Who Prepares? Seismic Risk, Household Income, and Individual Earthquake Preparedness in California

Supplementary Materials

April 10, 2023

Contents

1 Descriptive Statistics

Table 1: Descriptive Statistics.

	Count	Mean	Std. Dev.	Min.	Max.
Identification of Hazards	622	1.486	0.968	0	3
Strategy	622	1.693	0.931	0	3
Personal Kit	622	1.600	0.925	0	3
Household Kit	622	1.584	0.928	0	3
Building Weaknesses	622	1.090	0.977	0	3
Seismic Risk	622	2.471	1.106	1	4
Household Income	622	1.923	0.844	1	3
Age	622	34.699	12.123	18	79
Home Owner	622	0.437	0.496	0	1
Married	622	0.297	0.457	0	1
Democrat	622	0.492	0.500	0	1
Republican	622	0.156	0.363	0	1
Independent	622	0.273	0.446	0	1
Ideology	622	0.376	0.265	0	1
Male	622	0.494	0.500	0	1
Religious Attendance	622	1.063	1.408	0	5
Education	622	3.619	0.912	1	6
Employed	622	0.756	0.430	0	1
White	622	0.674	0.469	0	1
African-American	622	0.076	0.265	0	1
Latinx/Hispanic	622	0.059	0.237	0	1
Asian-American	622	0.228	0.420	0	1

Table 2: Correlation Matrix.

	Identification of Hazards	Strategy	Personal Kit	Household Kit	Building Weaknesses	Seismic Risk	Household Income	Age	Home Owner	Married	Democrat	Republican	Independent	Ideology	Male	Religious Attendance	Education	Employed	White	African-American	Latinx/Hispanic	Asian-American
Identification of Hazards	1																					
Strategy	0.623***	1																				
Personal Kit	0.558***	0.579***	1																			
Household Kit	0.562***	0.569***	0.843***	1																		
Building Weaknesses	0.558***	0.388***	0.366***	0.402***	1																	
Seismic Risk	0.0944*	0.0359	0.101*	0.138***	0.119**	1																
Household Income	0.125**	0.0928*	0.107**	0.0987*	0.120**	0.0770	1															
Age	0.0955*	0.0393	0.106**	0.111**	0.0976*	-0.00492	0.00890	1														
Home Owner	0.0735	0.0645	0.0242	0.0778	0.168***	0.0319	0.277***	0.171***	1													
Married	0.117**	0.0938*	0.130**	0.129**	0.0697	-0.0928*	0.318***	0.290***	0.178***	1												
Democrat	-0.0252	-0.0278	-0.0539	-0.0506	-0.0347	0.0491	-0.0167	-0.0231	-0.0960*	-0.0142	1											
Republican	0.0271	0.0276	0.0280	0.00187	0.0330	-0.0750	0.0971*	0.113**	0.139***	0.215***	-0.423***	1										
Independent	-0.00948	-0.00697	0.0158	0.0497	-0.00113	-0.0525	-0.0209	-0.0429	-0.00975	-0.123**	-0.603***	-0.264***	1									
Ideology	-0.00494	-0.0430	0.0156	-0.00570	0.0122	-0.0655	0.0231	0.103**	0.124**	0.115**	-0.575***	0.585***	0.129**	1								
Male	-0.0767	-0.0336	-0.0421	-0.00751	0.0144	0.00694	0.0637	-0.173***	-0.00811	-0.108**	-0.135***	-0.0521	0.174***	0.0933*	1							
Religious Attendance	0.0769	0.0368	0.0144	0.0397	0.0404	0.0162	0.133***	-0.0144	0.0344	0.104**	-0.110**	0.245***	-0.0581	0.306***	-0.0532	1						
Education	0.0348	0.0535	0.0651	0.0367	0.0747	0.100*	0.261***	0.152***	0.0627	0.183***	0.0691	-0.0488	-0.00485	-0.134***	0.0176	0.0575	1					
Employed	0.0534	0.0657	0.0532	0.0513	0.0601	-0.0318	0.0766	-0.0487	-0.0417	0.0263	-0.0765	0.0794*	0.0969*	0.0321	0.0825*	0.0626	0.107**	1				
White	0.147***	0.135***	0.110**	0.0905*	0.0536	-0.110**	-0.0637	0.213***	0.0192	0.168***	-0.0763	0.176***	-0.0425	0.0271	-0.102*	-0.113**	-0.0540	-0.00485	1			
African-American	-0.0366	-0.0953*	-0.0144	-0.0356	-0.0201	0.0268	-0.00269	-0.00948	-0.0926*	-0.0263	0.0472	-0.0726	0.00211	-0.00359	-0.0997*	0.134***	-0.0140	0.0352	-0.307***	1		
Latinx/Hispanic	-0.0490	-0.0120	-0.0455	-0.0337	0.0255	0.00351	-0.0334	-0.144***	-0.00247	-0.104**	0.0380	-0.0706	-0.00172	-0.0488	0.0100	-0.0450	-0.111**	-0.0784	-0.274***	-0.0462	1	
Asian-American	-0.0949*	-0.0757	-0.104**	-0.0862*	-0.0462	0.0559	0.113**	-0.199***	0.0301	-0.136***	0.0164	-0.107**	0.0446	-0.0122	0.114**	0.0248	0.160***	0.0597	-0.643***	-0.141***	-0.104**	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

2 Survey Design

2.1 Demographics

1. Please enter your age.

2. What is the highest level of school you have completed?

   - Did Not Graduate High School (0)
   - High School Graduate - High School Diploma or the equivalent (1)
   - Some college, no degree (2)
   - Associate degree (3)
   - Bachelor's degree (4)
   - Master's degree (5)
   - Professional or Doctorate degree (6)

3. Please indicate what you consider your racial background to be. We greatly appreciate your effort to describe your background using the standard categories provided. These race categories may not fully describe you, but they do match those used by the Census bureau. It helps us compare our survey respondents to the U.S. population.

   Please check one or more categories below to indicate what race(s) you consider yourself to be.

   - White (1)
   - Black or African American (2)
   - Hispanic or Latino (3)
   - American Indian or Alaska Native (4)
   - Asian Indian (5)
   - Chinese (6)
   - Filipino (7)
   - Japanese (8)
   - Korean (9)
   - Vietnamese (10)
   - Other Asian (11)
   - Native Hawaiian (12)
   - Guamanian or Chamorro (13)
   - Samoan (14)

- Other Pacific Islander (15)

- Some other race (16)

4. What is your current gender identity?

   - Male (0)

   - Female (1)

5. The next question is about the total income of YOUR HOUSEHOLD for the PAST 12 MONTHS. Please include your income PLUS the income of all members living in your household (including cohabiting partners and armed force members living at home). Please count income BEFORE TAXES and from all sources (such as wages, salaries, tips, net income from a business, interest, dividends, child support, alimony, and Social Security, public assistance, pensions, or retirement benefits).

   - Less than $10,000 (1)
   - $10,000 to $19,999 (2)
   - $20,000 to $29,999 (3)
   - $30,000 to $39,999 (4)
   - $40,000 to $49,999 (5)
   - $50,000 to $59,999 (6)
   - $60,000 to $69,999 (7)
   - $70,000 to $79,999 (8)
   - $80,000 to $89,999 (9)
   - $90,000 to $99,999 (10)
   - $100,000 to $149,999 (11)
   - More than $150,000 (12)

6. Are you now married, widowed, divorced, separated, never married, or living with a partner?

   - Married (1)
   - Widowed (2)
   - Divorced (3)
   - Separated (4)
   - Never married (5)
   - Living with partner (6)

7. Are your living quarters...

- Owned or being bought by you or someone in your household (1)
- Rented for cash (2)
- Occupied without payment of cash rent (3)

8. Which statement best describes your current employment status?

- Working - as a paid employee (1)
- Working - self-employed (2)
- Not working - on temporary layoff from a job (3)
- Not working - looking for work (4)
- Not working - retired (5)
- Not working - disabled (6)
- Not working - other (7)

9. Generally speaking, do you think of yourself as a...

- Republican (1)
- Democrat (2)
- Independent (3)
- Another party, please specify: (4)
- No preference (5)

10. Answer If Generally speaking, do you think of yourself as a...Republican Is Selected

    Would you call yourself a...

- Strong Republican (1)
- Not very strong Republican (2)

11. Answer If Generally speaking, do you think of yourself as a...Democrat Is Selected

    Would you call yourself a...

- Strong democrat (1)
- Not very strong Democrat (2)

12. Answer If Generally speaking, do you think of yourself as a... Independent Is Selected And Generally speaking, do you think of yourself as a... Another party, please specify: Is Selected And Generally speaking, do you think of yourself as a... No preference Is Selected

    Do you think of yourself as closer to the...

- Republican Party (1)

- Democratic Party (2)

13. In general, do you think of yourself as...

   - Extremely liberal (1)
   - Liberal (2)
   - Slightly liberal (3)
   - Moderate, middle of the road (4)
   - Slightly conservative (5)
   - Conservative (6)
   - Extremely conservative (7)

14. What is your religion?

   - Baptist - any denomination (1)
   - Protestant (e.g. Methodist, Lutheran, Presbyterian, Episcopal) (2)
   - Catholic (3)
   - Mormon (4)
   - Jewish (5)
   - Muslim (6)
   - Hindu (7)
   - Buddhist (8)
   - Pentecostal (9)
   - Eastern Orthodox (10)
   - Other Christian (11)
   - Other non-Christian (12)
   - None (0)

15. How often do you attend religious services? [Reverse Coded)

   - More than once a week (5)
   - Once a week (4)
   - Once or twice a month (3)
   - A few times a year (2)
   - Once a year or less (1)
   - Never (0)

2.2   Individual Disaster Preparedness

As mentioned earlier, California is considered to be particularly vulnerable to the effects of earthquakes as the state lies on active faults that can create frequent and destructive earthquakes.

16. You are now asked to indicate your OWN level of preparedness for the event of an earthquake in terms of potential hazards in your home.
I have identified and prevented potential hazards in my home:

   - I was not aware of the need to take this action (0)
   - I am aware of the need to take this action, but I have not yet completed it (1)
   - I have formed a plan to take this action, but I have not yet completed it (2)
   - I have completed this action (3)

17. You are now asked to indicate your OWN level of preparedness for the event of an earthquake in terms of a strategy during an earthquake.
I have formed a strategy about what to do during an earthquake:

   - I was not aware of the need to take this action (0)
   - I am aware of the need to take this action, but I have not yet completed it (1)
   - I have formed a plan to take this action, but I have not yet completed it (2)
   - I have completed this action (3)

18. You are now asked to indicate your OWN level of preparedness for the event of an earthquake in terms of a personal disaster supplies kit.
I have assembled a personal disaster supplies kit:

   - I was not aware of the need to take this action (0)
   - I am aware of the need to take this action, but I have not yet completed it (1)
   - I have formed a plan to take this action, but I have not yet completed it (2)
   - I have completed this action (3)

19. You are now asked to indicate your OWN level of preparedness for the event of an earthquake in terms of a household disaster supplies kit.
I have assembled a household disaster supplies kit:

   - I was not aware of the need to take this action (0)
   - I am aware of the need to take this action, but I have not yet completed it (1)
   - I have formed a plan to take this action, but I have not yet completed it (2)
   - I have completed this action (3)

20. You are now asked to indicate your OWN level of preparedness for the event of an earthquake in terms of your building's potential weaknesses.

    I have identified and acted to mitigate against my building's potential weaknesses:

    - I was not aware of the need to take this action (0)
    - I am aware of the need to take this action, but I have not yet completed it (1)
    - I have formed a plan to take this action, but I have not yet completed it (2)
    - I have completed this action (3)

3 Full Results and Robustness Checks

Table 3: Ordered Logit Regression: Determinants of Individual Preparedness.

	(1) Identification of Hazards	(2) Strategy	(3) Personal Kit	(4) Household Kit	(5) Building Weaknesses
Seismic Risk	0.180*	0.073	0.185**	0.275***	0.225**
	(0.070)	(0.069)	(0.071)	(0.072)	(0.071)
Household Income	0.225*	0.139	0.198+	0.135	0.106
	(0.101)	(0.099)	(0.102)	(0.103)	(0.101)
Age	0.008	-0.000	0.009	0.013+	0.010
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Home Owner	0.091	0.141	-0.106	0.159	0.490**
	(0.161)	(0.159)	(0.161)	(0.162)	(0.160)
Married	0.224	0.186	0.334+	0.394*	0.003
	(0.191)	(0.188)	(0.189)	(0.188)	(0.191)
Democrat	-0.370	-0.489	-0.418	-0.239	-0.191
	(0.306)	(0.303)	(0.313)	(0.315)	(0.301)
Republican	-0.427	-0.229	-0.322	-0.167	-0.084
	(0.365)	(0.363)	(0.373)	(0.377)	(0.362)
Independent	-0.223	-0.270	-0.146	0.155	-0.059
	(0.311)	(0.310)	(0.319)	(0.320)	(0.307)
Ideology	-0.340	-0.827*	-0.182	-0.548	-0.288
	(0.414)	(0.407)	(0.416)	(0.424)	(0.407)
Male	-0.169	-0.103	-0.108	0.068	0.183
	(0.159)	(0.157)	(0.160)	(0.162)	(0.158)
Religious Attendance	0.130*	0.094	0.015	0.084	0.073
	(0.058)	(0.058)	(0.058)	(0.059)	(0.058)
Employed	0.266	0.327+	0.223	0.247	0.296+
	(0.180)	(0.179)	(0.178)	(0.183)	(0.180)
Education	-0.056	0.027	0.032	-0.077	0.028
	(0.090)	(0.089)	(0.089)	(0.091)	(0.091)
White	0.694*	0.419	0.146	0.132	0.338
	(0.297)	(0.299)	(0.305)	(0.304)	(0.291)
African-American	-0.005	-0.551	-0.104	-0.305	0.119
	(0.361)	(0.370)	(0.368)	(0.370)	(0.357)
Latinx/Hispanic	0.163	0.198	-0.138	-0.060	0.556
	(0.384)	(0.389)	(0.388)	(0.390)	(0.374)
Asian-American	0.078	-0.112	-0.406	-0.326	0.018
	(0.306)	(0.307)	(0.316)	(0.316)	(0.305)
cut1	-0.621	-2.055***	-1.448*	-1.271*	1.005
	(0.616)	(0.622)	(0.632)	(0.635)	(0.613)
cut2	1.745**	0.421	1.264*	1.585*	2.908***
	(0.620)	(0.612)	(0.626)	(0.631)	(0.624)
cut3	2.743***	1.658**	2.354***	2.582***	3.857***
	(0.625)	(0.615)	(0.631)	(0.637)	(0.633)
Observations	622	622	622	622	622

Standard errors in parentheses

$^+ p < 0.1$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$