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STUDENTS AND PROTESTS: A QUANTITATIVE ANALYSIS

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Previous studies have found a positive relationship between the youth and the educated with protest intensity, but the form that these protests take needs further research. We argue that students are a unique group, acting neither as an educated nor a young population, and three possible mechanisms push students towards non-violent rather than violent forms of protest. By promoting values of tolerance, higher levels of human capital, and social mobility, education serves as a factor that pacifies destructive tendencies in protest movements. At the same time, universities are a platform for cooperation, and the large amounts of free time and energy make the costs of participating in protests for students minimal compared to other groups. Using a negative binomial regression and a rare events logistic regression, we find that the proportion of students is a strong and consistently significant predictor of the number of non-violent demonstrations.

JEL Classification: D74.

Keywords: students, non-violent protests, violent protests, anti-government demonstrations, riots.

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Introduction

Student movements, which came to prominence during the 1950s and 1960s, are a product of the long-term development of mass education. The need for an educated workforce to manage modern society subsequently resulted in the creation of an active cohort in the population prepared to demonstrate against their representatives and reinforce democratic practices. The accepted wisdom is that the educated are more likely to participate in political activities (Dahlum, 2019), students are often quick to join political protests (Lipset, 1968), and that universities are commonly the location of political demonstrations (Dahlum & Wig, 2021). This can be observed in many anecdotal cases, such as the protests in Argentina in 1955, which ended with the overthrow of Peron, the events of 1956 in Hungary, the protests in Japan leading to the resignation of the Kishi government in 1960, and the Tiananmen student uprising of 1989, which failed to overthrow the Communist Party, but was largely composed of students (Sanborn & Thyne, 2014). One can also refer to the student demonstrations of the 1960s, mass student protests in Chile in 2011, or the Maple Spring in 2012 in Canada. However, in lieu of empirical testing and systematic theorization, scholars commonly offer only descriptive accounts of these dynamics (Chenoweth et al., 2011; Stephan & Chenoweth, 2008). We still do not have systematic knowledge and quantitative studies about the so-called "student protests" and "student political activism" at the cross-national level; these were previously studied only qualitatively (see, e.g., Briggs, 2017; Nissen, 2018).

The one possible exception is research by Dahlum (2019). She found that campaigns with a large number of students and graduated participants are more likely to be non-violent and more likely to reach success. However, this study examined the dichotomy violent vs. non-violent, but not separately the protests or riots and the risks of their occurrence. In other words, the quantitative part was an analysis of a small sample of large episodes that had already occurred. On the contrary, we investigate not the odds of non-violence through one campaign, but the effect of students on the emergence of protests or riots. The main independent variable used by Dahlum, *the Combined Education Index*, takes into account the average education level of campaign participants only. So, firstly, Dahlum tends to equate student behavior to the behavior of educated people; secondly, she takes into account only participants, but not the entire structure of society, which is an important factor.

It is also worth noting that Dahlum created her own main explanatory variable, which cannot be updated constantly. In other words, to replicate protest events using this index requires finding an enormous amount of data for the years since 2006. In addition, the main problem with it is that "the

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majority of criteria are based on the sources' descriptions of who the movement consisted of" (Dahlum, 2019: 288). Thus, it can only be collected *post facto* and has no predictive power.

Thus, the aim of this study is to investigate the relationship between the student population and the intensity of political protest in a country. Past studies demonstrate that youth (Kostelka & Rovny, 2019; Machado, Scatascini, & Tommasi, 2011; Moseley, 2015; Cornell & Grimes, 2015) and the educated (Freeman, 2003; McVeigh and Smith, 1999; Teixera, 1992; Cornell & Grimes, 2015) are more likely to participate in political protests, however, can the same be said for countries with large student populations? We argue that the combination of these two factors in the student population pushes them to protest at higher rates than non-students. That said, the qualitative form of these protests is a subject little investigated in the literature. Do students take after other younger people who tend to participate in both non-violent and violent protests, or do they experience the "pacifying effect" provided by education, commonly described in the socio-political destabilization literature, and participate primarily in non-violent demonstrations (see Østby, Urdal & Dupuy, 2019, Sawyer & Korotayev, 2021)? We argue that non-violent demonstrations are more prominent; education serves as a mediating factor that pacifies the more destructive tendencies in protest movements; education promotes peaceful values and a socially-conscious attitude towards politics, higher levels of human and social capital, which make traditional protests more successful, and social mobility, which raises the opportunity costs of participating in riots and violent demonstrations. We also argue that the share of students in the total population is an independent and crucial factor and cannot be proxied by the level of education in the country. In other words, we claim that students and educated people behave differently, and we cannot equate them when it comes to demonstrations and protests.

Our contributions to the literature are threefold: (1) we propose an original theory, partially developed by other scholars (see Østby, Urdal & Dupuy, 2019, Sawyer & Korotayev, 2021, Dahlum 2019) based on the role of education in both promoting protest intensity generally, all while inhibiting the predisposition to violence; we argue, however, that students are significant and independent predictor, while average level of education has lower and an essentially different effect; (2) we test this relationship using a cross-national dataset (CNTS) and The Non-violent and Violent Conflict Outcomes 1.3 (NAVCO) to demonstrate a consistently positive relationship between the student population and the level of non-violent maximalist campaigns (large protests); (3) our cross-national testing expands upon previous studies of a similar nature by including 10,999[5] country-year

[5] Note that this is the maximum number of observations used in the analysis, but due to omissions in some variables, the number of observations decreases in some models.

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observations from 1919 to 2017, using the CNTS dataset and 19,197 observations (293 non-violent campaigns) from 1919 to 2019, using the NAVCO dataset.

Formal Education, Modernization, and Political Protest

GDP per Capita and Education

The strong positive relationship between economic development, as measured by GDP per capita, and the intensity of political protests has shown to be a robust indicator across numerous studies (Ang, Dinar & Lucas, 2014; Brancati, 2014; Chenoweth & Lewis, 2013; Dalton & van Sickle, 2005; Korotayev, Bilyuga & Shishkina, 2018; Korotayev, Sawyer, & Romanov, 2021; Nam, 2007; Su, 2015). In general, this can be fully explained by the theory of modernization; due to economic development and a natural increase in the middle class, a greater interest in the expansion of political and civil freedoms begins to appear in society (Chenoweth & Ulfelder, 2017), which leads to an increase in the number of peaceful protests. While this general relationship may hold, other exogenous features of the modernization process have shown to be stronger predictors of this relationship, which implies that this general trend may be capturing the relationship demonstrated by more immediate factors such as urbanization, increases in formal education, and democratization (Korotayev, Bilyuga & Shishkina, 2018; Korotayev, Sawyer, & Romanov, 2021; Sawyer & Korotayev, 2021).

Recent cross-national studies have focused on the role that these individual factors of modernization play in terms of promoting political protest. Of those, formal education has often been cited as a key element. Early studies saw the potential for educated populations to break out into mass movements when levels of education and economic growth surpass political developments which hinders career opportunities (Huntington, 1968). This is how Goldstone and McAdam (2001) explained the collapse of the Soviet Union; early economic development led to a large amount of the population moving from the agricultural sector to the cities, where they began working in industrial or services-sector jobs and studying at institutions of formal education. The feelings of dissatisfaction that many highly-educated people felt with their status in blue-collar, industrial jobs formed the catalyst for the mass mobilizations during the late-Soviet period. A similar phenomenon could be seen during the Arab Spring when highly-educated youth took to the streets, in part, to demonstrate against the lack of economic opportunities afforded them (LaGraffe, 2012).

The proliferation of formal education is inextricably linked with modernization. A handful of studies have demonstrated that a strong positive relationship exists between the average years of formal education and economic growth at the early stages of modernization (Barro, 1991; Barro &

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Sala-i-Martin, 1995; Benos & Zotou, 2014; Sala-i-Martin, 1997). In fact, the relationship is circular, as expansions in GDP per capita, primarily in the early and middle stages of modernization, allow a populace to spend more on public and university-level education, which, in turn, promotes the economy's expansion (Atherton, Appleton, & Bleaney, 2013; Hanushek & Woessmann, 2011; Sachs & Warner, 1997). Given that economic development and education are so closely linked, the relationship with both of these indicators can be seen as a longer causal chain, with economic development promoting education, and education then promoting anti-government demonstrations. Much cross-national research has demonstrated that level of formal education a country has is a strong predictor of non-violent demonstrations over violent ones (Hall, Rodghier, & Useem, 1986; Jenkins & Wallace, 1996; Korotayev, Bilyuga, & Shishkina, 2018; Olson, 1963).

Individual Correlates of Education and Protest

While cross-national studies suffer from implicit ecological fallacies, numerous individual-level studies confirm the general trend that we see on the national level. Education, on the whole, is a strong positive indicator of both participation in political processes and in political protests. In the US, both income and the level of formal education are consistently linked to higher rates of political participation (Crotty, 1991; Freeman, 2003; Lipset, 1981; Teixera, 1992). This may be because income and education facilitate the higher levels of human capital necessary for political participation (Lipset, 1981; Powell, 1982; Verba, Nie & Kim, 1978), or, as Brody (1978) has argued, education by itself allows a person more access to information about political issues that affect their lives and the cognitive ability to comprehend it. Using a nationally representative survey of US respondents, McVeigh and Smith (1999) employ a multinomial regression model to understand what differentiates those who engage in political protests, those who participate in institutional political processes, and those who are not politically active. They found that higher levels of educational attainment were associated with higher levels of engagement in political protests. On the other hand, while income also corresponds with higher rates of political participation, this was primarily oriented towards institutional politics. This would seem to indicate that theories of cognitive mobilization may have more explanatory power. Inglehart's (1970, 2005: 28–9) theory of Cognitive Mobilization stipulates that as an individual's level of education increases, this "increases the individual's capacity to receive and interpret messages relating to a remote political community". Access to information related to political processes renders individuals more autonomous, diminishing restraints on human choice, and, consequently, makes them more distrustful of traditional political parties, hierarchical social relations, and institutional processes.

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We find that this relationship holds in other parts of the world as well. Significant, positive correlations can be found between levels of formal education and voting (Freeman, 2003), party membership (El-Said & Rauch, 2015), and political protest (Kostelka & Rovny, 2019; Machado, Scartascini, & Tommasi, 2011). Machado, Scartascini, and Tommasi's research (2011) demonstrates strong positive relationships between educational attainment and protest intensity in Latin America, while Moseley (2015) came to a similar conclusion with his Latin American and Caribbean sample. In Kostelka and Rovny's (2019) study of protest intensity in Europe, regardless of the region, respondents with higher levels of educational attainment were more likely to have reported protesting than those with lower levels. In the 2011–2012 protest wave that swept across Russia, nearly 80% of all protesters reported that they had at least some post-secondary education (Volkov, 2012).

Students, Universities, and the Propensity for Political Protest

In this study, we are interested in empirically investigating a specific mechanism that explains the relationship between the student population and protest intensity. In brief, we claim that given the general cognitive benefits of increased educational attainment, certain mobilizing capabilities specific to universities, and the tendency of the youth to protest more than older age cohorts, students should be specifically more prone to participation in political protests than other groups. Our primary hypothesis is formulated as follows:

H: The share of students in the total population is significantly and positively correlated with the intensity of political protests.

Younger cohorts (Kostelka & Rovny, 2019; Machado, Scatascini & Tommasi, 2011; Moseley, 2015; Briggs, 2017), and especially students (Moller, 1968; Olcese, Saunders & Tzavidis, 2014; Nissen, 2018; Crossley, 2008), are often found in political protests. We can observe this by the simple observation that universities tend to be hotspots for protest events (Dahlum & Wig, 2021; Greene, 1990; Enikolopov, Makarin & Petrova, 2020). Universities and centers of higher education aid participants in overcoming certain collective-action problems related to lowering the cost of participating in protests, reducing the incentives of individuals to falsify their preferences, and coordinating protest groups. Higher education creates a special kind of social network, where students interact with each other and exchange opinions on pressing issues (Hillygus, 2005; Lohmann, 1994). Structurally, universities permit students to mobilize under the banner of student organizations that have the effect of bolstering their capabilities for collective action (Staniland, 2014) and organize at focal points on campus that mitigate issues related to proximity (Boren, 2001). It is for this reason that university campuses around the world are commonly filled with the activities of political

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activists, such as public speeches, debates, the reading and sharing of political literature, and other expressions of political belief.

It is also important that students have a lot of free time and energy for political activities and searching information, while older people, especially with higher education, have neither the time, the energy, nor the inclination to be politically active because they are "often submerged in the world of work, paying the mortgage and raising the next generation" (Briggs, 2017: 4). Thus, the opportunity cost for students of participating in a protest is much lower than for the already-educated population, which faces the possibility of losing income or simply missing out on some of the benefits of participating in a demonstration.

As educational institutions, universities are set up in such a way that gives rise to new grievances. In the university environment, there is a high diffusion and dissemination of information (Thomas, 2002). At their most basic level, the education that students receive at universities teaches them self-management, critical-thinking, deliberation, and individualism, which in turn promotes a social consciousness, and preferences for tolerance, citizen empowerment, and civil rights (Inglehart & Welzel, 2005; Welzel, 2013). Students with such values try to achieve more political inclusion because higher education gives more of an opportunity for self-government by teaching students the behaviors and knowledge necessary to define political preferences, understand politics, and pursue political interests (Hillygus, 2005). A clear example of this is the French student revolution of 1968, when the slogans demanded student autonomy and the social-democratic orientation of governments. Thus, it can be said that students are zealous in advocating for their political rights. They are a striking part of the intelligentsia, always ready to stand up not only for their own but also for general civil rights (Grinin et al., 2017; Lipset, 1968). This is supported by the fact that the rapid growth of well-being and education also generates an increase in the need for self-expression, which is most fully embodied in the student environment, where individualism and independence prevail (Inglehart & Welzel, 2005), leading them to react sharply to any restrictions and, potentially, take to the streets.

Universities have a strong "politicizing effect" because of the concentration of a large number of students who want to express their political position and who have a relatively large amount of free time (McAdam, 1986). Such social organization is characterized by a dense concentration of the human capital necessary for strengthening civil society and facilitating the coordination of people. Both these factors lead to a high level of participation (Scheufele & Shah, 2000). Access to educational capital is essential to the operations of any effective movement (Morris and Staggenborg, 2007: 174–176). A commonality that most leaders of social movements share is their middle or upper-class background and their higher educational attainment relative to the rank-and-file membership

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(Flacks, 1971; Greene, 1990: 47–51; Oberschall, 1973; Rejai & Phillips, 1988). In many respects, their education defines their role as political leaders as they are responsible for the movement's means of action, tactics, and timing (Greene, 1990).

Students tend to be much younger than the rest of the population, whereas Goldstone (2002: 10–11) notes that "large youth cohorts are prone to new ideas and unorthodox religions". When students come into contact with new ideas from the intellectual class in a university setting, this can become the catalyst that launches protest movements. Their lack of professional experience and social ties to the workplace also give them more opportunities to participate in protest actions; access to the professional sector moderates values and ideology (Greene, 1990) and increases the opportunity costs of engaging in political violence (Dahlum & Wig, 2021). Thus, student movements emanating from the universities have tended to be more engaged in unarmed rebellions when compared to the rest of the population.

Students are also a very heterogeneous social group that bridge geographic and demographic divides. Consequently, any discontent in society is likely to affect students, albeit indirectly (Giroux, 2013). In other words, even if the trigger is an event that does not directly affect their education, students as part of other groups will still be mobilized (Lipset, 1968b). This dynamic also operates in the opposite direction; from the initial trigger in the form of higher tuition fees, as was the case in Quebec in 2012, students very quickly move to general policy demands that do not directly affect the educational sphere (Giroux, 2013; Raynauld et al., 2016). The same was seen during the protests in Chile in 2011, which combined student and political-environmental demands (Scherman et al., 2015).

However, we should note that a large class divide exists between those attending university and the rest of society. While the proliferation of higher education has increased the percentage of the population with higher education, technological development and increasingly competitive societies means that the standard of living has become increasingly dependent on the level of education one has (as seen, for example, in the explosion of "deaths of despair" in the US among those without a bachelor's-level education, see Case & Deaton, 2020). Those with lower incomes and educational attainment are characterized by lower levels of all forms of participation on average, primarily due to the barriers to participation that education would otherwise help them overcome (Teixeira, 1992), and a general apathetic disposition to the political process (Gaventa, 1980). That said, as research has shown, societies without high levels of educational attainment are not devoid of political protests, but instead, they are of a qualitatively different form: violent protesting and rioting (Sawyer & Korotayev, 2021).

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There is also the opinion that students have more reason to be dissatisfied because of the enormous amount of debt. As Nissen wrote "debt can—and has—motivated remarkable student protests in recent years" (2018: 37) because the huge number of favorable programs for obtaining an educational loan in different countries and the demand for this from young people who are already aware of the financial precariousness of their situation during their education (Nisse, 2018). Of course, such an unprotected position of students is an important factor in their discontent and demand for the existing authorities.

Student Protests: Peaceful or Violent?

Having discussed the tendency that the educated have towards political mobilization, and the particular propensity that students theoretically have to take to the streets, we can conclude that students are an easily mobilizable group of the population, which as a rule has more aspirations and opportunities than other groups. In particular, it is clear from the arguments above that it is not higher education itself that makes people more politicized, but precisely those characteristics that are unique to students. Universities concentrate large numbers of young, energetic people with lots of free time, who tend to be unencumbered by any major commitments, and who observe political action very closely and critically. They are constantly discussing political issues and want to express themselves, while having good self-organization and unification abilities, as well as low opportunity costs. Thus, we can say that protest life is part of student life (Crossley, 2008). However, the question of the form of protests that students bring to political systems has yet to be formally theorized and empirically tested.

There are a number of reasons to question the assumption that the student population is a primary driver of peaceful protests and not rioting. For one, students are disproportionately young, almost by definition, which is commonly linked to protest intensity of both violent and non-violent forms. Large youth bulges, or the size of the youth population to the total adult population, are significantly associated with armed conflict, politically-motivated violence, and riots when in conditions of high urban inequality and low opportunities for professional advancement (Urdal, 2008). Other studies have reported similar findings in Indonesia (Østby et al., 2011), Sri Lanka (Braunghart, 1984), and others (Goldstone, 1991, 2002; Huntington, 1996; Flückiger & Ludwig, 2018; Urdal & Hoelscher, 2012; Weber, 2019). This was a very prominent theme during the Arab Spring, when disenfranchised young people served as 'combustible material' in countries where slow economic growth and limited opportunities existed (LaGraffe, 2012).

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However, we have reason to believe that this is less the case for the student population. Instead, we argue that the strong propensity of youth to protest is mediated by their development of high levels of social and human capital which help their demonstrations succeed, the pro-tolerance content of their educational programs, and their facilitation of social mobility to produce primarily peaceful forms of protest. Higher education provides greater political interest in and tolerance for political expression, which fosters non-violent democratic protests (Jenkins & Wallace, 1996). At the same time, students are part of the intelligentsia and they have lower opportunity costs for frequent participation in demonstration and more resources for mass cooperation. Due to this, students often act as the core of discontent. Based on this, we formulate our hypotheses as follows:

H1: The share of students in the total population is significantly and positively associated with non-violent protests.

H2: The share of students in the total population is not significantly associated with violent protests.

Scholars of political conflict are quickly coming to the consensus that education plays a pacifying role that tends to mitigate most forms of political violence (Ishiyama & Breuning, 2012; Østby, Urdal & Dupuy, 2019; Sawyer & Korotayev, 2021). What little work that has been performed on education's impact on the propensity to participate in collective acts of political violence (Østby, Urdal & Dupuy's (2019) review of 42 quantitative studies mentions only three) demonstrates that education mitigates the desire to commit violence. Urdal's (2008) study of 27 Indian states concluded that the simple effect of increasing literacy demonstrated a significant negative relationship with the onset of Hindu-Muslim riots. In an earlier study on the propensity of youth bulges to commit acts of political violence, the interaction between educational attainment and the size of the youth bulge neutralized the impact of the propensity to riot (Urdal, 2006).

One likely reason for this may be the normative consequences of receiving a formal education from a school with a state-sanctioned curriculum, which instills democratic values in republican political regimes (Boli et al., 1985: 147–149; Inglehart, 1970), downplay the efficacy and morality of conflict among members of society, and promote peaceful compromise (Østby, Urdal & Dupuy, 2019), and encourage political participation through traditional institutional channels (Hibbs, 1973; Huntington, 1968). Kuhn and Weidmann (2015: 552) have noted, for example, that the less educated are more susceptible to "rhetoric, propaganda, and indoctrination". The dissemination of education and access to information may also allow people to see the world from the point of view of people who are not like themselves (Dahlum, 2019; Inglehart, et al., 2015).

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Another reason, as we hinted at earlier, may be related to education's role in promoting social mobility. Educational attainment, in addition to income and other social characteristics, is a principal component of social class (Breen & Jonsson, 2005). Simply put, the more education one has, the more opportunities to obtain higher-paying jobs with better working conditions are available. Consequently, education is, on the whole, a significant factor that promotes social mobility (Jonsson & Erikson, 2000; Lindbekk, 1998). While the less educated tend to be less politically active, this is not to say that they are politically passive. Instead, where significant disparities in educational attainment, income, and opportunities for advancement are present, violent demonstrations become more likely (Boskin, 1976; Grimshaw, 1960, 1969; Blauner, 1971; Morgan & Clark, 1973). Piven and Cloward (1979), for example, argue that the more educated upper classes are more likely to have their demands met by the political system due to the structural positions they possess in societal institutions which lead their forms of participation in political processes to be more successful. The lower classes, who lack the resources and positions of power to influence politics through traditional avenues, find more success through disruption, such as rioting which is often the "only power they do have" to be heard by the state and be granted concessions (Piven & Cloward, 1979: 26). If more efforts are made to alleviate the conditions of the lower classes, through the proliferation of education and investment in human capital, for example, this would imply a lower likelihood of these cohorts developing grievances as a result of the gap between their expectations and actual situations and lashing out violently at the state (Gurr, 1970; Østby, Urdal & Dupuy, 2019). If the opportunity costs for engaging in collective violence, from having "nothing to lose", are low in under-educated youth (Hall et al., 1986), then increased educational opportunities that promote advancement, and thus raise opportunity costs, may lead to changed protest behavior.

Materials and methods

Methodology

To test our hypotheses, we take panel data from 1919 to 2017 from about 150 countries. We employ a negative binomial regression on our dataset to avoid biases associated with the non-normalized Poisson distribution of our main dependent variables from the CNTS, which contain a large number of 0s. For this reason, we are unable to apply a standard parametric OLS-regression (see Hilbe, 2011). Given that our data contains country-year observations, we introduce fixed effects by country and year to control for potential diffusion effects. We have included these fixed-effects models in order to properly gauge the yearly impact of the student population on the intensity of political protest in a given country; whereas country-fixed effects help account for unobserved

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heterogeneity between different countries, the time-fixed effects take into account unobserved shocks that hit all countries at the same time during our period of observation (see Allison, 2009).

For the validation of our results obtained with the CNTS database, we introduced a binary dependent variable from NAVCO. This requires exploiting the logistic regression because of its dichotomous nature. We also have to use a specification of this method—a rare events logistic regression—as the dependent variable has a bias to 0 (King & Zeng, 2001).

Dependent variable

Our first dependent variable is the number of anti-government demonstrations provided by the CNTS Data Archive (Banks & Wilson, 2020), which can be defined as "any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature" (Wilson, 2020: 5).

Our second dependent variable is the number of riots, that is, violent protests, also provided by the CNTS Data Archive, which can be defined as "any violent demonstration or clash of more than 100 citizens involving the use of physical force" (Wilson, 2020: 5).

We introduce another dataset for robustness check because CNTS, while it was an important early data source, has many well-known weaknesses, particularly when it comes to identifying protest (See Manekin & Mitts, 2021). The third dependent variable is from NAVCO 1.3, which identifies 622 maximalist/revolutionary campaigns which occurred between 1900 to 2019 (Chenoweth & Shay, 2020: 6). These data combine numerous instances of violent and non-violent maximalist campaigns (i.e. large protests) with the goals of expelling foreign occupation, regime change, or separatism, and in some cases other major types of social change (such as campaigns against apartheid). In addition, Chenoweth and Shay identify whether the campaign was successful, achieved its goals or failed, and some other characteristics. However, we are interested in another variable provided by Chenoweth and Shay – whether the campaign non-violent or not.[6] It is this variable that will be the dependent variable in this paper. Thus, it is a binary variable, where 1 is a non-violent revolutionary campaign and 0 is a violent one or no event.

[6] Chenoweth and Shay themselves emphasize that "campaigns are primarily non-violent when the vast majority of participants are unarmed, and when they use mostly non-violent practices to confound, impede, and challenge the regime and its supporters. Campaigns are primarily violent when most participants use force, especially armed force, to target regimes and their supporters" (Chenoweth & Shay 2020: 6).

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Independent and Control Variables

Our main explanatory variable is the percent of tertiary school students in the total population for each year from 1919 to 2017 (percent of Tertiary School Students in Total Population), taken from the CNTS Data Archive (Banks & Wilson, 2020).

It is also necessary to control for the total population that is positively associated with destabilization and violent uprisings (Hegre & Sambanis, 2006) and which alone can explain a fairly large part of the variation (Chenoweth & Ulfelder, 2017). This variable is presented in thousands by Department of Economic and Social Affairs of the United Nations Secretariat (2019).

Regarding the general factors for protests, economic factors often play a crucial role. For instance, some studies confirm that a slowdown in economic growth increases the likelihood of demonstrations (Ang, Dinar & Lucas, 2014; Brancati, 2014; Caren et al., 2017; Gleditsch & Rivera, 2017; Urdal & Hoelscher, 2012). That happens due to reduced employment and entrepreneurship opportunities leading to discontent (Chenoweth & Ulfelder, 2017) and decreased opportunity costs for organizing a union-led protest (Butcher & Svensson, 2016). It is important that because of economic crises and declining growth rates, other economic factors could also appear, for example, inflation pushing people to take to the streets (Chenoweth & Ulfelder, 2017; Massoud, Docs & Magee, 2019). Thus, a country's poor economic performance often pushes its citizens to protest. For our indicator of economic development, we add the GDP per capita logarithm to control our model for the level of well-being, which has already been highlighted by us as an important predictor. We take data from the V-Dem dataset (Coppedge et al., 2019), which covers the most important years for us from 1960 to 1970 (which, for example, the World Bank does not cover). It also makes sense to take the annual percentage growth rate of GDP per capita in constant 2010 dollars from the World Bank dataset (The World Bank Databank: World Development Indicators, 2021) to control for recoveries and recessions in the economic cycle, which, has been found to be important for analyzing protests and grievances.

Researchers note that there is a greater likelihood of peaceful protest in democracies than in autocratic regimes (Caren et al., 2017; Chenoweth & Ulfelder, 2017; Dahl et al., 2017; Korotayev et al., 2018, 2021). This is associated with the facts that: (1) it is easier for dissatisfied citizens to present their demands to the government or to mobilize in a democratic country, where the structure of institutions presupposes the inclusion of broad masses in governance (Nam, 2007); (2) a relatively high level of freedoms, or rather their non-suppression through a repressive apparatus, also leads to an increase in the likelihood of protest (Massoud et al., 2019). Thus, democracy does not in itself lead

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to an increase in discontent but opens the way for its expression through mass mobilization in polling stations and streets (Dahl et al., 2017). The type of regime matters, and we introduce index of Electoral Democracy from Varieties of Democracy (V–Dem), that "is formed by taking the average of, on the one hand, the weighted average of the indices measuring freedom of association thick, clean elections, freedom of expression, elected officials, and suffrage and, on the other, the five-way multiplicative interaction between those indices" (Coppedge et al., 2021: 7), and it scales from 0 to 1.

In addition, representatives of the resource-based view and modernization theory highlight another factor shaping the middle class that requires political rights—the level of urbanization. For example, mass mobilization is more likely in the most urbanized and complex societies with dispersed social power (Gleditsch & Rivera, 2017), where a high concentration of the population and human capital helps disaffected groups find a larger audience (Butcher & Svensson, 2016; Chenoweth & Ulfelder, 2017; Dahl et al., 2017). It is also important to note that in urbanized areas there is a high likelihood of peaceful protests, whereas, at the periphery radical groups choose another violent methods of disagreement (Dahl et al., 2017). For our urbanization variable, we take the share of the population that lives in urban areas. These data are calculated and based on the World Urbanization Prospects database provided by the United Nations Population Division (2021b). However, the original data only contain observations at intervals of five years, so we use linear interpolation to fill in the missing values.

As mentioned, our argument concerning the propensity of students to participate in political protests hinges on two constituent mechanisms, the tendency for both the youth and the educated to participate in political protests (Chenoweth & Ulfelder, 2017; Cincotta & Doces, 2012; Farzanegan & Witthuhn, 2017). However, we argue that students and educated people behave differently to other young people and we control for these two factors to reveal the precise strength of the student population variable. Data for the average number of years of schooling is provided by UNDP Human Development Reports and is defined as the "average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level" (UNESCO Institute for Statistics, 2020). Our data for the share of the youth bulge is defined as the proportion of people in the population between the ages of 20 and 29 and has been calculated on the basis of information provided by the World Population Prospects database (United Nations Population Division, 2021a).

However, data for all variables are not fully available from 1919 to 2017, so we have to limit our subsequent analysis, which reduces the number of observations from one model to another. We

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should also take into account that data are not always available for all country-years, because there are omissions, which again reduces the sample. The number of observations, however, is still large and does not affect the quality of testing our hypotheses.

Results

Students and non-violent protests

Table 1 shows the results obtained during the regression analysis using a negative binomial regression. As might be expected, based on our theoretical research, students are positively and significantly associated with the number of peaceful protests in all models with the introduction of all kinds of controls.

Thus, even in M1, which presents a pairwise regression, it is seen that the *share of students* significantly ($p < 0.001$) affects the intensity of demonstrations. After controlling for the *logarithms of population* and *GDP per capita, economic growth, index of electoral democracy and share of urbanization population* within M2–M5, the share of students is still significantly related to protests ($p < 0.001$). Note, democracy is not a significant predictor, while the economic controls, population and urbanization are strong ($p < 0.001$ except GDP per capita ($p < 0.01$) after introducing urbanization).

In the further models, the variables *mean years of schooling* and *youth bulge* are added to the controls. Thus, *mean years of schooling* appears in M6, which is significantly ($p < 0.001$) positively associated with non-violent protests, and reduces the significance of the students (from $p < 0.001$ to $p < 0.01$). In M7 *youth bulge* is introduced. It is a significant ($p < 0.001$) and negative predictor of non-violent protests.

Even more interesting, *GDP per capita* has changed its sign in M5 and is now negatively associated with the number of peaceful protests, which can be explained by the fact that well-being itself does not directly affect our dependent variable, but only indirectly absorbs both education and urbanization and the type of regime and students (Korotayev et al., 2021).

[Table 1 is about here]

According to Table 1, a higher share of students is significantly associated with non-violent protests. To evaluate its effect Figure 1 is introduced, which shows the predicted intensity of demonstrations depending on *share of students* with a 95% confidence interval holding all variables

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constant at their means. In other words, it is a visualization of our model from Table 1, where the effect of independent variable is depicted, while other are also included, but without own predicted lines. More specifically, this graph is based on M7 from Table 1, which contains all the controls. From the plot, one can see that students have strong and positive effect on protests. This effect is not linear and starting from the moment when the share of students equals five percent, growth begins to increase (and the confidence interval too). Overall, it can be seen that while share of students increases, the intensity of demonstrations in country rises.

[Figure 1 is about here]

In Table 2, we introduced the same models as in Table 1 but used a rare events logistic regression for the occurrence of non-violent maximalist campaigns from the NAVCO dataset. As one can see, the share of students is a positive and significant predictor of intensity of non-violent protests in all models. *Mean years of schooling*, contra to previous models with CNTS data, now is insignificant predictor in M6 and M7, which tells us that *the share of students in total population* has stronger effect on large protests than education which also confirms our suggestion that students, not just educated people, play a crucial role. Another important implication is that the *index of electoral democracy*, contra to previous models with CNTS data, is now a strong and significant predictor in all models, which tells us that the political component should not be discounted.

[Table 2 is about here]

To evaluate effect of students accordingly to NAVCO models the plot in Figure 2 is introduced. As for the previous figure, this graph is based on M7 (but from Table 2) and contains all the controls at their means. Thus, the findings from another dependent variable and dataset shows the same tendency: students have strong and positive effect on protests. This effect is not linear and starting from the moment when the share of students equals five percent, growth begins to increase (and the confidence interval too). Overall, while the share of students increases, the intensity of demonstrations in the country rises.

[Figure 2 is about here]

Thus, we can conclude that our primary hypothesis that the share of students in the total population is significantly and positively associated with political protests is confirmed based on our empirical strategy. The empirical evidence points towards the tendency of students to participate in political protests of a specifically non-violent character, thus confirming H1 as well. The number of

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students has a positive and significant effect on the number of non-violent protests. In addition, it should be emphasized that the share of students as a crucial predictor of anti-government demonstrations is not replaced by the education variable.

Students and violent protests

Table 3 provides a summary of several models showing the association of students and control variables with the number of riots. Thus, students, as we predicted, do not interact with violent protests.

In the first model, under paired regression, students are insignificantly and negatively associated with the number of riots. In further models there is the same tendency: share of students does not associate with riots. The majority of the controls are not significant. For instance, just population, economic growth, and the youth bulge are seen as strong variables associated with riots. GDP per capita and urbanization are significant only in the last model after introducing the youth bulge.

Thus, based on the above analysis, it can be concluded that the share of students in the population does not associate with riots in any model. However, many other variables are also not strong predictors.

[Table 3 is about here]

Turning to analysis based on the NAVCO database, we see the same trend. The share of students is an insignificant predictor of violence within most models. M1 and M2 with the paired model and the model with population, respectively, are exceptions. This is because here the students act as a proxy variable for modernization. Since controlling for GDP per capita the share of students loses in effect and significance dramatically.

[Table 4 is about here]

These findings suggest that, in general, the share of students in the total population is not associated with riots and violence. In other words, this predictor is not significant. Thus, our second hypothesis also can be accepted: students are not a crucial factor of intensity or probability of violence.

Discussion

What has been generally observed by anecdotal evidence and historical accounts has been confirmed through our empirical testing; the percentage of students in the population is positively

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correlated with anti-government demonstrations, leading us to find confirmatory evidence for our primary hypothesis. Our results point to a consistent association between students and protest intensity that, given the controls for the mean level of education and the size of the youth population, shows students are an independent predictor of protest. Our results also confirm a number of studies that provide descriptive accounts (Amutabi, 2002; Moller, 1968), use individual survey data (Olcese, Saunders, and Tzavidis, 2014), proxies (Dahlum and Wig, 2021), and national level observational data (Grinin, et al., 2017) to study student protest behavior. While previous studies in this area have only dealt with individual cases or countries, our findings suggest the impact of students on a global cross-national scale.

We do not think that the student population is the sole factor that promotes political protest. As mentioned in the theoretical section, all of the variables included in our models are directly affected by modernization; as economies develop, urbanization, educational attainment, population sizes, and democratic practices all tend to increase. As our tests indicate, all of these factors have a demonstrable effect on the dependent variable, and at the very least, are responsible for the increase in political protests as part of a longer causal chain. Advances in education come about as a result of economic development which allows for more funding to be appropriated for educational centers (Barro, 1991; Barro & Sala-i-Martin, 1995; Benos & Zotou, 2014; Sala-i-Martin, 1997), while the student population cannot come about without the development of the educational sector of the economy.

Conclusion

Students have commonly been cited as a core group of protest-oriented individuals. From the Civil Rights movement to the utopian student movement in May 1968 to the Russian opposition movement in Bolotnaya Square, students are often at the forefront of protest movements. In the current study, we set out to analyze this relationship empirically and cross-nationally. In the theoretical section, we examine past research on education and the propensity to join political protests and formulated a theory as to why students would be more likely to participate in protests, based on the combined effect of being younger and educated, which both have strong effects in bringing individuals to the streets. Education provides an increased cognitive awareness of social phenomena, and tends to be a significant indicator of the structural position held in society. As a result, educated individuals with higher levels of human capital are more likely to participate in politics, and especially in political protests (Crotty, 1991; Lipset, 1981; McVeigh & Smith, 1999; Teixera, 1992). However, it is only the students who have the advantages of higher education and who have enough time and energy to participate directly in protests. Using unique mobilization sites—universities—they have the opportunity to bring together and for cooperation and discussion.

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Past studies (Sawyer & Korotayev, 2021) lead us to believe that there may be a qualitative difference between the forms that this protest activity takes; we propose an original theory as to why students would be more likely to join peaceful protests over violent ones. First, we argue that higher education provides students with higher levels of human capital, as well as access to the social capital which allow protests to be more successful. Secondly, the content of higher education curricula tends to promote tolerance, deliberation, and new ideas (Boli et al. 1985, 147–9; Inglehart, 1970; Østby, Urdal & Dupuy, 2019), which may push students to participate in more institutional political processes such as peaceful protests (Hibbs, 1973; Huntington, 1968). Finally, education is commonly cited as a source of social mobility, which may help to raise the opportunity costs for participating in more violent, destructive protests that attract a response from state forces. Piven and Cloward (1979) famously argued that "poor people's movements", which have very little to lose by disrupting societal processes, are likely to resort to more destructive protest patterns because this is the only way of making their voices heard. Consequently, if education can function as a tool to promote social mobility, even in the long-term, students' opportunity costs for participating in disruptive protests, such as riots, may be higher. With this in mind, we formulated one primary hypothesis and two secondary hypotheses; (H) The share of students in the total population is significantly and positively correlated with political protests; (H1) The share of students in the total population is significantly and positively correlated with non-violent protests; (H2) The share of students in the total population is not significantly associated with violent protests. The results demonstrate evidence to support each hypothesis. Using cross-national data, with country-year observations, our tests point towards strong significant correlations between the percentage of students in the population and the intensity of anti-government demonstrations.

Our tests are limited in similar ways that all cross-national studies are; while it is believed that these specific individual mechanisms are responsible for protest intensity, our tests cannot fully account for this given the bias implicit in studies with country-year observations as the level of analysis. While we make no claim to causality, our study still corresponds to a number of studies analyzing this relationship on the level of the individual reporting the same conclusions (Olcese, Saunders & Tzavidis, 2014). The results of our study, however, provide evidence for this relationship beyond temporal and geographic boundaries.

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Appendix:

Tab. 1. Negative binomial regression of the intensity of demonstrations (CNTS).

	Dependent variable: Anti-government demonstrations (CNTS)						
Independent variables/Model	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**
Students	0.256***	0.186***	0.109***	0.103***	0.086***	0.082**	0.088**
	(0.013)	(0.015)	(0.023)	(0.024)	(0.024)	(0.028)	(0.030)
Population (logged)		0.209***	0.236***	0.230***	0.272***	0.296***	0.290***
		(0.021)	(0.023)	(0.023)	(0.024)	(0.026)	(0.027)
GDP per capita (logged)			0.478***	0.432***	-0.398**	-0.440**	-0.707***
			(0.105)	(0.112)	(0.150)	(0.170)	(0.185)
GDP per capita annual growth			-2.925***	-2.909***	-2.474***	-3.446***	-3.316***
			(0.405)	(0.407)	(0.390)	(0.437)	(0.468)
Index of electoral democracy				0.162	-0.014	-0.108	-0.156
				(0.137)	(0.136)	(0.141)	(0.148)
Share of urban population					0.023***	0.021***	0.022***
					(0.003)	(0.003)	(0.003)
Mean years of schooling						0.065***	0.064**
						(0.019)	(0.020)
Youth bulge							-0.047***
							(0.014)
Constant	-1.751***	-3.717***	-5.597***	-5.425***	-3.806***	-4.050***	-2.173**
	(0.042)	(0.212)	(0.442)	(0.466)	(0.503)	(0.572)	(0.729)
Time-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	10999	9257	8175	8156	8156	7268	6560

Notes: ***p < .001, **p < .01; *p < .05;

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Tab. 2. Rare events logistic regression of the intensity of maximalist non-violent campaign (NAVCO).

	Dependent variable: maximalist non-violent campaign (NAVCO)						
Independent variables/Model	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**
Students	0.194***	0.124**	0.269***	0.294***	0.301***	0.292***	0.326***
	(0.037)	(0.046)	(0.061)	(0.058)	(0.060)	(0.077)	(0.081)
Population (logged)		0.314***	0.325***	0.343***	0.341***	0.366***	0.355***
		(0.044)	(0.049)	(0.050)	(0.050)	(0.053)	(0.055)
GDP per capita (logged)			-0.754**	-0.505*	-0.392	-0.772*	-0.655
			(0.248)	(0.248)	(0.337)	(0.376)	(0.392)
GDP per capita annual growth			-3.150**	-3.217**	-3.302**	-3.805**	-4.409***
			(1.084)	(1.055)	(1.076)	(1.168)	(1.223)
Index of electoral democracy				-1.286***	-1.289***	-1.308***	-1.105**
				(0.346)	(0.347)	(0.358)	(0.370)
Share of urban population					-0.003	-0.002	-0.001
					(0.007)	(0.007)	(0.007)
Mean years of schooling						0.075	0.035
						(0.050)	(0.051)
Youth bulge							0.104*
							(0.043)
Region-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	11193	9417	8272	8253	8253	7387	6607

Notes: ***p < .001, **p < .01; *p < .05;

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Tab. 3. Negative binomial regression of the intensity of riots (CNTS).

	Dependent variable: Riots (CNTS)						
Independent variables/Model	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**
Students	-0.028	-0.028	-0.043	-0.042	-0.047	0.040	0.055
	(0.017)	(0.020)	(0.029)	(0.029)	(0.030)	(0.035)	(0.037)
Population (logged)		0.123***	0.125***	0.126***	0.134***	0.150***	0.187***
		(0.026)	(0.027)	(0.027)	(0.028)	(0.029)	(0.032)
GDP per capita (logged)			0.062	0.082	-0.058	-0.060	-0.464*
			(0.118)	(0.127)	(0.166)	(0.189)	(0.213)
GDP per capita annual growth			-2.923***	-2.942***	-2.842***	-3.387***	-3.518***
			(0.419)	(0.419)	(0.423)	(0.488)	(0.540)
Index of electoral democracy				-0.053	-0.083	-0.078	-0.275
				(0.156)	(0.157)	(0.162)	(0.178)
Share of urban population					0.004	0.007	0.011**
					(0.003)	(0.003)	(0.004)
Mean years of schooling						-0.047*	-0.031
						(0.022)	(0.024)
Youth bulge							-0.075***
							(0.016)
Constant	-1.200***	-2.457***	-2.607***	-2.670***	-2.414***	-2.559***	-0.386
	(0.045)	(0.263)	(0.502)	(0.529)	(0.563)	(0.627)	(0.815)
Time-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	10999	9257	8175	8156	8156	7268	6560

Notes: ***p < .001, **p < .01; *p < .05;

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Tab. 4. Rare events logistic regression of the intensity of maximalist violent campaign (NAVCO).

	Dependent variable: violent maximalist campaigns (NAVCO)						
Independent variables/Model	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**
Students	-0.312***	-0.366***	-0.078	-0.033	-0.028	0.189	0.182
	(0.084)	(0.092)	(0.113)	(0.114)	(0.118)	(0.148)	(0.155)
Population (logged)		0.344***	0.344***	0.356***	0.355***	0.380***	0.401***
		(0.052)	(0.059)	(0.060)	(0.060)	(0.069)	(0.075)
GDP per capita (logged)			-1.063***	-1.024***	-0.987*	-0.725	-0.740
			(0.307)	(0.304)	(0.389)	(0.481)	(0.507)
GDP per capita annual growth			-7.633***	-7.488***	-7.523***	-5.433***	-6.206***
			(0.961)	(0.962)	(0.999)	(1.263)	(1.367)
Index of electoral democracy				-0.781	-0.778	-0.731	-0.897
				(0.456)	(0.457)	(0.494)	(0.529)
Share of urban population					-0.001	0.002	0.002
					(0.007)	(0.009)	(0.010)
Mean years of schooling						-0.204**	-0.207**
						(0.070)	(0.075)
Youth bulge							-0.006
							(0.063)
Region-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	11193	9417	8272	8253	8253	7387	6607

Notes: ***p < .001, **p < .01; *p < .05;

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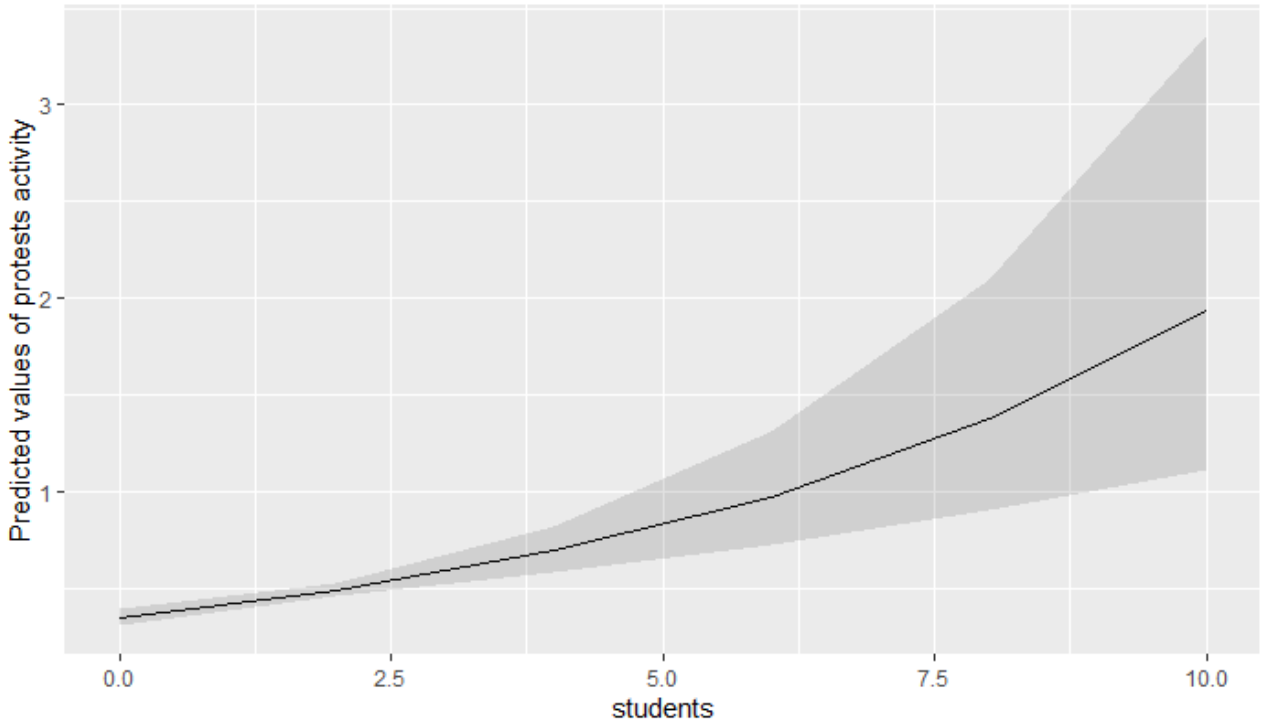

Fig. 1. The predicted intensity of demonstrations (CNTS).

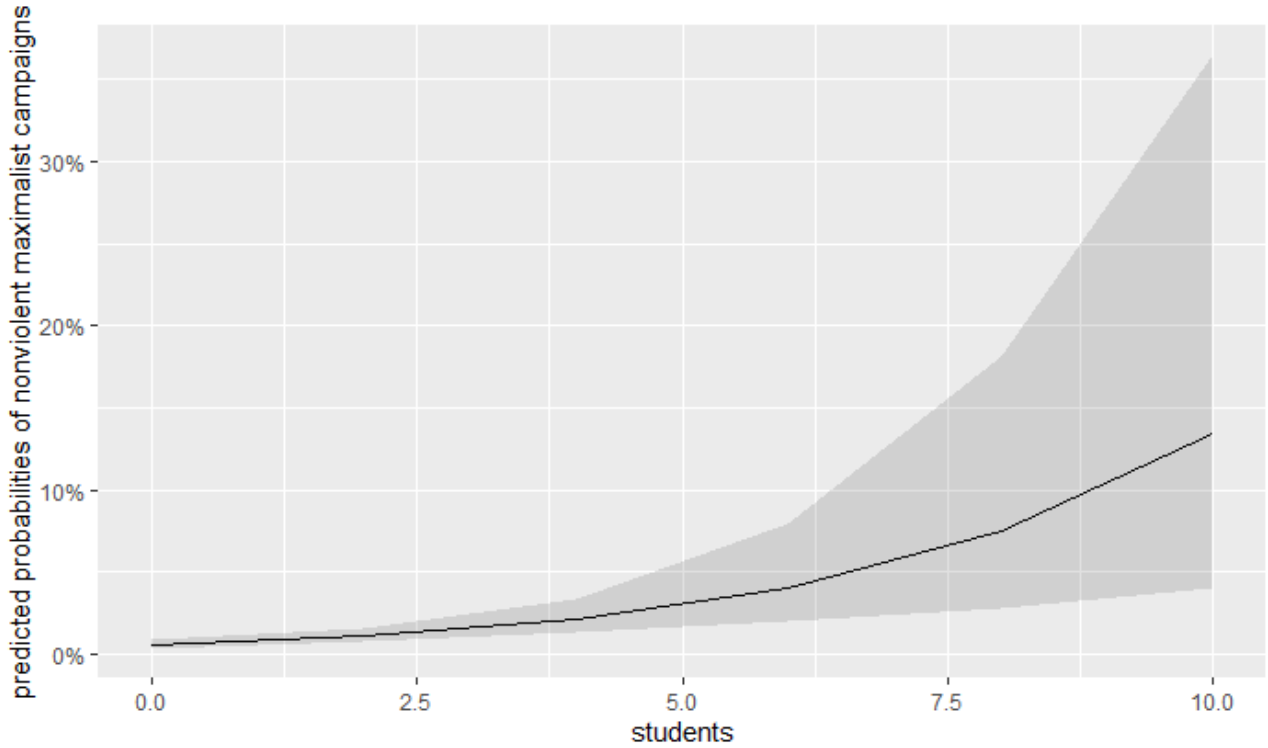

Fig. 2. The predicted probabilities of non-violent maximalist campaigns (NAVCO).

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