

Why Are Hispanics More Concerned than Whites about Global Warming?

Personal Vulnerability as an Explanation

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A recent national poll done in January 2015 by Stanford University, the New York Times, and Resources for the Future found that Hispanics in America are more concerned than whites about global warming and more supportive of actions that government can take to deal with global warming.

The present study explored whether Hispanics are more concerned about global warming and more supportive of ameliorative efforts because Hispanics feel more personal vulnerability to global warming. We conducted statistical analyses of the survey data to test this hypothesis.

Method

Data

SSRS interviewed a representative national sample of 1,006 U.S. adults by telephone, 483 respondents were interviewed on a landline telephone, and 523 were interviewed on a cell phone. Interviews were conducted between January 7 and January 22, 2015, and were administrated in English and Spanish. The AAPOR Response Rate 3 was 12%.

Samples were drawn from both landline and cellular random digit dial (RDD) frames, with an overlapping frame design. The RDD landline sample was generated through Marketing Systems Group's GENESYS sampling system. The GENESYS RDD procedure produces an Equal Probability Selection Method sample of telephone numbers from all working. The sample was generated shortly before the beginning of data collection to provide the most up-to-date sample possible, maximizing the number of valid telephone extensions. The sample went through MSG's IDplus screening process, which purges out all listed business telephone numbers contained in a sample file, and then dials the remaining unlisted portion to screen out non-working and additional

business numbers. Cell phone numbers were generated using the Telecordia database, which identifies 1000-series telephone blocks dedicated to cellular devices. From the identified 1,000 series telephone blocks dedicated to cellular devices, MSG generates a random sample of possible telephone numbers.

For the landline sample, in households with two adults, one adult was randomly selected. In households with three or more adults, a first random selection was made to choose between the adult who answered the phone and the rest of the adults, and if the remaining adults were selected, one was randomly chosen using the last or next birthday method (whereby the adult with the most recent or the upcoming birthday was selected for interviewing; the use of next vs. last birthday for each household was determined randomly). For the cell phone sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. Cell phone sample respondents were offered a post-paid reimbursement of \$10 for their participation.

SSRS created weights for the survey data to adjust for the fact that not all survey respondents were selected with the same probabilities and to account for systematic nonresponse along known population parameters. The combined sample was weighted to match demographic parameters from the 2014 March Supplement of the Current Population Survey and telephone status parameters from the National Health Interview Survey for the time period between January and June 2014. The weighting procedure accounts for the overlapping dual frame design, multiple chances of selection in each frame, within-household selection in the landline sample, and differential nonresponse across demographic groups. The weight was computed in two stages. The first stage weight adjusted for the factors influencing the probability that a given adult was selected for the survey: telephone status of the individual (landline only, cell phone

only, or both), the number of eligible landlines, the number of eligible cell phones, the number of eligible adults in the household for the landline sample, and the relative sizes of the samples drawn from the two frames. The second stage of weighting calibrated sample demographics to estimated population parameters. The sample was calibrated to match national population parameters for age-by-gender, education, race, ethnicity, marital, phone status, Census region, a variable dividing U.S. counties into three based on the 2012 presidential election outcomes: Democratic-leaning counties; Republican-leaning counties; all other counties.

Measures

Attitude and Belief Index. Our primary dependent variable was an index of beliefs and attitudes gauging concern about global warming and desire for government action to deal with global warming. A respondent's score on the index was computed by averaging answers to the following questions, coded as follows and therefore ranged from 0 (meaning the least concern) to 1 (meaning the most concern).

How much the federal government should do about global warming: a great deal = 1, a lot = .75, a moderate amount = .5, a little = .25, not at all = 0.

Should the government give money to poor countries to deal with global warming: should give money = 1, should not give money = 0.

Should the government require companies to pay a carbon tax for imported fossil fuels: should require = 1, should not require = 0.

How important is the issue of global warming personally: extremely important = 1, very important = .75, somewhat important = .5, not too important = .25, not at all important = 0.

Personal Vulnerability Index. The hypothesized mediator was an index of beliefs about the degree to which global warming has hurt and will hurt the respondent. A respondent's score on the index was computed by averaging answers to the following questions, coded as follows and therefore ranged from 0 (meaning the least vulnerable) to 1 (meaning the most vulnerable).

How much has global warming hurt you personally: a great deal = 1, a lot = .75, a moderate amount = .5, a little = .25, not at all = 0.

How much will global warming hurt you personally: a great deal = 1, a lot = .75, a moderate amount = .5, a little = .25, not at all = 0.

Demographics. Respondents reported their sex, age, race, Hispanic ethnicity, education, income, and region of residence.

Results

Racial-Ethnic Gap in Personal Vulnerability

Hispanics felt significantly more vulnerable personally than whites to the impact of global warming (see Table 1; $b = .32$ for whites and $b = .42$ for Hispanics, $p < .01$).

Racial-Ethnic Gap in Concern about Global Warming and Support for Action

Hispanics were more concerned about global warming and more supportive of government action to deal with global warming than were whites (see Table 1), and the racial-ethnic gap in the concern and support index score was statistically significant ($b = .50$ for whites and $b = .68$ for Hispanics, $p < .001$).

Personal Vulnerability Mediates the Racial-Ethnic Gap in Concern/Support for Action

An OLS regression confirmed that the Hispanic-white gap in concern about global warming and support for action was large and statistically significant ($b = .16$, $p < .01$, see column 1, row 1, Table 3). The Hispanic-white gap in perceived personal vulnerability was also

large and statistically significant ($b = .09, p < .01$, see column 2, row 1, Table 3).

Personal vulnerability perceptions mediated the Hispanic-white gap in concern about global warming and support for action. The Hispanic-white gap in personal vulnerability was positive and statistically significant ($b = .09, p < .01$, see Figure 1), and personal vulnerability in turn increased the global warming index score ($b_1 = .60, p < .01$). The direct effect of the Hispanic-white variable on index scores ($c_1 = .16, p < .01$) was significantly weakened by controlling for personal vulnerability ($c_1' = .11, p < .01$). The average causal mediation effect was $.05$ ($p < .01$); personal vulnerability mediated 34% of the total effect. Thus, these data suggest that the racial-ethnic gap in concern about global warming and support for action was in part driven by the racial-ethnic gap in perceived personal vulnerability.

Discussion

The poll revealed that Hispanics more concerned about global warming and more supportive of ameliorative action than were whites. The heightened level of concern and support for action among Hispanics was caused in part by their heightened level of perceived personal vulnerability to global warming.

Table 1: Racial-Ethnic Gap in Personal Vulnerability to Global Warming

How much do you think global warming has hurt you?	Among Non-Hispanic Whites	Among Hispanics
A great deal	6%	5%
A lot	4	13
A moderate amount	19	20
A little	23	24
Not at all	48	37
Don't know/Refused	*	*
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(4.59, 3858.08) = 2.89, p = 0.016$.

If nothing is done to reduce global warming in the future, how much do you think it will hurt you personally?	Among Non-Hispanic Whites	Among Hispanics
A great deal	17%	19%
A lot	12	21
A moderate amount	21	27
A little	17	17
Not at all	32	17
Don't know/Refused	1	*
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(4.75, 3991.44) = 2.55, p = 0.028$.

Personal vulnerability index	Among Non-Hispanic Whites	Among Hispanics
Mean (standard error)	.32 (.01)	.42 (.03)

Note: Adjusted Wald test rejects the hypothesis that the mean is equal between whites and Hispanics: $F(1, 840) = 8.60, p < .01$.

Table 2: Racial-Ethnic Gap in Concern about Global Warming and Support for Government Action

How much do you think the U.S. government should do about global warming?	Among Non-Hispanic Whites	Among Hispanics
A great deal	30%	37%
A lot/Quite a bit	19	26
A moderate amount/Some	21	15
A little	12	17
Nothing	17	5
Don't know/Refused	1	
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(4.22, 3541.86) = 2.78, p = 0.023$.

Do you think the United States government should or should not give money to poor countries to help them reduce the damage that global warming might cause?	Among Non-Hispanic Whites	Among Hispanics
Should give money	32%	65%
Should not give money	66	31
Don't know/Refused	1	4
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(2.00, 1679.28) = 18.43, p < 0.001$.

How important is the issue of global warming to you personally?	Among Non-Hispanic Whites	Among Hispanics
Extremely important	11%	10%
Very important	26	44
Somewhat important	26	25
Not too important	17	12
Not at all important	19	8
Don't know/Refused	*	*
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(4.19, 3516.25) = 3.14, p = 0.012$.

Do you think the federal government should or should not require companies to pay a tax to the government for every ton of greenhouse gases that will be put out by coal, natural gas, and oil the companies bring into the U.S. from other countries? [All this tax money would be given to all Americans equally by reducing the amount of income taxes they pay.] ¹ ?	Among Non-Hispanic Whites	Among Hispanics
Should require	63%	80%
Should not require	34	20
Don't know/Refused	2	
Total	100%	100%
N	738	103

Note: The distribution of responses differed significantly between non-Hispanic Whites and Hispanics, design-based $F(1.37, 1147.84) = 6.49, p = 0.005$.

Concern about global warming/support for government action index	Among Non-Hispanic Whites	Among Hispanics
Mean (standard error)	.50 (.01)	.68 (.03)

Note: Adjusted Wald test rejects the hypothesis that the mean is equal between whites and Hispanics: $F(1, 840) = 30.40, p < .001$.

¹ Half the respondents, selected randomly, heard the sentence in brackets.

Table 3: OLS Regression Coefficients Predicting the Index of Concern about Global Warming/Support for Government Action and the Index of Personal Vulnerability

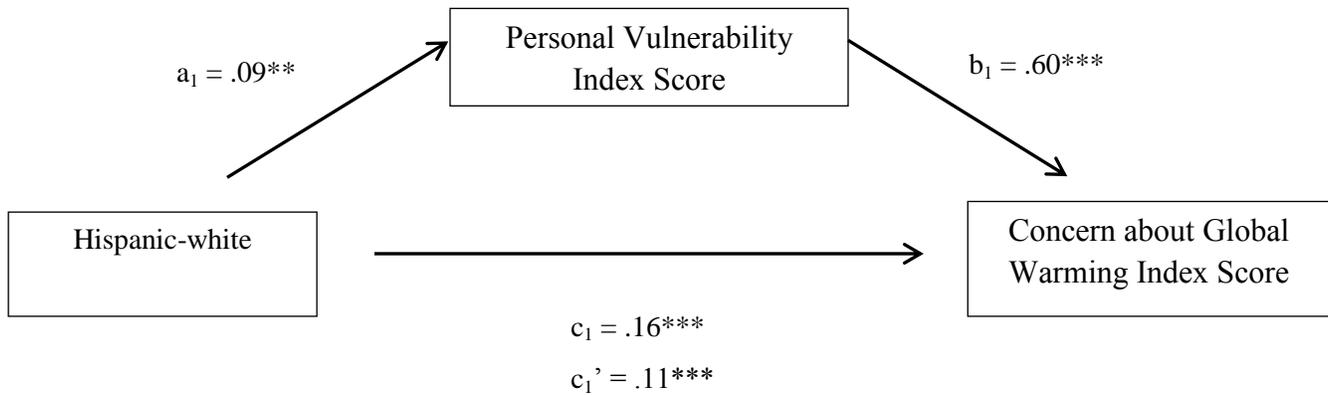
Predictor	DV = Index of Concern about Global Warming	DV = Index of Personal Vulnerability
Hispanic-whites (Hispanics=1, white=0)	0.16*** (0.03)	0.09*** (0.03)
Male	-0.04* (0.02)	-0.06*** (0.02)
Age 18-29	0.12*** (0.04)	0.10*** (0.04)
Age 30-44	0.09** (0.04)	0.03 (0.03)
Age 45-64	0.08*** (0.03)	0.10*** (0.03)
High school graduate	0.03 (0.05)	0.00 (0.05)
Some college	0.05 (0.05)	0.05 (0.05)
College graduate	0.04 (0.05)	0.01 (0.05)
Post-college	0.15*** (0.05)	0.10** (0.05)
Income \$35,000 but under \$50,000	-0.07* (0.04)	-0.12*** (0.04)
Income \$50,000 but under \$75,000	-0.00 (0.04)	-0.08** (0.04)
Income \$75,000 but under \$100,000	-0.12*** (0.04)	-0.13*** (0.04)
Income \$100,000 or more	-0.08** (0.04)	-0.12*** (0.04)
Northeast	0.04 (0.03)	-0.01 (0.03)
Midwest	0.00 (0.03)	-0.01 (0.03)
West	0.03 (0.03)	0.01 (0.03)
Constant	0.44*** (0.05)	0.35*** (0.05)
N	841	841
R ²	0.108	0.090

Notes: Presented are unstandardized OLS regression coefficients (standard errors in parentheses)

adjusting for sampling weights among respondents who identified themselves as non-Hispanic whites or Hispanics in the 2015 national survey. Respondents who identified themselves as other races were excluded from the analysis. Among the predictors in these regressions were dummies of refusals in any measures, and results of those dummies are not shown for brevity of presentation. Omitted categories were female, age 65 or older, less than high school graduate, income under \$35,000, and living in the South.

*** $p < 0.01$ ** $p < 0.05$ * $p < 0.10$.

Figure 1: Personal Vulnerability as a Mediator of the Hispanic-white Gap in Concern about Global Warming



Average causal mediation effect = $.05^{***}$

Percent of total effect mediated = 34%

*** $p < 0.01$ ** $p < 0.05$ * $p < 0.10$.