

Supplementary Information: Climate Actions by Climate and Non-Climate Researchers

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1 Descriptives

Tables S1 and S2 show frequencies and percentages for demographic and background variables for researchers whose research is *not at all* and *a great deal* related to climate change. We find that the two samples are generally very similar, but that climate researchers tend to be younger, are slightly more likely to be male, are more likely to come from the natural sciences or from professions and applied sciences, and are less likely to be full professors but more likely to be PhD candidates / Postdocs or researchers at public research institutes.

Table S1: Frequencies and percentages of demographic and academic background variables for both climate and non-climate researchers.

Variable	Value	Non-climate researchers (<i>n</i> = 2,257)	Climate researchers (<i>n</i> = 1,565)
Age	18-24 years	2 (0%)	4 (0%)
	25-34 years	359 (16%)	366 (23%)
	35-44 years	779 (35%)	548 (35%)
	45-54 years	526 (23%)	332 (21%)
	55-64 years	337 (15%)	201 (13%)
	65+ years	244 (11%)	106 (7%)
	NA	8 (0%)	6 (0%)
Gender	Male	1308 (58%)	975 (62%)
	Female	874 (39%)	538 (34%)
	Non-binary	12 (1%)	16 (1%)
	Prefer to self-describe	10 (0%)	4 (0%)
	Prefer not to say	48 (2%)	28 (2%)
	NA	3 (0%)	2 (0%)
Continent	Europe	1120 (50%)	779 (50%)
	North America	783 (35%)	372 (24%)
	South America	47 (2%)	82 (5%)
	Asia	159 (7%)	179 (11%)
	Africa	5 (0%)	36 (2%)
	Oceania	125 (6%)	101 (6%)
	NA	16 (1%)	14 (1%)
Field	Social and behavioural sciences	600 (27%)	341 (22%)
	Natural sciences	867 (38%)	716 (46%)
	Medical sciences	411 (18%)	24 (2%)
	Professions and applied sciences	171 (8%)	392 (25%)
	Formal sciences	118 (5%)	17 (1%)
	Humanities	78 (3%)	14 (1%)
	Other	10 (0%)	59 (4%)
Position	PhD candidate	135 (6%)	134 (9%)
	Postdoc	236 (10%)	216 (14%)
	Assistant professor	376 (17%)	213 (14%)
	Associate professor	420 (19%)	269 (17%)
	Full professor	649 (29%)	335 (21%)
	Researcher in industry	53 (2%)	27 (2%)
	Researcher at a public research institute	211 (9%)	240 (15%)
	Researcher at a non-profit organization	54 (2%)	48 (3%)
	Other	118 (5%)	78 (5%)
	NA	3 (0%)	3 (0%)

Table S2: Frequencies and percentages of the variables political orientation and self-reported carbon-intensity of lifestyle (see Table S3) for both climate and non-climate researchers.

Variable	Value	Non-climate researchers ($n = 2,257$)	Climate researchers ($n = 1,565$)
Political orientation	1=Left	208 (9%)	190 (12%)
	2	849 (38%)	560 (36%)
	3	656 (29%)	384 (25%)
	4	352 (16%)	265 (17%)
	5	141 (6%)	94 (6%)
	6	25 (1%)	32 (2%)
	7=Right	3 (0%)	19 (1%)
	NA	21 (1%)	19 (1%)
Carbon-intensity of lifestyle	Much lower	271 (12%)	208 (13%)
	Lower	1102 (49%)	753 (48%)
	About the same	650 (29%)	395 (25%)
	Higher	205 (9%)	173 (11%)
	Much higher	26 (1%)	32 (2%)
	NA	1 (0%)	2 (0%)

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2 Item formulation

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Table S3 shows the expanded item formulations used in the survey and the shortened name that is used to refer to them in the main text. While we have included an item on having fewer or no children based on Wynes & Nicholas [1], we note this action and its potential are controversial. To calculate the impact of having one fewer child, the authors assumed constant carbon emissions into the future and assigned half of the child’s carbon emission (and half of the child’s child carbon emissions and so on) to the parent, which is highly questionable. Personally, we are not convinced of it as a (scalable) climate solution compared to e.g. switching to plant-rich diets. We have included it regardless because absolute proportions and potential differences would still be interesting.

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Participants saw additional clarification for the items advocacy and nonviolent civil disobedience. In particular, we defined climate change advocacy as “the promotion of actions and policies aimed at reducing the impacts of climate change through for example public education, awareness-raising, and political engagement” and expanded on civil disobedience, writing: “There are many definitions of civil disobedience, but it can broadly be understood as a ‘constrained, communicative protest, contrary to law, that people engage in to support a change in governmental or nongovernmental practices’ (Smith & Brownlee, 2017) or as a ‘public, nonviolent, conscientious yet political act contrary to law usually done with the aim of bringing about a change in the law or policies of the government’ (Rawls, 1971). Civil disobedience actions vary widely, ranging from strikes and boycotts to blocking the construction of oil pipelines. Civil disobedience has been used by numerous past social movements, including the suffragettes, the Indian independence movement, and the civil rights movement. It comes with the risk of arrest.”

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Table S3: Item formulation and shortened name used in main text to refer to it.

Shortened Name	Item formulation
Engaged with politicians	Engaging directly with politicians or policymakers on topics related to climate change (e.g., attending city council meetings, giving expert advice)
Engaged in advocacy	Engaging in climate change advocacy
Wrote letters to politicians	Writing letters to or emailing politicians, civil servants, journalists or editors about the topic of climate change
Engaged in civil disobedience	Participating in nonviolent civil disobedience actions related to climate change
Engaged in protest	Participating in legal climate change-related protests (e.g., marches, demonstrations)
Advocated change within institution	Advocating institutional change (e.g., for universities to divest from fossil fuels, for less meat in catering or cafeterias, for a mandatory course on climate change)
Signed petitions	Signing petitions for policy changes addressing climate change
Talked about climate with others	Talking about climate change with others
Donated to climate organizations	Donating money to an organization that works to reduce climate change
Switched to renewable energy at home	Increasing energy efficiency or shifting to renewable energy at home (e.g., installing solar panels, installing a heat pump, improving insulation, switching to a green energy supplier)
Reduced flying	Reducing the amount of flying
Follows a mostly vegetarian or vegan diet	Following a mostly vegetarian or vegan diet
Reduced car usage	Reducing car usage
Switched to electric vehicle	Switching to an electric vehicle
Decided to have fewer or no children	Having fewer or no children
Research related to climate	To what extent is your research related to climate change?
Worry	Overall, how worried are you about climate change?
Informedness	How informed do you consider yourself to be about climate change?
Political orientation	Where would you place yourself on this scale representing political views from left to right?
Carbon-intensity of lifestyle	Compared to the average citizen in the country you are currently residing, how carbon intensive do you think your lifestyle is?

3 Difference between climate and non-climate researchers

Figure S1 shows how many times more likely climate researchers are to report engaging in civic actions and lifestyle changes compared to non-climate researchers. We report estimates without adjusting for any background or other variables (blue circle), estimates adjusted for background variables (green triangle), and estimates adjusted for background variables and how informed researchers consider themselves to be about climate change (beige squares). Adjusted estimates were calculated via the R package *marginaleffects* [2] by calculating the average of the predicted (multiplicative) difference between climate and non-climate researchers for different levels of the variables we adjusted for [not assuming a balanced data set, but using their empirical distribution; 3]. Background variables were age (held at its mean), political orientation (held at its mean), academic position, scientific field, continent, tenure status, and gender. Adjusting for background variables does not markedly change the estimates compared to not adjusting for them. Sometimes they are actually higher, which is an instance of *Simpson's reversal* [4]. While adjusting for background variables makes no difference, adjusting for how informed researchers consider themselves to be on climate change (fixing the variable at its mean) does reduce the differences between climate and non-climate researchers. Additionally

57 adjusting for levels of worry had a negligible effect.

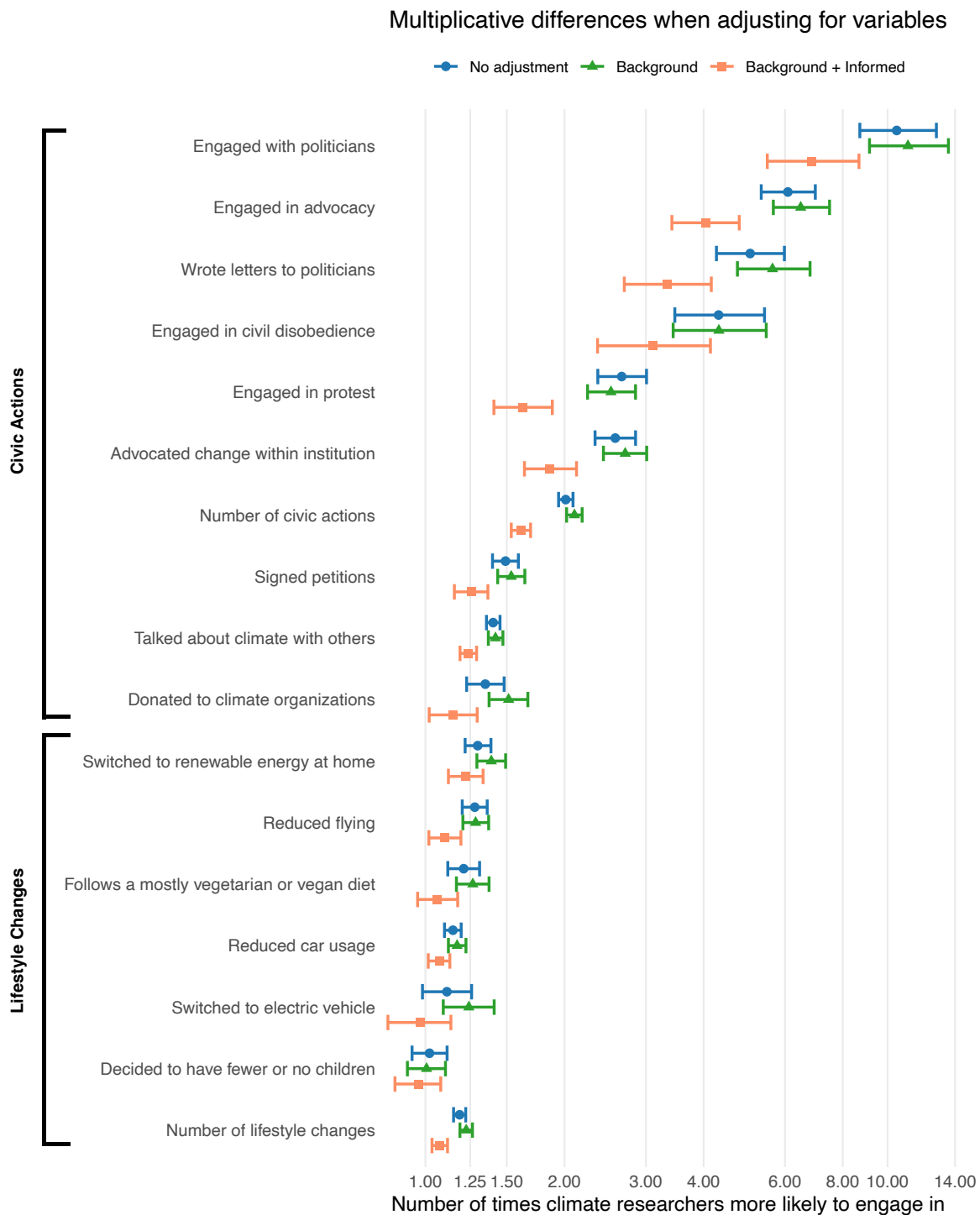


Figure S1: **Differences when adjusting for variables.** Posterior means and 99% credible intervals for the number of times researchers whose research is *a great deal* related to climate change reported engaging more in civic actions and lifestyle changes than researchers whose research is *not at all* related to climate change. Estimates are without any adjustment (blue circles), adjusting for background variables (green triangles), and adjusting for background variables and how informed researchers considers themselves to be on climate change (beige squares).

58 4 Difference between all researchers

59 Figure S2 shows that the more researchers' research was related to climate change, the more they
 60 tended to report engaging in civic actions (orange). Bayes factors indicated strong evidence for such

an ordinal hypothesis for all civic action. This was also the case for all but two lifestyle changes (green): the null hypothesis of no difference across research types was strongly supported for switching to an electric vehicle and deciding to have fewer or no children.

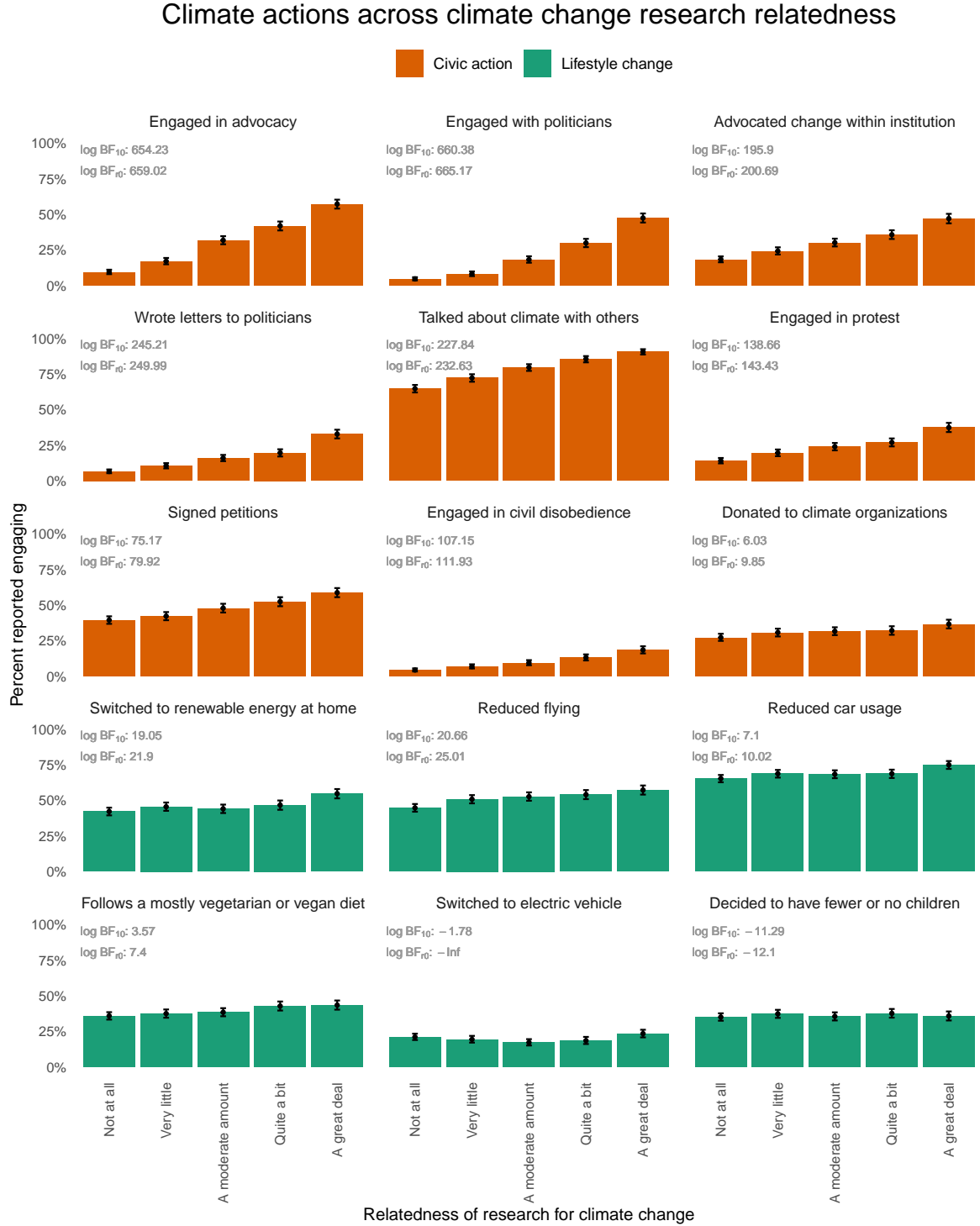


Figure S2: **Climate actions across climate change research relatedness.** Percentage of researchers who reported engaging in civic actions (orange) and lifestyle changes (green) depending on how related their research is to climate change. Gray points and error bars indicate posterior means and 99% credible intervals. Bayes factors in favor of \mathcal{H}_1 (all proportions differ) and \mathcal{H}_r (proportions increase with climate research relevancy) over \mathcal{H}_0 (all proportions equal) are given.

5 Correlations between all climate actions

Figure S3 shows pairwise Kendall's τ for all climate actions as well as self-reported carbon-intensity of lifestyle and political orientation. The climate actions tended to correlate positively with each other, except deciding to have fewer or no children. Reducing flying and reducing car usage were most strongly associated with the self-reported carbon-intensity of one's lifestyle. Interestingly, political orientation was strongly negatively related with engaging in protest and signing petitions. The more on the right one is on the political spectrum, the less one tended to engage in these two (and many other) climate actions. On the other hand, one's political orientation seemed to be only very weakly related to engaging with politicians, switching to renewable energy at home, and switching to an electric vehicle.

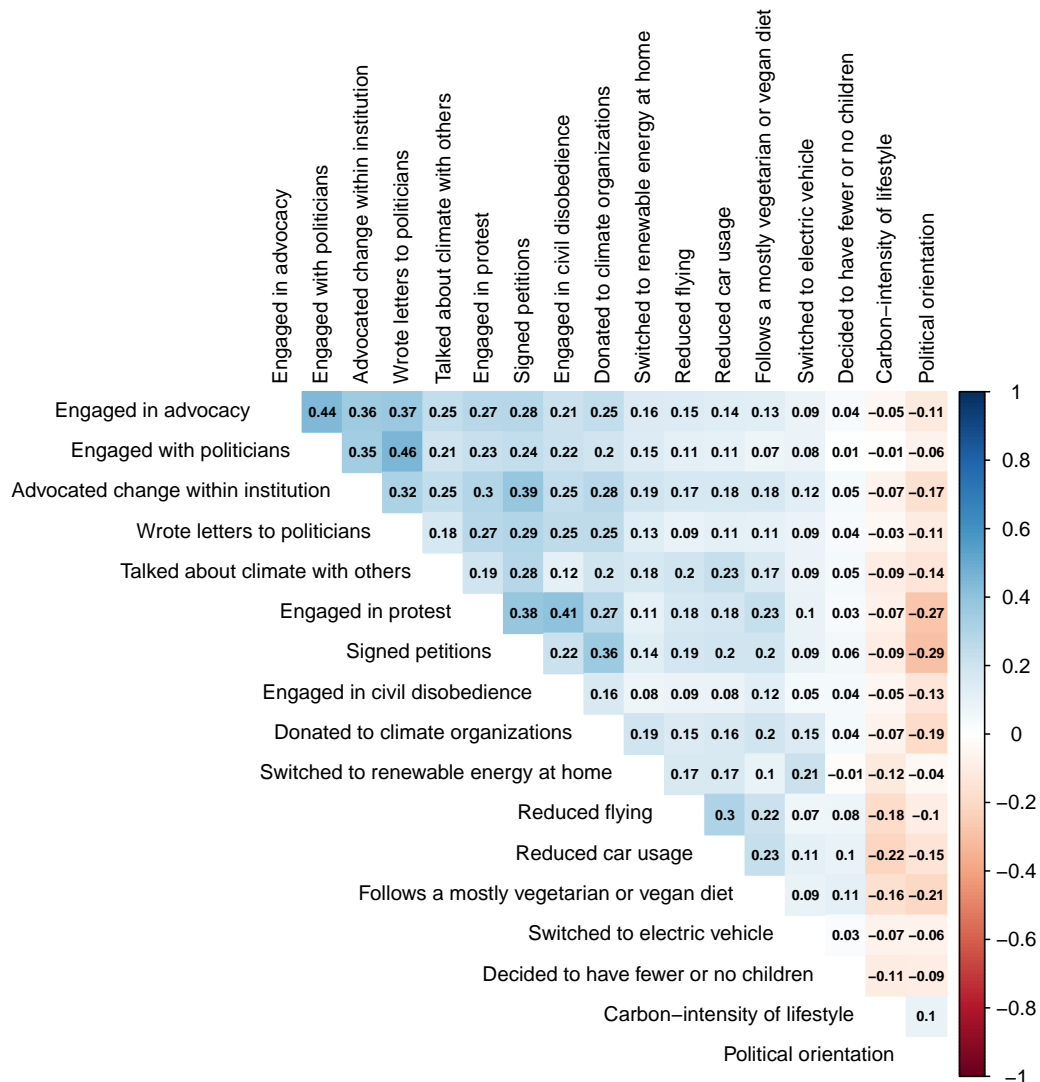


Figure S3: **Correlations between climate actions.** Kendall's τ correlations among all climate actions across the overall sample as well as self-reported carbon-intensity of lifestyle and political orientation.

6 Difference across climate research fields

Figure S4 shows that climate researchers from the social and behavioural sciences tended to report engaging in more civic actions as well as making more lifestyle changes than climate researchers from the natural sciences, who in turn tended to report engaging more than climate researchers in professions and applied sciences.

Climate actions by climate researchers in different fields

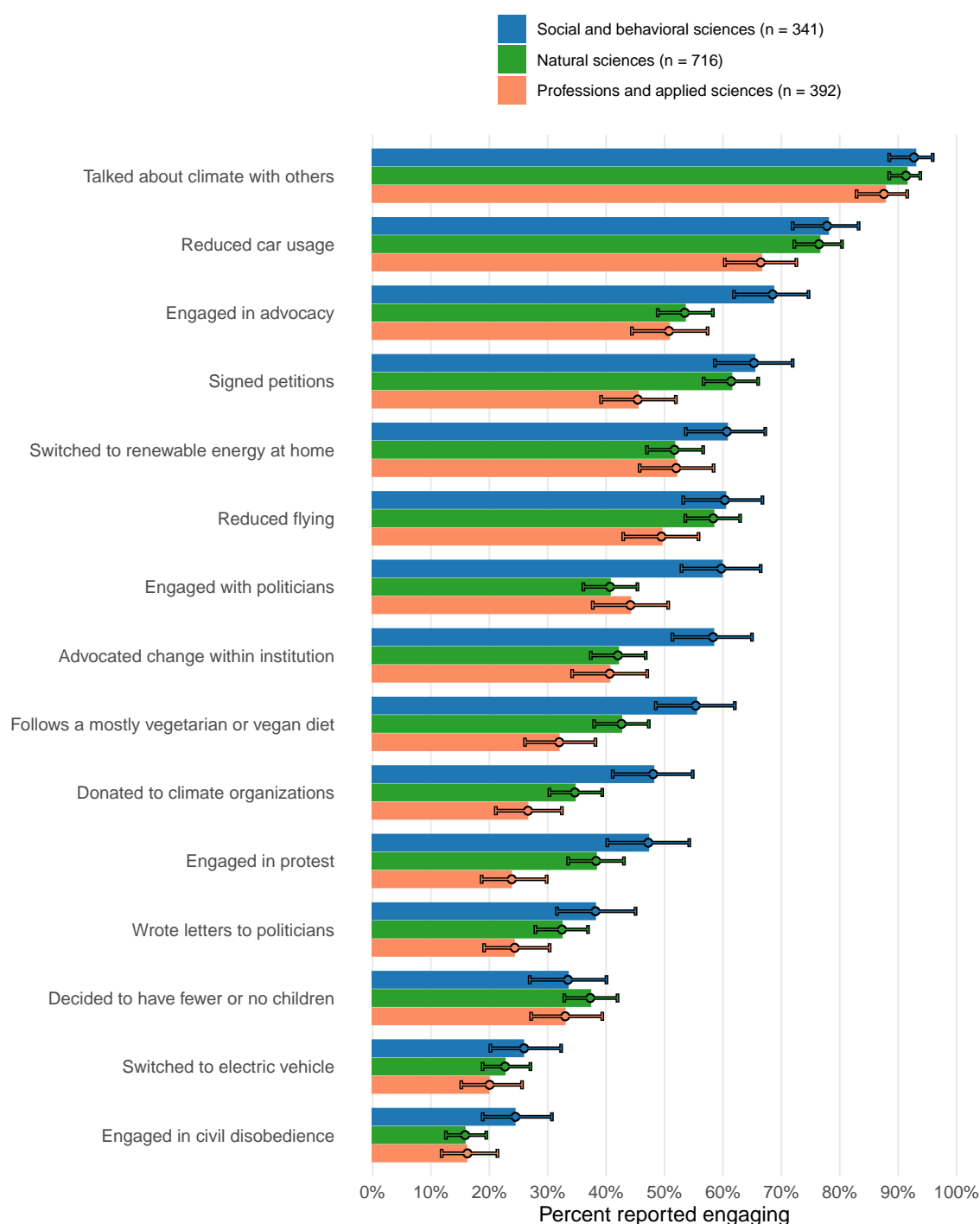


Figure S4: **Climate actions across climate research fields.** Percentage of researchers who reported having engaged in a particular behaviour for researchers whose research is *a great deal* related to climate change and who work in the social and behavioural sciences (blue), natural sciences (green), and professions and applied sciences (coral). Points and error bars indicate posterior means and 99% credible intervals.

References

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