with the level of inequality), Acemoglu and Robinson (2006) argue that there is an inverted U-shaped relationship between inequality and democratization, with democ-ratization being most likely at medium levels of inequality.

We employ two strategies to rule out that pressure from below is the mechanism at play. Following Acemoglu and Robinson (2006), we examine whether support for suffrage extension is highest at medium levels of landholding inequality. In addition, we consider the possibility that the share of citizens that would be enfranchised in case of an approval of the vote was the

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[8]Electoral fraud can be considered an extreme form of social control. However, it does not work through the political behavior of non-elite actors, which is why we treat it as an alternative mechanism.

main cause of opposition among the elites. Here, the assumption is that pressure from below increases with the share of excluded citizens. All four proposals were primarily concerned with adult Swiss males who held citizenship from another canton, who were excluded from suffrage due to inter-cantonal mobility. We, therefore, explore the relationship between landholding inequality and the share of disenfranchised adult Swiss males.

Third, the landed masses might oppose suffrage extension, independent of social control exercised by local elites, because they do not want people who have been living a short amount of time in the region to vote on municipal, cantonal, or national matters and influence the lives of long-term residents, especially in matters of taxation and spending. Put differently, the already enfranchised voters might have had their own reasons to oppose franchise extension. We would expect such opposition to increase with the share of newcomers and levels of poverty because of growing concerns about the division of scarce resources among newcomers and long-term residents (Ardanaz and Mares 2014; Stasavage 2022).[9] In the empirical analysis, we consider this possibility in two ways. Next to the share of Swiss males excluded from suffrage due to inter-cantonal mobility (see above), we also look at the share of non-cantonal citizens and data on infant mortality (as an indicator of poverty).

It could also be argued that citizens with more authoritarian attitudes move into areas with high levels of landholding inequality. However, as shown in the appendix, domestic migration primarily concerned the movement of people from rural areas to centres of industrialization in this period. There is no evidence of migratory movements in the other direction for political reasons. More plausibly, it could be argued that citizens with more democratic attitudes leave rural areas, especially those with high levels of landholding inequality. However, such migratory movements perfectly align with the argument about social control. Resisting social control and supporting democracy, such individuals are expected to incur economic and social sanctions, which might ultimately force them to leave their home areas. Finally, it could be argued that citizens in small remote villages in mountainous areas might generally be more hostile to aliens from other cantons, although the chance of being outvoted by newcomers is comparatively small. While this possibility cannot be completely ruled out, it remains unclear why such conservative attitudes should co-vary with landholding inequality. Moreover, the existing literature on mountainous areas and democratization has typically argued the opposite, emphasizing how mountainous areas are conducive to democracy, although there is no comprehensive evidence in favour of this argument (see Gerring et al. 2022, 313–319).[10]

OLS and instrumental variable estimation are relied on to estimate the effect of landholding inequality on support for suffrage extension. Given that idiosyncratic factors might drive voting behaviour in individual votes, we pooled all four votes and added vote fixed effects to all of our models. We used cluster-robust standard errors to account for the non-independence of our observations within districts. We expect our treatment and outcome to be spatially correlated, as Fig. 2 suggests. To avoid bias induced by spatial correlation, we employ a spatial two-stage least square model (S-2SLS) that provides unbiased estimates under spatial interdependencies within instruments and outcomes (Betz, Cook, and Hollenbach 2020). We specify the neighbouring structure by using the inverse distance between districts and then row-standardized the connectivity matrix. This gives us the weighted average for yes shares for all districts with higher weights for districts that are closer.

Moreover, we include several control variables that might confound the relationship between landholding inequality and support for suffrage extension. Most notably, we control for urbanization, a widely used indicator to capture differences in economic development (Stasavage 2022, 182). This is particularly important because landholding inequality might be associated

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[9]Please note that such 'labor abundance' strengthens the economic position of local elites (Ardanaz and Mares, 2014; Baland and Robinson, 2008).

[10]At a more technical level, it should be noted that two of our instruments, climate suitability for wheat and the soil's nutrient storage capacity, are not related to remoteness and insularity.

with higher agricultural productivity and, thus, economic development (Montalbo 2023). By controlling for urbanization, we ensure that our indicators of landholding inequality do not simply capture differences in economic development.[11] Additional controls include population size and whether a district is predominantly Catholic and/or German-speaking. Table A1 in the appendix shows an overview of the operationalization. Finally, in the appendix, we provide qualitative evidence based on historical research to substantiate the plausibility of the social control mechanism. The historical literature on the social and political conditions in regions characterized by high levels of landholding inequality offers rich depictions of social hierarchies, which could govern the behaviour of ordinary citizens.

Quantitative Evidence

Table 1 displays the OLS and instrumental variable (IV) estimations for the effect of landholding inequality on support for suffrage extension. The first two models provide OLS estimates for the relationship between landholding inequality and support for suffrage extension. As the second model shows, a 0.1 increase in landholding inequality is associated with a decrease of 3.6 percentage points in support for suffrage extension. In the remaining models, we forward IV estimates using soil quality, climate suitability for wheat, and ruggedness. In line with Fig. 1, the first-stage results demonstrate a strong relationship between the instruments and landholding inequality, even if we account for different confounders and spatial dependence. The second stage results show that the IV estimates are significant with the expected sign. More precisely, the results suggest that a 0.1 increase in landholding inequality leads to a decrease of 6.2 or 8.4 percentage points in support of suffrage extension.

Having provided evidence on the link between landholding inequality and support for suffrage extension, Tables 2 and 3 provide OLS estimates to shed light on the causal mechanism linking landholding inequality and opposition to democratization.[12] We start by focusing on indirect measures of social control. Landholding inequality is negatively and significantly linked to education supply and outcomes. Put differently, landholding inequality is associated with less education spending per pupil ('Education Spending'), a higher share of poorly trained teachers ('Education Teacher'), and a weaker educational performance ('Education Performance'). In addition, the relationship between landholding inequality and voter density is also negative ('Voter Density'). Moreover, Table 2 shows that civil society organizations ('Associations') were less likely to exist in regions with high levels of landholding inequality, which provides further evidence of social control. Overall, the results demonstrate that voters residing in districts with higher landholding inequality could be more easily monitored by traditional elites, were less educated, and displayed lower levels of civil society organization. These findings suggest that social control can explain mass political opposition to suffrage extension in regions characterized by high levels of landholding inequality.

What about the alternative explanations for the relationship between landholding inequality and mass opposition to suffrage extension? As mentioned above, local elites might engage in electoral fraud if they cannot exercise sufficient social control. Table 3 shows the relationship between landholding inequality and turnout in the votes in 1875 and 1877 ('Turnout 1875' and 'Turnout 1877'). Turnout data for the two votes in 1866 is, unfortunately, not available. As discussed above, given the logic of referendums (nationwide majorities), electoral fraud by opponents of suffrage extension should lead to higher turnout (to compensate for supporting majorities in other areas). However, the results provide no evidence that turnout was systematically associated with landholding inequality.

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[11]In our analysis of mechanisms, we also consider variables such as education and infant mortality. Together, these analyses show that modernization processes and differences in agricultural productivity cannot account for the relationship between landholding inequality and opposition to suffrage extension.

[12]Data on education and non-cantonal citizens is missing for districts in the cantons of Solothurn and Appenzell-Ausserrhoden. Data on excluded citizens is missing for districts in the canton of Luzern.

Table 1. Landholding inequality and support for suffrage extension

	OLS		IV Soil				IV Wheat				IV Ruggedness			
	OLS	OLS	1. Stage	1. Stage	2. Stage	2. Stage	1. Stage	1. Stage	2. Stage	2. Stage	1. Stage	1. Stage	2. Stage	2. Stage
Nutrient storage capacity			−0.06***	−0.05***										
			(0.00)	(0.01)										
Climate suitability wheat							−0.02***	−0.01***						
							(0.00)	(0.00)						
Ruggedness											0.01***	0.01***		
											(0.00)	(0.00)		
Landholding inequality	−0.98***	−0.36*			−1.74***	−0.62*			−2.17***	−0.84*			−1.75***	−0.62*
	(0.19)	(0.16)			(0.27)	(0.26)			(0.39)	(0.38)			(0.27)	(0.25)
Urbanization		0.11*		−0.00		0.10*		−0.02		0.10*		−0.00		0.10*
		(0.05)		(0.02)		(0.05)		(0.02)		(0.05)		(0.02)		(0.05)
ln population		0.01		0.00		0.01		−0.01		0.00		−0.00		0.01
		(0.02)		(0.01)		(0.02)		(0.01)		(0.02)		(0.01)		(0.02)
Catholic district		−0.23***		−0.01		−0.23***		0.00		−0.22***		−0.01		−0.23***
		(0.02)		(0.01)		(0.02)		(0.01)		(0.03)		(0.01)		(0.02)
German district		−0.00		0.01		−0.01		0.00		−0.02		0.00		−0.01
		(0.03)		(0.01)		(0.03)		(0.01)		(0.03)		(0.01)		(0.03)
Spatial lag		2.28***		1.49***		2.15***		2.02***		2.02***		1.49***		2.14***
		(0.35)		(0.28)		(0.34)		(0.30)		(0.37)		(0.27)		(0.34)
Intercept			0.76***	−0.08			0.59***	−0.41*			0.46***	−0.33†		
			(0.02)	(0.18)			(0.01)	(0.20)			(0.01)	(0.17)		
Vote Fes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Num. obs.	708	680	732	732	708	680	732	732	708	680	732	732	708	680
R^2	0.13	0.44	0.49	0.57	0.08	0.43	0.24	0.44	−0.01	0.42	0.49	0.58	0.07	0.43
Adj. R^2	0.13	0.43	0.49	0.57	0.07	0.43	0.24	0.43	−0.01	0.41	0.49	0.58	0.07	0.43
F statistic	26.81	58.33	711.27	162.49	36.14	58.25	228.43	94.69	25.96	56.35	707.60	169.62	35.97	58.27
F p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Num. groups: vote	4	4			4	4			4	4			4	4

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.1$.

Table 2. Landholding inequality and support for suffrage extension: social control mechanisms

	Education spending	Education teacher	Education performance	Voter density	Associations
Landholding inequality	−30.23*** (8.30)	0.88*** (0.25)	0.78** (0.24)	−5.45*** (0.69)	−0.72† (0.40)
Spatial lag	0.58 (0.47)	2.51*** (0.69)	1.24* (0.51)	1.48*** (0.36)	1.29** (0.48)
Urbanization	10.08*** (2.69)	0.12 (0.08)	−0.30*** (0.06)	0.92*** (0.25)	0.35** (0.12)
ln population	2.97** (0.90)	−0.01 (0.03)	−0.05† (0.03)	0.41*** (0.08)	0.25*** (0.05)
Catholic district	−5.19*** (1.16)	0.02 (0.04)	0.30*** (0.04)	−0.08 (0.08)	−0.23*** (0.06)
German district	−1.78 (1.11)	0.00 (0.05)	0.03 (0.04)	−0.23** (0.08)	−0.08 (0.07)
Intercept	−2.16 (15.55)	−0.73* (0.32)	−0.57 (1.14)	−2.35† (1.28)	−2.03*** (0.58)
R^2	0.46	0.27	0.53	0.70	0.36
Adj. R^2	0.45	0.24	0.51	0.69	0.34
Num. obs.	170	170	170	183	183

Heteroscedasticity-robust standard errors in parenthesis. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.1$.

Table 3. Landholding inequality and support for suffrage extension: alternative mechanisms

	Turnout 1875	Turnout 1877	Excluded	Non-Cantonal	Poverty
Landholding inequality	−0.05 (0.13)	−0.18 (0.13)	0.01 (0.05)	−0.11 (0.09)	−47.86 (75.92)
Spatial lag	1.65*** (0.27)	1.56*** (0.22)	2.70*** (0.25)	2.48*** (0.69)	−1.85† (1.03)
Urbanization	−0.11** (0.04)	−0.11** (0.04)	−0.05** (0.02)	0.14*** (0.03)	23.85 (18.22)
ln population	0.01 (0.02)	0.02 (0.02)	0.01 (0.01)	−0.00 (0.01)	1.89 (8.51)
Catholic district	0.09*** (0.02)	0.05* (0.02)	−0.02* (0.01)	−0.01 (0.01)	48.20*** (10.39)
German district	0.09** (0.03)	0.11*** (0.03)	0.04*** (0.01)	−0.01 (0.02)	−4.71 (10.91)
Intercept	−0.57* (0.27)	−0.49* (0.25)	−0.35*** (0.09)	−0.08 (0.15)	730.89* (312.60)
R^2	0.51	0.58	0.60	0.36	0.13
Adj. R^2	0.50	0.57	0.59	0.34	0.10
Num. obs.	183	183	178	170	183

Heteroscedasticity-robust standard errors in parenthesis. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.1$.

Qualitative evidence provides no support for the electoral fraud mechanism either. The federal government received no complaints about electoral fraud regarding the two popular votes in 1866 and 1875 and only one complaint in the case of the 1877 vote. For the sake of comparison, there were eighteen complaints in 1875, seven in 1876, and eight in 1877 about the violation of electoral laws in elections (Bundesrat 1866, 67–120; 1875, 151–67; 1876, 456–68; 1877, 428–46). Given that the federal government had no incentive to withhold information about complaints, these results suggest that landholding inequality did not operate via electoral fraud.

What about pressure from below? Table A4 in the appendix shows that there is, in contrast to Acemoglu and Robinson (2006), little evidence for an inverted U-shaped relationship between landholding inequality and opposition to suffrage extension. In addition, Table 3 shows that landholding inequality is not systematically associated with the share of excluded citizens ('Excluded'). Similarly, Table 3 offers no evidence that the landed masses opposed suffrage extension (independent of social control exercised by local elites) because they did not want people from outside to influence local political matters. The share of non-cantonal citizens ('Non-Cantonal') and the poverty level ('Poverty') in a given district are not systematically associated with landholding inequality.

In sum, the evidence presented in Tables 2 and 3 points to social control as the likely mechanism linking landholding inequality to mass opposition to suffrage extension. In the appendix, we provide additional qualitative evidence based on historical research to substantiate the plausibility of this causal mechanism. More specifically, we show that in areas with high levels of landholding inequality, local elites had the means to exercise social control by keeping investments in education low, suppressing opposition groups, and exercising control over institutionalized forms of political participation.

Conclusion

A rich literature explores whether geographically concentrated resource endowments undermine democratization. This literature suggests that wealthy elites in possession of fixed assets such as natural resources or large estates oppose democracy because of its redistributive effects and their inability to evade taxation. Thus, democratization is less likely if immobile capital is unequally distributed, usually captured through high levels of landholding inequality. However, existing empirical evidence on the relationship between geographically concentrated resource endowments and democratization is inconclusive, not least due to endogeneity concerns. Moreover, there is limited empirical work on the causal mechanisms linking concentrated resource endowments to autocratic rule.

This paper makes two main contributions to this literature. First, exploiting exogenous variation in topography, climate, and soil characteristics, we have used three instrumental variables to demonstrate that landholding inequality increases opposition to suffrage extension. Second, using four popular votes on suffrage extension, we have shed light on a thus far empirically underexplored causal mechanism. By taking advantage of this unique data set, we have shown that mass political behaviour was in line with local elites' economic and political interests and that traditional patterns of social control are the most plausible mechanism for this alignment.

The research has important implications. It questions the assumption, often made in the literature, that political preferences can be directly derived from economic positions. Our research suggests that while this assumption might hold for the elites, it is not always the case for ordinary citizens, especially in areas characterized by traditional patterns of social control. In these areas, low levels of education, a repressive political climate, and economic dependencies limit ordinary citizens' possibilities to form an independent and informed political opinion on matters related to economics and politics. For the same reasons, mass support for democratization cannot be taken for granted (Welzel and Inglehart 2008). Instead, voters' preference formation must be understood as a political process (Emmenegger and Marx 2019; Hall 2005). Moreover, future research on democratization might benefit from shifting the theoretical unit of analysis from individuals and their preferences to the geographical areas in which the individuals are embedded because local communities are often subject to processes of inter-generational socialization and institutional reinforcement (Acharya, Blackwell, and Sen 2018; Caughey 2018).

This paper explored a case of gradual democratization, where 80 per cent of the adult male population was already entitled to vote. What does this imply for the theoretical generalizability of our findings? To begin with, Ziblatt (2006, 332) observes that democracy typically emerges gradually in first-wave democracies, and we have shown that Switzerland is no exception.

Admittedly, in partial democracies such as nineteenth-century Switzerland, the redistributive threat of further enfranchisement is lower than in autocracies. However, we should still expect concerns about the redistributive effects of suffrage reform to inform the elites' opposition to further democratization (Acemoglu and Robinson 2006; Boix 2003). While some of the enfranchised middle-class voters might also oppose democratization for economic reasons, the wealthy elites have the most at stake.[13] In terms of generalization, it should be more difficult to find the negative relationship between landholding inequality and support for democratization in partial democracies.

At the same time, the enfranchisement of a majority of the adult male population allows us to observe processes that, in other cases, are hidden from plain sight. The traditional patterns of social control we have explored in this paper are, we argue, the reason why non-elite actors often struggle to mobilize for democracy or even reject the idea of democracy altogether. However, in the absence of mass political action (for example, electoral behaviour or direct

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[13]Moreover, middle-class opposition to democratization cannot account for the observed relationship between landholding inequality and mass opposition to suffrage reform.

democratic votes), non-elite political behaviour is often difficult to observe. Our study thus adopts a similar approach to Montalbo (2023), who examines the effect of landholding inequality on electoral support for pro-democratic parties. However, unlike this contribution, we can directly examine mass political behaviour on the question of suffrage extension.

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