

DISCUSSION PAPER SERIES

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and Protests**

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ABSTRACT

Social Gaps, Perceived Inequality and Protests*

Latent feelings of economic vulnerability and social stagnation may have catalyzed the unprecedented uprisings that shook Latin America and other parts of the world in 2018-2019. We document this process in the context of Chile, leveraging survey data on protest participation and its potential determinants. Specifically, we construct a “social gap” index, measuring the disconnect between objective and perceived social status. Our findings suggest that this social gap predicts protest involvement beyond factors such as perceived living costs, the subjective value of public services, peer influence, or political demands. Notably, it complements broader feelings of anger toward inequalities in explaining protests.

Keywords: protests, social gap, perceived inequality, social status

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1. Introduction

Feelings of social stagnation and economic insecurity have played a crucial role in recent political shifts, particularly in bolstering support for radical and populist movements in Western countries. Research has extensively documented how economic downgrading and insecurity—whether caused by globalization (Autor et al., 2020), austerity policies (Fetzer, 2019; Baccini and Sattler, 2024; Justino et al., 2023), or a combination of both (Algan et al., 2017; Bossert et al., 2023; Guiso et al., 2024)—has contributed to shift electoral behavior in the US or in Europe. However, less attention has been paid to how similar perceptions and grievances translate into social protests, in particular during the unprecedented global wave of unrest in 2019 (Justino and Martorano, 2016, 2019; Justino et al., 2019). Our research provides new evidence on the distributional and psychological determinants of mass mobilizations in Latin America: we focus on the November 2019 protests in Chile (*Estallido*), which began as a student movement but quickly escalated into a broader outcry. While each protest had specific local triggers—such as metro fare hikes in Chile or the removal of gasoline subsidies in Ecuador—these events were largely fueled by widespread perceptions of social frustration amid unjust political and economic systems, rising living costs, and deteriorating public services.

So far, the literature has focused mainly on objective measures of inequality or relative deprivation to explain protests. Actual disparities may matter, for instance the role of regional inequities in France during the Yellow Vest movement (Algan et al., 2019) or top-income inequality rooted in neoliberal policies since the Pinochet era in Chile (Palacios-Valladares, 2017). Yet, capturing the role of inequality dynamics is challenging (Solt, 2008) and evidence is mixed.¹ The Latin American case highlights well this difficulty: the 2019 protests erupted after two decades of *declining* inequality, suggesting that frustration arose not from worsening conditions but from the perception that progress was incomplete and insufficient (Ferreira and Schoch, 2020).² This highlights the need to focus instead on subjective inequality and, more specifically, the feeling of relative social position. In Chile, protesters voiced grievances over corruption, tax evasion by the wealthy, as well as their

¹ A positive relationship is sometimes found between local inequality and protest using cross country variation (e.g., in Nollert, 1995) but also an ambiguous or negative one (e.g., Dubrow et al., 2008; Solt, 2015). Using changes in local inequality provides a source of variation but may not refer to the most relevant comparison points. Results vary also widely across contexts, as shown in Luca et al. (2025): the authors find positive correlations in the poorest countries but weak ones in middle-income and richer countries, which aligns with evidence from Latin America (e.g., Justino and Martorano, 2016). For Colombia, Justino et al. (2019) indicate that civic engagement levels increase with inequality.

² Chile is no exception. The Gini coefficient fell from 54.9 in 2000 to 46.5 in 2017. On the other hand, the share of national wealth captured by the ultra-rich increased (UNDP, 2017).

own daily economic struggles, suggesting that both perceived individual situations and distributional beliefs played a central role (Justino and Martorano, 2016, 2019). The persistence of an oligarchic social contract that sustained inequality of opportunity bred discontent, particularly among the middle and upper-middle income groups, who felt that not belonging to the elite meant enduring economic insecurity and social relegation.

Against this background, we propose new empirical evidence based on original data linking protest behavior to ‘misperceptions’ of social ranks, alongside more usual determinants of social unrest. Precisely, we hypothesize that perceived social status, relative to actual standing, is a key catalyst for these social movements, alongside perceived inequality, unmet democratic expectations, rising living costs, and public sector privatization (Cox et al., 2024). We use panel data collected both in 2018 and following the 2019 protests. The survey enables us to explore alternative measures of protest participation (such as social media activism, street protests, and justification of violence). It also allows including various potential correlates or determinants (such as the perceived value of public services and living costs, peer influence, unfairness feelings regarding income distribution, and political attitude), along with subjective assessments of social standing. Specifically, we construct of a ‘social gap’ measure, which quantifies the divergence between one’s objective social status—measured through alternative proxies based on income, occupation, or a combination—and subjective status, i.e., individuals’ perceptions of their place in society. By analyzing this measure alongside other key determinants of protests, we provide a more comprehensive understanding of the psychological determinants of protest behavior.

Our results begin by outlining the characteristics of the protesters. They primarily belong to the middle or upper-middle class, either measured by income or occupation levels, rather than the low-income (or low-status) tiers. When accounting for standard socio-demographic and economic controls, the perceived social status does not explain protest participation, which is unsurprising given the fact that it is highly concentrated around central values. However, the tension between this subjective status and objective measures of social status—i.e., our ‘social gap’ measure—proves to be a consistent predictor of protest engagement. Individuals with a greater divergence between their perceived and actual social ranks exhibit higher levels of mobilization, suggesting that misperceptions and social frustration serve as catalysts for action. While our baseline result is based on the lagged social gap (i.e., 2018) to mitigate concerns of reverse causality, we also examine the cumulative dynamics leading up to the 2019 events. Specifically, we show that the probability of protesting increases with both prior social gap levels (as observed in 2017) and the widening of the social gap between 2017 to 2018. These results are not causal, as variations in the social gap (across individuals or over time) may stem from unobserved factors that simultaneously influence protest

behavior. However, our findings are highly suggestive and provide valuable insight into the strong connection between a self-focused measure (the social gap) and the likelihood of participating in an unprecedented social uprising. Heterogeneity analyses show that protests are driven by the difference between those perceiving themselves as relatively disadvantaged (while possibly belonging to higher-status groups) and those feeling above their actual status (possibly belonging to the poor), but also by differences within the first group. The protest response to the feeling of social downgrading is not confined to some specific characteristics; rather, it is strong across the various attributes of protesters (e.g., being young or middle-aged, more educated, anti-conservative voters, or resident of urban centers). Finally, we estimate protest participation in richer specifications and find a solid effect of the social gap even when controlling for other self-interest considerations (such as perceived cost of living and public service quality), peer influence, or political views (e.g., concerns about democracy and corruption). Most importantly, we find that the social gap is not merely a component of redistributive views and perceived inequality. Individuals with stronger redistributive demands are more likely to protest, but the effect of the social gap remains robust after controlling for unfairness feelings (regarding income distribution or tax policies) or, alternatively, anger over inequality. These findings suggest that social rank misperception serves as a distinct psychological and motivational factor for political activism beyond emotional perceptions of inequality.

This paper provides several contributions. *First*, we participate to the growing literature on what triggers social movements and civil conflicts. In poorer settings, such as those in Africa, social unrest often emerges from deep-seated inequalities—particularly along ethnic or class lines—that are exacerbated by economic disruptions. Events like natural disasters (Harari and La Ferrara, 2018), epidemics (Cervellati et al., 2022), and fluctuations in commodity prices (Berman and Couttenier, 2015) generate income shocks that heighten existing tensions, ultimately leading to conflict. In contrast, in middle- and high-income countries, such as those in Latin America, protests are frequently triggered by policies perceived as unfair (e.g., a subway fare increases in Chile). These events appear as breaking points within broader contexts of frustration over top-income concentration, democratic deficits, and declining living standards. *Second*, more specifically, our study adds to the limited literature on social unrest in Latin America. Existing research links social activism and perceptions of unfairness, particularly through social media (Reyes and Gasparini, 2022), or explores how redistributive preferences and perceptions regarding public services, living standards, and corruption, shape protest dynamics (Justino and Martorano, 2019). We build on this literature by further disentangling these mechanisms and the role of self-interest determinants (such as the social gap) beyond redistributive views. *Third*, research on the link

between relative concerns and protests is relatively limited so far. While some studies in sociology and social psychology examine how objective income influences political activism (Fransman and von Fintel, 2024) or protest behavior (Grant and Brown, 1995; Lijphart, 1997; Grasso and Giugni, 2016), fewer focus on subjective perceptions of relative deprivation. An abundant literature shows that the objectively poor tend to have lower political participation (Brady et al., 1995; Solt, 2008; Schlozman et al., 2012; Erikson, 2015; Kraus et al., 2015) due to structural barriers (e.g., lack of resources, education, and time) and lower social integration into networks that encourage engagement. Yet, these mechanisms are rarely related to subjective ranks and perceptions (Ravallion, 2015). Similarly, the feeling of being worse off than one's actual position is rarely considered a key factor in explaining higher levels of political engagement and activism among the middle and upper-middle class.³ Our results confirm that low protest participation among the poor may stem from a sense of centrality, while protest activity is more prevalent among non-poor individuals who perceive themselves as falling behind. This work is also related and complementary to the literature focusing on (mis)perceptions of inequality.⁴ *Fourth*, our study contributes to the more general research linking relative social status to other relevant outcomes, such as subjective well-being and redistributive preferences. Our social gap index inherently captures how individuals perceive themselves as disadvantaged relative to their expectations or their social reference group.⁵ The literature connecting relative status and subjective well-being (e.g., Ferrer-i-Carbonell, 2005; Ravallion and Lokshin, 2010; Perez-Truglia, 2020) actually points to stronger associations when subjective, rather than objective, status is used (Tan et al., 2020); it also challenges the identification of the comparison group (Clark and Senik, 2010).⁶ Individuals' perceived socio-economic position—and misjudgments of their own

³ An exception is Grasso et al. (2019). Qualitative evidence of a deprivation-protest paradox is also provided in Power (2018), describing situations where people are aware of a narrative of objective recovery but are not feeling it subjectively in their lived experiences: this gap—between expectations and lived experiences—can galvanize and legitimize protest and civic discontent.

⁴ Inequality perception may play a role on redistributive demand and political engagement, as shown in social psychological research (Hauser and Norton, 2017) and economic analyses utilizing country variation (Gimpelson and Treisman, 2018) or country-time variation (Bussolo et al., 2021). Experiments show that discrepancies between actual and perceived inequality levels can go in both directions (some tend to underestimate inequality, e.g. in Osberg and Smeeding 2006, Norton and Ariely 2011; or to overestimate it, e.g., in Chambers et al. 2013). Discrepancies may stem from the fact that subjective views are shaped by personal experiences, societal contexts, and broader notions of inequality that encompass economic insecurity, availability of public goods, etc., in addition to standard income disparities (Bussolo et al, 2021).

⁵ Social frustration also stemmed from the stark contrast between the "Chilean Miracle" narrative and individual reality. While Chile was often hailed as Latin America's most developed economy, many Chileans felt this success did not benefit them personally.

⁶ Witte et al. (2020) investigate the mediating role of subjective well-being for explaining social unrest.

status—also shape their views on how unfair inequality is and, subsequently, their distributional preferences (e.g., Fong 2001; Kuziemko et al., 2014; Fisman et al. 2020; Hvidberg et al 2021). We attempt to disentangle these different elements and show that the social gap is not only a component of redistributive demands and perceived inequality but plays its role as a protest catalyst. Finally, our results are broadly consistent with studies on redistributive preferences that manipulate individual rank perception experimentally.⁷

The rest of the paper is structured as follows. Section 2 provides background information and presents the data and the empirical strategy. Section 3 reports the main results, heterogeneity and sensitivity analyses, while section 4 concludes.

2. Background Information, Data and Empirical strategy

2.1. Background Information

The 2019 Chilean protests began on October 6th following a metro fare increase in Santiago, initially sparking widespread fare evasion by students. The unrest quickly escalated into mass mobilization, leading to violent confrontations and prompting the government to declare a state of emergency. The movement reached its peak on October 25th, when approximately 1.2 million people gathered in Santiago, with other numerous protests spreading across multiple cities nationwide. The unrest continued for several weeks, marked by intense and widespread demonstrations, resulting in 36 deaths and over 11,500 injuries. Over time, protest participation gradually declined, further dampened by COVID-19 restrictions in 2020. The demonstrations left a lasting impact, eventually contributing to national elections and the drafting of a new constitution in 2021 to address long-standing grievances. As was the case for several social movements in 2019, the Chilean protests lacked visible leaders and clear demands, fueled by a diverse middle-class sector that felt increasingly alienated by growing disparities in wealth, persistent corruption, and the privatization of essential services. Protesters were said to be primarily young, educated, and frequent social media users (Cox et al., 2019). The present paper provides novel evidence and a more refined picture of the protesters.

2.2. Data

Survey. Our analysis is based on the *Estudio Longitudinal Social de Chile (ELSOC)*, a nationally representative survey of the Chilean population aged 18–75, based on 92 communes of the 13

⁷ Lower-income individuals underestimate their rank and, if made aware of it, increase their support for redistribution (see Cruces et al 2013, for Argentina; Hvidberg et al 2021, for Denmark; Hoy and Mager 2021, using data on ten countries; Albacete et al 2022, for Austria). Somewhat symmetrically, those who's relative position improves decrease support (Karadja et al 2017, for Sweden).

regions of Chile. The dataset contains detailed information on individual and household characteristics including socio-demographic variables, income, detailed occupation, as well as subjective information on well-being, redistributive preferences and political views. The ELSOC survey was designed by the Center for Social Conflict and Cohesion Studies (COES) and, for this reason, is uniquely oriented towards measures of social cohesion and conflict in Chile, including social relations, institutional trust, political participation and, most importantly, protest participation (in various forms). This dataset is publicly available but remains relatively underutilized. It is nonetheless recognized as a reliable and robust data resource in economics and political science, for instance to mobilize subjective data (Schleef et al., 2024), to study the link between social status and occupational prestige (Requena and Figueroa, 2019), or to examine geographical correlation between past repression and democratic outcomes (Bautista et al., 2019; Bourret-Soto, 2024).

Panel and Selection. Although six rounds of this longitudinal survey are available (starting 2016), we primarily use the wave corresponding to the 2019 protests, along with individual characteristics from the previous year obtained thanks to the panel dimension. Our selection process first involves removing observations with missing values for key variables (approximately 5% of the initial sample) and then focusing on the working population (retirees and students account for 16% of the original sample). This selection is simply due to the fact that we analyze protest behavior in relation to a differential measure between of perceived versus actual status, whereby the latter is assessed through employment-related variables, such as income level and occupational prestige, as detailed below. Our final sample comprises 2,277 individuals observed in both 2018 and 2019 (with a 15% attrition rate between the two years).

2.3 Protest Outcomes

Protest Behavior and Protest Statistics. Our key outcome variable is protest participation, defined as a binary indicator of whether an individual engaged in protests over the past 12 months. In sensitivity analyses, we explore individual protest frequency and other forms of social unrest: from softer (e.g., social media activism) to stronger ones (tolerance toward violence); intermediate actions include street protests (our baseline) and banging pots and pans as a collective expression of dissent (the sound of *cacerolazos* became a symbol of unity and resistance, allowing mass participation without requiring physical presence in protests). The 2019 Chilean protests were unprecedented in both scale and frequency compared to previous movements. Between October 18 and the end of 2019, the COES recorded over 3,300 protest events—a stark contrast to 2011, the previous peak year, which saw only 1,100 protests, roughly a third of the 2019 total (Joignant et al., 2020). Regarding protester

numbers, we can directly examine statistics derived from our 2019 sample. Appendix [Figure A1](#) shows that 25% of individuals in our sample took part in the protests—a figure that aligns well with official COES estimates. Notably, around 80% of these participants were "new" protesters, highlighting the exceptional mobilization in 2019.

Timing of Events and Interviews. For 2019, most protests took place before the survey interviews, ensuring that our ELSOC sample captures protest behaviors relatively accurately. This is illustrated in Appendix [Figure A2](#), which compares the daily density of protests, based on COES data, with the daily distribution of interviews in the ELSOC survey. However, as precise protest participation dates are not available, we cannot determine the exact time elapsed between an individual's participation and their interview. Nevertheless, this limitation does not fundamentally affect our analysis. More importantly, the number of times a person protested during the October-November 2019 period is available and provides a useful measure of protest intensity, which we incorporate into our sensitivity analyses alongside the other previously mentioned measures (such as social media activism, justification of violence, etc.).

Protester Description. In our main estimations hereafter, we focus on the 2019 protest wave, as it was by far the largest. This also allows us to assess the predictive power of the *lagged* social gap, or of the social gap dynamics over several years before the 2019 events. Our empirical strategy avoids using panel estimations over the entire period covered in ELSOC because protests were concentrated in 2019 while protests of the previous years were more marginal and possibly driven by more specific individuals (we address this distinction in our robustness checks). We rather aim to characterize what drives the outstanding large event of 2019. We provide an initial characterization of protesters, with simple estimations reported in Appendix [Table A1](#). We begin with logit estimations of the 2019 protest dummy (column 1). Among the significant correlates, we confirm that protesters were slightly younger on average and more educated.⁸ Additionally, indigenous individuals had a 25% higher likelihood of participating. As we discuss in greater detail later, income matters: protesters tended to belong to the middle and upper-middle class. They were more frequently found among both the unemployed and formally employed workers. We further refine our analysis using a multinomial logit model to distinguish between new protesters (column 2) and those who had protested at least once before (column 3). While age, education, and income tend to play in the same direction across both groups, some differences emerge: for instance,

⁸ A 10-year increase in age corresponds to a 7-percentage-point lower probability of protesting, approximately one-quarter less than the mean protest probability (27%). Education also plays a key role: individuals with lower education levels were three times less likely to protest.

indigenous individuals were more likely to be repeated protesters, whereas the unemployed were more likely to be new protesters. Our main estimations will allow us to go further by correlating protests with redistributive views, concerns about the cost of living, and, most importantly, our social gap measure.

2.4 Social Gap

As motivated before, leveraging subjective measures is crucial to capturing the social dynamics underlying political engagement, particularly protest behavior. We construct a measure of social frustration, referred to as the ‘social gap,’ defined as the difference between a person’s objective social status, based on alternative indicators (income, occupational level, etc.), and her subjective/perceived social status. We now detail these two components.

Subjective Social Rank. The ELSOC dataset includes a question on perceived social rank, formulated as follows: *"In our society, some groups are usually at the higher levels, while others tend to be placed at the lower levels. Using the presented scale, where 0 represents the lowest level and 10 the highest, where would you place yourself in Chilean society?"*⁹ The distribution of perceived social ranks is reported in the first graph of Appendix [Figure A3](#). It reveals that very few individuals position themselves at the extremes (with rank 0 merged with rank 1 and ranks 9-10 grouped into rank 8 for visualization), while the majority cluster around ranks 3-5. This pattern reflects a systematic misperception towards the center, commonly referred to as "center bias" (Hvidberg et al., 2020; Bublitz, 2022; Cruces et al., 2013; Karadja et al., 2017), "median bias" (Hoy and Mager, 2021) or "middle-class bias" (Fehr et al., 2022). These biases are well-documented in these studies on voting behavior, redistributive preferences, or perceptions of social mobility. A key implication of this high concentration is that perceived social rank alone is unlikely to be a strong explanatory variable for protest participation. However, the gap between subjective and objective rank may hold greater explanatory power, serving as a proxy for social frustration and perceived downward mobility. Notably, [Figure A3](#) (first graph) shows a slight decline in subjective rank in 2019 compared to 2018, coinciding with rising social discontent during the protest period. However, we caution against interpreting this shift as a causal driver of protests due to potential reverse causality—individuals exposed to protests may have reassessed their social rank downward. We return to this issue later in the analysis.

Objective Social Rank. Assessing social status is challenging. It is possibly multi-dimensional, with context-dependent weights assigned to the different dimensions. Since all

⁹ A few studies use similar measures, for instance Bussolo et al. (2021) focus on individual beliefs about inequality as proxied by the person’s perceived position on the income distribution. They find that it is negatively correlated with support for reducing inequality.

these parameters are broadly unknown, we simply use alternative proxies for objective status, which help test the sensitivity of our results throughout the following analyses. A first, standard measure is income decile. While income alone does not fully capture social status, it reflects multiple dimensions of socioeconomic position. However, Bourguignon (2006) and Goldthorpe (2012) argue that an overemphasis on economic indicators may lead social scientists to overlook other critical aspects of social inequality that income alone fails to capture. To address this, our second option is to consider occupational prestige, a widely recognized dimension of social standing. We use the Erikson-Goldthorpe-Portocarero (EGP) classification (Erikson et al., 1979), described in [Table A2](#), though our findings remain consistent across alternative occupational ranking systems. Finally, a third approach integrates multiple dimensions into a composite measure, calculated as the average of income decile, EGP occupational prestige, and education level, each normalized on a 1-10 scale (following Adler et al., 1994). This composite measure provides a broader view of social status beyond any single factor.¹⁰ Note that while income is available all years, information on occupation is only available in 2016 and 2018.

Social Gap. The social gap is defined as the difference between objective and subjective social status. For our estimations of protest behavior later on, we will use a standardized measure of the social gap to interpret more easily the magnitude of its effect. For visualization purposes, in the second graph of [Figure A3](#), we use natural scales for both objective and subjective status. To enhance clarity, we also regroup the few extreme observations. Objective status is defined here according to income deciles. We observe a social gap ranging from -4 to 7, displaying more variability than the distribution of subjective ranks before. This social gap reflects the discrepancy between individuals' actual position and their perceived place in the social hierarchy. Highly positive (negative) values indicate an underestimation (overestimation) of one's actual status. Values near zero, either positive or negative, denote smaller misperceptions. Yet, it is evident that zero itself cannot be interpreted as a perfect alignment of perceived status with one's actual position.¹¹ Given that subjective ranks tend to fluctuate more rapidly than objective ones, we expect the social gap to increase in 2019 compared to 2018, as subjective rankings decline slightly. This pattern is confirmed in [Figure A3](#) (second graph). Alternative measures of objective status lead to a

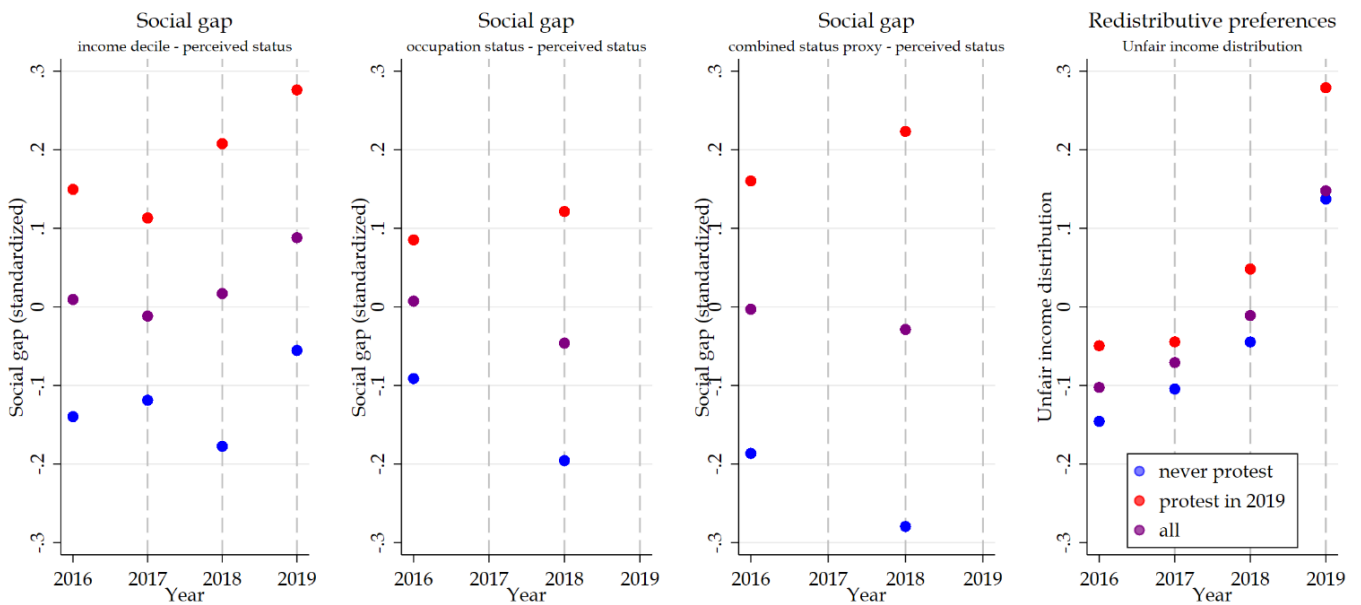
¹⁰ According to the literature in sociology, psychology, epidemiology and public health, income, occupation status and education represent the material substance of social class and shape the life-trajectories of individuals in profound ways (Adler et al., 1994, Kraus et al 2013).

¹¹ Indeed, objective and subjective scales are not comparable, partly because subjective status question is framed more broadly.

slightly more concentrated distribution, especially when education is used in the combined index (third graph).

Time Trends. We hypothesize that a large social gap significantly contributes to protest participation. To illustrate this intuition, Figure 1 presents a series of graphs first depicting trends in the social gap. The gap is now standardized and alternatively defined using income, occupation or the combined measure for objective status (graphs 1-3). Recall that we can calculate social gaps only for years 2016 and 2018 when occupation is used (alone or in the composite measure). Each graph differentiates between those who never protest in 2016-2019 (blue), those who protest in 2019 (red) and the overall sample (purple).

Fig.1: Trends in social gap and redistributive preferences



All variables are standardized.

The first key observation is that protesters exhibit a higher level of social frustration, as measured by the social gap, while non-protesters show a lower level. These broad statistics anticipate our main results, which are further developed in the next section. Secondly, the social gap increases between 2017 and 2019 among 2019 protesters, whereas for non-protesters, the trend is declining (over 2016-18). These initial statistics suggest that individuals who feel increasingly misaligned with their actual economic rank are more likely to engage in protests, reinforcing the role of perceived social status in shaping political mobilization. We also compare these patterns to trends in redistributive preferences (fourth graph), based on a question about perceived income distribution unfairness. Unlike the social gap, this measure shows a continuous increase across all groups (protesters and non-protesters), indicating growing social discontent with inequality in the years preceding the 2019 events. However, much like the self-focused concern captured by the social gap, the

divide between protesters and non-protesters widens over time. These findings suggest that a growing perception of relative social decline, potentially coupled with increasing discontent over inequality, could serve as an early warning signal for protest mobilization.

2.5 Empirical Approach

Our empirical analysis begins by outlining the characteristics of protesters. We particularly focus on their position within both objective status scales (i.e., income deciles or occupational levels) and subjective ranks, as well as along the social gap scale to show the relevance of this measure. We also present a series of non-parametric estimations aimed to further validate the informational relevance of the social gap. We demonstrate that detailed values of the social gap provide significant informational content beyond detailed positions along income or occupational scales. As explained, we systematically use the lagged gap. We refrain from using the contemporaneous social gap, as it is recorded post-protest (see [Figure A2](#)) and may be affected by exposure to protests (Madestam et al., 2013).

We then turn to more parsimonious estimations, with a linear specification of the (lagged) social gap, to assess its role and the contribution of social gap dynamics the years before 2019 events. We also identify heterogeneous effects and check results with alternative protest outcomes (including soft versus violent forms of protests and, for all those outcomes, an intensive margin of the frequency of participation). Finally, we refine our interpretations and test the sensitivity of the social gap effect by incorporating factors that can be seen as other key determinants of protest. The general model is written:

$$Protest_{it} = \beta_0 + \beta_1 Gap_{it-1} + \beta_2' X_{it} + \beta_3' Living_{it} + \beta_4 Peers_{it} + \beta_5' SocPref_{it} \quad (1)$$

with $Protest_{it}$ denoting our main protest variable (equal to 1 if individual i participated in protests at least once during year $t=2019$, and 0 otherwise). Gap_{it-1} denotes the lagged social gap. As in basic descriptive estimations before, we use contemporaneous controls X_{it} including socio-demographic variables (gender, age, education, married, region of residence), household income and broad employment variables (unemployed, informal worker, with formal worker or inactive as reference group). Perceived social rank, or its discrepancy with objective social standing, likely integrates multiple factors beyond these characteristics, including living conditions, peer effects, and social preferences. To account for living conditions, we incorporate a vector $Living_{it}$, which comprises an individual's anger about the cost of living and self-evaluation of public goods and services. The social gap inherently depends on social comparison, so we introduce $Peer_{it}$, a binary variable indicating whether the person's peers, friends or family participated in the 2019 protest. Subjective relative status has been shown to influence perceptions of unfairness and redistributive preferences (e.g. Cruces et al 2013; Kuziemko et al., 2014; Fisman et al. 2020;

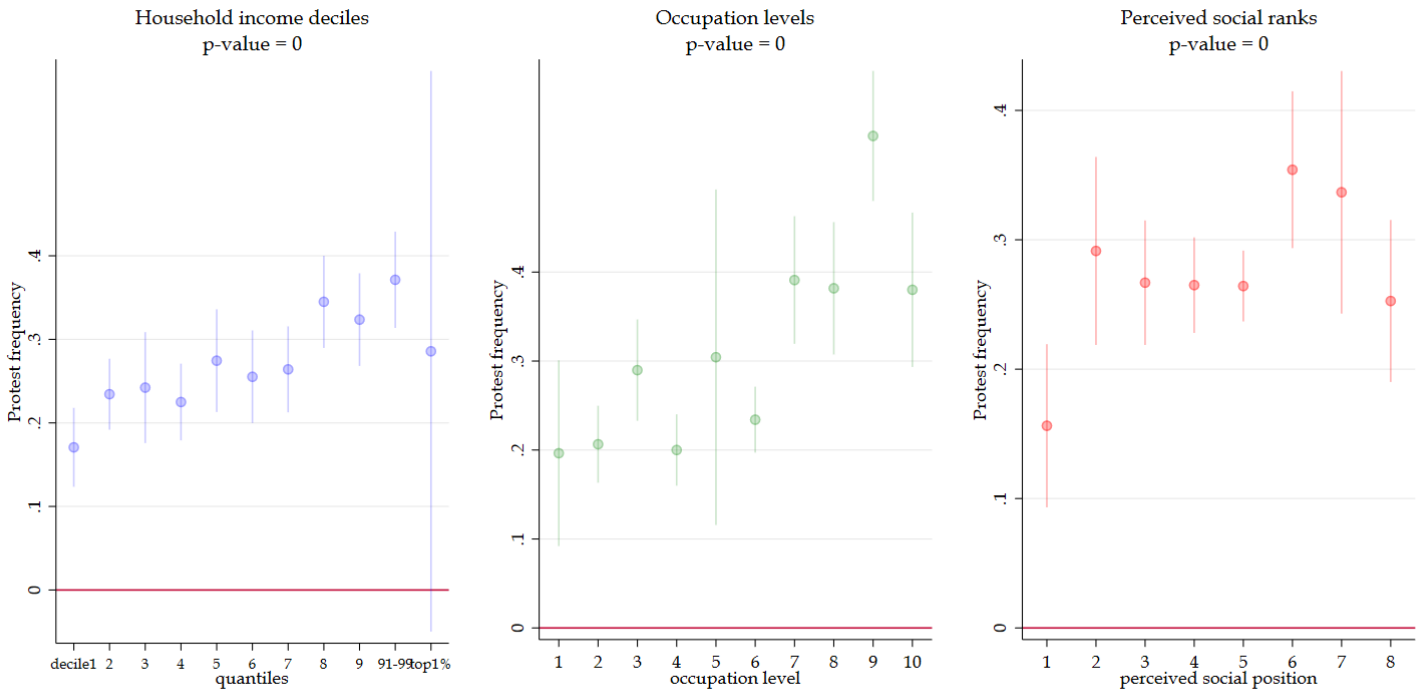
Hvidberg et al 2021; Hoy and Mager, 2021; Albacete et al., 2022). To isolate the pure effect of social rank misperception, we then control for a vector $SocPref_{it}$, which includes unfairness feelings and political views. For unfairness, we alternatively use information on one's anger about ongoing inequality, perceived unfairness of income distribution, or perceived unfairness of the tax system. Regarding political views, we account for individual preferences for democracy (over authoritarianism) and perception about the extent of corruption issues in Chile. This more comprehensive specification enables us to determine whether our social gap measure directly influences the propensity to protest or primarily serves as a mediator shaping perceptions and emotions related to inequities in Chile.

3. Results

3.1 Protests by Levels of Objective Status, Subjective Status and Social Gap

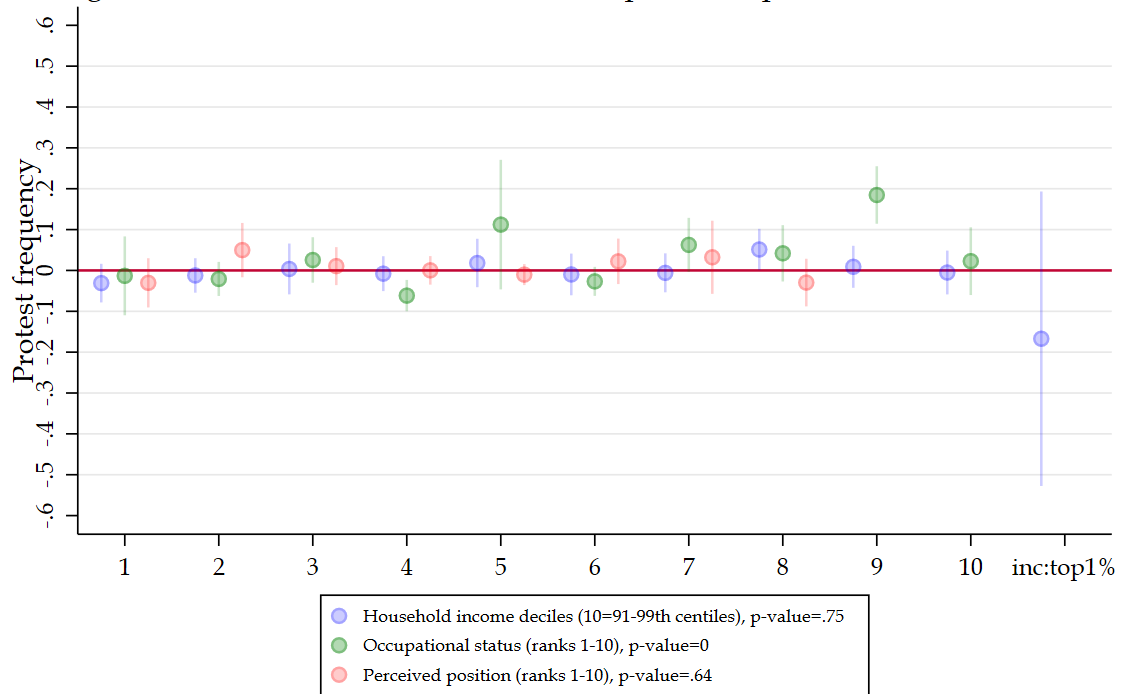
Objective and Subjective Ranks. The analysis of protester distribution across economic and social strata provides key insights into the socioeconomic backgrounds of those most likely to engage in demonstrations. [Figure 2a](#) presents non-parametric estimates of protest rates based on dummies for income levels (deciles), occupational levels (1-10 scale), or perceived social ranks (simplified 1-8 scale grouping the extremes as in the first graph of [Figure A3](#)). Across all three dimensions, a consistent pattern emerges: protest participation tends to increase with socioeconomic rank, albeit not in a strictly monotonic manner. Increasing trends align with established research suggesting that socio-economically disadvantaged individuals participate less in political activities (e.g., Solt, 2008). Interesting, we show here that this pattern holds for both objective status (income, occupation) and subjective perceptions of status. Also, while protest rates generally rise with income, occupation, and social rank, they tend to decline slightly at the very top, though this often affects a very small minority. For income specifically (first graph of [Figure 2a](#)), the highest group consists of the top 1%, who demonstrate less frequently than the group just below them (i.e., the 91st–99th centiles). The top 1% is likely highly heterogeneous, and the very wealthy within this group are probably underrepresented in the data, meaning their actual participation rate could be even lower with improved representation. Importantly, the 91st–99th centiles should not be considered "rich" in absolute terms. Household income distribution data, reported in [Appendix Figure A4](#), shows that the threshold separating the 99th and 100th centiles is approximately PPP US\$ 2,300 per month. Overall, we conclude that protest participation is highest among the middle class (deciles 2–7) and even more pronounced in the upper-middle class (deciles 8–9–10, excluding the top 1%).

Fig.2a: Protest rates across income, occupation or perceived ranks (no controls)



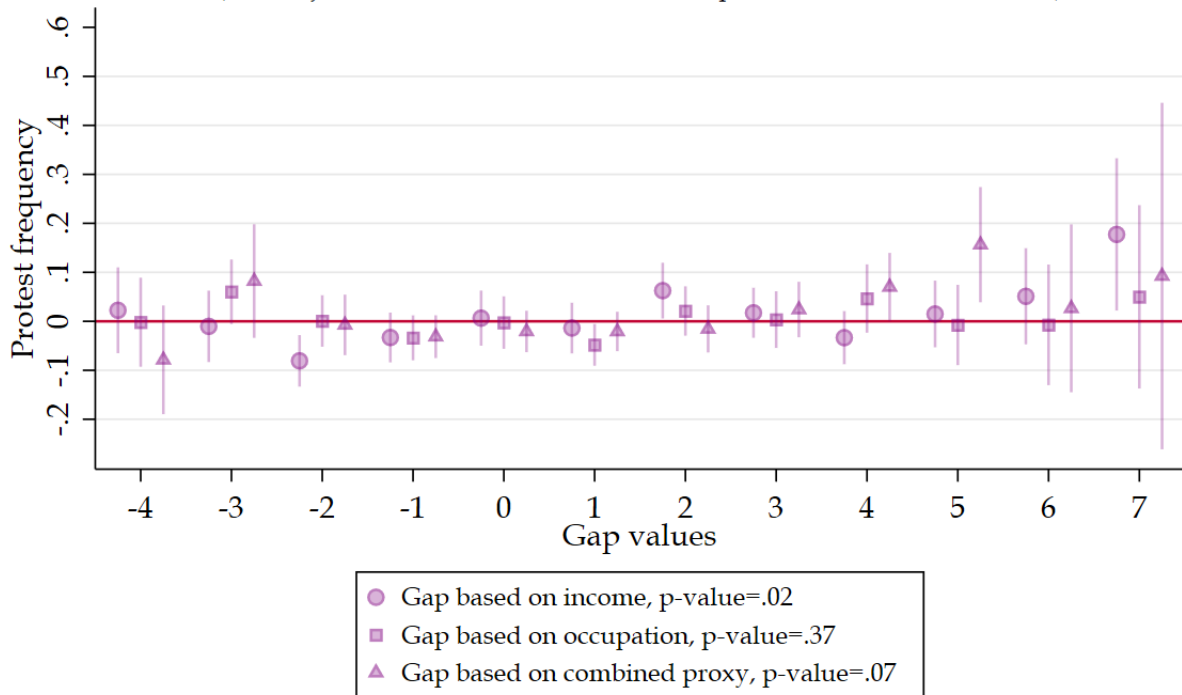
Estimation of individual protest on dummies for either income decile, occupation level or perceived position (no controls). Subtitles report the p-value of joint significance of these sets of dummies.

Fig 2b: Protest rates across income, occupation or perceived ranks (controls)



Note: Estimation of individual protest on dummies for either income deciles, occupation levels or perceived social ranks, controlling for standard socio-demographic variables and linear income. P-value for joint significance of each set of dummies.

Fig. 3: Protest rates by social gap levels
(with objective status based on income, occupation or combined measures)



Estimation of individual protest dummy on either deciles, occupation levels or perceived social ranks, controlling for standard socio-demographic variables and linear income

These three sets of non-parametric estimations are replicated while introducing controls for socio-demographic characteristics (gender, age, education, marital status, and region of residence), linear household income and broad employment categories (unemployed, informal worker, with formal worker or inactive as the reference group). The corresponding results are presented in [Figure 2b](#). Controlling for linear income, in particular, reduces the informational value of detailed ranks, as confirmed by p-values rejecting the contribution of these sets of dummies (for income deciles and perceived social rank).

Social Gap Levels. This outcome is unsurprising given the relative linearity of the income gradient observed earlier and, in the case of perceived status, its previously noted high concentration. However, combining objective and subjective status seems relevant. In [Figure 3](#), we estimate protest participation on social gap levels—measured using income deciles, occupational levels, or a composite index (income, occupation, education) for objective status—while maintaining the same set of controls (socioeconomic factors, linear income, and broad employment categories). Results indicate a clear increasing pattern, with p-values not rejecting the contribution of a flexible specification of the social gap, regardless of the objective status metric used, beyond socio-economic controls and linear income in particular. Specifically, negative social gap values (i.e. overestimation of one’s status) are associated with zero protest rates, whereas highly positive social gap values correspond to the highest

propensity to demonstrate (conditional on control variables). These findings reinforce our hypothesis that perceived social misalignment is a key driver of mobilization. We can further refine our characterization by examining the interaction between social gap values and, for instance, income levels. Appendix [Figure A5](#) presents a heat map illustrating protest participation rates across different income-social gap combinations. To ensure visual clarity and avoid excessively small cells, we categorize observations into five income quintiles and seven social gap groups. The size of each cell is proportional to the weight of the corresponding income-gap group in the dataset. The figure reveals a consistent pattern: at all income levels, including among lower-income groups, a higher social gap is associated with increased protest participation.

Statistical Tests. In [Table A3](#), we present a series of non-parametric estimations designed to further validate the informational relevance of the social gap. We estimate several flexible models of the 2019 protest outcome, progressively introducing different sets of variables. We begin with a baseline model that includes standard socio-demographic and employment controls but *excludes* linear income (column 0). We then add income decile dummies (column 1). In addition to income deciles, we introduce either perceived rank dummies (column 2), social gap dummies (columns 3–5), or an interaction between income decile dummies and social gap dummies (column 6). Panel (a) focuses on linear probability models, primarily used to test the joint significance of different sets of dummies (income deciles, perceived ranks, etc.). Panel (b) presents log-likelihood tests from logit estimations of nested models, especially to test models 2–6 against model 1. Both approaches lead to the same conclusions. Income deciles alone do not significantly improve the model when basic controls—particularly education—are included, as shown in column 1. As expected, adding perceived status ranks (column 2) does not enhance explanatory power, as indicated by large p-values in both types of tests. However, incorporating social gap values (columns 3–5) into a model that already includes basic controls and income decile dummies significantly improves the fit (p-values = 0, regardless of the occupation status measure used to construct the social gap). The model interacting social gap values with income deciles—mirroring the insights from the heat map—provides the strongest explanatory power. Yet, its adjusted R² is lower than that of the more parsimonious models based on social gap values.

3.2 Estimation Results: Baseline, Dynamics, Alternative Outcomes and Heterogeneity

In the following, we precisely employ a parsimonious model of protest, using a linear specification of the social gap alongside standard controls, including socio-demographic factors, household income, and employment variables, as specified in equation (1).

Baseline. Baseline results are reported in [Table 1](#), with a focus on the social gap coefficient, while other (unreported) coefficients are very similar as in [Table A1](#), as previously commented. Models (1)–(3) correspond to the three alternative occupational status measures used to construct the social gap. Since the gap is standardized, the coefficients are easily interpretable: a one standard deviation increase in the social gap is associated with a 3.4 to 5.4 percentage point increase in protest frequency across models. This corresponds to a 12–19% rise in protest participation or an 8–12% increase in the standard deviation of protest frequency (see relative effects in the lower rows of the table). This magnitude is substantial and, as we shall see, does not weaken when adding closely related psychological factors that potentially contributes to protests as well (such as anger over living costs and perceived inequality). Furthermore, very similar results are obtained when replacing or complementing (continuous) income with (continuous) occupational status in the model, or when specifying the social gap in a logarithmic form.

Dynamics. We also examine specifications that incorporate the dynamics of the social gap. Model (4) uses the 2017 social gap level and its change over 2017–2018 (using income as the objective status). Both factors contribute to protest participation: the level of social frustration two years prior to the protests and its reinforcing dynamics over 2017–2018. This pattern aligns with the discussion around [Figure 1](#) and the idea that a wave of discontent had begun to grow and is effectively captured by our measure.¹² Model (5) further introduces the change in the social gap between 2018 and 2019, but this does not produce additional significant effects—suggesting that frustration may have already peaked. This does not necessarily alleviate concerns about reverse causality, particularly if effects operate in opposite directions: in other words, social frustration might have declined at the time of the 2019 survey due to the cathartic effect of the protests that had just taken place. However, this does not hinder our analysis, as the overall magnitude of the total effect remains unchanged. If we compute relative effects, assuming a one standard deviation increase in the 2017 social gap that persists in 2018, we observe, as reported, an increase in protest frequency of 15–18% across models (or a 10–12% increase in the standard deviation of protest frequency).

¹² It also relates to the theoretical work of Correa et al. (2025), according to which large sudden increases in grievances coordinate behavior far more effectively into protests than a sequence of small grievance shocks that generate the same final distribution of grievances in society. The authors provide an empirical illustration for different waves of protests in Chile including 2019, showing that, even after controlling for grievance levels, large grievance shocks increased the number of protests. Our empirical strategy is different but confirm these findings.

Tab. 1: Baseline estimations and dynamics

Dep. var.: 2019 Protest frequency	Baseline			Dynamics				
	Income	Occupation	Composite	Income	Income	Income	Occupation	Composite
Objective status used for social gap:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Social gap, 2018	0.034*** (0.011)	0.039*** (0.010)	0.054*** (0.010)					
Social gap, 2017				0.043*** (0.016)	0.053*** (0.019)			
Change in Social gap, 2017-18				0.026* (0.014)	0.039** (0.019)			
Change in Social gap, 2018-19					0.016 (0.015)			
Social gap, 2016						0.050*** (0.016)	0.030* (0.016)	0.072*** (0.018)
Change in Social gap, 2016-18						0.029** (0.014)	0.046*** (0.015)	0.060*** (0.017)
Relative effects of:	+1 s.d. in 2018 social gap			+1 s.d. in all-year social gaps				
in % mean protest	12%	13%	19%	15%	18%	17%	10%	25%
in % s.d. protest	8%	9%	12%	10%	12%	11%	7%	16%
# obs	2110	2110	2110	1386	1386	1427	1227	1129
R2	0.125	0.128	0.133	0.157	0.158	0.149	0.144	0.150
Adj. R2	0.116	0.118	0.123	0.143	0.143	0.135	0.127	0.132

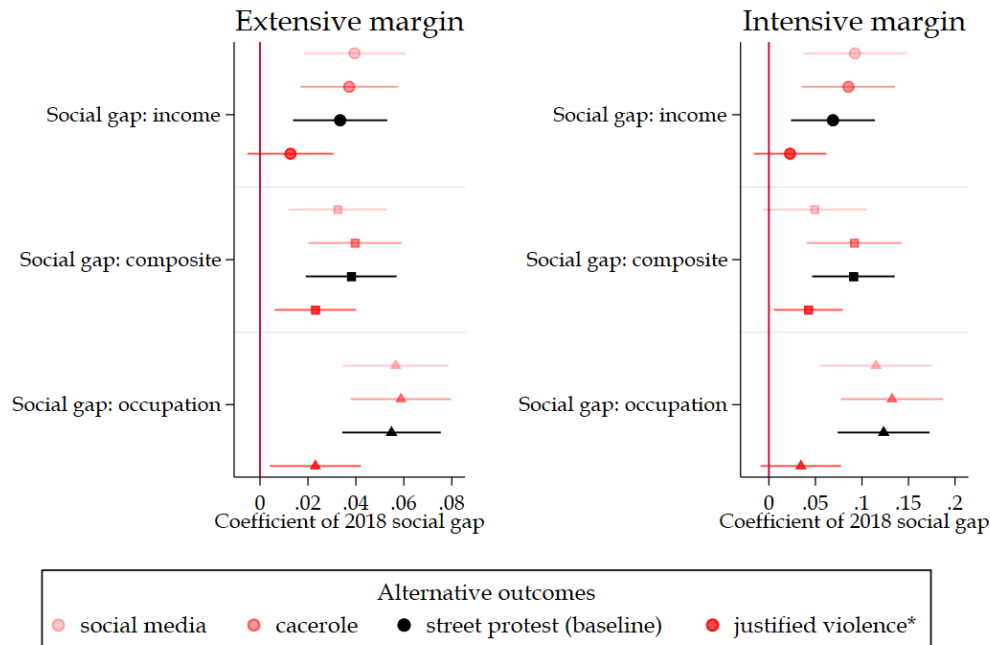
Note: all estimation control for socio-demographics (male, age, married, education, indigenous), household income, work status, and region. For models 1-3, we use a common sample (i.e. observations for which income, occupation and perceived ranks are available) for the sake of comparability. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

We do not include 2016 in this analysis to avoid excessive sample size reduction due to panel attrition. However, recall that occupation data is only available for 2016 and 2018, so we focus on these two years when considering alternative measures of objective status to construct the social gap (models 6–8). For these years, we find that the baseline effects of the 2016 social gap level and its 2016–2018 change are relatively similar to previous findings, even if orders of magnitude change across the different social gap definitions (i.e. objective status measures). In relative terms, a one standard deviation increase in the 2016 social gap (persisting in 2018) leads to a 10–25% increase in protest frequency across models (6)–(8).

Alternative Outcomes. We explore alternative forms of protest, including social media activism, *cacerolazos* (i.e. saucepan banging), street protests (our baseline outcome), and justification of violence. We distinguish between the extensive margin (a dummy variable for each type of protest action, as used so far for street protests) and the intensive margin (the respondent's frequency of participation in each type of action during the protest period). [Figure 4](#) presents the estimated coefficients for both dimensions of protest participation. The results are consistent and stable across measures, with similar coefficients observed across softer forms of protest, such as social media activism or *cacerolazos*, and street protests. Only the most extreme form—justifying violence—produces smaller and sometimes insignificant

coefficients. This suggests that social frustration, as we measure it, is primarily a driver of moderate or conventional protest actions, while violent protest may be influenced by additional factors beyond status concerns.¹³

Fig. 4: Estimations for alternative protest outcomes



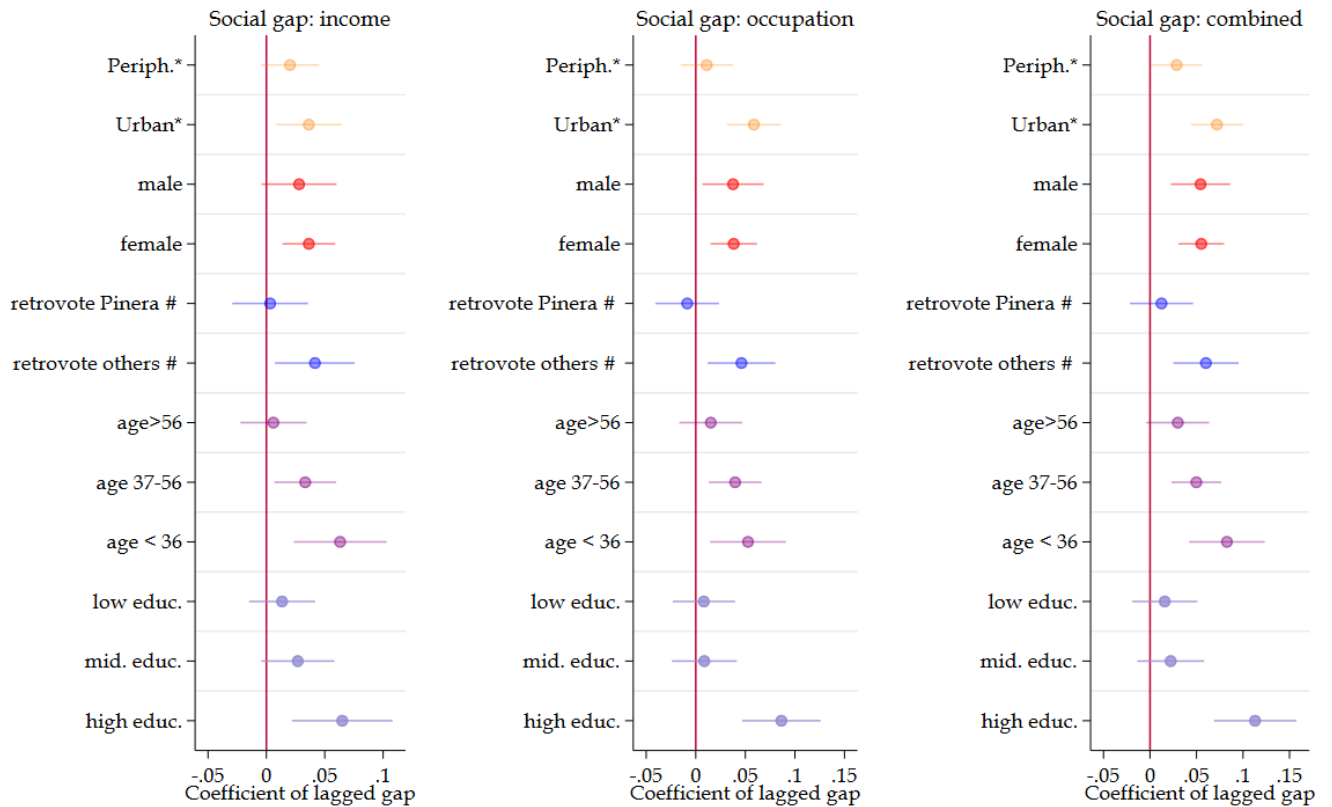
*Violence justified against public transport infrastructure.
 Extensive margins denote individual binary variables (for protesting through social media, banging 'cacerole', taking part in street protest, or thinking that violence is justified). Intensive margins correspond to the number of protest occurrences of each type.

Heterogeneity. Unreported estimations indicate that the baseline effect is primarily driven by social gap differences among individuals who underestimate their life standards (i.e., those with a positive gap) and by the contrast between this group and those who overestimate their life standards (i.e., those with a negative gap), a pattern already evident in Figure 3. Additionally, we conduct heterogeneous estimations along standard variables, as presented in Figure 5. Most of the results are consistent across different definitions of the social gap, indicating stronger protest responses among urban residents, left-wing voters, younger and middle-aged individuals, and those with higher education levels. While these findings align with known characteristics of protesters,¹⁴ they reinforce the idea that the social gap is a robust predictor of protest participation across the board, rather than being confined to specific subgroups among demonstrators.

¹³ Additional estimations indicate, for instance, that the coefficient difference between violent and non-violent forms of protest diminishes at high levels of anger over inequality or living costs.

¹⁴ For instance, protesters tend to be younger and more educated, as analyzed before. They also exhibit greater interest in political issues (Verba et al., 1995) and lean toward left-wing or pro-democratic orientations (Dalton et al., 2010).

Fig. 5: Heterogeneous effects on protest frequency



*Periph.: peripheral households, defined as living at above median distance to regional capital (as opposed to urban: below-median)
 #Retrovote question about last election (Pinera: conservative party, opposed to 'others' including mainly left parties).

3.3 Estimation Results: Adding Key Protest Determinants

To confirm our interpretation of the social gap and how it influences protest participation, we introduce more standard determinants of protests in the model, and assess their potential confounding effects. These determinants are introduced sequentially into the baseline model, following the order suggested by equation (1). Given the psychological dimension of the social gap, we emphasize that some of these factors carry an emotional component. Notably, our dataset includes two variables with a relatively original framing as they measure how angry individuals feel about living costs and inequality. Protests are often understood as emotional reactions to perceived unfairness (Passarelli and Tabellini, 2017), which can relate to personal grievances—such as relative deprivation, perceived social status, or living costs—or to concerns about broader societal injustice, such as inequality aversion. According to Rhodes-Purdy and Rosenblatt (2021), protests in Chile reflect a "primal outburst of rage and frustration" triggered by an elitist political structure that has historically stifled participatory opportunities.

The results are presented in Table 2. The upper panel focuses on estimations where income is used as the objective status for constructing the social gap, but similar conclusions regarding

the social gap effect are obtained with occupation or the composite measure, as reported in middle and lower panels (note that other protest determinants also have very similar coefficients in this case). We begin with the baseline model (column 1), comprising standard controls (socio-demographic characteristics, income and employment variables), and introduce the living costs variable, which captures both individuals' valuation of public goods and services and their anger over living costs (column 2). Both variables show the anticipated signs: individuals who rate public services poorly or express frustration over the cost of living are more likely to participate in protests (note that public services valuation is not significant in this specification). Controlling for these factors only slightly reduces the effect of the social gap—the coefficient decreases by 10% but remains highly significant—suggesting that two sources of self-centered economic grievances, i.e. the gap in perceived status and concerns over living costs, act as complementary drivers of protest participation. The social gap depends on one's status perception, which may inherently relate to some reference points, while individuals may also be influenced directly by others in terms of protest behavior (e.g., Acemoglu et al., 2018). To account for a potential co-determination of these two types of relativities, we introduce a measure of peer influence, namely the protest participation of friends and family members (column 3). Our coefficient of interest is marginally affected, indicating that perceived relative status and peer effects constitute distinct dimensions of other-dependent behavior.

Perhaps the most important set of controls pertains to social preferences. Social frustration can influence redistributive demands together with other-oriented concerns, such as altruism or value-driven inequality aversion. Columns (4)–(6) present estimates from a model that sequentially introduces different measures of perceived unfairness: unfairness in income distribution, unfairness in the tax system, and anger over inequalities. In all three cases, the social gap coefficient decreases only marginally, reinforcing the idea that perceived personal economic standing is distinct from, yet complementary to, broader redistributive concerns, maybe because these redistributive preferences primarily reflect other-oriented considerations and a broader sense of unfairness in Chilean society. Finally, political engagement and protests are not solely driven by redistributive views—they also intersect with broader political demands. To account for this, we extend our analysis by incorporating individuals' political views (column 7). Our findings show that preference for democracy (over authoritarianism) is strongly associated with protest participation. Concerns over corruption do not appear significant in this specification but this is primarily due to the sequencing of variable introductions (as corruption concerns are positively correlated with perceptions of unfairness and democracy). Most importantly, the coefficient on the social gap decreases by another 13-15% (across social gap definitions) but remains highly significant

($p=0.02$). In other words, the social gap is not entirely determined by protesters' ideological alignment: there is enough variation in social frustration among anti-conservative voters to drive distinct protest behaviors and identify the independent effect of the social gap. Note finally that similar results are obtained in (unreported) estimations where other political variables are used, such as support for a new Constitution or trust in the government.

Tab. 2: Estimations adding key protest determinants

	Dep. var.: 2019 protest dummy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Objective status: income</i>							
Social gap, 2018	0.033*** (0.010)	0.029*** (0.010)	0.029*** (0.010)	0.028*** (0.010)	0.028*** (0.010)	0.029*** (0.010)	0.024** (0.010)
Public good valuation		-0.041 (0.027)	-0.045* (0.026)	-0.046* (0.026)	-0.045* (0.026)	-0.045* (0.026)	-0.041 (0.026)
Anger at life cost		0.070*** (0.010)	0.066*** (0.010)	0.062*** (0.010)	0.062*** (0.010)	0.034*** (0.013)	0.057*** (0.010)
Peers protest			0.184*** (0.017)	0.182*** (0.017)	0.181*** (0.017)	0.179*** (0.017)	0.177*** (0.017)
Unfair: income differences				0.024** (0.011)			0.018* (0.011)
Unfair: tax system					0.016** (0.007)		
Anger at inequalities						0.043*** (0.012)	
Support democracy							0.100*** (0.017)
Corruption issue							0.058 (0.038)
# obs	2295	2295	2295	2295	2295	2295	2295
R2	0.128	0.143	0.172	0.174	0.174	0.177	0.186
<i>Objective status: occupation</i>							
Social gap, 2018	0.037*** (0.010)	0.036*** (0.010)	0.034*** (0.010)	0.033*** (0.010)	0.032*** (0.010)	0.032*** (0.010)	0.027*** (0.010)
# obs	2062	2062	2062	2062	2062	2062	2062
R2	0.127	0.147	0.177	0.180	0.179	0.182	0.191
<i>Objective status: composite</i>							
Social gap, 2018	0.058*** (0.011)	0.053*** (0.011)	0.049*** (0.011)	0.048*** (0.011)	0.048*** (0.011)	0.048*** (0.011)	0.040*** (0.011)
# obs	1990	1990	1990	1990	1990	1990	1990
R2	0.130	0.149	0.178	0.181	0.180	0.183	0.195

Note: estimation of 2019 protests, controls including socio-demographics (male, age, married, education, indigenus), household income, broad employment information (unemployed, informal worker, ref: formal worker & inactive) and region. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

3.4 Additional Robustness Checks

To ensure the robustness of our results, we conduct a series of robustness checks, presented in Table 3. These checks include the use of retrospective data, adjustments for personality

traits, and the exclusion of persistent protesters. For a comparison, columns (1)-(3) replicate baseline estimations including the series of protest determinants.

Retrospective Determinants. In columns (4)-(6), we show estimation results based on *lagged values* for key protest determinants (including public good, living costs, peer influence, unfair distribution, democracy, and corruption), except for the anger over living costs, which is only available for 2019. As expected, lagged redistributive preferences contribute to protest behavior similarly to their contemporaneous counterparts and, in some cases, even more strongly (e.g., corruption concerns). A possible interpretation is that the experience of 2019 protests may have temporarily eased some grievances (as seen in models 1–3), while concerns about corruption in 2018 (models 4–6) may have played a role in mobilization. Crucially, the social gap coefficients remain largely unchanged, reinforcing the robustness of our findings.

Psychological Traits. The literature highlights that subjective measures are prone to latent heterogeneity in how individuals perceive underlying scales and respond to subjective questions (Ravallion, 2014). This is particularly an issue when the subjective variable is the dependent variable (Bertrand and Mullainathan, 2001). In our case, perceived status is central as it is used to construct the social gap. Unobserved heterogeneity issues in subjective answers may be seen as some noise that could attenuate the estimated effect. The issue is sometimes treated by including fixed effects in panel estimation (which is possible when the same behavior is repeated, which is not exactly the case here). A second treatment hinges on the use of vignette to anchor individual response subjectivity (e.g., Bago d’Uva et al., 2008; Beegle et al., 2012). A third commonly used approach is to control for personality traits, which act as a proxy for individual fixed effects (Akay and Karabulut 2020; Budria and Ferrer-i-Carbonell 2019). We are able to follow the latter approach and introduce personality traits in our analysis (models 7-9). They include characteristics such as being reserved, reliable, lazy, relaxed, artistic, sociable, perfectionist, and nervous. While none of these traits significantly influence protest behavior—except for a significant negative effect of being "reserved"—they are jointly significant. Notably, these traits are only available for 2017, and we assume they remain time-invariant for use in analyzing 2019 protests. Although this results in a substantial reduction in sample size, our main findings remain broadly unchanged.

Hardliners/Always Protesters. The group of protesters consists primarily of ‘new’ participants, as previously discussed. However, we have also identified a specific subgroup of highly engaged protesters, particularly those who participate in protests annually (‘hardliners’). To assess the impact of this group on our results, we exclude them from the

analysis (models 10–12). Once again, our findings remain highly stable, confirming that the observed effects are not driven by a minority of recurrent protesters.

Tab. 3: Sensitivity analysis

Objective status for social gap:	Baseline			Key determinants: lagged			Incl. psychological traits			No hardliners		
	Inc.	Occ.	Comp.	Inc.	Occ.	Comp.	Inc.	Occ.	Comp.	Inc.	Occ.	Comp.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Social gap, 2018	0.024** (0.010)	0.027*** (0.010)	0.040*** (0.011)	0.024** (0.010)	0.029*** (0.010)	0.039*** (0.011)	0.024* (0.014)	0.029** (0.013)	0.035** (0.014)	0.022** (0.010)	0.021** (0.010)	0.032*** (0.011)
Public good valuation	-0.041 (0.026)	-0.029 (0.028)	-0.032 (0.028)	-0.039 (0.027)	-0.029 (0.030)	-0.028 (0.030)	-0.064* (0.034)	-0.048 (0.036)	-0.052 (0.036)	-0.033 (0.026)	-0.024 (0.028)	-0.025 (0.028)
Anger at life cost	0.057*** (0.010)	0.069*** (0.011)	0.040*** (0.015)	0.064*** (0.010)	0.075*** (0.011)	0.072*** (0.011)	0.052*** (0.013)	0.069*** (0.014)	0.066*** (0.014)	0.054*** (0.010)	0.065*** (0.011)	0.062*** (0.011)
Peers protest	0.177*** (0.017)	0.183*** (0.018)	0.178*** (0.019)	0.176*** (0.017)	0.186*** (0.018)	0.186*** (0.018)	0.156*** (0.021)	0.167*** (0.022)	0.166*** (0.023)	0.165*** (0.017)	0.172*** (0.018)	0.171*** (0.018)
Unfair: inc. diff.	0.018* (0.011)	0.025** (0.012)	0.022* (0.012)	0.023*** (0.009)	0.023** (0.010)	0.021** (0.010)	0.022 (0.014)	0.025* (0.015)	0.027* (0.015)	0.017 (0.011)	0.024** (0.012)	0.027** (0.012)
Support democracy	0.100*** (0.017)	0.101*** (0.019)	0.086*** (0.019)	0.090*** (0.018)	0.085*** (0.019)	0.083*** (0.020)	0.067*** (0.022)	0.064*** (0.024)	0.059** (0.024)	0.092*** (0.017)	0.090*** (0.019)	0.083*** (0.019)
Corruption issue	0.058 (0.038)	0.050 (0.040)	0.039 (0.040)	0.066** (0.030)	0.095*** (0.034)	0.092*** (0.034)	0.127*** (0.036)	0.110*** (0.041)	0.111*** (0.041)	0.049 (0.038)	0.044 (0.039)	0.044 (0.040)
# obs	2295	2062	1990	2288	2053	1986	1365	1242	1197	2230	1995	1930
R2	0.186	0.191	0.195	0.185	0.190	0.192	0.220	0.226	0.226	0.168	0.172	0.174

Note: estimation of 2019 protests, controls including socio-demographics (male, age, married, education, indigenous), household income, broad employment information (unemployed, informal worker, ref: formal worker & inactive) and region. Objective status measures for social gap construction are income ("Inc."), occupation ("Occ.") or composite ("Comp."). Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

5. Concluding remarks

This study offers new insights into the determinants of major protests in Chile. We confirm that the probability of protesting increases with socio-economic status, measured by income or occupational level. However, we also challenge conventional perspectives that focus solely on relative income or income inequality as predictors of protest behavior. Our findings suggest that individuals' perceptions of their own status—relative to their actual economic and social position—play a significant role in shaping their likelihood of engaging in protests. We focus on this social gap measure—the difference between objective and subjective status—and show that it brings explanatory power to protest models beyond socio-demographic and economic factors. We analyze the dynamics preceding the events and identify a cumulative effect: protest propensity increases not only with the initial level of the social gap but also with any widening of this gap in the lead-up to the protests. Future research should explore exogenous and measurable variations in the social gap to establish a stronger causal link with protest behavior.

Another key contribution of this paper is the possibility to enrich the model with a comprehensive set of protest determinants, either self-interest motivations (such as living costs) or more other-oriented dimensions (such as inequality aversion and political views). In particular, some of these variables capture psychological dimensions (e.g., anger at inequality), in the same vein as our social gap measure. We find that the social gap strongly complements, rather than overlaps with, other self-interest drivers of political mobilization including individual perceptions of public service quality and anger over the cost of living. Perhaps most importantly, given the extensive literature on redistributive preferences, we find that social frustration is not mediated by redistributive views—specifically, perceptions of unfairness in income distribution or tax policies—but instead operates in a complementary manner. Whether these redistributive claims arise from unfairness feelings or more emotional responses (anger about inequality), the social gap maintains strong independent explanatory power. Moreover, social frustration is widely distributed and not merely a reflection of political orientation: it influences protest participation broadly, rather than operating solely through pro-democratic or anti-corruption sentiments. This suggests that economic grievances and perceptions of social status are distinct yet complementary drivers of mass mobilization, alongside broader democratic and political concerns. Ultimately, this research underscores the importance of leveraging subjective perceptions alongside objective socio-economic indicators to explain collective action. In particular, future studies should continue to investigate how perceptions of social standing shape political behavior across different contexts and historical periods.

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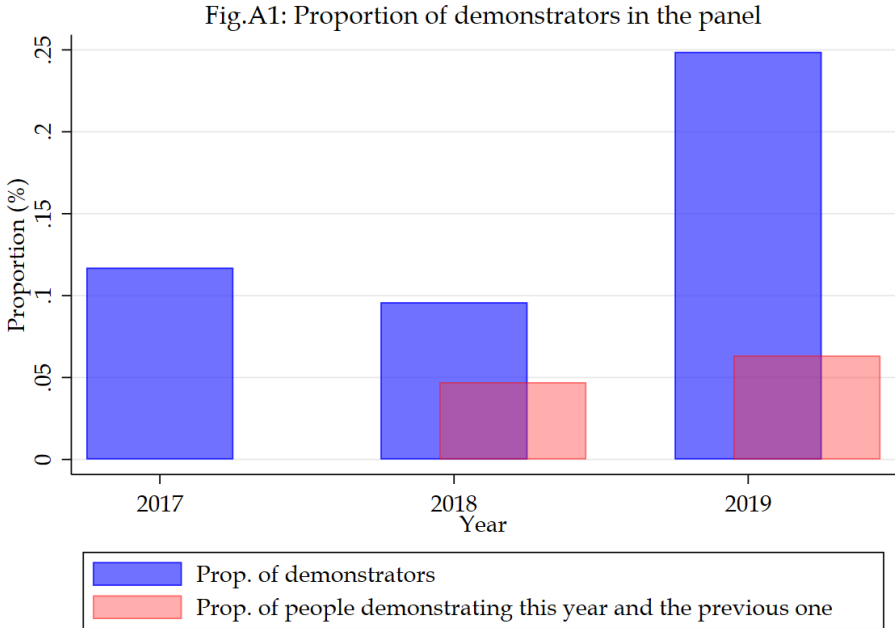
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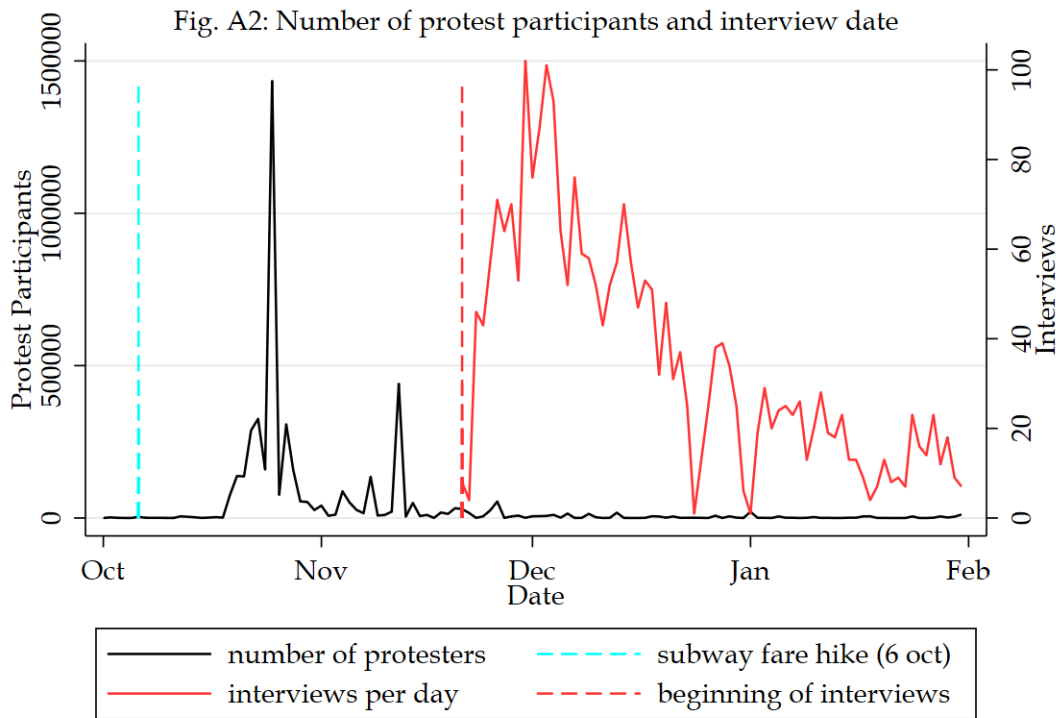
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Appendix: Figures





Note: ELSOC data is merged with 'COES Protest Events Dataset'

Fig.A3: Distributions of perceived status and social gaps

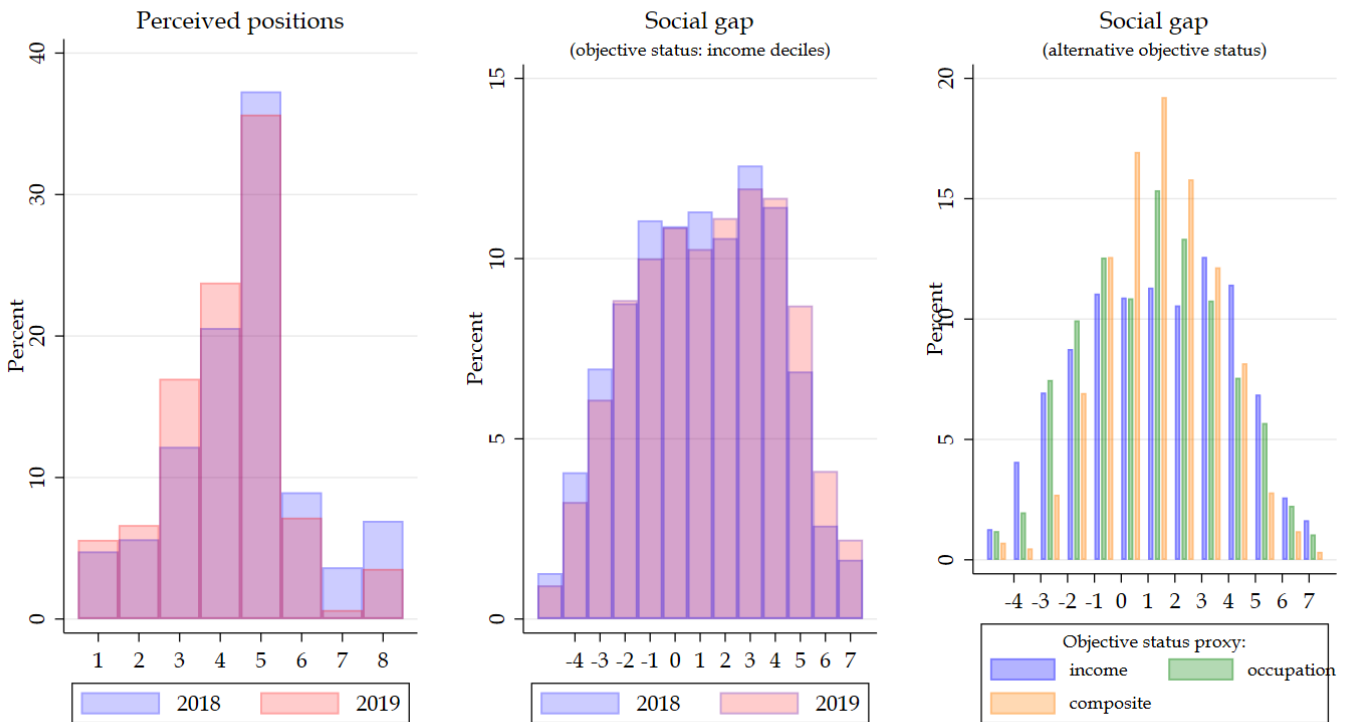
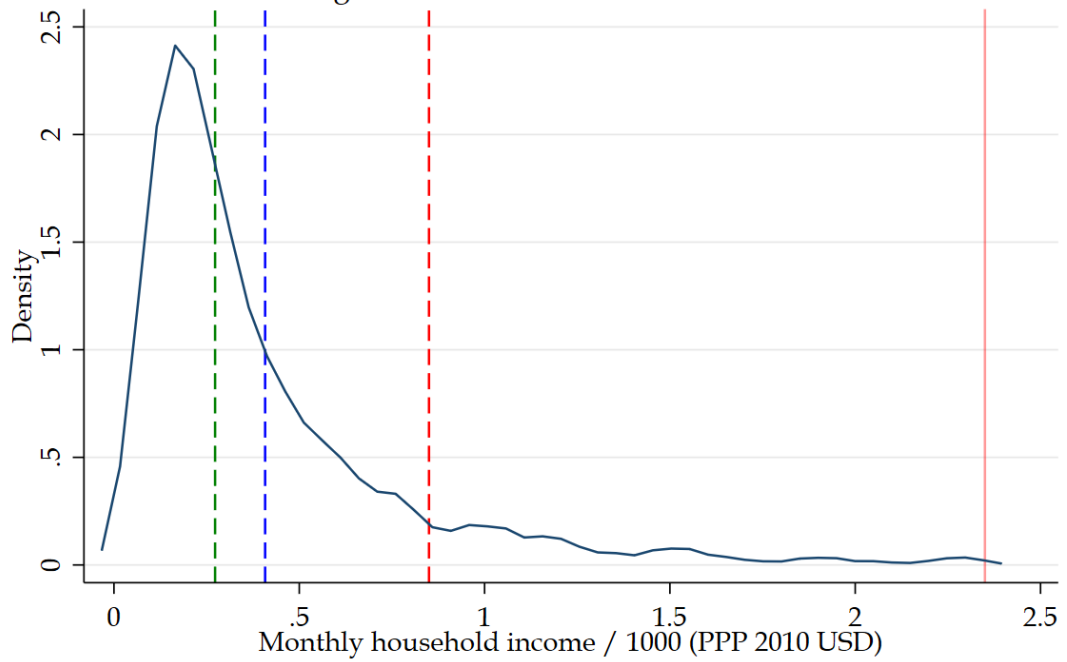
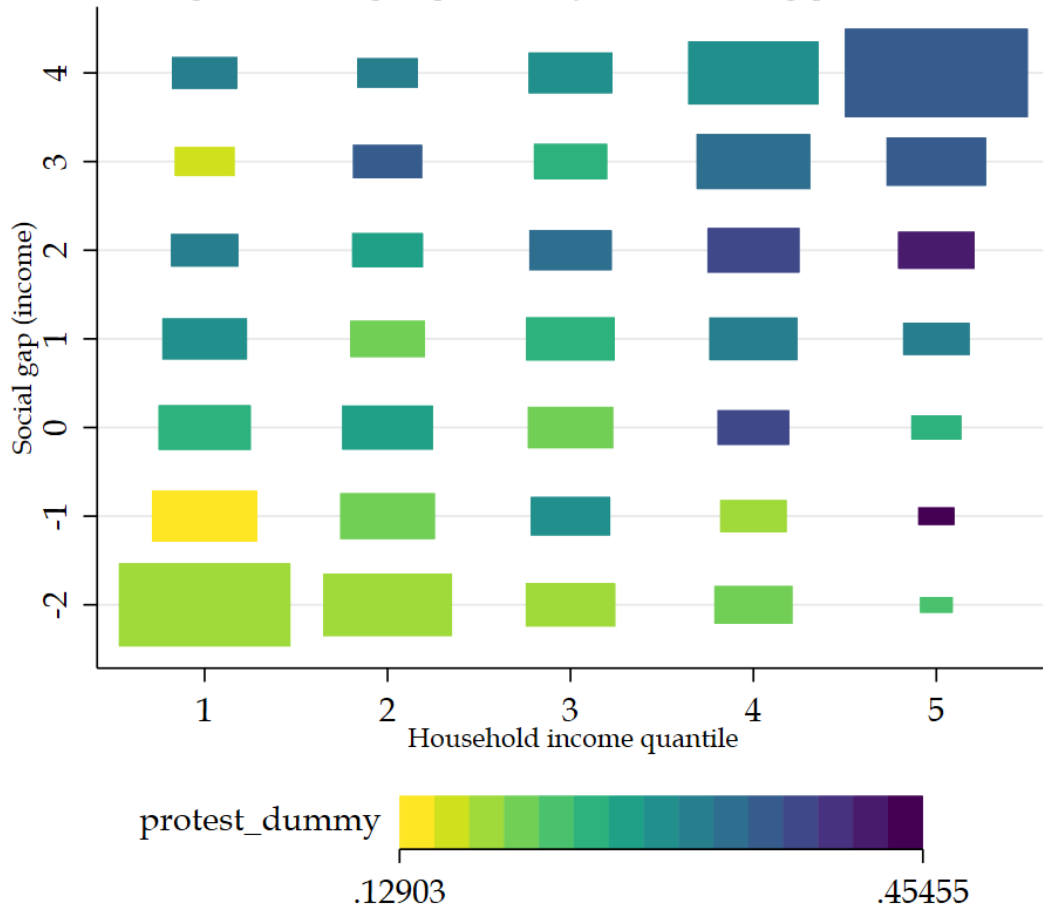


Fig.A4: Household income distribution



The dashed green (blue) line indicates median (mean) household income, the dashed red line the lower bound of the 10th decile, the solid red line the lower bounds of the last centile.

Fig. A5: Percentage of protesters by income x social gap cells



Appendix Tables

Tab. A1: Basic protest estimations

Dep. var.:	Logit	Multinomial Logit (ref: never protest)	
	2019 Protest dummy	Protest in 2019 but not before ('new' protesters)	Protest in 2019 and at least once before
	(1)	(2)	(2)
Male	0.016 (0.017)	0.003 (0.012)	0.003 (0.010)
Age	-0.007*** (0.001)	-0.002*** (0.000)	-0.003*** (0.000)
Low educ.	-0.207*** (0.029)	-0.052*** (0.014)	-0.073*** (0.010)
Middle educ.	-0.052*** (0.018)	0.000 (0.012)	-0.045*** (0.009)
Indigenous	0.069*** (0.025)	0.018 (0.019)	0.076*** (0.022)
Married	-0.009 (0.018)	-0.004 (0.012)	-0.001 (0.010)
Household income	0.066*** (0.020)	0.026* (0.014)	0.026** (0.010)
Unemployed	0.076** (0.033)	0.068** (0.032)	0.014 (0.022)
Informal work	-0.046* (0.024)	0.008 (0.017)	-0.033*** (0.011)
# obs	2676	2428	
Log-likelihood	-1406.1	-1393.262	

Note: Column (1) reports marginal effects of the logit estimation of 2019 protest participation on a series of socio-demographic and economic characteristics. Columns (2)-(3) reports multinomial logit estimation of protest participation for two groups of 2019 protesters (relative to those who never protest during 2017-19): the 'new' protesters and those who had protested and at least once before. Robust standard errors indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

Tab. A2: Occupation levels (EGP classification)

Occupational rank	Rank name	Detail
10	Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors	Senior professionals (e.g., doctors, lawyers, senior civil servants), top executives, and large business owners
9	Lower-grade professionals, administrators, and officials; higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees	Mid-level professionals (e.g., teachers, engineers), middle management, and supervisors of office workers
8	Routine non-manual employees (higher grade)	Clerical and administrative staff with higher responsibility (e.g., senior secretaries, office managers)
7	Routine non-manual employees (lower grade)	Basic clerical and sales employees (e.g., cashiers, receptionists)
6	Small proprietors with employees	Small business owners employing others (e.g., shop owners, restaurant owners with staff)
5	Small proprietors without employees	Self-employed individuals without employees (e.g., independent artisans, freelancers)
4	Farmers and smallholders	Small-scale agricultural workers and farm owners
3	Lower-grade technicians; supervisors of manual workers	Technicians with lower specialization (e.g., lab assistants, maintenance supervisors)
2	Skilled manual workers	Tradespeople and craftsmen (e.g., electricians, plumbers, carpenters)
1	Semi- or unskilled manual workers	Factory and industrial workers with some training (e.g., machine operators, assembly line workers); laborers and workers with no specialized skills (e.g., cleaners, construction laborers, farmhands)

Note: We present the social class scheme suggested by Erikson, Goldthorpe and Portocarero (1979, EGP). It uses the International Standard Classification of Occupations (ISCO) codes to categorize occupations as marker of social classes. Majors at the top and bottom were divided to fit the 10 rank distribution. See: <https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/>

Tab. A3: Specification Tests

Dep. var: 2019 protest	Each model adds an alternative set of variables for:						
	Basic controls	Income deciles	Perceived positions	Social gaps (income)	Social gaps (occup.)	Social gaps (composite)	Decile x position interaction
	(0)	(1)	(2)	(3)	(4)	(5)	(6)
(a) Linear probability models							
Joint significance of the set of dummies for:		Decile dummies	Perceived Position dum.	Social gap dum. (income)	Social gap dum. (occup.)	Social gap dum. (composite)	Decile x position dum.
p-value		.36	.58	0	0	0	0
R2	0.118	0.123	0.125	0.134	0.135	0.135	0.155
Adj. R2	0.109	0.110	0.109	0.117	0.118	0.118	0.113
(b) Logit regressions							
Log-L. ratio test (nested models)		(1) vs (0)	(2) vs (1)	(3) vs (1)	(4) vs (1)	(5) vs (1)	(6) vs (1), vs (2)
p-value		0.35	0.39	0	0	0	0.03, 0.03
Socio-demographics	YES	YES	YES	YES	YES	YES	YES
Decile dummies	NO	YES	YES	YES	YES	YES	NO
# obs	2104	2104	2104	2104	2104	2104	2104

Note: we estimate 2019 protest using alternative specification. Controls include socio-demographics (male, age, married, education, indigenous), unemployed, informal worker, and region. For comparability and to conduct nested model tests, we use a common sample (i.e. observations for which income, occupation and perceived status are available) for all specifications. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.