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Working-class youth participation in climate action: networks, civic experience, and equity

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Research on individual participation in climate action largely focuses on middle class environmental activism around protest events. To better understand the expansion of civic engagement on climate issues, more work needs to be carried out on wider sectors of the population. This study examines the drivers associated with involvement in climate action at the individual level with a survey sample of working-class youth of color. The findings suggest that youth embedded in pro-climate social networks, a history of civic engagement, and an equity belief system increase willingness to participate in several forms of climate action, including climate meetings, demonstrations, and inviting others to participate. For larger climate action initiatives to overcome the barriers of participation, linking to specific pools of sympathy in civil society that value economic equality may provide a mass base of support for policies consistent with just transition perspectives.

A greater understanding of civic engagement assists policy makers and advocates to increase public participation around climate change initiatives. Indeed, recent publications sponsored by both the British Academy of Sciences[1] and the US National Academies of Science, Engineering and Medicine[2] urge greater public involvement in climate action. The US National Academies of Science state, "The people of the United States are essential contributors to and participants in the decarbonization of the U.S. energy system. Without their active involvement and support, the nation will not achieve the policy, technology, and societal changes necessary to fashion a carbon neutral economy by 2050"[2]. Hence, we need a greater comprehension of not only participation in climate protests, but also how to widen civic engagement in the various forms of climate action in general, from nature-based climate solutions to green energy transitions and decarbonization[3].

Such an undertaking of increasing civic engagement on reducing greenhouse gas emissions begins with studies of the wider population beyond people already participating in climate demonstrations. At the same time, we use the climate protest participation literature to understand what might make groups and individuals in the broader population willing to engage in climate issues. This work focuses on what brings working-class youth of color into the pool of sympathizers for climate action of multiple types, including local climate meetings (the starting place for several forms of climate action).

A pool of sympathizers is the subset of a population prepared by their preferences and stated desires to participate in civic engagement[4,5]. Social movement participation studies provide a set of conditions that bring youth into the pool of sympathizers around climate action initiatives. In concurrence with the recent upswing of youth participation and leadership in the global climate movement, there is now a growing body of empirical studies on youth climate engagement. Holmberg and Alvinius[6] discuss multiple forms of youth involvement over the climate emergency, including marginalized youth. They find several sites of participation such as climate persuasion within families and neighborhoods as acts of youth resistance, while relying heavily on social media channels of communication. Pickard[7] also emphasizes youth activism in the twenty-first century as characterized by grievances expressed via social media and preferences for non-institutional forms of collective action. Others have focused on the neglected issue of *non-participation* in youth environmental action. Such studies find youth non-participation in environmental movements as related to counter-pressures from family and peer networks as well as lacking a sense of efficacy that one's individual participation will make a difference[8].

Drawing from the civic engagement literature, this study utilizes a multidimensional approach to understand working-class youth of color participation in climate action, including the role of informal networks, previous civic engagement, beliefs, and demographic factors[9]. The focus on working class youth of color provides insights on both 1) the correlates of institutional and non-institutional engagement in climate action; and 2) how the findings from this segment of the population may inform more progressive strategies of pushing climate action on to more of an equitable and just transition trajectory. Below, we develop specific hypotheses on the likelihood of working-class youth climate action based on the climate and civic engagement literature.

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Social networks

Informal networks of daily interactions with family, friends, schoolmates, and work colleagues shape people's choices about engaging in collective action. Younger people are especially more likely to be influenced to mobilize through friends or school, rather than more formal organizations or institutions[10]. Friendship networks encouraging participation are especially influential because relationships of reciprocity and trust have already been established[11]. Previous work indicates that younger participants in environmental marches are more likely to join in blocks with peers and schoolmates. They are often invited by friends to participate, highlighting the significant role of friendship as a core informational channel in mobilizing youth for climate action[9,12], especially working-class and immigrant youth[13].

Past civic engagement

One of the most consistent predictors of social movement participation involves past participation in civic-type activities[14]. Young people gain familiarity, experience, and skills to engage in a variety of events once they have participated[15], including climate action[16]. *Outward-oriented* civic engagement would be especially conducive to climate action such as city council meeting attendance, community organizing, and attending public rallies[17]. In the twenty-first century, political participation also includes online activism as many climate movement actions are organized via social media platforms (e.g., Whatsapp, Instagram, TikTok, X, and Facebook)[18]. For climate action participation in particular, past involvement in a climate or environmental protest would likely lead one to be interested in joining a similar action in the future, including climate meetings. It is also more probable for working-class youth of color that past environmental participation involved claims or demands around environmental justice[19].

Efficacy and beliefs

One prevalent hypothesis in the social movement literature states that youth who believe their individual participation will have an impact on policy or social change increase their chance of engaging in collective action[5,20]. Young people make a calculation about if it is worth the effort to invest energy into participation in climate action. Other ideological factors may also make a difference, such as beliefs about equity. Those with strong attitudes about reducing social inequality may be more inspired to act than those with less strongly felt convictions[21]. The motivation likely derives from a sense of threat, whereby not acting worsens existing conditions, especially for those relatively more economically and socially excluded[22].

Demographic characteristics

Demographic factors such as income, race, gender, and age influence individual climate action. Racial and ethnic minorities as well as working-class groups are likely to be more engaged in local climate justice struggles, such as the proximity of oil wells, freeways, and pipelines to residential communities, than predominantly white and middle-class groups who tend to focus on climate change in general and carbon reductionism[23]. Young women have been particularly active in climate politics and climate planning[24]. In the general adult population, participation in climate action tends to decline with age[25]. Since our sample is largely young people between the ages of 18 and 23, we expect relatively older youth, less constrained from parental control, to be more active in civic engagement[26,27].

In summary, we have developed the following hypotheses related to the multi-dimensional models on the forces shaping working-class youth participation in climate action.

H_1: Those with family and friends encouraging civic engagement in general are more willing to participate in climate action.

H_2: Working-class youth with past civic engagement experience will be more interested in participating in climate action in the present.

H_3: Youth who believe their individual participation will have an impact on policy or social change increases their willingness of engaging in climate action.

H_4: Working-class youth concerned about economic equity will show a greater willingness to participate in climate action.

H_5: Those youth with greater biographical availability in terms of relatively older age will more interested in engaging in climate action.

In the following sections, we test these hypotheses and discuss the implication of the findings for increasing working-class youth civic engagement around climate change.

Results

Table 2 presents the descriptive statistics used in the multivariate analyses. The three forms of climate action include willingness to attend a climate meeting, a climate demonstration, and invite someone to a climate meeting. The average for willingness to engage in climate action across the three indicators was slightly above fifty percent. In terms of social networks, friends were more supportive of participation in climate demonstrations than family members. Half of our respondents signed a petition or engaged in online activism, and nearly a quarter of respondents (23 percent) participated in an environmental or climate march in the past. 88 percent of respondents identified as nonwhite and the mean age was 20.9 years old.

Multivariate analysis

Institutional climate action can be defined as meetings, routine and state sanctioned activities addressing climate change (such as urban forestation, climate education, and climate action planning). Non-institutional forms of climate action include protests, boycotts, and other disruptive activities[3]. Table 1 provides multivariate OLS regression models predicting participation in three forms of climate action, from noninstitutional action (joining a rally) to institutional (attending local meetings and inviting others to meetings). In terms of informal networks, youth embedded in friendship relationships that support addressing climate change were more likely to participate in all three forms of climate action. Climate supportive parents was positively associated with working-class youth being more willing to invite others to a local climate meeting. Multiple types of past civic engagement activities also made one more willing to engage in several dimensions of climate action. Two especially strong civic engagement predictors of climate action were contacting a state official and experience in a climate or environmental march.

Past engagement with state actors made youth 9 percentage points more likely to attend a local climate meeting and 12 percentage points more willing to attend a climate rally (holding all other variables constant). The noninstitutional action of participating in a past environmental or climate demonstration increased one's willingness by 10 percentage points to attend a local climate meeting - an institutional form of climate action. Also consistent with research reporting climate activism as partially driven through online communication[28], past social media activism was also associated with a greater likelihood to participate in all three forms of climate action. In terms of belief systems, those youth with attitudes in favor of a more equitable distribution of economic resources were more willing to engage in all three forms of climate action. These same values of economic and social equity act as the core principles within sectors of the climate movement that seek just transitions and energy justice. Consistent with these findings on values of equity, working class youth and nonwhite participants across climate demonstrations in Europe were not as inclined as middle- and upper-class youth to believe in market-based solutions to global warming[29]. As expected from our hypothesis, older young adults were more interested in climate action than youth in their late teens as they are less under parental control. Women were more open to attending a climate demonstration than men, and students of color were more willing to invite others to a climate meeting than their white peers.

Discussion

Working-class youth of color embedded in pro-climate peer networks, a history of civic engagement, and holding an equity belief system were all associated with a greater willingness to participate in several forms of climate action, including climate meetings, demonstrations, and inviting others to participate in climate meetings. The social network finding of peer approval of climate engagement as associated with interest to participate in multiple

Table 1 | Multivariate OLS regression models predicting willingness to participate in institutional and noninstitutional forms of climate action (n = 582)

	Willingness to attend a local climate change meeting	Willingness to attend a climate rally	Willingness to invite someone to a climate meeting
Social networks			
Friends	0.016* (0.007)	0.024*** (0.008)	0.019** (0.007)
Family	0.009 (0.006)	0.009 (0.006)	0.015* (0.006)
Civic engagement			
Signed petition	0.066** (0.024)	0.047* (0.023)	0.071** (0.024)
Contact state/ elected official	0.094** (0.030)	0.121*** (0.029)	0.105*** (0.031)
Climate/ environmental march	0.098*** (0.024)	0.108*** (0.024)	0.083*** (0.026)
Social media mobilization	0.066** (0.025)	0.078*** (0.024)	0.067** (0.025)
Ideology/belief system			
Equity in resource distribution	0.040*** (0.011)	0.052*** (0.011)	0.042*** (0.010)
Efficacy	0.010 (0.012)	0.018[a] (0.010)	0.020[a] (0.012)
Demographic controls			
Gender (Woman = 1)	0.015 (0.029)	0.056* (0.027)	0.004 (0.026)
Age	0.008* (0.004)	0.008*** (0.003)	0.008** (0.003)
Income	0.006 (0.010)	−0.013 (0.010)	−0.008 (0.010)
Nonwhite/White (Nonwhite = 1)	0.052[t] (0.031)	0.030 (0.031)	0.088** (0.030)
Constant	−0.172 (0.109)	−0.314*** (0.089)	−0.297*** (0.090)
R-squared	0.26	0.35	0.29

*$p \le .05$; **$p \le .01$; ***$p \le 0.001$ (two tailed tests) (Robust Standard Errors in Parentheses)
[a]<0.10

types of climate action may suggest the importance of expanding climate change curriculum in the school system. Expanding climate education may increase youth awareness of the impacts of planetary warming and encourage wider groups of youth to influence their friends in seeking solutions. The positive relationship between previous civic engagement and willingness to engage in climate initiatives shows the importance of public participation in general. Promoting civic engagement (e.g., via the funding of community-based organizations) could provide another pathway to enlarging the pool of sympathizers for climate related activities.

Future research should also examine the implications of how values of equity and economic redistribution encourage climate action for young adults in working-class communities of color. Those youth already organized in civic engagement with distributive beliefs are not only motivated to attend climate rallies to pressure governmental officials, but also more willing to attend more institutionalized actions such as local climate meetings. Local climate meetings provide a democratic and participatory space to initiate and strategize a wide variety of just transition initiatives, from equitable climate action planning, municipal control of energy and water distribution to workforce development projects involving nature-based climate solutions and green jobs with good benefits[30,31].

Future lines of inquiry may also further explore the implications of equity-focused youth as more likely to invite others to local climate meetings, acting as a key node or broker in the community to expand participation in climate initiatives. Such "inviters" are critical mediators moving people from concern about planetary warming to climate action. As young people have reinvigorated the global climate movement since 2019[21,32], working class youth of color appear especially positioned to direct climate initiatives in a just transition trajectory while resisting other efforts by more privileged groups promoting agendas of carbon reductionism and monetizing various forms of carbon capture and storage (CCS), while leaving the overall treadmill of production intact. Indeed, the leading Climate Justice organization in the United States, the Climate Justice Alliance, includes the "redistribution of resources and power" as one of its six core principles of Just Transitions[33]. This is the same equity principle associated with willingness to participate in multiple forms of climate action by working-class youth of color in this study. Greater integration of groups aligned with environmental justice principles in climate civic engagement, such as working-class youth of color, may provide a roadmap whereby existing inequalities are less likely to be reproduced in the search for climate solutions.

Methods

Sampling and data collection

The study is based on a survey of undergraduate students at the University of California, Merced (UCM). The study was approved by the UC Merced Institutional Review Board in 2019 (UCM2019-85) and informed consent was obtained from respondents. Sixty percent of the student population at (UCM) receive Federal Pell grant funding for exceptional financial need. The online survey was administered in the spring semester of 2021 and the fall semester of 2023 through the SONA cloud platform. Students were recruited in their classes and received extra course credit as compensation for their participation. The survey is based on a modified version of the Protest for a Future II questionnaire administered during the Fridays for Future youth protests in fifteen countries across Europe and North America in 2019[11]. The sample included 582 students, representing 7 percent of the 8300 undergraduates enrolled at UC Merced. The response rate was 18.2 percent. With sampling frames of over 500 university students, sample estimates are viewed as reliable with response rates as low as between 5 and 10 percent[34]. The survey sample included similar racial and income distributions as the entire campus student population. In terms of race/ethnicity, the campus undergraduate population is 91 percent nonwhite and the sample is 88 percent nonwhite. The student population has a median household income of $57,160 and 54 percent of the survey sample had a self-reported median household income of $50,000 or less.

Survey design and measures

Table 2 lists the descriptive statistics for all variables in the analysis. There are three dependent variables in the study covering multiple dimensions of climate action. The first variable measured willingness to attend a rally that demands government officials to address climate change. The second dependent variable expressed the willingness to attend a local climate change meeting, and the third dependent variable examined willingness to invite someone to a local climate change meeting. The three dependent variables are measured as percentages on a scale from 0 to 1.

The independent variables include measures of social networks, past civic engagement, ideology and belief systems, and demographic characteristics. Beginning with social networks, respondents were asked to rank using a scale ranging from (0) to (10) the extent to which parents/family and friends would approve or disapprove their participation in a climate demonstration. For past civic engagement, respondents reported yes (coded 1) and no (coded 0) for participation in the following activities: signing a petition or public letter, contacting a politician or local/government official, raising awareness on a political issue using social media, and participating in a climate or environmental march.

Another set of questions asked the participants about their ideology and belief system. The first variable, as a measure of external efficacy, asked participants to rate the extent of hope they had about policies being able to

Table 2 | Descriptive statistics (*N* = 582)

	Mean	SD	min	max
Attend a climate change meeting	0.54	0.28	0	1
Attend a climate rally	0.52	0.30	0	1
Invite to climate change meeting	0.52	0.29	0	1
Social networks				
Family	6.27	2.92	0	10
Friends	7.94	2.06	0	10
Civic engagement				
Petition	0.52	0.50	0	1
Contact state/elected official	0.17	0.37	0	1
Climate or environmental march	0.23	0.42	0	1
Social media mobilization	0.51	0.50	0	1
Ideology/belief system				
Equity in resource distribution	3.51	1.03	1	5
Efficacy	2.93	0.98	1	5
Demographic controls				
Gender (Woman = 1)	0.80	0.40	0	1
Age	20.90	3.49	17	58
Income	1.46	1.07	0	3
Nonwhite/White (Nonwhite = 1)	0.88	0.32	0	1

address climate change by using a 5-point Likert scale, where (1) indicated "not at all" to (5) indicated "very much." In a measure of the value of economic equity, respondents were also asked to rate their level of agreement about a government's redistribution of income from the better off to those who are less well off, by using a 5-point Likert scale, where (1) indicated "strongly disagree" to (5) indicated "strongly agree." A set of demographic characteristics inquired about gender, age, income and race.

We performed multivariate Ordinary Least Squares (OLS) regression models (with robust standard errors) for each of the three continuous dependent variables to estimate the willingness to 1) attend a climate change demonstration, 2) attend a climate change meeting and 3) invite someone to a climate change meeting. The results are presented as regression coefficients in Table 1 representing the percentage point change of the dependent variables associated with a unit change in each independent variable.

Data availability

As agreed with the University of California Institutional Review Board (IRB) for this study with human subjects, data is protected and anonymized files used for the analysis can be made available by contacting the corresponding author.

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References

1. Verfuerth, C., Demski, C., Capstick, S., Whitmarsh, L. & Poortinga, W. A people-centred approach is needed to meet net zero goals. *J. Br. Acad.* **11**, 97–124 (2023).
2. National Academies of Sciences, Engineering, and Medicine. *Accelerating Decarbonization in the United States: Technology, Policy, and Societal Dimensions* (National Academies of Sciences, Engineering, and Medicine, 2023).
3. Almeida, P., González Márquez, L. R. & Fonsah, E. The forms of climate action. *Sociol. Compass* **18**, e13177 (2024).
4. Klandermans, B. The Social Psychology of Protest (Blackwell, 1997).
5. Van Stekelenburg, J. & Klandermans, B. *A Social Psychology of Protest: Individuals in Action* (Cambridge University Press, 2024).
6. Holmberg, A. & Alvinius, A. Children's protest in relation to the climate emergency: A qualitative study on a new form of resistance promoting political and social change. *Childhood* **27**, 78–92 (2020).
7. Pickard, S. *Politics, protest and young people: Political participation and dissent in 21st century* (Palgrave Macmillan UK, 2019).
8. Feldman, H. R. Motivators of Participation and Non-Participation in Youth Environmental Protests. *Front. Political Sci.* **3**, 662687 (2021).
9. Schussman, A. & Soule, S. A. Process and protest: Accounting for individual protest participation. *Soc. forces* **84**, 1083–1108 (2005).
10. Rainsford, E. & Saunders, C. Young Climate Protesters' Mobilization Availability: Climate Marches and School Strikes Compared. *Front. Political Sci.* **3**, 713340 (2021).
11. Andretta, M. & della Porta, D. When millennials protest: Youth activism in Italy. In *Italian Youth in International Context*, pp. 41–57 (Routledge, 2020).
12. De Moor, J., Uba, K., Wahlström, M., Wennerhag, M. & De Vydt, M. *Protest for a future II: Composition, mobilization and motives of the participants in Fridays For Future climate protests on 20-27 September, 2019, in 19 cities around the world* (Swedish Research Council for Sustainable Development, 2020).
13. Teney, C. & Hanquinet, L. High political participation, high social capital? A relational analysis of youth social capital and political participation. *Soc. sci. res.* **41**, 1213–1226 (2012).
14. McAdam, D., Fielding-Singh, P., Laryea, K. & Hill, J. Predicting the Onset, Evolution, and Postgraduate Impact of College Activism. *Mobilization* **27**, 125–147 (2022).
15. Wray-Lake, L. How do young people become politically engaged? *Child Dev. Perspect.* **13**, 127–132 (2019).
16. Lorenzini, J., Monsch, G. A. & Rosset, J. Challenging Climate Strikers' Youthfulness: The Evolution of the Generational Gap in Environmental Attitudes Since 1999. *Front. Political Sci.* **3**, https://doi.org/10.3389/fpos.2021.633563 (2021).
17. Fisher, D. R. *Saving Ourselves: From Climate Shocks to Climate Action* (Columbia University Press, 2024).
18. Belotti, F., Donato, S., Bussoletti, A. & Comunello, F. Youth Activism for Climate on and Beyond Social media: Insights from FridaysForFuture-Rome. *Int. J. Press Politics* **27**, 718–737 (2022).
19. Conner, J. We Are Missing Our Lessons to Teach You One: Youth Activists on the Frontlines of Climate Justice. In *Environmental Justice in North America*, 355–384 (Routledge, 2023).
20. Van Zomeren, M., Postmes, T. & Spears, R. Toward an integrative social identity model of collective action: a quantitative research synthesis of three socio-psychological perspectives. *Psychological Bull.* **134**, 504 (2008).
21. Jasny, L. & Fisher, D. R. How networks of social movement issues motivate climate resistance. *Soc. Netw.* **75**, 159–169 (2023).
22. Almeida, P. D. The role of threat in collective action. *The Wiley Blackwell companion to social movements*, 43–62 (Wiley Blackwell, 2019).
23. Méndez, M. *Climate change from the streets: How conflict and collaboration strengthen the environmental justice movement* (Yale University Press, 2020).
24. Fisher, D. R. Climate of resistance: How the Climate Movement Connects to the Resistance. In *The Resistance: The Dawn of the Anti-Trump Opposition Movement* (eds Meyer, D. & Tarrow, S.) Chapter 5. 109–125 (Oxford University Press, 2018).
25. Almeida, P., González, L. R., Flores, E. O., Curry, V. & Padilla, A. The building blocks of community participation in local climate meetings. *Npj Clim. Action* **2**, 37 (2023).
26. McAdam, D. Recruitment to High-Risk Activism: The Case of Freedom Summer. *Am. J. Sociol.* **92**, 64–90 (1986).
27. Wray-Lake, L., Arruda, E. H. & Schulenberg, J. E. Civic development across the transition to adulthood in a national U.S. sample: Variations by race/ethnicity, parent education, and gender. *Dev. Psychol.* **56**, 1948–1967 (2020).

28. Nasrin, S. & Fisher, D. R. Understanding collective identity in virtual spaces: a study of the youth climate movement. *Am. Behav. Scientist* **66**, 1286–1308 (2022).
29. della Porta, D. & Portos, M. Rich kids of Europe? Social basis and strategic choices in the climate activism of Fridays for Future. *Riv. Ital. Di Sci. Politica* **53**, 24–49 (2023).
30. Caggiano, H., Kocakuşak, D., Kumar, P. & Tier, M. O. US cities' integration and evaluation of equity considerations into climate action plans. *npj Urban Sustain.* **3**, 50 (2023).
31. Hess, D. J. *Good green jobs in a global economy: Making and keeping new industries in the United States* (Mit Press, 2012).
32. Malafaia, C. & Fernandes-Jesus, M. Youth Climate Activism: Addressing research pitfalls and centring young people's voices. In *Land, Water, Air and Freedom: The Making of World Movements for Environmental Justice* (eds Carvalho, A. & Martínez-Alier, J.)(Edward Elgar Publishing, 2024).
33. Anon. Just Transition. Climate Justice Alliance. https://climatejusticealliance.org/just-transition/ (2024).
34. Fosnacht, K., Sarraf, S., Howe, E. & Peck, L. K. How important are high response rates for college surveys? *Rev. High. Educ.* **40**, 245–265 (2017).

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P.A. conducted survey design and data collection. P.A., R.N., and I.H. worked collectively on data cleaning, data analysis, and writing. P.A., R.N., and I.H. jointly contributed to the literature review and revisions.

Competing interests

The authors declare no competing interests.

Additional information

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