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Article

Climate Change Risk Perceptions of Audiences in the Climate Change Blogosphere

Supplement 1. Climate Change Blogs that Published the Survey

1. ... and Then There's Physics

This blog is run by Ken Rice, a Professor of Computational Astrophysics at the University of Edinburgh. While the blog's initial goal was to address climate science claims made on Watts Up With That, the blog now has a wider scope on climate change. In 2019, the blog published 100 blog posts. A typical post receives between 50–200 comments approximately.

Link to survey: https://andthentheresphysics.wordpress.com/2019/10/09/a-survey-of-blog-audiences/

2. Brussels Blog

The Brussels Blog is run by Geoff Beacon, who mostly writes about climate science and the need for climate change adaptation and climate mitigation. In 2019, the blog published 32 blog posts. A typical blog post receives between 0-5 comments approximately.

Link to survey: http://www.brusselsblog.co.uk/a-survey-for-research-at-cambridge-and-wageningen-universities/

3. Climate Action Australia

Climate Action Australia is run by John Pratt, who mostly writes about the need for climate change action and posts about different climate events. A typical blog post receives between 0-5 comments approximately.

Link to survey: https://climateactionaustralia.wordpress.com/

4. Climate Denial Crock of the Week

This blog is run by Peter Sinclair, a videographer specializing in issues of climate change and renewable energy solutions. Sinclair has produced more than 100 videos on his blog, which are "sharply satirical and scientifically rigorous responses to the many bits of climate science misinformation, and disinformation, often seen on the internet, which Mr. Sinclair calls the "Climate Crocks"". A typical blog posts receives between 0–20 comments approximately.

Link to survey: https://climatecrocks.com/2019/10/08/take-the-climate-blog-survey

5. Climate Sight

ClimateSight is run by Dr Kaitlin Naughten, who is an ocean modeller at the British Antarctic Survey in Cambridge. The blog is a record of her research as a young climate scientists, which was initially setup to help address the gap between climate science and public understanding. On 16th September 2020, ClimateSight had 641,421 hits. In 2019, four blog posts were published on the blog. A typical blog post receives between 0-20 comments.

Link to survey: https://climatesight.org/2019/10/21/we-need-your-help-share-your-views-on-climate-change-with-us/

6. Don't Look Now

The blog Don't look now is run by Geoff Beacon, who mostly writes about climate science and the need for climate change adaptation and climate mitigation. In 2019, the blog published 17 blog posts. A typical blog post receives between 0–5 comments approximately.

Link to survey: https://dontlooknow.org/2019/10/11/a-survey-for-research-at-cambridge-and-wageningen-universities/

7. The Green New Wave

This blog is run by Thomas Fuller. The blog aims to show how the Green New Deal could works in practice. In the blog posts, analyses and opinions about the Green New Deal are shared. In 2019, the blog published 26 blog posts. On 17th September 2020, The Green New Wave had 1702 hits. A typical blog post receives between 0–5 comments approximately.

Link to survey: https://thegreennewwave.com/2019/10/11/a-climate-survey-not-mine/

8 Hot Whopper

The blog HotWhopper is run by Sou (pseudonym), a woman with an interest climate science. The blog is about climate, with humor, and solid science. In 2019, the blog published 25 blog posts. A typical blog post receives between 10–50 comments approximately.

Link to survey: https://blog.hotwhopper.com/2019/10/do-your-bit-help-with-survey-of-climate.html

9. Real Climate

RealClimate is run by working climate scientists. The blog aims to provide quick commentary on climate science by contextualizing mainstream commentary. In 2019, the blog published 44 blog posts. A typical blog post receives between 20–500 comments approximately.

Link to survey: http://www.realclimate.org/index.php/archives/2019/10/do-you-want-to-share-your-views-on-climate-change-and-reading-blogs/

10. Stoat

Stoat is run by William M. Connolley, who was formerly a climate modeller and currently a software engineer for Cambridge Silicon Radio (https://en.wikipedia.org/wiki/William_Connolley#Writing_and_editing). The blog publishes about climate issues. On 17/09/2020, Stoat had 7,970 hits last month. In 2019, the blog published 31 blog posts. A typical blog post receives between 0–75 comments approximately.

Link to survey: https://mustelid.blogspot.com/2019/10/a-survey-of-blog-audiences.html

11. Under the Banyan

Under the Banyan is run by Mike Shanahan, who is a rainforest biologist, journalist, and author of the book Ladders to Heaven. The blog is about the environment and in particularly climate change and biodiversity loss. On 17th September 2020, 4276 people subscribed to the blog to receive notification via email. In 2019, the blog published 6 blog posts. A typical blog post receives between 0–5 comments approximately.

The survey was published in a text box on top of the website: https://underthebanyan.blog/

12. 3000 Quads.

This blog is run by Thomas Fuller, who mostly writes about energy. On 17th September 2020, 3000 Quads had 60,786 hits. In 2019, the blog published 2 blog posts. A typical blog post receives between 0–10 comments approximately.

Link to survey: https://3000quads.com/2019/10/10/a-climate-survey-and-its-not-even-mine/

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Supplement 2. Survey Items

Measurement Scale	Risk Perception Index Items (M = 5.73, SD = 1.40, α = 0.95)
(1 = Not concerned at all, 7 = Very concerned)	How concerned are you about climate change?
(1 = Very unlikely, 7 = Very likely)	In your judgment, how likely are you, sometime during your life, to experience serious threats to your health or overall well-being, as a result of climate change?
(1 = Very unlikely, 7 = Very likely)	In your judgment, how likely do you think it is that climate change will have very harmful, long-term impacts on society?
(1 = Not serious at all, 7 = Very Serious)	How serious of a threat do you think that climate change is to the natural environment?
(1 = Not serious at all, 7 = Very Serious)	How serious would you rate current impacts of climate change around the world?
(1 = Not serious at all, 7 = Very Serious)	How serious of a threat do you believe that climate change is, to you personally?
(1 = Not serious at all, 7 = Very Serious)	How serious would you estimate the impacts of climate change for your country of residence?
(1 = Very Rarely, 7 = Very Frequently)	How often do you worry about the potentially negative consequences of climate change?

Measurement Scale	Knowledge about Climate Change
(1 = Major, 2 = Minor, 3 = No Contribution to Climate Change, 4 = I really don't know)	**Natural Cause-Knowledge Index Items** (M = 0.85, SD = 0.19, α = 0.40) The sun, Volcanic eruptions, Influence of other planets, Flat earth, Natural variability (e.g. El Niño).
(1 = Major, 2 = Minor, 3 = No Contribution to Climate Change, 4 = I really don't know)	**Human Cause-Knowledge Index Items** (M = 0.86, SD = 0.12, α =0.45) Burning fossil fuels (coil, oil, gas) for heat and electricity, Flying/Commercial air travel, Toxic waste, Steadily rising CO2 emissions (carbon dioxide), Smoking cigarettes, Nuclear power plants, Driving a fossil fuel based car, Rising global sea level, Agricultural activities such as cattle breeding (cows raised for meat consumption), Acid rain, Deforestation (e.g. deconstruction of rainforests), Aerosol spray cans (containing CFCs).
(1 = Likely to Decrease 2 = No Change, 3 = Likely to Increase, 4 = I really don't know)	**Impact-Knowledge Index Items** (M = 0.86, SD = 0.18, α =0.77) Global sea level, Melting of glaciers and polar ice caps, Areas in the world experiencing drought, Global spread of infectious disease, Light pollution, Global average temperature, Extreme weather events (e.g. flooding, hurricanes, etc.), Global biodiversity (i.e. variety of plants and animals), Volcanic eruptions, Household waste, Frequency of hot days and nights, Global fresh water supply.
(1 = Reduce climate change a lot, 2 = Reduce climate change a little, 3 = Not going to reduce climate change at all, 4 = Don't know)	**Response-Knowledge Index Items** (M = 0.85, SD = 0.16, α = 0.68) Switching from fossil fuels to renewable energy (wind, solar, geothermal), Generating less toxic waste (nuclear, chemical), Recycling paper, glass, and plastic, Stop drinking sugar calories, Insulating buildings, Reducing the amount of (commercial) airline flights, Conserving energy, Fixing the hole in the ozone layer, Switching from petrol to electric cars, Eating less meat, Using more public transportation, Planting trees.
(0%–100%)	**Scientific Consensus** (M = 93.68, SD = 13.69) To the best of your knowledge, what percentage of climate scientists have concluded that human-caused climate change is happening?

Measurement Scale	Affect Index Items (M = 6.55, SD = 0.82, α = 0.94)
(1 = Very unpleasant, 7 = Very pleasant)	I see climate change as something that is...
(1 = Very unfavourable, 7 = Very favourable)	Overall, I think that climate change is...
(1 = Strongly disagree, 7 = Strongly agree)	I believe that climate change is something very positive...

Measurement Scale	Personal Experience with Extreme Weather Item (M = 0.81, SD = 0.39)
(1 = Never, 2 = Once, 3 = Twice, 4 = More than three, 5 = Can't remember)	Considering roughly the last 5 years, how often (in total) have you personally experienced any type of extreme weather event in your local area within your country of residence? For example, flooding, severe heat waves, droughts, freak storms or hurricanes?

Measurement Scale	Social Norms Items
	Descriptive Norm (Index) (M = 4.01, SD = 1.46, α = 0.87)
(1 = Strongly disagree, 7 = Strongly agree)	Most people who are important to me, are personally doing something to help reduce the risk of climate change.
(1 = Strongly disagree, 7 = Strongly agree)	Most people I care about are doing their bit to help slow climate change.
(1 = Very unlikely, 7 = Very likely)	How likely do you think it is that people close to you are taking personal action to address climate change?
	Prescriptive Norm (Index) (M = 5.05, SD = 1.24, α = 0.79)
(1 = Strongly disagree, 7 = Strongly agree)	It is generally expected of me that I do my bit to help reduce the risk of climate change.
(1 = Strongly disagree, 7 = Strongly agree)	People that are important to me, would support me if I decided to help reduce climate change.
(1 = Strongly disagree, 7 = Strongly agree)	People whose opinion I value, think that I should personally act to reduce climate change.
(1 = Strongly disagree, 7 = Strongly agree)	I feel that helping to tackle climate change is something that is NOT expected of me.

Measurement Scale	Broad Value Orientations Items
(1 = Opposed to my values, 9 = Of Supreme Importance)	**Biospheric Values (Index)** (M = 7.22, SD = 1.50, α = 0.90) Respecting the Earth (harmony with other species), Protecting the Environment (preserving nature), Preventing Pollution (protecting natural resources), Unity with Nature (fitting into nature).
(1 = Opposed to my values, 9 = Of Supreme Importance)	**Socio-Altruistic Values (Index)** (M = 7.19, SD = 1.36, α = 0.82) Peace (a world free of war and conflict), Equality (equal opportunity for all), Helpful (working for the welfare of others), Social Justice (correcting injustice, care for the weak).
(1 = Opposed to my values, 9 = Of Supreme Importance)	**Egoistic Values (Index)** (M = 3.58, SD = 1.06, α = 0.57) Authority (the right to lead or command), Influential (having an impact on people and events), Social Power (control over others, dominance), Wealth (material possessions, money).

Measurement Scale	Trust in Sources of Information About Climate Change Items
(1 = Strongly distrust, 7 = Strongly trust)	**Trust in scientists** (M = 6.38, SD = 1.16) How much do you trust **scientists** as a source of information about climate change?
(1 = Strongly distrust, 7 = Strongly trust)	**Trust in climate mainstream blogs** (M = 5.70, SD = 1.31) How much do you trust blogs that **support** evidence for human-caused climate change as a source of information?
(1 = Strongly distrust, 7 = Strongly trust)	**Trust in climate sceptical blogs** (M = 6.30, SD = 1.19) How much do you trust blogs that **reject** evidence for human-caused climate change as a source of information?

Measurement Scale	Socio-Demographic Items
	Gender
(1 = Male, 2 = Female, 3 = Not listed, ..., 4 = Prefer not to answer)	Female: 10.4% Male: 89.6%
	Age
(1 = 24 or younger, 2 = 25–34, 3 = 35–44, 4 = 45–54, 5 = 55–65, 6 = 66 or older)	24 or younger: 2.2% 25-34: 5.9% 35-44: 8.8% 45-54: 17.8% 55-65: 32.8% 66 or older: 32.5%
	Education
(1 = no qualification, 2 = High school degree or equivalent, 3 = Vocational degree or equivalent, 4 = Bachelors' degree or equivalent, 5 = Master's degree or equivalent, 6 = Doctoral degree (e.g. PhD), 7 = Prefer not to answer)	No qualification: 1.3% High school degree or equivalent: 5.6% Vocational degree or equivalent: 5.5% Bachelor's degree or equivalent: 27.6% Master's degree or equivalent: 32.2% Doctoral degree: 26.9% Prefer not to answer: 0.9%
	Country of Residence
List of countries alphabetically ordered	United States: 44.7% United Kingdom: 12.3% Australia: 9.2% Canada: 7.4% The Netherlands: 4.5% Other: 21.9%
	Income
(1 = Far below average, 2 = Below average, 3 = Somewhat below average, 4 = Average, 5 = Somewhat above average, 6 = Above average, 7 = Far above average)	Far below average: 6.4% Below average: 7.7% Somewhat below average: 9.3% Average: 11.4% Somewhat above average: 17.5% Above average: 37.4% Far above average: 10.2%
	Political Views
(0 = Left-wing, 7 = Right-wing)	Left-wing: 85.8% Right-wing: 14.2%

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Supplement 3. Overview Coefficients of Multiple Regression CCRPM+

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	4.105	0.250		16.406	0.000	3.613	4.596		
	Gender	0.374	0.153	0.082	2.442	0.015	0.073	0.674	0.995	1.005
	Income	−0.087	0.027	−0.107	−3.189	0.001	−0.140	−0.033	0.994	1.006
	Political views	1.894	0.134	0.474	14.172	0.000	1.632	2.157	0.993	1.007
2	(Constant)	0.796	0.368		2.161	0.031	0.073	1.519		
	Gender	0.518	0.114	0.113	4.550	0.000	0.294	0.741	0.963	1.038
	Income	−0.066	0.020	−0.081	−3.247	0.001	−0.105	−0.026	0.964	1.037
	Political views	0.657	0.112	0.164	5.863	0.000	0.437	0.876	0.758	1.319
	Human causes	−2.132	0.312	−0.185	−6.841	0.000	−2.743	−1.520	0.816	1.225
	Impact	3.457	0.318	0.435	10.866	0.000	2.832	4.082	0.372	2.689
	Responses	1.249	0.331	0.141	3.769	0.000	0.599	1.900	0.425	2.352
	Scientific consensus	0.020	0.004	0.200	5.829	0.000	0.014	0.027	0.504	1.984
3	(Constant)	−3.498	0.302		−11.586	0.000	−4.091	−2.905		
	Gender	0.323	0.079	0.071	4.098	0.000	0.168	0.478	0.954	1.048
	Income	−0.033	0.014	−0.040	−2.341	0.020	−0.060	−0.005	0.955	1.047
	Political views	0.221	0.079	0.055	2.796	0.005	0.066	0.376	0.726	1.377
	Human causes	−0.893	0.221	−0.077	−4.046	0.000	−1.326	−0.460	0.776	1.289
	Impact	0.897	0.239	0.113	3.749	0.000	0.427	1.366	0.314	3.189
	Responses	0.883	0.229	0.100	3.850	0.000	0.433	1.333	0.423	2.363
	Scientific consensus	0.010	0.002	0.099	4.128	0.000	0.005	0.015	0.491	2.036
	Affect	1.034	0.041	0.608	24.951	0.000	0.952	1.115	0.478	2.093
	Personal experience with extreme weather events	0.449	0.065	0.126	6.913	0.000	0.321	0.576	0.858	1.166
4	(Constant)	−3.899	0.308		−12.678	0.000	−4.503	−3.295		
	Gender	0.287	0.077	0.063	3.717	0.000	0.135	0.439	0.934	1.071
	Income	−0.035	0.014	−0.043	−2.534	0.011	−0.062	−0.008	0.921	1.086
	Political views	0.155	0.080	0.039	1.937	0.053	−0.002	0.311	0.667	1.499
	Human causes	−0.715	0.217	−0.062	−3.297	0.001	−1.141	−0.289	0.753	1.328
	Impact	0.882	0.232	0.111	3.802	0.000	0.426	1.338	0.312	3.202
	Responses	0.806	0.223	0.091	3.608	0.000	0.367	1.245	0.418	2.393
	Scientific consensus	0.010	0.002	0.103	4.387	0.000	0.006	0.015	0.485	2.063
	Affect	0.945	0.043	0.556	22.081	0.000	0.861	1.030	0.419	2.385
	Personal experience with extreme weather events	0.401	0.064	0.112	6.301	0.000	0.276	0.526	0.837	1.194
	Biospheric values	0.090	0.023	0.097	3.971	0.000	0.046	0.135	0.450	2.224
	Egoistic values	0.001	0.023	0.001	0.067	0.947	−0.043	0.046	0.919	1.088
	Altruistic values	0.012	0.025	0.012	0.495	0.621	−0.037	0.061	0.451	2.219
	Descriptive norm	0.057	0.021	0.059	2.694	0.007	0.015	0.099	0.547	1.828
	Prescriptive norm	0.008	0.026	0.007	0.317	0.751	−0.044	0.060	0.485	2.062
5	(Constant)	−3.595	0.291		−12.354	0.000	−4.167	−3.024		
	Gender	0.290	0.073	0.063	3.979	0.000	0.147	0.433	0.928	1.078
	Income	−0.036	0.013	−0.044	−2.782	0.006	−0.062	−0.011	0.920	1.087
	Political views	0.097	0.075	0.024	1.291	0.197	−0.051	0.245	0.662	1.510
	Human causes	−0.673	0.204	−0.058	−3.291	0.001	−1.074	−0.271	0.749	1.336
	Impact	0.518	0.222	0.065	2.334	0.020	0.082	0.953	0.302	3.313
	Responses	0.555	0.212	0.063	2.621	0.009	0.139	0.971	0.411	2.434
	Scientific consensus	0.006	0.002	0.061	2.623	0.009	0.002	0.011	0.430	2.325
	Affect	0.765	0.045	0.450	16.994	0.000	0.676	0.853	0.335	2.983
	Personal experience with extreme weather events	0.358	0.060	0.100	5.951	0.000	0.240	0.476	0.827	1.210
	Biospheric values	0.068	0.021	0.073	3.165	0.002	0.026	0.110	0.444	2.253
	Egoistic values	−0.010	0.021	−0.008	−0.469	0.639	−0.052	0.032	0.914	1.094
	Altruistic values	0.023	0.023	0.022	.981	0.327	−0.023	0.069	0.450	2.224
	Descriptive norm	0.050	0.020	0.052	2.518	0.012	0.011	0.089	0.546	1.831
	Prescriptive norm	−0.001	0.025	−0.001	−0.044	0.965	−0.050	0.048	0.484	2.068
	Trust in scientists	0.093	0.028	0.077	3.273	0.001	0.037	0.149	0.422	2.372
	Trust in climate mainstream blogs	0.145	0.024	0.137	5.951	0.000	0.097	0.193	0.445	2.246
	Distrust in climate sceptical blogs	0.100	0.029	0.085	3.476	0.001	0.043	0.156	0.395	2.530

Note: Dependent variable is risk perceptions. Entries are standardized beta coefficients. $p < 0.05$, $^{**}p < 0.01$.