

SOCIAL IMPACTS AND COMMUNITY RESILIENCE

November 6, 2020



Characterizing the Survey Respondents

Respondent Demographics	Comparison with Treatment	Treatment		Control	
	Y1 Post-wx (n=374)	Y1 Pre-wx (n=405)	Y2 Post-wx (n=198)	Y1 (n=866)	Y2 (n=544)
Race (%)					
Hispanic White***	4%	9%	8%	2%	3%
Non-Hispanic White***	58%	27%	31%	34%	34%
Hispanic Black or African American*	1%	3%	2%	1%	1%
Non-Hispanic Black or African American***	17%	20%	23%	46%	53%
American Indian or Alaska Native	--	--	0.5%	--	2%
Asian ***	6%	2%	2%	1%	0.4%
Native Hawaiian or Other Pacific Islander*	0.7%	0.2%	0.5%	0.7%	0.7%
Hispanic or Latino ***	4%	14%	22%	3%	4%
Other	4%	13%	7%	6%	4%
Missing	8%	16%	7%	8%	3%
Do you consider yourself to be of Hispanic or Latino origin? (Yes) ***	13%	42%	38%	9%	7%

⚡ Difference is statistically significant at the p<0.1 level.
* Difference is statistically significant at the p<.05 level.
** Difference is statistically significant at the p<.01 level.
*** Difference is statistically significant at the p<.001.

Characterizing Survey Respondents

Respondent Demographics	Treatment		Control	
	P1 (T_pre)	P2 (T_post)	P1	P2
Number of Households	417	198	892	553
Number of Persons	742	309	1,273	700
Age Main Respondent (mean) ***	58	60	57	60
Gender Main Respondent (female) (%) **	69%	73%	62%	60%
Primary Wage Earner Employed (%) *	27%	25%	24%	21%
Primary Wage Earner Retired (%) ***	46%	40%	42%	42%
Household Size (mean) ***	1.8	1.6	1.4	1.3
Single Person Household (%) ***	58%	68%	76%	84%

⚡ Difference is statistically significant at the p<0.1 level. * Difference is statistically significant at the p<.05 level.
** Difference is statistically significant at the p<.01 level. *** Difference is statistically significant at the p<.001.

Across ALL JPB Affordable MF Households

Demographic Characteristic	Across Research Groups and Regions (Midwest and Northeast) (N=1,859 – 1,891)
	Year 1; Baseline
Government/Social Assistance Income Received	
Social Security	49.3%
Supplemental Security Income (SSI)	23.6%
Welfare Payments or Case Assistance	3.2%
Veteran Affairs Benefits or Assistance	2.0%
Unemployment Compensation	1.6%
Receives No Government Income Assistance	22.9%
Other Social Assistance	
Food Stamps or WIC Assistance (n=1,838)	58.1%
Energy Assistance* (n=1,012)	35.7%

* Includes assistance from LIHEAP, local or state agencies, utility companies, families or friends, and other.

Changes in Dwelling Quality

Survey Question (Respondent Only)	Treatment		Diff.	Control		DID
	Pre	Post		Y1	Y2	
Kept home at unsafe or unhealthy indoor temperatures (Almost every month or some months)	40%	29%	-11%**	20%	13%	-4%
Home too drafty (All of the time, most of the time)	34%	17%	-17%*	17%	9%	-8%
Home too dusty (All of the time, most of the time)	42%	26%	-16%***	28%	25%	-13%**

⚡ Difference is statistically significant at the p<0.1 level. * Difference is statistically significant at the p<.05 level.
** Difference is statistically significant at the p<.01 level. *** Difference is statistically significant at the p<.001.

Changes in Dwelling Quality (Cont.)

Survey Question (Respondent Only)	Treatment		Diff.	Control		DID
	Pre	Post		Y1	Y2	
How infested is your home with cockroaches or other insects? (Extremely infested, very infested)	31.0%	23.0%	-8.0%***	16.3%	16.9%	-8.6%***
How infested is your home with rats, mice, or other rodents? (Extremely infested, very infested)	26.6%	30.4%	+3.8%***	14.2%	12.8%	+5.2%***
Have you seen mold in your home in the past 12 months? (Yes)	30.7%	28.8%	-1.8%	14.7%	13.5%	-0.6%
Have you seen standing water in your home in the past 12 months? (Yes)	10.8%	11.4%	0.6%	6.7%	5.7%	1.6%

✧ Difference is statistically significant at the $p < 0.1$ level.

* Difference is statistically significant at the $p < 0.05$ level.

** Difference is statistically significant at the $p < 0.01$ level.

*** Difference is statistically significant at the $p < 0.001$.

Changes in Dwelling Quality

Survey Question (Respondent Only)	Treatment		Diff.	Control		DID
	Pre	Post		Y1	Y2	
How much outdoor noise do you hear indoors when the windows are closed? (A great deal)	30.6%	20.0%	-10.6%**	20.7%	22.2%	-12.1%**
How much does outdoor noise interfere with your sleep at night? (Extremely, very much)	27.9%	16.2%	-11.7%*	12.4%	13.9%	-13.2%*
How often do you smell odors from outside your home when the windows are closed? (Very often, fairly often)	24%	12%	-12%**	13%	12%	-11%**
How often do you smell odors from other apartments or the hallway when you are inside your apartment? (Very often, fairly often)	38%	31%	-7%	26%	23%	-4%*

✧ Difference is statistically significant at the $p < 0.1$ level. * Difference is statistically significant at the $p < 0.05$ level.

** Difference is statistically significant at the $p < 0.01$ level. *** Difference is statistically significant at the $p < 0.001$.

Changes in Energy Affordability and Budget Trade-Offs

Resident Survey Question (Respondent Only)	Treatment		Diff.	Control		DID
	Pre	Post		Y1	Y2	
During the past 12 months, did you receive a disconnect, shut-off, or non-delivery notice? (Almost every month, some months)	16.7%	21.4%	+4.8%	8.7%	11.4%	2.1%
During past 12 months, was your electricity or natural gas disconnected because you were unable to pay your home energy bill? (Yes)	6.1%	6.1%	0.0%	3.6%	5.2%	-1.6%
How hard is it to pay energy bills? (Very hard or hard)	37.5%	40.0%	+2.5%	37.0%	34.5%	5.0%
During the past 12 months, how often did your household not fill a prescription for medication in order to pay an energy bill? (Every month, every other month)	4.7%	4.7%	0.0%	2.9%	0.8%	2.1%
During the past 12 months, how often did your household not pay an energy bill in order to fill a prescription for medication? (Every month, every other month)	2.6%	5.3%	+2.7%	1.3%	0.0%	4.0%
Received energy assistance - last 12 months (Yes)	34.0%	36.6%	+2.6%	22.4%	47.0%	-24.6%**
In the past year, have you used any of the following to assist with paying your energy bill? (payday loan, tax refund anticipation loan, car title loan, pawn shop, other type of short-term, high-interest loan)	6.2%	4.1%	-2.1%***	10.1%	8.5%	-0.5%

** Difference is statistically significant at the p<.01 level. *** Difference is statistically significant at the p<.001.

Food Trade-offs and Security

Survey Question (Respondent Only)	Treatment		Control	
<i>Over the past 12 months...</i>	Pre-Wx	Post-Wx	Yr 1	Yr 2
Did not purchase food in order to pay energy bills (every month or every other month)	12.7%	13.8%	7.4%	8.4%
Did not pay energy bills in order to purchase food (every month or every other month)	6.7%	4.0%	7.2%	7.5%
In the past 4 weeks, respondent or household member went an entire day and night without eating anything because there was not enough food	10.7%	10.3%	7.7%	9.7%
In the past 4 weeks, respondent worried that household members would not have nutritious food to eat	15.0%	18.5%	13.1%	16.7%
In the past 12 months, household received food stamps or WIC assistance to help pay for food	63.1%	63.3%	61.7%	64.5%

Food Security: USDA Food Status and Scales

U.S. Household Food Security Survey Module: Six-Item Short Form Economic Research Service, USDA, September 2012

- In the past 12 months, the food I bought just didn't last, and I didn't have money to get more.
- In the past 12 months, my household couldn't afford to eat balanced meals.
- In the last 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?
 - How often did this happen?
- In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
- In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?



Food Security Status

- Raw Score 0 - 1 = High or marginal food security
- Raw Score 2 - 4 = Low food security
- Raw Score 5 - 6 = Very low food Security

OR

Food Security Scale

- Score is based on the number of affirmatives. (examples; 1 = 2.86; 6=8.48)

USDA Status	Treatment		Diff.	Control		Diff.
(Status by Percent)	Pre	Post		Y1	Y2	
High/Mod Food Security (0-1)	68	60	-8	64	66	+2
Low Food Security (2-4)	17	23	+6	20	19	-1
Very Low Food Security (5-6)	15	17	+2	16	15	-1
USDA Status Scale	Treatment		Diff.	Control		Diff.
	Pre	Post		Y1	Y2	
Mean food security score (0-8.48)	3.0	2.9	-0.1	2.6	2.5	-.01

* Lower the mean, more food secure

Power Outages and Medically Vulnerable Households

Survey Question (Respondent Only)	Full Sample
Do you or anyone else in your household currently take prescription medicines that need to be kept in the refrigerator? (Yes)	16.2% (n=1,836)
If Yes, would it be life threatening if the medicines were not refrigerated for an extended period of time because of a power outage? (Yes)	46.0% (n=235)
Do you or does anyone else in your household currently rely on medical equipment that would stop working if the power goes out? (Yes)	14.0% (n=1,771)
If Yes, would it be life threatening if your electric medical equipment was unable to be powered for an extended period of time? (Yes)	63.0% (n=219)

Social Cohesion and Community Resilience

Survey Question (Respondent Only) (n=1846 +/-)	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
People in my building help each other (%)	22	42	25	7	4
My building is prepared for future emergencies and disasters (%)	21	35	28	11	6
I am proud to call this building my home (%)	32	40	19	7	4
I invite people to visit my home (%)	27	45	14	9	4
People in my building feel like they belong to a community (%)	20	35	31	8	6
Survey Question (Respondent Only) (n=1846 +/-)	Very Safe	Safe	Neither safe or unsafe	Somewhat Unsafe	Very Unsafe
How safe do you feel while on the building's property? (%)	57	28	4	8	3

Social Cohesion and Community Resilience

Resident Survey Question (n=1844 +/-)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
People in your building are committed to the well-being of the community (%)	22	42	25	7	4
People in your building have hope for the future (%)	21	35	28	11	6
During an emergency or disaster, I am confident I will get the information or instructions I need to stay safe (%)	23	50	17	6	3
During an emergency or disaster, I am confident I can stay connected to family and friends (%)	28	54	14	4	2
During an emergency or disaster, I am confident I will be treated with dignity and respect (%)	24	49	21	4	3
I am confident my household will stay safe in my current apartment during a violent storm (%)	26	51	18	4	2
I am confident I can be of help to my neighbors or community in an event of an emergency or disaster (%)	27	53	16	3	2

Satisfaction

		Treatment (n=171)		Control (n=498)	
Survey Item/Group		Pre-Wx	Post-Wx	Year 1	Year 2
Satisfied with your life in general:	Not at all satisfied	4.7%	5.8%	2.8%	2.4%
	Not very satisfied	7.6%	10.5%	10.4%	7.7%
	Neither satisfied nor dissatisfied	13.5%	18.3%	11.6%	11.0%
	Fairly satisfied	38.0%	24.6%	38.2%	36.9%
	Very satisfied	36.3%	40.8%	36.9%	41.9%
Satisfied with your health:	Not at all satisfied	6.6%	12.2%	4.2%	4.0%
	Not very satisfied	18.6%	14.8%	14.9%	15.3%
	Neither satisfied nor dissatisfied	15.6%	15.9%	9.9%	10.7%
	Fairly satisfied	32.9%	33.3%	43.8%	39.7%
	Very satisfied	26.3%	23.8%	27.1%	30.3%

Satisfaction

		Treatment (n=171)		Control (n=498)	
Survey Item/Group		Pre-Wx	Post-Wx	Year 1	Year 2
Satisfied with present standard of living:	Not at all satisfied	6.0%	8.0%	4.7%	4.8%
	Not very satisfied	12.0%	13.4%	11.0%	9.4%
	Neither satisfied nor dissatisfied	18.6%	20.9%	14.2%	11.8%
	Fairly satisfied	32.9%	24.6%	42.5%	41.9%
	Very satisfied	30.5%	33.2%	27.6%	32.2%
Satisfied with your neighborhood:	Not at all satisfied	8.3%	10.8%	7.6%	9.2%
	Not very satisfied	10.1%	13.4%	10.1%	9.2%
	Neither satisfied nor dissatisfied	24.9%	22.0%	18.9%	13.9%
	Fairly satisfied	29.6%	28.5%	36.8%	42.9%
	Very satisfied	27.2%	25.3%	26.6%	24.8%

Exposure to Extreme Natural Disasters/Emergencies

In the past 12 months, how many times have any of these events occurred in the area where your property is located?

Property Manager Survey Question					
Type of Disturbance (n=164)	0	1	2	3	4 or more
Extreme hot temperatures* (%)	23	12	15	14	35
Extreme cold temperatures* (%)	9	19	11	15	46
Very high winds (%)	22	27	13	21	18
Heavy snow (%)	15	16	13	19	37
Heavy Rain (%)	11	20	18	23	28
Flooding (%)	72	14	2	7	5
Drought (%)	92	4	4	0	0
Wildfire (%)	99	1	0	0	0
Earthquake (%)	97	1	2	0	0
Power Outage* (%)	53	18	18	2	9

*Lasting 3 or more days

Due to rounding totals may not equal 100%

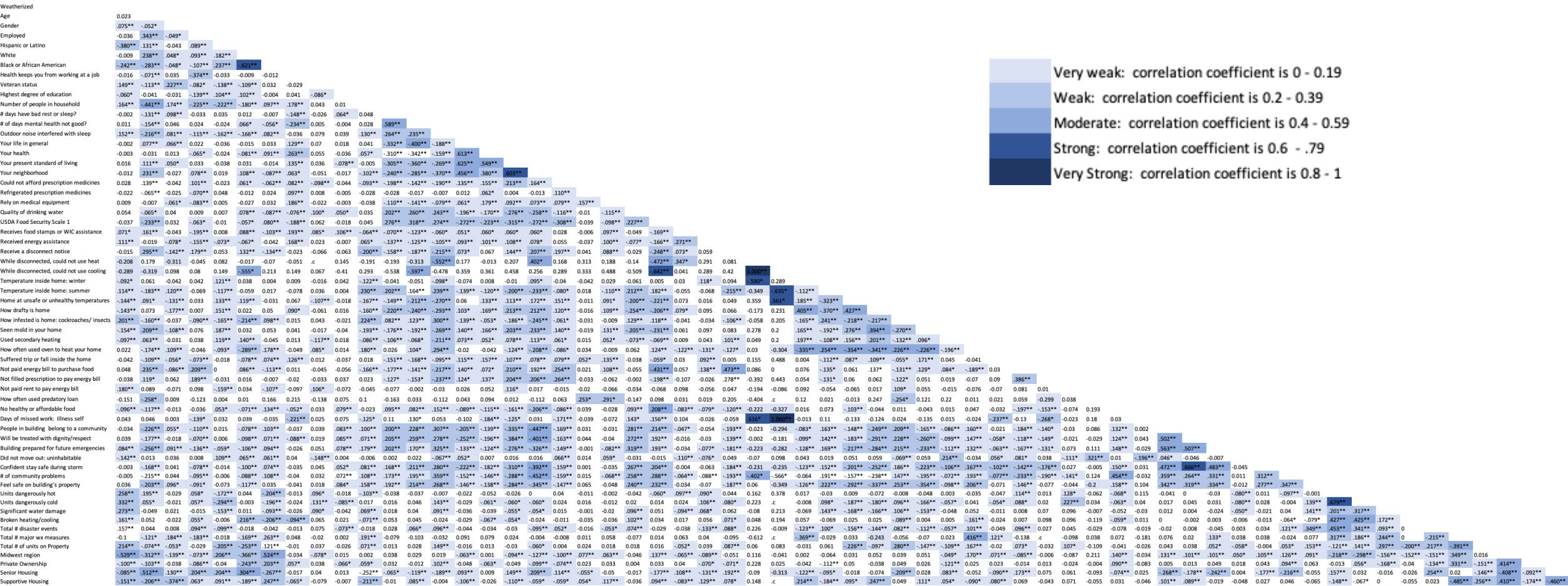
Disruptions from Extreme Events

Thinking about the events you reported in the previous question, did any of them result in the following situations? (% Yes)

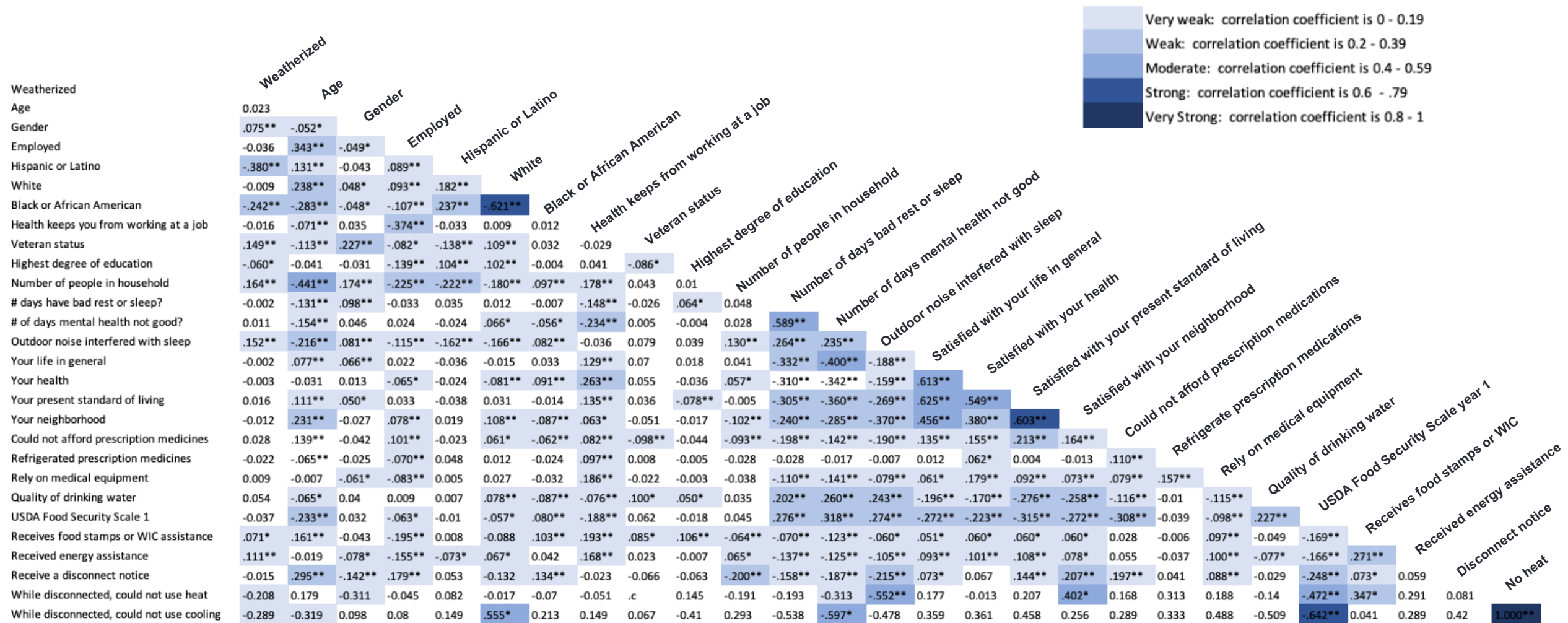
Property Manager Survey Question	
	Full Sample
Heating or cooling system shut down	27.2%
Residents could not use oxygen machine	12.4%
Residents could not refrigerate medications	11.2%
Residents could not use phone	11.6%
No safe drinking water	7.0%
Residents could not cook meals	18.9%
Resident's food spoiled	12.0%
Units dangerously cold	20.8%
Units dangerously hot	24.2%
Raw sewage smell	8.3%
Residents extremely concerned about welfare	21.4%
Residents communicated concerns and frustrations	50.4%

Resilience Dimension	Resilience Indicators and Metrics	Number of Variables
Well-being	Health: sleep, physical and mental health, Satisfaction: life, health, standard of living, neighborhood	8
Social Cohesion and Community	Social norms and values: will be treated with dignity and respect during emergency; hope for the future, Connectivity: invite people to home; people feel like they belong to a community, confident can stay connected during emergency; Social Support and Caring: people help each other	10
Disaster Management	Subjective resilience: building preparedness for future emergencies, access to information to stay safe, confidence in staying safe during future emergencies	4
Human Essentials	Energy Security: access to heating and cooling, access to energy for medical equipment and medications, reliance on energy assistance; Food Security: access to food, reliance on food assistance; Safe Drinking Water: water quality; Healthcare: access to healthcare, prescription affordability	17
Psychosocial Stress	Financial burden: difficulty paying for energy, choosing between basic essentials, use of predatory loans; Stressors: worries about household members going hungry, constrained food choices, not having heating or cooling or electricity; Economic impacts: missed days of work due to illness/injury	15
Neighborhood Quality	Assets: good schools, stores with food people like to eat, arts and culture; Local environment: number of environmental issues (traffic, litter, weeds, substance misuse, unsecured doors)	8
Indoor Health and Safety Hazards	Exposure: environmental tobacco smoke, odors, noise; Dwelling quality: extreme temperatures, mold, dust, pests; Safety hazards: trips and falls, use of oven and other alternative sources to heat home, fires	20
Perceptions of Safety	Fear of harm: visibility (brightness) indoors and outdoors, exposure to crime and/or violence	5
Independent Variables	Demographics and Socioeconomics: age, gender, race/ethnicity, education status, employment status, government assistance, disability status, veteran status, children in the home; household size, years lived in home; Weatherization and Building Systems Resilience; number of major wx measures; number of emergency measures; Building/Property Characteristics: # units on property/in building; number of extreme events in past year; disruptions/issues from extreme events; Location: region; Building Use: mixed use, senior housing, supportive housing, family; Ownership Type: Nonprofit, public, private, limited partnership	16
Total Number of Variables in Correlation and Network Analyses		103

Resilience Correlation Matrix



Resilience Correlation Matrix (Zoom in)



** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Social Impact and Community Resilience Observations

- Of those that pay at least one of their energy bills, 36% reported receiving energy assistance at baseline (year 1). During the second year, a sharp rise in assistance was observed in the control group; the treatment group only minimally increased.
- 32% of the households in this sample are classified as having very low or low food security. The majority of households (58%) reported they received either food stamps or WIC at baseline (year 1). No significant changes in food security status were observed post-weatherization.
- The subjective resilience of households living in affordable multifamily buildings in the Midwest and Northeast region is strong. The majority of participating households either agreed or strongly agreed that people in their building feel like they belong to a community, help each other, and will stay safe during a natural disaster event.
- Many social and community resilience indicators are interactive and have statistically significant relationships.

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