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On the political and social consequences of economic inequality: Civic engagement in Colombia

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On the political and social consequences of economic inequality

Civic engagement in Colombia

Patricia Justino,¹ Ana Arjona,² Juan Camilo Cárdenas,³ Ana María Ibáñez,³ Julian Arteaga Vallejo³

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Abstract: This paper investigates the impact of inequality on individual civic engagement at the community level, whether this impact persists over time, and what mechanisms may shape the relationship between inequality and civic engagement. The results show that inequality in Colombia is associated with *increases* in individual participation in political organizations, including increased membership, meeting attendance, and assumption of leadership roles. Mechanisms explaining this effect include elite influence, strong connectivity between community members, and high individual aspirations. The effect is strongest in the medium term and weakens over time.

Key words: civic participation, collective action, Colombia, inequality

JEL classification: D74, D31, D63, O54

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1 Introduction

A lot has been written about the role of collective mobilization in addressing inequalities throughout history.¹ Labour unions, in particular, have played important roles in processes of social mobilization against inequality by influencing the rules that govern private and public job practices (see Freeman and Medoff 1984; Moore 1978). Other relevant collective action organizations include women's groups that raise awareness about and lobby for women's rights and gender equality (Batliwala 2012; Tadros 2016), village user committees engaged in protecting and managing access to common resources (Ostrom 1990), local committees for the management and provision of public goods (Pritchett and Woolcock 2003), and agricultural cooperatives (Bardhan 2000). The actions undertaken by these different collective organizations have affected levels and changes in inequality in many parts of the world, through subsequent political and social change in government practices and policies (Branch and Mampilly 2015; Jenkins and Klandermans 1995).

But rising inequality may not necessarily incite social mobilization to curtail it. For instance, it has been shown that citizens living in European countries with high levels of inequality are *less likely* to engage in what they define as 'soft protests' (legal demonstrations, signing petitions, and contacting government officials) (Dubrow et al. 2008). Other studies have reported a negative correlation between economic inequality and rates of individual political engagement (Solt 2008, 2015). In these contexts, inequality has hindered collective mobilization because it has an impact not just on the *will* of individuals and groups to mobilize, but also on their *ability* to do so. In fact, a growing literature has shown that persistent inequalities within heterogeneous groups and asymmetries in power may limit social cooperation and, thus, individual civic engagement in social organizations, as well as hindering the effectiveness of collective action (Alesina and La Ferrara 2000; La Ferrara 2002). However, despite these advances in the literature, there is still limited knowledge about the factors that shape civic engagement in unequal societies. This paper attempts to shed new light on the relationship between economic inequality and individual civic participation in collective organizations. We propose a framework to map key pathways through which inequality may affect civic engagement at the community level, and derive testable hypotheses on key mechanisms that may shape this relationship. These include the relation between elites and ordinary citizens, levels of social coordination within and between groups, and individual aspirations and expectations.

Theoretical hypotheses are tested for the case of Colombia, a country that exhibits some of the highest levels of inequality in the world. The empirical analysis uses a unique longitudinal survey conducted in 2010, 2013, and 2016, the *Encuesta Longitudinal Colombiana de la Universidad de los Andes* (ELCA), which allows us to analyse how the effect of inequality on civic engagement may persist (or not) over time—something that is rarely done in the literature. The survey includes modules designed to understand civic engagement, collective action, and social and political attitudes and beliefs. These data are combined with the SISBEN dataset (2005 and 2010), an administrative database constructed to identify potential beneficiaries of social programmes in Colombia,² which contains census-type information on income distributions at the individual level across the country.

¹ Pioneering contributions include Jenkins and Klandermans (1995), Moore (1978), Skocpol (1979, 1994), and Tilly and Tarrow (2015). More recent contributions include Acemoglu and Robinson (2006), Boix (2003), and Justino and Martorano (2018, 2019).

² See <https://www.sisben.gov.co/Paginas/inicio.aspx> (in Spanish).

Identifying the effect of inequality on civic engagement is challenging because standard estimates may be biased due to reverse causality and omitted variable biases, the direction of potential biases being a priori ambiguous. To address these concerns, we make use of municipality fixed effects models that include a rich array of individual- and community-level controls. We also conduct several tests to assess the potential extent of reverse causality and omitted variable and measurement error biases; we find limited evidence for these in our estimations. The main results show that high levels of inequality in communities in Colombia are associated with an increase in individual participation in civic organizations at three levels: membership of organizations, meeting attendance, and assumption of leadership positions. This effect is dominated by participation in political organizations. The effect is particularly strong in 2013 but weakens over time. The mechanism analysis suggests that the positive effect of inequality on civic participation is greatest in communities with strong elite dominance (measured in terms of vote-buying and strength of relations between political elites and citizens), high levels of social connectivity, and above-average educational and house ownership aspirations.

The paper makes a number of theoretical and empirical contributions. The first contribution is to the understanding of the social and political consequences of economic inequality. A large body of literature over the last century has identified several factors that drive changes in inequality.³ Large efforts have also been made to develop methods to collect data and measure such changes (see, for instance, Atkinson and Piketty 2007, 2010; Sen 1973). Some studies have examined the economic consequences of inequality in terms of poverty traps, economic productivity, private consumption, and economic growth (for instance, Bowles et al. 2006; Galor and Zeira 1993; Perotti 1993). Others have shown that economic inequalities in income and wealth may result in less than optimal social, economic, and political outcomes (Piketty 2013; Stiglitz 2013). This paper discusses the less-researched but critical effect of inequality on civic engagement in collective organizations, arguably a central factor in how people come together to achieve common societal goals (Akerlof 1976; Ostrom 1990; Putnam 1993). Yet it has remained under-researched, particularly at very detailed levels of disaggregation and over time, as analysed in this paper. Second, the paper contributes to a large body of research on the determinants of collective social mobilization (for instance, Moore 1978; Skocpol 1979, 1994; Tilly and Tarrow 2015). This literature has generated substantial insights over the last five decades about the emergence, structure, function, and evolution of organized social movements, and how they are produced, shaped, and constrained by different governance regimes and forms of political organization (Jenkins and Kladermans 1995). Emerging research in this field is starting to address how specific social, economic, and political structural changes—such as rising inequalities—may affect how citizens participate in social movements and other forms of civic collective action. Some studies have reported a negative association between rising inequalities and individual voting and protest behaviour (Dubrow et al. 2008; Gilens 2012; Hacker and Pierson 2010; McCarthy et al. 2006; Solt 2008, 2015), particularly in the aftermath of the 2007/08 global financial crisis (Della Porta 2015; Justino and Martorano 2018, 2019; Rudig and Karyotis 2013). This paper contributes to this literature by exploring the mechanisms that may shape the relationship between inequality and civic engagement in local organizations at the individual level, a key factor in how social movements and collective action emerge and are organized. Finally, the paper discusses how the relationship between income inequality and civic engagement is shaped by how people, individually or in groups, perceive themselves and relate to others in society. In this way, the paper builds on the recent literature on the formation and evolution of social cooperation (Axelrod and Hamilton 1981; Bowles and Gintis 2011; Gambetta 1988), and of individual aspirations (Ray 2006). It does so by analysing how social relations between elites and ordinary citizens, social cooperation, and

³ See reviews in Atkinson and Piketty (2007, 2010), Piketty (2013), and Stiglitz (2013).

levels of aspiration about future social and economic outcomes may affect individual civic engagement in unequal contexts.

The paper is organized as follows. Section 2 discusses the relationship between economic inequality and individual participation in civic organizations, and identifies a number of testable hypotheses about key theoretical mechanisms that may shape this relationship. Section 3 describes the Colombian context, introduces the main datasets we use, and presents descriptive statistics. Section 4 discusses the empirical framework and main results, while Section 5 focuses on the analysis of the mechanisms. Section 6 presents a number of robustness tests to assess the validity of the main results. Section 7 concludes.

2 When and how does inequality affect civic engagement?

The literature to date has revealed mixed effects of inequality on a number of factors related to civic engagement (Alesina and La Ferrara 2005b; Bardhan 2005; Solt 2008). In some cases, high levels of economic inequality may lead to increases in forms of collective action that aim to reduce it. Cases in point include the ‘Occupy’ movement, the ‘Arab Spring’ events, food riots across large parts of Asia and Africa after 2007, and demonstrations against austerity in Europe in recent years. In other contexts, high levels of economic inequality are associated with reductions in collective action (Alesina and La Ferrara 2000; La Ferrara 2002), mistrust of institutions (Acemoglu and Robinson 2006; Piketty 2013), and less efficient public goods provision (Alesina et al. 1999; Bardhan 2000; Miguel and Gugerty 2005). These seemingly contradictory results are not surprising because the ways in which citizens participate in civic life and mobilize collectively are moulded by inequality itself (Piketty 2013; Stiglitz 2013). In the light of this, we bring together below several strands of existing literatures to advance a number of theoretical mechanisms that may help to explain these mixed results and shed light on the relationship between economic inequality and civic engagement. The first is the relation between elites and ordinary citizens and the levels of influence exercised by the former over the latter. The second is a group mechanism shaped by levels of social cooperation within and between groups. The third is an individual mechanism related to individual aspirations and beliefs about their future life outcomes.

2.1 Elite influence

The standard median-voter model predicts that in societies with high levels of inequality the median voter will be located closer to the majority of poor voters, and thus policies targeted at the median voter will benefit those at the bottom of the income distribution (Meltzer and Richard 1981). However, this result is dependent on the political influence of those at the top of the distribution (Piketty 1996), and their dominance over the rest of society and the social norms that rule it (Piketty 2013). High levels of inequality may affect prospects for civic engagement and collective social mobilization among ordinary citizens when resources and power are captured by elites at the expense of other sections of society (Bardhan 2005; Platteau 2004). In some cases, elites may want to promote the political and civic participation of the rest of the population. This is likely to happen in contexts when the social and political exclusion of ordinary citizens might threaten the status quo of incumbent elites (Acemoglu and Robinson 2006; Boix 2003), as was the case with the extension of the franchise and greater political participation of citizens in Western societies during the late 19th and early 20th centuries (Acemoglu and Robinson 2000). But in many high-inequality countries political decision-making tends to systematically exclude some social groups, whether because they are left out of the political process altogether (Gilens 2012), because their votes are bought out as part of systems of patronage and clientelism (Lijphart 1997), or because they are co-opted into organizations that benefit elites and their power capture (Gáfaró et

al. 2014). Low levels of civic engagement may, in turn, perpetuate existing inequalities and thwart collective action and civic engagement. For instance, recent studies have shown how rises in inequality in the United States have led to greater polarization of party competition (McCarthy et al. 2006) and to wealthy interests dominating policy processes and decisions (Gilens 2012; Hacker and Pierson 2010). A study in Tanzania has shown that high levels of inequality reduce individual participation in social and productive groups, particularly among the poorest (La Ferrara 2002). Taken together, this literature suggests that the net effect of inequality on civic participation may be profoundly shaped by interactions between elite and citizen interests: in general, we can thus expect the effect of inequality on civic engagement to be positive when there is a weak dominance of elites over the rest of society, or when resulting civic organizations may benefit elites. The effect of inequality on civic engagement is likely to be negative in contexts characterized by strong dominance and influence of elites.

2.2 Social cooperation

While few studies to date have offered a systematic analysis of the impact of inequality on group behaviour, recent literature has suggested that high levels of inequality may affect social preferences around trust, altruism, and reciprocity between and within social groups (Attanasio et al. 2012; Bowles and Gintis 2011; Gambetta 1988; Thöni et al. 2012), sometimes leading to more inclusive institutions, and sometimes further entrenching existing structural inequalities (Bowles et al. 2006). The net effect of this mechanism is also *a priori* ambiguous. While some levels of heterogeneity within and between social groups may facilitate collective action, particularly when elites may benefit from the collective good (Bergstrom et al. 1986; Olson 1965), high levels of heterogeneity (across ethnic and wealth dimensions) may reduce group cooperation at the local level (Alesina and LaFerrara 2005a; Bardhan 2005; Buckley and Croson 2006; Cárdenas 2003; Miguel and Gugerty 2005; Nishi et al. 2015). For instance, it has been shown that interpersonal trust in the US is lower in communities that exhibit higher levels of income inequality (Alesina and La Ferrara 2000). Experiments in the lab (Cárdenas 2003) also show that social distance among group members hinders cooperation in social dilemma games (Buckley and Croson 2006; Nishi et al. 2015). This literature suggests that more homogeneous groups may be better able to ensure higher levels of social cooperation, which may in turn result in higher levels of civic engagement. However, internally homogeneous groups may also be characterized by forms of ‘parochialism’ (Bowles and Gintis 2004, 2011), when inequalities between groups are significant, leading to suspicion and discrimination against ‘other’ groups. This may in turn reduce the efficacy of civic engagement in highly unequal societies. These findings suggest that group cooperation may play a substantial role in explaining the relationship between inequality and civic engagement in different contexts. Overall, we would expect the effect of inequality on civic engagement to be negative when it promotes group cooperation in parochial ways. The opposite effect will dominate when social cooperation between groups is strongest.

2.3 Individual aspirations and beliefs

The ways in which individuals engage in civic organizations in unequal societies may also be affected by their own aspirations and beliefs. It is possible that some levels of inequality will result in higher aspirations about better life outcomes in the future for individuals at the bottom of the income distribution. Albert Hirschman’s ‘tunnel’ parable describes individual beliefs about inequality as akin to the thinking of drivers stuck in a traffic jam inside a tunnel (Hirschman 1981; Hirschman and Rothschild 1973): when they see the adjacent lane moving, either they get frustrated and change lanes (i.e. act to change their situation) or they stay in their lane in the hope that it will start moving soon, too. This metaphor was intended to illustrate how individuals may accept certain levels of inequality when they believe that social structures will allow moves up the social ladder. (Such beliefs explain, for instance, the persistence of the idea of the ‘American dream’

(Alesina and Glaeser 2004; Alesina et al. 2001). On the other hand, individuals will be more inclined to engage in organized forms of collective action when they do not believe that existing social processes will resolve existing inequalities (Putnam 2000). Several studies have, however, found a negative association between income inequalities and beliefs and aspirations about future life prospects (Genicot and Ray 2014; Ray 2006). This negative effect is shaped by the persistence of self-fulfilling beliefs about how individuals perceive their future life opportunities (Bourdieu 1986), and mediated by identity-based or other socio-cultural preferences (Akerlof and Kranton 2000). These processes may lead to the internalization of an unequal status quo when individuals at the bottom of the distribution adopt behaviours that ensure they will stay there (Justino and Moore 2015). These behaviours may include low political participation among individuals at the bottom of the distribution, who assume that their voting preferences or voices in protests, demonstrations, and civic organizations will not matter (Lijphart 1997, 1999). For instance, a large body of research has linked the persistence of gender and ethnic inequalities to social norms and individual beliefs about lack of worth and ability to exercise citizenship rights (Lijphart 1997, 1999; Perron 2014). Taken together, these findings indicate that we may expect the effect of inequality on civic engagement to be positive when individuals perceive collective civic organizations as ways of achieving their own life aspirations and improving their lives. The effect is likely to be negative when inequality is associated with low individual aspirations.

In summary, the discussion above suggests that high levels of inequality may reduce (increase) individual civic engagement when (i) elites exercise strong (weak) dominance and control over the rest of society, (ii) inter-group social cooperation is weak (strong), and (iii) individuals display low (high) levels of aspirations about their future lives. We test these hypotheses empirically in the next sections for the case of Colombia.

3 Colombian context and data

Colombia is one of the most unequal countries in the world (OECD 2013). Although inequality declined between 2002 and 2016 according to the Colombian central statistical office (Figure A1 in Appendix), aggregate levels of inequality in Colombia hide large heterogeneity (Alvaredo and Londoño-Velez 2013), as shown also in the survey sites we use in the empirical analysis (Table A1 in the Appendix). The persistence of inequality, particularly with respect to land and income distribution, has been at the heart of Colombia's social, political, and economic development for several decades, including a civil war that devastated the country for over five decades (Flores 2014; Reyes Posado 2016). As a result, Colombia has a long history of civic engagement and collective action against persistent inequalities, in particular with respect to land inequality. Forms of collective action have included the activity of trade unions since the early 20th century (Amnesty International 2007; Palacios 2003; Vidal Castaño 2012), and the actions of peasant associations and productive cooperatives (Hristov 2005), which strengthened land rights and market access and protected workers' rights against the power of industrialists and large landowners. These labour and social movements were significantly weakened in the 1950s and 1960s by national governments backed by a US fearing the rise of communism (Kofas 2000; Molano 2007). Some groups ended up supporting or joining guerrilla groups (Leech 2011; Vallejo 1986), while others disappeared altogether. Social movements and trade unions have played renewed roles in recent years with an increase in workers' protests and demands for land redistribution in the period leading up to the peace agreement. However, during this period, and in the aftermath of the peace agreement, unionists, human right activists, social movement leaders, and other civil society groups were targeted and killed (Gutiérrez Sanín et al. 2017).

In order to analyse how inequality has affected levels of civic engagement in Colombia, we will make use of several datasets. The main dataset is the *Encuesta Longitudinal Colombiana de la Universidad de los Andes* (ELCA), which covers 4,800 households living in rural areas surveyed in 2010, 2013, and 2016. This sample is representative of small agricultural producers in four micro-regions: Atlantic, Central, Coffee-Growing, and South.⁴ The household questionnaire collected detailed information on individual consumption expenditure, incomes, and participation in social organizations, among a wealth of other socio-economic variables. The exact geographical location of each household was recorded using GPS. The community questionnaire elicited information on social and public infrastructure, and local economic, social, and political conditions.⁵

Our main independent variable, the level of inequality in each community sampled in ELCA, was calculated using the SISBEN dataset, collected in 2005 and 2010. Income inequality measures (Gini index, General Entropy, and Atkinson Index) were calculated at the community level using the census-level information of the SISBEN database. This dataset contains information at the individual level collected by the government's National Planning Department (DNP) to classify individuals and households according to their living conditions, and thus identify potential beneficiaries of government assistance programmes. The dataset comprises all segments of the Colombian rural population. The main income variable used in these calculations is the aggregated predicted individual income of every member of the household. Because it is known that the SISBEN surveys determine who is eligible for government aid programmes, income variables tend to be underreported. In order to accurately estimate official poverty and inequality measures, the DNP has since 2006 carried out a correction procedure in which the income variables of the dataset are fitted to match the distribution of a less problematic survey, as explained below. The same correction was performed in the dataset we use in this paper.⁶

Using the rural household sample of another large-scale household survey, the *Gran Encuesta Integrada de Hogares* (GEIH),⁷ income was predicted using a tobit regression with regional fixed effects, where the dependent variable (income) is lower-censored at zero. The explanatory variables used included schooling grade; age; gender; whether the individual is the household's head; whether the person is unemployed, not looking for a job, informally employed, or formally employed; and whether there are working adults in the household. We then used individual-level SISBEN data for every person residing in each of the 222 communities in the ELCA sample in 2010 and inputted their predicted incomes according to the previously estimated coefficients in the tobit regressions.⁸ Inequality measures for each community were calculated after aggregating individual incomes at the household level. One limitation of the SISBEN dataset is that inequality can only be calculated for 2005 and 2010. However, measures of income inequality tend to change slowly across time (Sen 1973), and this is the case also in Colombia: Figure A1 shows that the national Gini coefficient fluctuated between 0.52 and 0.57 over the period being considered. The empirical analysis in the paper concentrates on income inequality measured in 2010, and takes

⁴ Within each region, municipalities and communities were randomly selected. The sample in 2010 included 17 municipalities and 222 rural communities, each covering between 500 and 1,000 inhabitants.

⁵ The 2010 households were resurveyed in 2013 and 2016. The attrition rate was 5.8 per cent between the 2010 and 2013 surveys, and 10.24 per cent between the 2013 and 2016 surveys. The overall attrition rate (between the 2010 and 2016 surveys) was 13.46 per cent. Because the survey followed migrants and split-offs between waves, the sample in 2013 increased to 114 municipalities and 637 communities.

⁶ In doing this, we followed Daza and Franco (2009).

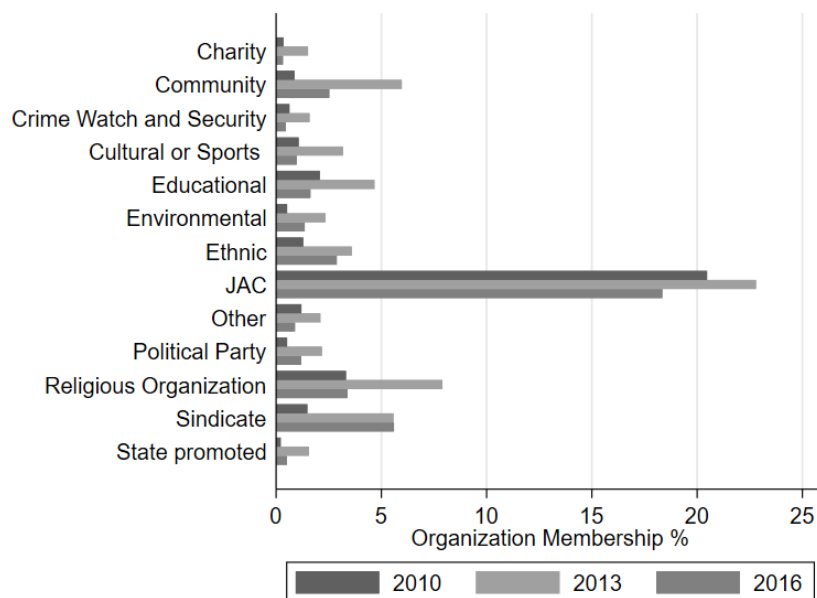
⁷ See <https://www.dane.gov.co/index.php/estadisticas-por-tema/mercado-laboral/empleo-y-desempleo/geih-historicos> (in Spanish).

⁸ Income estimation using a hot-deck imputation method yields statistically identical results.

advantage of the longitudinal nature of ELCA to investigate the effect of inequality in 2010 on civic participation outcomes in the short term (2010) and longer term (2013 and 2016). We use the 2005 SISBEN data in robustness tests later in the paper.

We explore the effects of inequality on individual participation in local (community-level) collective organizations. Measures of individual participation include membership of collective organizations, meeting attendance and leadership positions in those organizations. We aggregate these organizations into three broad categories: political, productive, and other (Figure 1 and Table A2). The political category includes membership in political parties, state-promoted participation spaces (for example, periodical meetings with aqueduct- or road-building authorities), and Community Action Boards (JACs in the Spanish acronym). JACs are civic organizations that are omnipresent in Colombia. They were formed in 1958 for the purpose of counteracting weak state presence in geographically isolated areas and strengthening social networks. They are voluntarily run by community residents with the broad objective of organizing community activities, solving minor problems within the community, and raising issues with local and national authorities about public goods provision in the area. The productive category consists of trade unions, work cooperatives, and producers' guilds. Other organizations include neighbourhood, religious, cultural, sports, educational, environmental, and security groups. One-quarter of the sample reported membership in a civic organization in 2010. This number rose to 32.8 per cent in 2013 and reduced to 26.3 per cent in 2016. Just over 23 per cent of the sample attended meetings in 2010. The estimates for 2013 and 2016 were, respectively, 30.8 and 24.3 per cent. Leadership in civic organizations rose from 10.5 per cent in 2010 to 12.9 per cent in 2013 and 2016. Membership, meeting attendance, and leadership levels are highest in political organizations across all years (with the exception of membership of other organizations in 2013) (Table A2).

Figure 1: Individual membership of civic organizations in Colombia



Source: Authors' illustration based on ELCA.

We complement the ELCA and SISBEN datasets with other sources of data, which we use to construct several control variables. We gathered detailed information on geographical variables for the ELCA communities from the official geographical institute in Colombia (IGAC) and the Global Land Cover Facility at the University of Maryland, and we used additional municipal characteristics as controls in the different regressions based on data from a municipal panel

collected by the Department of Economics of the Universidad de los Andes, which regularly compiles information from several official sources. Table A3 provides relevant information about the sample and controls we use in the paper.

4 Empirical analysis

The main econometric model we use regresses income inequality (measured using the Gini coefficient) on all measures of individual participation in local civic organizations. As robustness checks, we replicate the same results using other inequality measures, as explained below. We start by examining the effect of inequality measured in 2010 on individual civic participation in 2010. We then examine the effect of inequality (still measured in 2010) on individual civic participation outcomes for the same individuals surveyed in 2013 and 2016. This exercise allows us to assess how the effect of initial inequality levels on individual civic engagement may persist (or not) over time.

The set of regressions we estimate is as follows:

$$P_{ijmy} = \alpha_0 + Inequality_{jy} + X_{iy} + Z_{jy} + \gamma_{my} + e_{ijm} \quad (1)$$

where P_{ijm} is the participation in civic organizations by individual i , in community j , in municipality m , and in year y (2010, 2013, or 2016); $Inequality_m$ is the inequality measure for community j ; X_i and Z_j are vectors of individual and community level controls; and γ_m are municipality level fixed effects.

All regressions include a series of individual-, community-, and municipality-level controls (measured in 2010) that might affect civic participation. Individual-level controls (listed in Table A3) include age, gender, highest school grade, occupational status, and a dummy variable indicating whether the individual is the household head. Community-level controls include the number of households in the community; a series of geographical variables that might affect the operation and membership of civic organizations (such as altitude above sea level, distance to a main road, distance to the closest river, and time needed to travel to the municipality's main town and to the state's capital); a dummy indicating whether lack of water was a problem in agricultural production, which may affect productive organizations in particular; a market insertion index indicating which agricultural products are sold in nearby communities and towns, an issue that may shape how rural households engage with local organizations; and an institutional index that encompasses the number of different state institutions available in each community (including child care and nutrition facilities, pre-school, primary, and secondary schools, and a functioning medical or other health services post). All regressions were estimated using both OLS and logit models. Given the similarity between the two sets of results, we report in the paper the OLS estimation. Logit estimations are available from the authors upon request.

The main results of the regressions above are shown in Tables 1, 2, and 3. In each of these tables, each column represents the most stringent specification of the model above, which includes individual controls, community controls, and municipality fixed effects. Overall, the results show a positive relationship between inequality and individual participation in civic organizations in Colombia. This effect is largely dominated by political organizations.

Table 1 shows that larger levels of inequality at the community level (measured by the Gini coefficient in 2010) are positively associated with individual membership and increased attendance at meetings of political organizations in 2010. Levels of income inequality in 2010 do not seem to

affect any other form of civic engagement, nor the participation of household members in the running of organizations. This is not surprising given the influence of the JACs, the largest component of this variable (Figure 1), in local decision-making processes and development initiatives (Kaplan 2017).

Table 1: Inequality and participation 2010, OLS regressions

	Overall	Productive	Political	Other
<i>Panel A. Membership</i>				
Gini Index, 2010	0.118*	-0.00592	0.169***	-0.0236
	(0.0679)	(0.0163)	(0.0598)	(0.0500)
Observations	7,530	7,530	7,530	7,530
R-squared	0.088	0.032	0.096	0.045
<i>Panel B. Attendance</i>				
Gini Index, 2010	0.155**	-0.00207	0.188***	-0.00431
	(0.0667)	(0.0159)	(0.0581)	(0.0489)
Observations	7,530	7,530	7,530	7,530
R-squared	0.082	0.029	0.091	0.043
<i>Panel C. Leadership</i>				
Gini Index, 2010	0.0671	0.00794	0.0176	0.0547
	(0.0512)	(0.0125)	(0.0417)	(0.0356)
Observations	7,530	7,530	7,530	7,530
R-squared	0.050	0.020	0.040	0.029

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Table 2: Inequality and participation 2013, OLS regressions

	Overall	Productive	Political	Other
<i>Panel A. Membership</i>				
Gini Index, 2010	0.232***	0.0159	0.298***	-0.0658
	(0.0754)	(0.0276)	(0.0662)	(0.0653)
Observations	6,764	6,764	6,764	6,764
R-squared	0.078	0.044	0.091	0.061
<i>Panel B. Attendance</i>				
Gini Index, 2010	0.282***	0.0300	0.294***	-0.0202
	(0.0742)	(0.0251)	(0.0650)	(0.0629)
Observations	6,764	6,764	6,764	6,764
R-squared	0.078	0.039	0.090	0.062
<i>Panel C. Leadership</i>				
Gini Index, 2010	0.0867	0.0174	0.0998**	0.0168
	(0.0559)	(0.0148)	(0.0473)	(0.0389)
Observations	6,764	6,764	6,764	6,764
R-squared	0.045	0.017	0.040	0.026

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Table 2 shows a stronger effect of inequality (measured in 2010) on civic engagement in 2013. The coefficients measuring the effect of income inequality on organization membership and meeting

attendance in 2013 are almost twice the size of the 2010 coefficients and statistically significant at the 1 per cent level. The leadership coefficient is now also statistically significant. These effects weakened in 2016, likely due to a reduction in overall participation between 2013 and 2016, but remain positive and in line with those observed in 2010 and 2013 (Table 3).

Table 3: Inequality and participation 2016, OLS regressions

	Overall	Productive	Political	Other
<i>Panel A. Membership</i>				
Gini Index, 2010	0.0863 (0.0754)	-0.0243 (0.0287)	0.110* (0.0647)	-0.00775 (0.0576)
Observations	6,122	6,122	6,122	6,122
R-squared	0.064	0.050	0.068	0.039
<i>Panel B. Attendance</i>				
Gini Index, 2010	0.0680 (0.0736)	-0.0126 (0.0262)	0.0824 (0.0630)	0.0242 (0.0551)
Observations	6,122	6,122	6,122	6,122
R-squared	0.061	0.046	0.065	0.034
<i>Panel C. Leadership</i>				
Gini Index, 2010	0.104* (0.0601)	0.00196 (0.0147)	0.0779 (0.0495)	0.0458 (0.0428)
Observations	6,122	6,122	6,122	6,122
R-squared	0.053	0.024	0.047	0.026

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

5 Mechanisms

The previous section showed that levels of inequality observed in Colombia in 2010 have been positively associated with levels of individual civic participation in political organizations in 2010, 2013, and 2016, albeit with weaker results observed in 2016. This section focuses on the mechanisms that may explain this result. The discussion in Section 2 emphasized three possible theoretical mechanisms, which we test empirically below. This analysis is constrained to 2013 and 2016 because the data needed to test the mechanisms proposed were not collected in 2010.

First, we postulated that the effect of inequality on civic engagement may be positive when there is a weak dominance of elites over the rest of society or when the resulting civic organizations may benefit elites. The effect of inequality on civic engagement is likely to be negative when elite control is strong, and elites have a vested interest in curtailing civic participation. Directly observing the levels of interest of elites on civic organizations is difficult, since this information is unlikely to be available anywhere. The ELCA survey contains, however, a number of questions about the relationship between local powerful political figures and ordinary citizens that may go some way towards illustrating the control of elites over the social and political system.⁹ The first question is:

⁹ We are aware that the proxies we use here may miss out other important elites such as landowners, industrialists, and powerful families, whose actions may also shape the main results. However, data on relations between non-political elites and ordinary citizens are not available in the datasets we used. We are also not aware of other datasets that would allow such analysis.

‘When deciding to vote, have you ever taken into account benefits, gifts or jobs offered by a candidate in exchange for your vote?’. Clientelism has been linked to lower levels of civic participation in Colombia (Escobar 2002). We interpret the ‘yes’ answers to this question as indicating strong control of elites over ordinary citizens through vote-buying. ELCA also asks whether survey respondents ‘have ever asked the following people for assistance when trying to solve their problems: a congressman (or his aides), the mayor or another council member, or any community leader’. These questions arguably illustrate the level of influence of these figures in each community (Martz 1997).

Table 4 shows that in communities where vote-buying was above the mean in 2013, individual political participation is reduced across all categories (membership, meeting attendance, and leadership). However, the interaction variable indicates that communities with higher levels of inequality *and* where vote-buying is above the mean are characterized by *higher* levels of membership of political organizations, meeting attendance in such organizations, and individuals assuming political leadership positions. The results using other measures of elite influence are similar. Table 4 shows that participation in political organizations is lower in communities where citizens are more likely to ask for assistance from powerful figures. However, as above, the interaction term shows stronger political participation in communities where inequality *and* levels of elite influence are both high. The effect is particularly high when assistance is sought from the mayor or another council member or from a community leader. This is not surprising, since these are the political actors most likely to exercise authority at the local level. The statistical significance of these results is reduced in 2016, with the exception of political leadership in communities with high levels of inequality and influence from community leaders (Table 5). Taken together, these results suggest, in contrast to our initial hypotheses, that high levels of inequality result in higher levels of civic participation when elite dominance and influence is stronger. We return to this result in the final section of the paper.

Table 4: Elite strength, 2013

<i>PANEL A. Q: When deciding your vote, have you ever taken into account benefits, gifts or jobs offered by a candidate in exchange for your vote?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.169** (0.0790)	0.169** (0.0774)	0.0231 (0.0561)
Vote-buying in community above mean	-0.201*** (0.0607)	-0.193*** (0.0599)	-0.110** (0.0444)
Gini 2010*Vote-buying in community above mean	0.354*** (0.132)	0.343*** (0.130)	0.231** (0.0977)
Observations	6,764	6,764	6,764
R-squared	0.094	0.092	0.041
<i>PANEL B. Q: In order to solve your problems, have you ever asked for assistance to: A congressman or any of his aides?</i>			
Gini Index 2010	0.228*** (0.0843)	0.248*** (0.0828)	0.0289 (0.0588)
Help asked to congressman by community members is above mean	-0.0488 (0.0572)	-0.0253 (0.0562)	-0.0704* (0.0404)
Gini 2010*Help asked to congressman by community members is above mean	0.157 (0.122)	0.101 (0.120)	0.161* (0.0862)
Observations	6,764	6,764	6,764
R-squared	0.092	0.091	0.040
<i>PANEL C. Q: In order to solve your problems, have you ever asked for assistance to: The mayor or a council member?</i>			
Gini Index 2010	0.00911 (0.0827)	0.0101 (0.0806)	0.00112 (0.0587)
Help asked to mayor or council by community members is above mean	-0.226*** (0.0604)	-0.217*** (0.0593)	-0.0721* (0.0436)
Gini 2010*Help asked to mayor or council by community members is above mean	0.622*** (0.130)	0.609*** (0.127)	0.211** (0.0936)
Observations	6,764	6,764	6,764
R-squared	0.099	0.098	0.042
<i>PANEL D. Q: In order to solve your problems, have you ever asked for assistance to: Any community leader?</i>			
Gini Index 2010	0.189** (0.0818)	0.181** (0.0804)	0.0567 (0.0585)
Help asked to community leaders by community members is above mean	-0.0857 (0.0585)	-0.0903 (0.0575)	-0.0330 (0.0422)
Gini 2010*Help asked to community leaders by community members is above mean	0.296** (0.127)	0.301** (0.125)	0.118 (0.0910)
Observations	6,764	6,764	6,764
R-squared	0.095	0.094	0.041

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Table 5: Elite strength, 2016

<i>PANEL A. Q: When deciding your vote, have you ever taken into account benefits, gifts or jobs offered by a candidate in exchange for your vote?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.0888 (0.0816)	0.0735 (0.0797)	0.0974 (0.0635)
Vote-buying in community above mean	0.0115 (0.0610)	0.0332 (0.0594)	0.0498 (0.0454)
Gini 2010*Vote-buying in community above mean	0.0419 (0.128)	0.00443 (0.124)	-0.0667 (0.0959)
Observations	6,122	6,122	6,122
R-squared	0.069	0.066	0.048
<i>PANEL B. Q: In order to solve your problems, have you ever asked for assistance to: A congressman or any of his aides?</i>			
Gini Index 2010	0.182** (0.0892)	0.123 (0.0863)	0.0919 (0.0691)
Help asked to congressman by community members is above mean	0.0637 (0.0571)	0.0370 (0.0553)	0.0110 (0.0423)
Gini 2010*Help asked to congressman by community members is above mean	-0.145 (0.121)	-0.0815 (0.117)	-0.0293 (0.0906)
Observations	6,122	6,122	6,122
R-squared	0.068	0.065	0.047
<i>PANEL C. Q: In order to solve your problems, have you ever asked for assistance to: The mayor or a council member?</i>			
Gini Index 2010	0.156** (0.0790)	0.0906 (0.0764)	0.0931 (0.0609)
Help asked to mayor or council by community members is above mean	0.0838 (0.0566)	0.0430 (0.0552)	0.0320 (0.0429)
Gini 2010*Help asked to mayor or council by community members is above mean	-0.153 (0.121)	-0.0479 (0.118)	-0.0538 (0.0918)
Observations	6,122	6,122	6,122
R-squared	0.068	0.066	0.048
<i>PANEL D. Q: In order to solve your problems, have you ever asked for assistance to: Any community leader?</i>			
Gini Index 2010	0.0957 (0.0788)	0.0767 (0.0769)	0.000547 (0.0582)
Help asked to community leaders by community members is above mean	0.0349 (0.0551)	0.0354 (0.0538)	-0.0549 (0.0418)
Gini 2010*Help asked to community leaders by community members is above mean	0.0584 (0.117)	0.0372 (0.114)	0.158* (0.0889)
Observations	6,122	6,122	6,122
R-squared	0.072	0.068	0.049

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Second, we advanced in Section 2 that the effect of inequality on civic engagement may be positive when it promotes social cooperation in non-parochial ways. In order to explore these effects, we make use of two questions included in the ELCA surveys that measure social connectivity and levels of trust between community members. The first question asks whether the respondent has the mobile telephone number of at least half of their neighbours. We interpret this variable as a proxy for social connectivity, a factor known to significantly shape group cooperation, social coordination, and the effectiveness of collective action (Manacorda and Tesei 2016). The results show no statistically significant impact of this variable (when taken into account on its own) on individual political participation (Table 6). However, the interaction variable shows that communities with high levels of inequality *and* high levels of social connectivity are characterized by higher levels of individual political participation in terms of organization membership and meeting attendance. This mechanism appears to have no effect on leadership of political organizations, and loses statistical significance in 2016 (Table 7).

Table 6: Group trust, 2013

<i>PANEL A. Q: Do you have the cellphone number of at least half of your neighbours?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.213*** (0.0815)	0.214*** (0.0801)	0.0553 (0.0581)
Connectedness in community above mean	-0.0495 (0.0551)	-0.0445 (0.0544)	-0.0235 (0.0394)
Gini 2010*Connectedness in community above mean	0.234** (0.120)	0.220* (0.118)	0.123 (0.0845)
Observations	6,764	6,764	6,764
R-squared	0.095	0.094	0.042
<i>PANEL B. Q: Do you think that at least half of your neighbours would immediately lend you COL\$50,000 in case of a medical emergency just with your promise to pay them back?</i>			
Gini Index 2010	0.362*** (0.0889)	0.373*** (0.0874)	0.0880 (0.0633)
Trust within community above mean	0.111* (0.0609)	0.128** (0.0601)	0.0152 (0.0436)
Gini 2010*Trust within community above mean	-0.175 (0.129)	-0.212* (0.127)	0.0126 (0.0912)
Observations	6,764	6,764	6,764
R-squared	0.092	0.091	0.040

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

The second question asks the following: 'Do you think at least half of your neighbours would immediately lend you COL\$50,000 in case of a medical emergency just with your promise to pay them back?'. This variable is a relevant measure of social trust, since it involves a loan of a substantial amount of money: for instance, the average daily wage of farm labourers in the sample is COL\$17,000 in 2010, COL\$20,000 in 2013, and COL\$25,000 in 2016. The results reported in Table 6 suggest that individual membership of political organizations and meeting attendance is higher among respondents who are more likely to be trusted by their neighbours. The interaction term—in contrast to the previous result—has a negative coefficient, indicating that political participation is lower in communities with high levels of inequality and high levels of social trust. However, only the coefficient for meeting attendance is statistically significant. This may suggest

that high levels of social trust among community members crowd out the need to join political organizations in order to curtail it, since the strength of social networks may reduce reliance on support from formal organizations. This is an effect observed in other studies, where it has been shown that high levels of interpersonal trust may crowd out more impersonal forms of collective action (Alesina and Giuliano 2011). This effect is not present in 2016 (Table 7).

Table 7: Group trust, 2016

<i>PANEL A. Q: Do you have the cellphone number of at least half of your neighbours?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.0849 (0.0785)	0.0773 (0.0772)	0.0876 (0.0603)
Connectedness in community above mean	-0.000972 (0.0549)	0.0274 (0.0529)	0.0451 (0.0417)
Gini 2010*Connectedness in community above mean	0.0462 (0.119)	-0.0128 (0.114)	-0.0541 (0.0895)
Observations	6,122	6,122	6,122
R-squared	0.068	0.065	0.048
<i>PANEL B. Q: Do you think that at least half of your neighbours would immediately lend you COL\$50,000 in case of a medical emergency just with your promise to pay them back?</i>			
Gini Index 2010	0.0393 (0.0837)	0.00831 (0.0815)	0.110* (0.0644)
Trust within community above mean	-0.0477 (0.0554)	-0.0489 (0.0535)	0.0515 (0.0411)
Gini 2010*Trust within community above mean	0.169 (0.118)	0.177 (0.113)	-0.0782 (0.0874)
Observations	6,122	6,122	6,122
R-squared	0.069	0.067	0.048

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Finally, we hypothesized in Section 2 that the effect of inequality on civic engagement is positive when individual aspirations are high. Measuring aspirations empirically is challenging and, like most other researchers (see, for example, Ray 2006), we do not have access to any direct measures. However, ELCA includes relevant questions asked of a small sample of households with children below the age of 10 in 2010. Although we are aware of the shortcomings of using such a selective sample, we find the results illustrative and complementary to the two mechanisms analysed above. We measure individual aspirations using two related questions about whether young individuals in the respondent's household think they will ever obtain a university degree or buy their own house. Answers to these questions are provided by children and adolescents in the household whose ages range from 10 to 13 years in 2013, and from 10 to 16 in 2016. We interpret these variables as an indication of the overall aspirations of the household and its members. The interaction variables in Table 8 (which test the relevant mechanisms) show that educational and house ownership aspirations above the mean in high-inequality communities result in higher levels of membership of political organizations and meeting attendance (though only educational aspirations are statistically significant). One possible interpretation is that wanting to achieve a university degree or own a house is an aspiration that may result in participation in organizations that may enable such aspirations to be realized in the future. As with the other mechanisms, the results are weaker in 2016 (Table 9).

Table 8: Aspirations, 2013

<i>PANEL A. Q: Do you think you will ever: Earn a university degree?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.179* (0.0971)	0.181* (0.0951)	0.0206 (0.0678)
Education aspirations in community above mean	-0.0933* (0.0564)	-0.0897 (0.0554)	-0.0577 (0.0405)
Gini 2010*Education aspirations in community above mean	0.208* (0.121)	0.199* (0.119)	0.135 (0.0863)
Observations	6,764	6,764	6,764
R-squared	0.092	0.090	0.040
<i>PANEL B. Q: Do you think you will ever: Buy your own house?</i>			
Gini Index 2010	0.164 (0.112)	0.158 (0.110)	0.000895 (0.0773)
Home ownership aspirations in community above mean	-0.0690 (0.0590)	-0.0714 (0.0580)	-0.0498 (0.0414)
Gini 2010*Home ownership aspirations in community above mean	0.184 (0.128)	0.187 (0.126)	0.136 (0.0889)
Observations	6,764	6,764	6,764
R-squared	0.092	0.090	0.040

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

Table 9: Aspirations 2016

<i>PANEL A. Q: Do you think you will ever: Earn a university degree?</i>	Membership political	Attendance political	Leadership political
Gini Index 2010	0.0136 (0.0985)	0.0142 (0.0964)	0.0275 (0.0725)
Education aspirations in community above mean	-0.0683 (0.0553)	-0.0475 (0.0539)	-0.0228 (0.0410)
Gini 2010*Education aspirations in community above mean	0.152 (0.120)	0.107 (0.117)	0.0674 (0.0893)
Observations	6,122	6,122	6,122
R-squared	0.068	0.065	0.048
<i>PANEL B. Q: Do you think you will ever: Buy your own house?</i>			
Gini Index 2010	0.333** (0.134)	0.214* (0.127)	0.0794 (0.0936)
Home ownership aspirations in community above mean	0.116* (0.0668)	0.0697 (0.0642)	0.0109 (0.0476)
Gini 2010*Home ownership aspirations in community above mean	-0.267* (0.146)	-0.158 (0.140)	-0.00519 (0.103)
Observations	6,122	6,122	6,122
R-squared	0.068	0.065	0.047

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. All regressions include controls for covariate violent shocks at the community level, controls for community and household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA.

5 Robustness tests

5.1 Reverse causality

One important concern with our main results is that of reverse causality. As discussed in Section 2, inequality may impact on civic engagement but it is also shaped by forms of civic participation. It is, therefore, possible that participation in civic organizations will affect levels of inequality in each community, a factor that will substantially bias the above results. It is unlikely that reverse causality will bias the results in the 2013 and 2016 regressions, since income inequality is measured in 2010. However, given that both variables are measured in the same year in the 2010 regressions, it is possible that the results in Table 1 may be biased. One way of addressing these potential endogeneity concerns would be to use an instrumental variable model. However, this is challenging because it is unlikely that we will be able to find a purely exogenous variable that will affect civic participation only via income inequality. Another way of assessing potential reverse causality is to examine the effect of past levels of inequality on current levels of civic participation. To do this, we included in the regressions a measure for inequality calculated in 2005 as an additional control variable. Assuming path dependence between inequality measures (see Sen 1973), this exercise allows us to control for initial conditions in inequality. This analysis is reported in Table A4. The results do not show significant changes when compared with the coefficients discussed above.

5.2 Omitted variable bias

The inclusion of rich sets of individual- and community-level controls and the use of municipality fixed effects go a long way towards reducing any potential omitted variable bias. However, it is still possible that unobservable variables—for instance, the institutional setting of each community—may bias the above results. One important omitted variable may be the fact that Colombia experienced armed conflict and violent crime events at sporadic times in 2010, 2013, and 2016. Colombia has experienced major internal conflicts over the last 50 years, which have resulted in around 170,000 deaths and over 5 million displaced people (Grupo de Memoria Histórica 2013). The conflict in its various forms has profoundly affected local forms of collective action and civic engagement (Acemoglu et al. 2013; Arjona 2016; Grupo de Memoria Histórica 2010; Ronderos 2014; Sánchez and Palau 2006). In some cases, armed groups deliberately destroyed social networks and community organizations (Grupo de Memoria Histórica 2010, 2011a), captured local organizations, and created new organizations and leaders (Gáfaro et al. 2014). For instance, armed groups forced the population to attend JAC sessions and coerced its members into participating in public works (Arjona 2016). Community members attended meetings and participated in organizations out of fear. Paramilitary groups, in particular, used community organizations to construct infrastructure, disseminate their rules of social behaviour, and collect valuable information for war activities (Ronderos 2014). In other cases, armed groups faced civil resistance in communities with strong organizations (Arjona 2016; Kaplan 2017). Communities also adopted more covert ways of resistance by creating new organizations with an apparently non-political purpose, such as sporting, religious, and cultural organizations (Grupo de Memoria Histórica 2011b, 2013). Many of these are listed under ‘other’ organizations in the analysis above. Taken together, this evidence suggests that conflict may be an important omitted variable in the regressions above, leading to a potential overestimation of the effect of inequality if both inequality and participation in political organizations are shaped by the legacy of conflict dynamics.

In order to test this, we use data on armed group presence (see Arjona 2016) and the incidence of violent events at the community levels included in ELCA. With regard to armed group presence, we define presence as prolonged if any armed actor was continuously present in the community for at least six consecutive months throughout the whole span of the conflict. Of the 224

communities on the sample, 35 reported the prolonged presence of armed groups, while 14.3 per cent of the ELCA sample reported a violent event (Table A3). In order to assess whether the main results we report above might be biased by these conflict-related variables, we added them as additional controls; we report these results in Table A5. The table shows that the results discussed above are unlikely to be biased by the exposure of individuals to violent events or the prolonged presence of armed groups in their community.

In order to explore further potential omitted variable biases, we analyse the effect of omitted variable biases on regression results by determining whether unobservable characteristics would reduce the estimated coefficient of interest to zero.¹⁰ The empirical strategy to account for potential omitted variable bias is based on the observation that, assuming that observable and unobservable factors have the same explanatory power, a consistent estimator of the impact of the main dependent variable (in our case, inequality) on the dependent variable (individual civic engagement) can be expressed as:

$$\bar{\beta} = \beta^* - (\beta - \beta^*) * (R_{max} - R^*) / (R^* - R) \quad (2)$$

where β^* is the coefficient resulting from the regression after the inclusion of all observable covariates, while β is the coefficient resulting from the regression without covariates (González and Miguel 2015.). We compute these two values using OLS. R_{max} is the value of R^2 when we can control for all observable and unobservable factors.

Tables A6, A7, and A8 report the results of these tests for each year, respectively. Each column reports the ‘consistent’ value of β measured under the different assumptions on R_{max} . The tables show that omitted variables are unlikely to substantially affect the main results, given that most bounds in the three tables are positive. Some uncertainty remains for the leadership variable under conservative assumptions for R_{max} in 2010 and the meeting attendance variable under also restrictive assumptions in 2016. However, given the stability of the coefficients across the robustness tests above and the fact that most bounds are positive, it is unlikely that omitted variables could significantly bias the main results discussed above.

5.3 Alternative measures of inequality

In order to test the strength of the main results discussed above, we replicated all regressions using alternative measures of inequality: General Entropy GE(a) with $a=1$ and the Atkinson Index AI(e) with $e=1$. The results (shown in Table A9) remain largely unchanged. Similar results were also obtained with other variations in GE and the Atkinson Index and are available upon request from the authors.

5.4 The role of migration

Another identification concern arises from the possibility that the impact of inequality on civic engagement discussed above is affected by individual decisions to migrate. It is possible that individuals who are less (more) tolerant towards inequality and less (more) inclined to engage in civic organizations will choose to migrate, leading to an overestimation of the coefficients discussed in the previous section. The existing literature shows evidence of a relationship between

¹⁰ In this, we follow González and Miguel (2015) and Oster (2017), who propose a simple strategy based on Altonji et al. (2005). Altonji et al. (2005) propose assessing the extent of a potential omitted variable bias by observing changes in coefficients after including controls, while Oster (2017) argues that it is also important to take into consideration movements in R-squared values.

migration decisions and income distribution (for instance, Blau and Kahn 2012). Therefore, migration movements—which have been substantial in Colombia, particularly in areas affected by conflict and violence (Engel and Ibáñez 2007)—may affect our main results. In addition, individuals facing certain levels of inequality may decide to migrate to other communities, where their decision to participate in civic engagement may be influenced by other factors that we may potentially not observe (chiefly, the inequality level in the community of arrival). In order to address these concerns, we replicated the main estimations in Tables 1, 2, and 3 but restricted the sample to (i) individuals who did not migrate during the particular period under consideration (Table A10), and (ii) individuals who did not migrate in any of the periods considered in the analysis (Table A11). The tables show that using these subsamples does not greatly affect the main results. This reassures us that the effects discussed in the previous section are not driven by migrant households.

6 Conclusion

The main objective of this paper was to analyse the effects of inequality on individual participation in civic organizations, whether the effects persist over time, and what mechanisms may shape the relationship between inequality and participation. This was done for the case of Colombia, using detailed administrative data on inequality, and longitudinal information on individual-level participation in local collective organizations in 2010, 2013, and 2016. The main results show that income inequality in Colombia is positively associated with individual participation in local community organizations, in terms of membership, meeting attendance, and leadership. This result is mainly driven by individual participation in political organizations, particularly JACs, which have considerable influence in local decisions.

The analysis of several theoretical mechanisms indicates that the positive effect of inequality on individual civic participation is strongest in communities with strong elite dominance and influence, with high levels of social connectivity, and where households exhibit higher aspirations. Although we expected to observe the last two results, the first result is surprising. Two alternative factors may explain it. On the one hand, it may be that political organizations in areas of strong elite dominance are of interest to the elites themselves and thus increased civic participation is encouraged—or enforced—in these communities. On the other hand, we may be observing an increase in civic engagement as a retaliation against the role of elites and their influence. Much more detailed data would be necessary to mediate between these two potential explanations.

This positive association between inequality and civic participation is observed in 2010 and 2013, but shows signs of weakening in 2016, at the same time that participation in collective organizations decreases. It is not immediately clear why we observe this reduction in participation, or a weaker effect of inequality on civic engagement across time, and we can only postulate about it. The period between 2010 and 2013 marked the end of the Uribe presidency, characterized by heavy-handed policing of social movements perceived to be associated with guerrilla groups. It also marked the start of the peace process, which has strengthened collective movements, particularly trade unions and peasant associations attempting to voice grievances that have persisted across time.¹¹ Although the cessation of hostilities was welcomed by the vast majority of the population, it also brought to light the persistence of social injustices, inequalities, and ill-feeling among many social groups in Colombia. However, social movement leaders have been

¹¹ <https://www.tni.org/en/article/peasants-mobilized-in-colombia-the-strike-is-finished-the-struggle-continues> (accessed 14 October 2019).

targets of extreme violence in Colombia in recent years—a fact that may underlie the reduction of participation in civic organizations in 2016, even though inequalities have remained high.¹² Increases in political polarization in Colombia may have also contributed to this result.¹³ Adjudicating empirically between these many factors is difficult with the data currently available, and future research should attempt to collect more detailed information on the composition of social movements and other forms of collective action, as well as motivations for individual participation in them, particularly as they may change over time. We hope the results in this paper will motivate new research to address these important questions, particularly in contexts of high or rising inequality, where participation in civic organizations may be re-shaped in ways that will change state–citizen relations and the exercise of citizenship rights. These questions are of particular importance in contexts of weak state institutions, where civic participation and collective action are key to local social, economic, and political organization.

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¹² See www.observatoriodeltierras.org/donde-y-como-estan-matando-a-los-lideres-rurales-variables-municipales-en-el-asesinato-de-lideres-sociales-rurales/ (in Spanish) and <http://focoeconomico.org/2018/05/22/las-consecuencias-inesperadas-de-la-paz-el-caso-del-asesinato-de-lideres-sociales-en-colombia/> (in Spanish) (accessed 14 October 2019).

¹³ <http://time.com/5316992/colombia-elections-duque-political-divide/> (accessed 14 October 2019).

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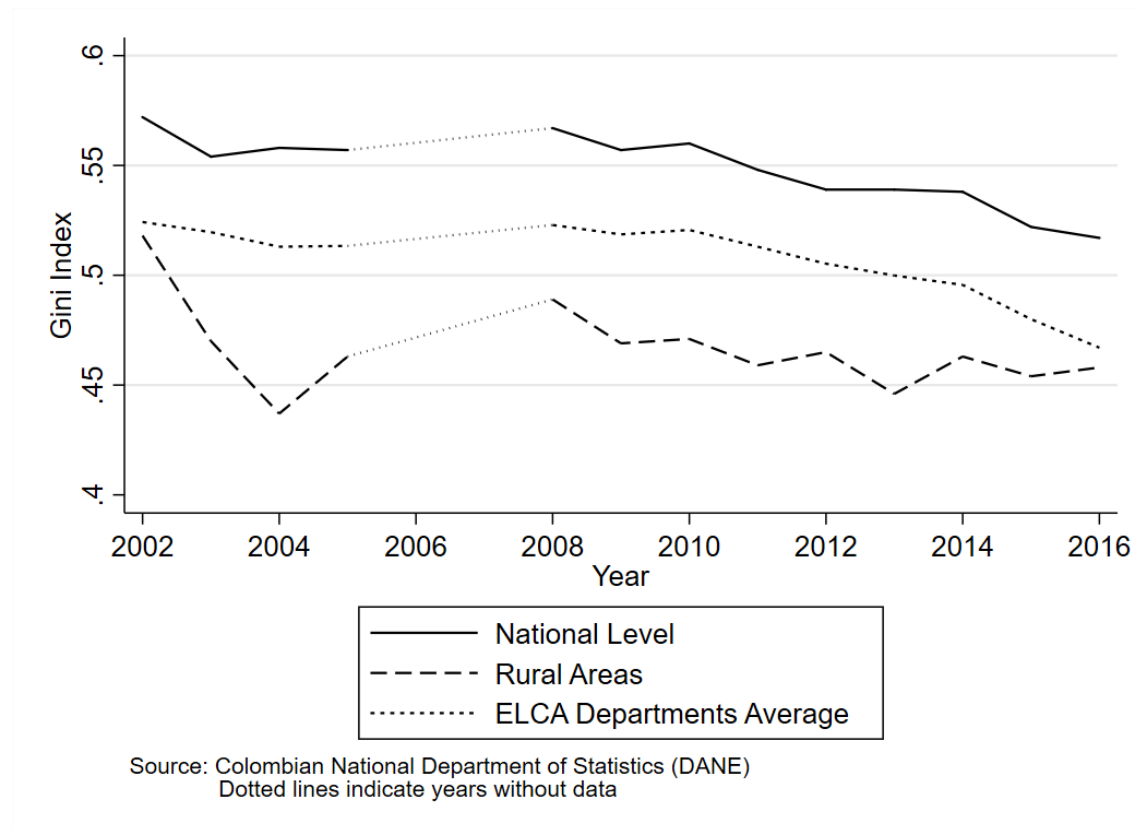
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Appendix

Figure A1: Inequality in Colombia, 2002–15



Note: dotted lines indicate years without data.

Source: Colombian National Department of Statistics (DANE).

Table A1: Inequality measures in ELCA communities, 2005 and 2010

	2005	2010
Gini Index	0.38 (0.05)	0.46 (0.09)
Generalized Entropy (e=0)	0.35 (0.10)	0.50 (0.20)
Generalized Entropy (e=1)	0.27 (0.08)	0.42 (0.22)
Atkinson Index (a=1)	0.29 (0.07)	0.38 (0.11)
Atkinson Index (a=2)	0.64 (0.15)	0.73 (0.17)
P90/P10 Ratio	10.82 (8.04)	18.45 (18.42)
Number of observations	224	224

Standard errors in brackets.

Source: Authors' calculations based on ELCA and SISBEN.

Table A2: Participation in collective organizations in Colombia, 2010–16

	2010	2013	2016
Membership in organization	25.0	32.8	26.3
Membership productive associations	1.2	3.5	4.2
Membership political organizations	16.4	18.9	15.8
Membership other organizations	10.4	19.1	12.1
Meeting attendance	23.2	30.8	24.3
Meeting attendance productive associations	1.1	3.0	3.8
Meeting attendance political organizations	14.8	17.8	14.8
Meeting attendance other organizations	9.9	17.8	10.9
Leader in organization	10.5	12.9	12.9
Leader in productive associations	0.5	0.9	1.2
Leader in political organizations	6.7	8.1	8.2
Leader in other organizations	4.4	6.3	5.7
Number of observations	7530	6764	6122

Source: Authors' calculations based on ELCA.

Table A3: Sample characteristics in 2010

Individual (N=7,530)		
Age		43.60 (12.84)
Male (%)		48.6
Household head (%)		56.1
Number of years attended school		4.69 (3.68)
Worked in wage labour in the past year (%)		22.8
Community (N=224)		
Armed group presence (%)		15.6
Covariate violence shock (%)		14.3
Number of households in community		87.956 (86.12)
Distance to municipality's main town (km)		0.667 (0.62)
Lack of water is a problem for agriculture (%)		47.5
Number of state institutions in community		3.304 (2.24)
Altitude (m)		1,110.6 (959.6)
Distance to main road (km)		8.76 (9.87)
Distance to closest river (km)		15.369 (12.87)
Distance to state capital (km)		66.389 (40.39)
Market Insertion Index		0.162 (0.37)

Source: Authors' calculations based on ELCA and NSAA data.

Table A4: Controlling for income inequality in 2005

	2010	2013	2016
<i>Membership</i>			
Overall	0.0850 (0.0685)	0.199*** (0.0760)	0.0672 (0.0765)
Productive	-0.00730 (0.0158)	0.0105 (0.0279)	-0.0331 (0.0295)
Political	0.151** (0.0605)	0.279*** (0.0665)	0.0996 (0.0657)
Other	-0.0391 (0.0512)	-0.0903 (0.0658)	-0.0199 (0.0584)
<i>Assistance</i>			
Overall	0.127* (0.0674)	0.248*** (0.0747)	0.0451 (0.0747)
Productive	-0.00342 (0.0154)	0.0232 (0.0255)	-0.0212 (0.0271)
Political	0.175*** (0.0588)	0.274*** (0.0652)	0.0688 (0.0641)
Other	-0.0190 (0.0500)	-0.0437 (0.0634)	0.0103 (0.0559)
<i>Leadership</i>			
Overall	0.0543 (0.0518)	0.0714 (0.0566)	0.0880 (0.0613)
Productive	0.00493 (0.0115)	0.0112 (0.0150)	-0.0018 (0.0153)
Political	0.0165 (0.0423)	0.0957** (0.0480)	0.0712 (0.0506)
Other	0.0442 (0.0362)	0.000662 (0.0393)	0.0357 (0.0435)
Observations	7,530	6,764	6,122

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Each pair of values shows the estimated coefficient and its robust standard error for a separate regression where the main independent variable is an inequality measure in 2010 (columns) and the dependent variable is a civic engagement outcome (rows). All regressions include each community's 2005 Gini Index, controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA and NSAA data.

Table A5: Controlling for armed group presence and violent shocks

	2010	2013	2016
<i>Membership</i>			
Overall	0.0618 (0.0688)	0.183** (0.0764)	0.0452 (0.0773)
Productive	-0.00348 (0.0162)	0.0230 (0.0287)	-0.0279 (0.0304)
Political	0.126** (0.0605)	0.273*** (0.0665)	0.0843 (0.0662)
Other	-0.0400 (0.0514)	-0.103 (0.0657)	-0.0310 (0.0593)
<i>Assistance</i>			
Overall	0.0991 (0.0677)	0.231*** (0.0751)	0.0227 (0.0754)
Productive	-0.00008 (0.0158)	0.0352 (0.0262)	-0.0176 (0.0279)
Political	0.147** (0.0587)	0.263*** (0.0652)	0.0569 (0.0645)
Other	-0.0232 (0.0503)	-0.0502 (0.0633)	-0.0007 (0.0567)
<i>Leadership</i>			
Overall	0.0407 (0.0521)	0.0638 (0.0568)	0.0813 (0.0620)
Productive	0.00660 (0.0118)	0.0125 (0.0157)	-0.0005 (0.0159)
Political	-0.00046 (0.0425)	0.0938* (0.0482)	0.0708 (0.0510)
Other	0.0439 (0.0363)	-0.00900 (0.0394)	0.0325 (0.0444)
Observations	7,530	6,764	6,122

Notes: *** p<0.01, ** p<0.05, * p<0.1. Each pair of values shows the estimated coefficient and its robust standard error for a separate regression where the main independent variable is an inequality measure in 2010 (columns) and the dependent variable is a civic engagement outcome (rows). All regressions include controls for non-state armed groups presence and for covariate violent shocks occurring at the community level. Regressions also include each community's 2005 Gini Index, controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA and NSAA data.

Table A6: Testing for omitted variable bias, 2010

	Regression without controls	Regression with controls	$R_{Max} = 1.3\tilde{R}$	$R_{Max} = 2\tilde{R} - \hat{R}$	$R_{Max} = 2.2\tilde{R}$	$R_{Max} = 0.3$	$R_{Max} = 0.5$
<i>Panel A. Membership political organization</i>							
2010 Gini	0.2441 (0.049)	0.169*** (0.060)	[0.145,0.169]	[0.094,0.169]	[0.075,0.169]	[0.003,0.169]	[-0.159,0.169]
R-squared	0.003	0.096	-	-	-	-	-
R _{Max}	-	-	0.125	0.188	0.211	0.3	0.5
<i>Panel B. Assistance political organization</i>							
2010 Gini	0.2274 (0.047)	0.188*** (0.058)	[0.176,0.188]	[0.149,0.188]	[0.139,0.188]	[0.094,0.188]	[0.003,0.188]
R-squared	0.003	0.091	-	-	-	-	-
R _{Max}	-	-	0.118	0.178	0.199	0.3	0.5
<i>Panel C. Leadership political organization</i>							
2010 Gini	0.0457 (0.033)	0.018 (0.042)	[0.010,0.018]	[-0.010,0.018]	[-0.015,0.018]	[-0.163,0.018]	[-0.302,0.018]
R-squared	0.000	0.040	-	-	-	-	-
R _{Max}	-	-	0.052	0.08	0.088	0.3	0.5

Notes: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable in italics. \tilde{R} is the R² for regressions with all controls for each dependent variable. \hat{R} denotes the R² for regressions without controls. Set intervals estimation using an equal proportional selection assumption. Controls include age, gender, household head indicator, education level, occupational status, violent covariate shocks suffered, Gini Index for 2005, and the set of community characteristics. Robust standard errors in parentheses.

Source: Authors' calculations based on ELCA and NSAA data.

Table A7: Testing for omitted variable bias, 2013

	Regression without controls	Regression with controls	$R_{Max} = 1.3\tilde{R}$	$R_{Max} = 2\tilde{R} - \hat{R}$	$R_{Max} = 2.2\tilde{R}$	$R_{Max} = 0.3$	$R_{Max} = 0.5$
<i>Panel A. Membership political organization</i>							
2010 Gini	0.4056 (0.054)	0.298*** (0.061)	[0.262,0.298]	[0.191,0.298]	[0.156,0.298]	[0.027,0.298]	[-0.233,0.298]
R-squared	0.008	0.091	-	-	-	-	-
R _{Max}	-	-	0.119	0.174	0.201	0.3	0.5
<i>Panel B. Assistance political organization</i>							
2010 Gini	0.3953 (0.053)	0.294*** (0.060)	[0.260,0.294]	[0.192,0.294]	[0.160,0.294]	[0.033,0.294]	[-0.215,0.294]
R-squared	0.008	0.090	-	-	-	-	-
R _{Max}	-	-	0.117	0.172	0.198	0.3	0.5
<i>Panel C. Leadership political organization</i>							
2010 Gini	0.0951 (0.038)	0.100** (0.044)	[0.100,0.101]	[0.100,0.105]	[0.100,0.106]	[0.100,0.133]	[0.100,0.159]
R-squared	0.001	0.040	-	-	-	-	-
R _{Max}	-	-	0.051	0.078	0.087	0.3	0.5

Notes: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable in italics. \tilde{R} is the R² for regressions with all controls for each dependent variable. \hat{R} denotes the R² for regressions without controls. Set intervals estimation using an equal proportional selection assumption. Controls include age, gender, household head indicator, education level, occupational status, violent covariate shocks suffered, Gini Index for 2005, and the set of community characteristics. Robust standard errors in parentheses.

Source: Authors' calculations based on ELCA and NSAA data.

Table A8: Testing for omitted variable bias, 2016

	Regression without controls	Regression with controls	$R_{Max} = 1.3\tilde{R}$	$R_{Max} = 2\tilde{R} - \hat{R}$	$R_{Max} = 2.2\tilde{R}$	$R_{Max} = 0.3$	$R_{Max} = 0.5$
<i>Panel A. Membership political organization</i>							
2010 Gini	0.1708 (0.061)	0.166** (0.080)	[0.165,0.166]	[0.161,0.166]	[0.160,0.166]	[0.054,0.166]	[-0.024,0.166]
R-squared	0.001	0.013	-	-	-	-	-
R _{Max}	-	-	0.017	0.026	0.03	0.3	0.5
<i>Panel B. Assistance political organization</i>							
2010 Gini	0.1745 (0.060)	0.141* (0.079)	[0.130,0.141]	[0.108,0.141]	[0.096,0.141]	[-0.733,0.141]	[-1.340,0.141]
R-squared	0.001	0.012	-	-	-	-	-
R _{Max}	-	-	0.016	0.023	0.027	0.3	0.5
<i>Panel C. Leadership political organization</i>							
2010 Gini	0.0483 (0.044)	0.096 (0.059)	[0.096,0.110]	[0.096,0.145]	[0.096,0.152]	[0.096,2.151]	[0.096,3.554]
R-squared	0.000	0.007	-	-	-	-	-
R _{Max}	-	-	0.009	0.014	0.015	0.3	0.5

Notes: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable in italics. \tilde{R} is the R² for regressions with all controls for each dependent variable. \hat{R} denotes the R² for regressions without controls. Set intervals estimation using an equal proportional selection assumption. Controls include age, gender, household head indicator, education level, occupational status, violent covariate shocks suffered, Gini index for 2005 and the set of community characteristics. Robust standard errors in parentheses.

Source: Authors' calculations based on ELCA and NSAA data.

Table A9: Results with alternative inequality measures

	2010		2013		2016	
	General Entropy ($\alpha=1$)	Atkinson Index ($\epsilon=1$)	General Entropy ($\alpha=1$)	Atkinson Index ($\epsilon=1$)	General Entropy ($\alpha=1$)	Atkinson Index ($\epsilon=1$)
<i>Membership</i>						
Overall	0.0420 (0.0261)	0.0743 (0.0573)	0.0784*** (0.0294)	0.150** (0.0631)	0.0355 (0.0293)	0.0568 (0.0640)
Productive	-0.00416 (0.00666)	-0.0171 (0.0132)	0.00277 (0.0111)	0.0000147 (0.0233)	-0.0158 (0.0113)	-0.0477* (0.0252)
Political	0.0669*** (0.0227)	0.126** (0.0510)	0.109*** (0.0259)	0.210*** (0.0559)	0.0633** (0.0253)	0.0806 (0.0554)
Other	-0.0198 (0.0193)	0.00293 (0.0423)	-0.0274 (0.0251)	-0.0820 (0.0539)	-0.0188 (0.0221)	0.0292 (0.0474)
<i>Assistance</i>						
Overall	0.0588** (0.0257)	0.115** (0.0565)	0.0962*** (0.0290)	0.185*** (0.0620)	0.0327 (0.0286)	0.0233 (0.0623)
Productive	-0.00288 (0.00659)	-0.0141 (0.0131)	0.00514 (0.0102)	0.00855 (0.0215)	-0.00956 (0.0104)	-0.0409* (0.0233)
Political	0.0758*** (0.0221)	0.150*** (0.0497)	0.108*** (0.0256)	0.209*** (0.0549)	0.0497** (0.0245)	0.0475 (0.0541)
Other	-0.00897 (0.0191)	0.0147 (0.0413)	-0.0140 (0.0242)	-0.0445 (0.0521)	-0.00553 (0.0216)	0.0448 (0.0453)
<i>Leadership</i>						
Overall	0.0358* (0.0199)	0.0667 (0.0428)	0.0391* (0.0219)	0.0242 (0.0470)	0.0501** (0.0241)	0.0650 (0.0507)
Productive	0.000309 (0.00505)	0.00527 (0.00916)	0.00587 (0.00592)	0.00569 (0.0124)	-0.00555 (0.00579)	-0.00590 (0.0139)
Political	0.0180 (0.0161)	0.0228 (0.0354)	0.0471** (0.0186)	0.0549 (0.0404)	0.0483** (0.0204)	0.0432 (0.0423)
Other	0.0211 (0.0138)	0.0532* (0.0295)	0.00527 (0.0154)	-0.0178 (0.0321)	0.0112 (0.0172)	0.0494 (0.0352)
Observations	7,530	7,530	6,764	6,764	6,122	6,122

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Each pair of values shows the estimated coefficient and its robust standard error for a separate regression where the main independent variable is an inequality measure in 2010 (columns) and the dependent variable is a civic engagement outcome (rows). Each regression includes all community- and individual-level controls, and municipality fixed effects. Controls are age, gender, household head indicator, education level, occupational status, the same inequality measure calculated for year 2005, violent covariate shocks suffered, and the set of community controls. General Entropy measures are calculated setting the parameter ($\alpha=1$) and are thus equivalent to Theil's Index. Atkinson Index measures are calculated setting the parameter ($\epsilon=1$). Varying these parameters or using alternative inequality measures (e.g. inter-decile ratios, Palma Index) yields qualitatively identical results to the ones shown.

Source: Authors' calculations based on ELCA and NSAA data.

Table A10: Controlling for migration in each year

	2010	2013	2016
<i>Membership</i>			
Overall	0.118* (0.0679)	0.257*** (0.0849)	0.0729 (0.0921)
Productive	-0.00592 (0.0163)	0.0339 (0.0313)	-0.0325 (0.0352)
Political	0.169*** (0.0598)	0.347*** (0.0761)	0.118 (0.0796)
Other	-0.0236 (0.0500)	-0.0774 (0.0739)	-0.0363 (0.0709)
<i>Assistance</i>			
Overall	0.155** (0.0667)	0.315*** (0.0836)	0.0574 (0.0901)
Productive	-0.00207 (0.0159)	0.0469* (0.0284)	-0.0238 (0.0317)
Political	0.188*** (0.0581)	0.348*** (0.0748)	0.1000 (0.0779)
Other	-0.00431 (0.0489)	-0.0350 (0.0712)	0.0154 (0.0680)
<i>Leadership</i>			
Overall	0.0671 (0.0512)	0.0981 (0.0640)	0.129* (0.0745)
Productive	0.00794 (0.0125)	0.0165 (0.0172)	-0.0017 (0.0193)
Political	0.0176 (0.0417)	0.114** (0.0542)	0.0989 (0.0617)
Other	0.0547 (0.0356)	0.0290 (0.0453)	0.0611 (0.0524)
Observations	7,530	5,398	4,366

Notes: *** p<0.01, ** p<0.05, * p<0.1. Each pair of values shows the estimated coefficient and its robust standard error for a separate regression where the main independent variable is an inequality measure in 2010 (columns) and the dependent variable is a civic engagement outcome (rows). All regressions include each community's 2005 Gini Index, controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA and NSAA data.

Table A11: Controlling for migration across all years

	2010	2013	2016
<i>Membership</i>			
Overall	0.0858 (0.0843)	0.259*** (0.0907)	0.0729 (0.0921)
Productive	0.00355 (0.0185)	0.0222 (0.0336)	-0.0325 (0.0352)
Political	0.201*** (0.0761)	0.363*** (0.0808)	0.118 (0.0796)
Other	-0.0917 (0.0614)	-0.134* (0.0796)	-0.0363 (0.0709)
<i>Assistance</i>			
Overall	0.0995 (0.0831)	0.319*** (0.0893)	0.0574 (0.0901)
Productive	0.00321 (0.0184)	0.0337 (0.0301)	-0.0238 (0.0317)
Political	0.207*** (0.0743)	0.362*** (0.0793)	0.1000 (0.0779)
Other	-0.0785 (0.0599)	-0.0862 (0.0766)	0.0154 (0.0680)
<i>Leadership</i>			
Overall	0.0522 (0.0626)	0.103 (0.0686)	0.129* (0.0745)
Productive	0.00311 (0.0149)	0.0113 (0.0188)	- (0.0193)
Political	0.0330 (0.0533)	0.124** (0.0582)	0.0989 (0.0617)
Other	0.0267 (0.0414)	0.0238 (0.0489)	0.0611 (0.0524)
Observations	4,969	4,814	4,366

Notes: *** p<0.01, ** p<0.05, * p<0.1. Each pair of values shows the estimated coefficient and its robust standard error for a separate regression where the main independent variable is an inequality measure in 2010 (columns) and the dependent variable is a civic engagement outcome (rows). All regressions include each community's 2005 Gini Index, controls at the community level, controls for household characteristics, and municipality fixed effects.

Source: Authors' calculations based on ELCA and NSAA data.