

Q4 Special Topic: Green Home Improvements and Home Repairs

National Housing Survey

Q4 2021



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Executive Summary

Green Home Improvements

- Younger homeowners (18-34) are most likely to be interested in mortgage-financed green home improvements (often known as energy-efficient mortgages), as are those who have recently purchased their home; these groups are more likely to reap longer-term benefits following the investment.
- Installing solar panels and improving energy efficiency are most appealing, while there's less interest in paying for an overall home energy assessment.

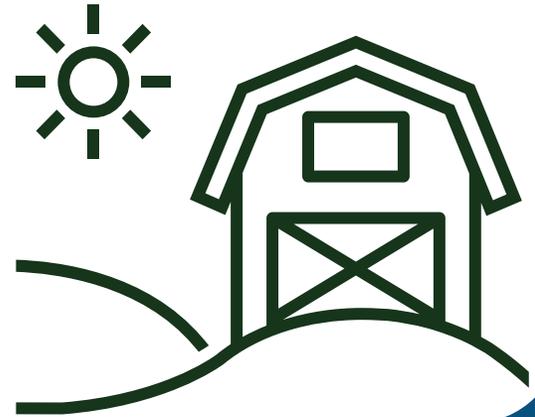
Home Repair Costs

- Most homeowners say small- and medium-sized repairs are needed to keep their home well-maintained, and that the costs were similar to or less than expected. However, one-third of homeowners indicate the repair costs were higher than expected.
- Black and Hispanic homeowners, as well as residents living in lower-income areas, are more likely to express significant concern over unexpected home repair costs.
- The costliest repairs cited by homeowners are to the exterior structure, HVAC, and appliances/major equipment.



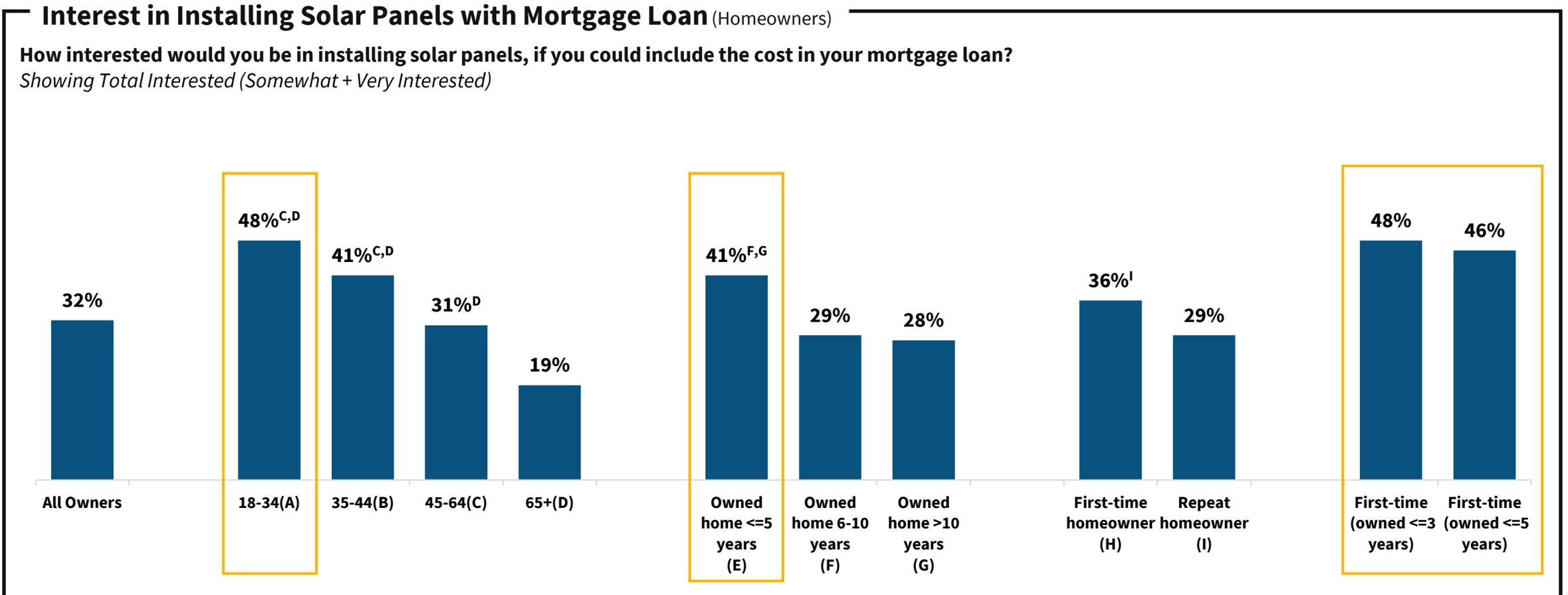


Green Home Improvements



Nearly half of younger (18-34) homeowners would be interested in installing solar panels if the cost were included in their mortgage loan.

- Those who purchased their home within the past 5 years are also more likely to be interested; both groups are more likely to see benefits over the length of homeownership than older homeowners and/or those who have owned their home for a longer period.



Q: How interested would you be in installing solar panels, if you could include the cost in your mortgage loan?

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A/B/C/D, E/F/G, H/I : Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level within the year



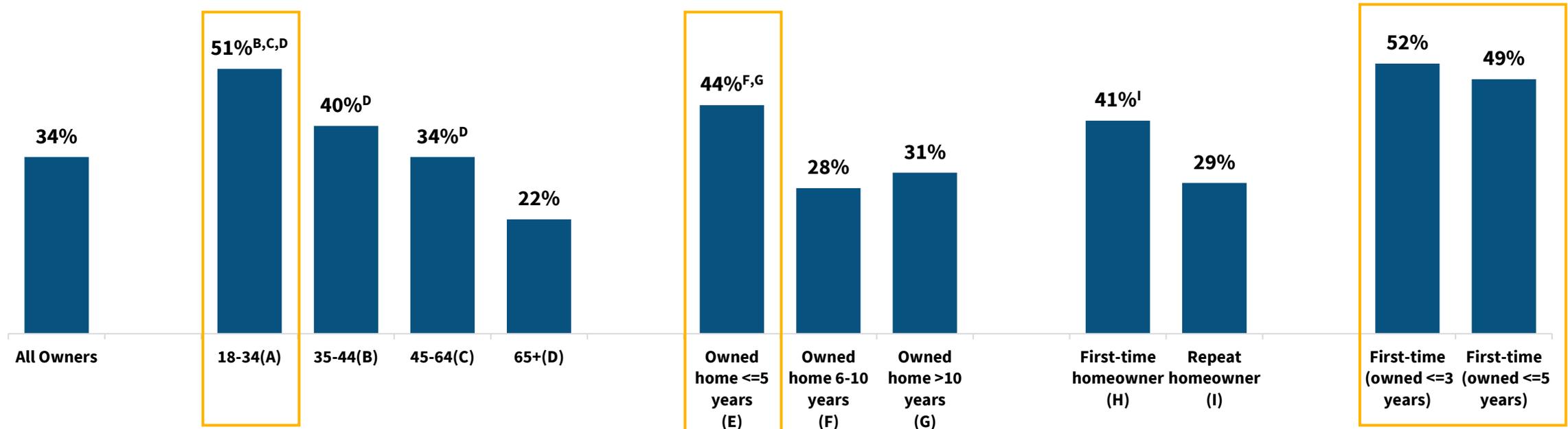
Similarly, more than half of younger owners would be interested in making energy efficiency home improvements if the costs were included in their mortgage loan.

- Again, those who purchased their home within the past 5 years are also more likely to be interested, as are first-time homeowners in general.

Interest in Making Energy Efficiency Improvements to Home with Mortgage Loan (Homeowners)

How interested would you be in making energy efficiency improvements to your home (e.g., additional insulation, HVAC replacement, energy efficient appliances) if you could include the costs in your mortgage loan?

Showing Total Interested (Somewhat + Very Interested)



Q: How interested would you be in making energy efficiency improvements to your home (e.g., additional insulation, HVAC replacement, energy efficient appliances) if you could include the costs in your mortgage loan?

A/B/C/D, E/F/G, H/I : Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level within the year

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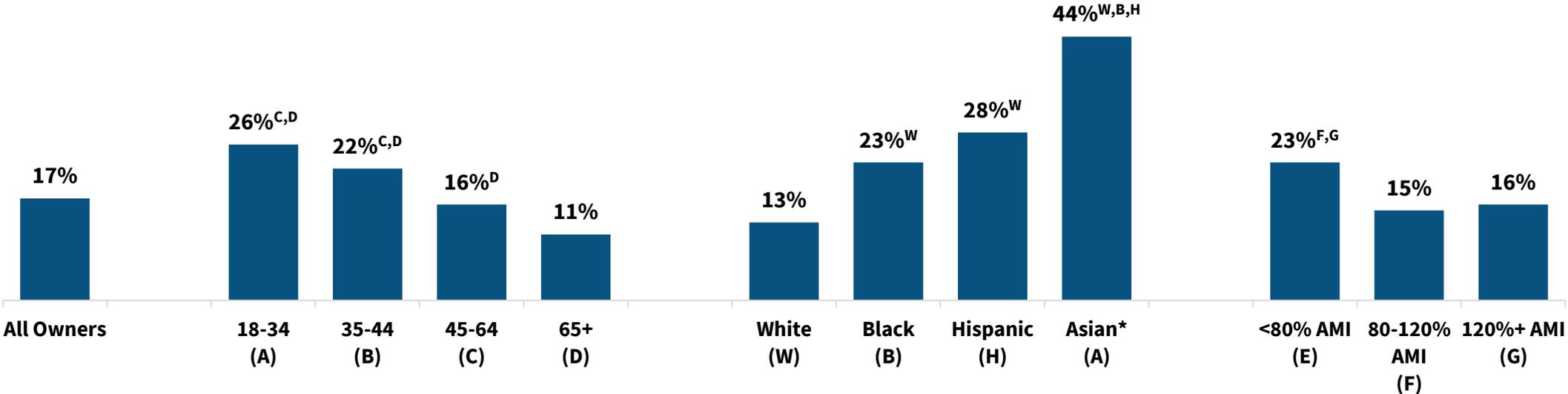
However, homeowners are less interested in paying for an overall home energy assessment that would provide recommendations and estimated savings.

- Young homeowners, minorities, and those with lower incomes are most likely to be interested in investing in a home energy assessment.

Interest in an Overall Home Energy Assessment (Homeowners)

How interested would you be in an overall home energy assessment, with a one-time fee of a few hundred dollars, that gives you recommendations on home energy improvement projects and the estimated cost savings?

Showing Total Interested (Somewhat + Very Interested)



Q: How interested would you be in an overall home energy assessment, with a one-time fee of a few hundred dollars, that gives you recommendations on home energy improvement projects and the estimated cost savings?

* Small sample size: Asian Owners (N=69)

A/B/C/D, W/B/H/A, E/F/G: Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level within the year



🔧 Home Repair Costs

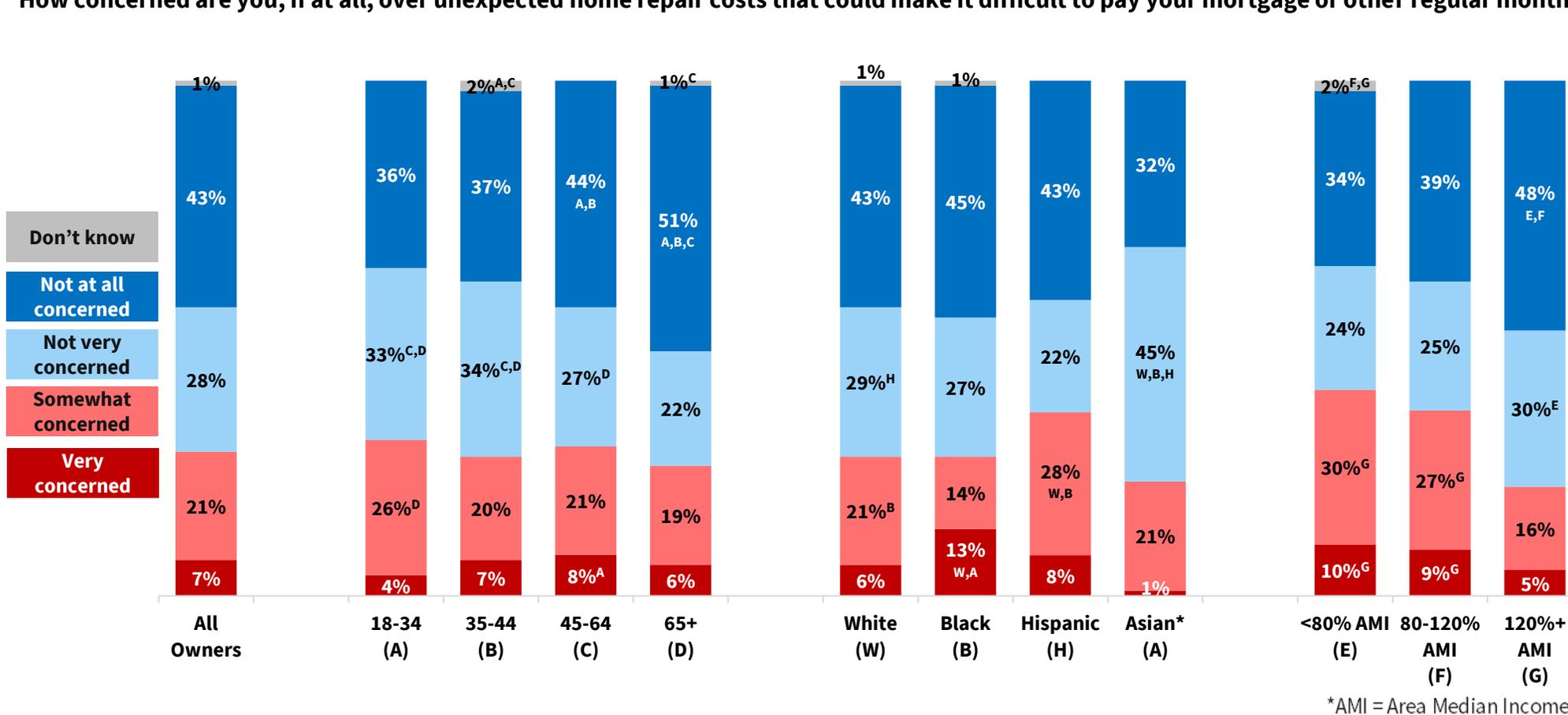


Black and Hispanic homeowners and those from lower income groups are more likely to express significant concern over unexpected home repair costs.

- Black homeowners are more than twice as likely as White homeowners to say they are "very concerned" about unexpected repair costs.
- Older homes are a top driver of unexpected home repair costs, often requiring major investment.

Concern over the Impact of Unexpected Home Repair Costs (Homeowners)

How concerned are you, if at all, over unexpected home repair costs that could make it difficult to pay your mortgage or other regular monthly bills?



Among those who are concerned about unexpected home repair costs:

- 60% say home repairs are due to their **house being older** and 20% say **remodeling**, compared to 45% and 32% respectively among those who are not concerned
- 25% expect to do **large or very large repairs**, compared to 13% of those who are **not concerned**
- They are significantly more likely to say repairs on **interior room additions, exterior structure, interior structure, plumbing/electrical, HVAC, and appliances/major equipment** have been cost burdensome, compared to those who are not concerned

Q: How concerned are you, if at all, over unexpected home repair costs that could make it difficult to pay your mortgage or other regular monthly bills?

* Small sample size: Asian Owners (N=69)

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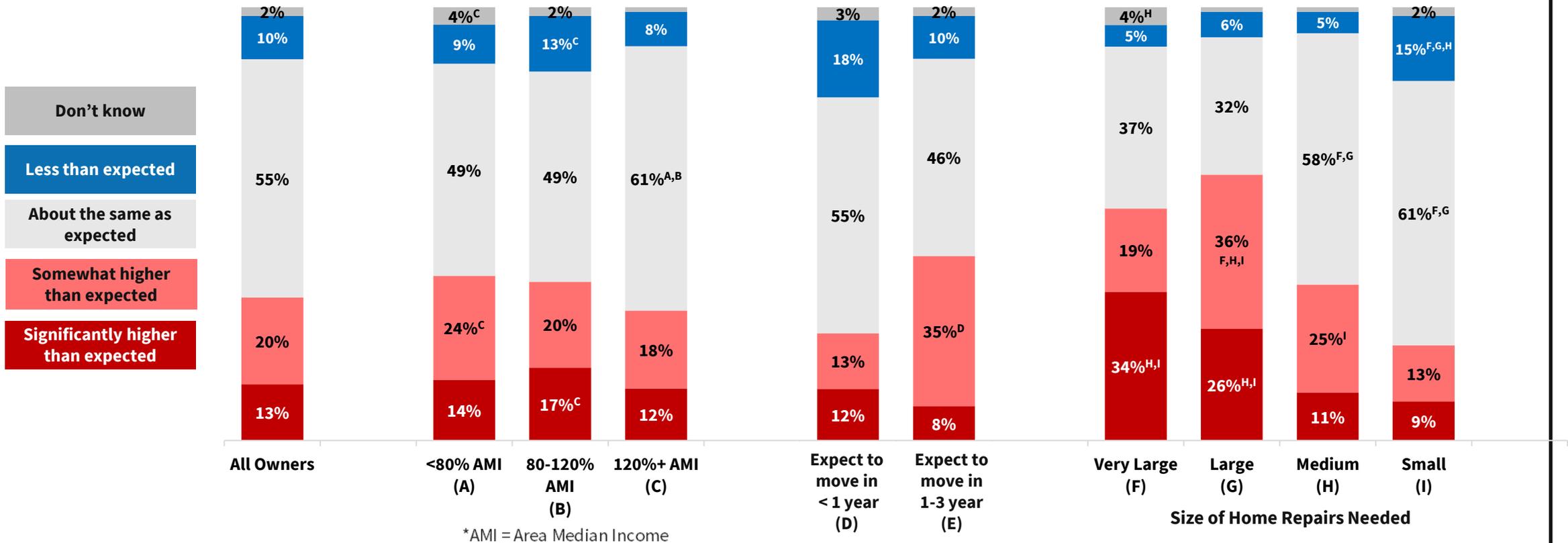
A/B/C/D, W/B/H/A, E/F/G: Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level

While most homeowners say the repair costs were similar to or less than expected, one-third say they were higher than expected.

- Those with an AMI lower than 120% and those who expect to move within 1-3 years are more likely to say the costs required were higher than expected.

Costs Required vs. Expected to Make Repairs (Homeowners)

Were the costs required to make these repairs to your home...



Q: Were the costs required to make these repairs to your home...

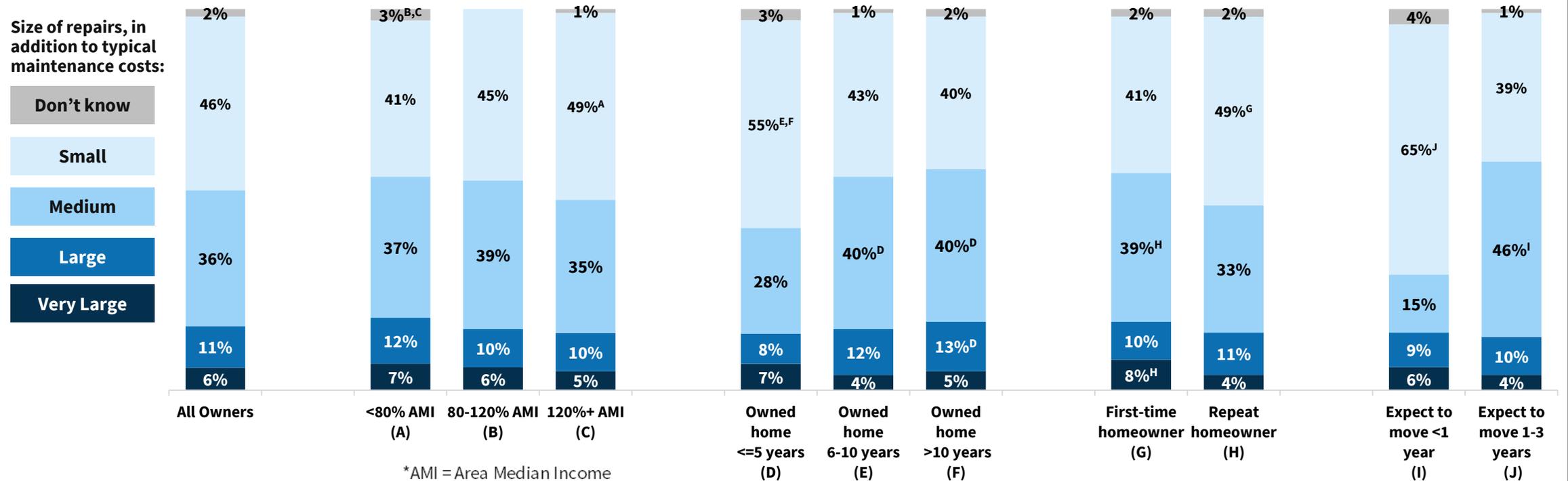
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Most homeowners say small and medium size repairs are needed to keep their home well-maintained.

- Homeowners who have owned their home for more than 5 years and first-time homeowners are more likely to say they require medium repairs.
- Those who expect to move within 1 year are more likely to say that a small amount of repairs are needed, whereas those who plan to move in the next 1-3 years are investing more time and money into repairs.

Size of Home Repairs Needed to Maintain Home (Homeowners)

Since you have owned your home, how would you describe the amount of repairs needed to keep your home well-maintained? (Homeowners)



Q: Since you have owned your home, how would you describe the amount of repairs needed to keep your home well-maintained?

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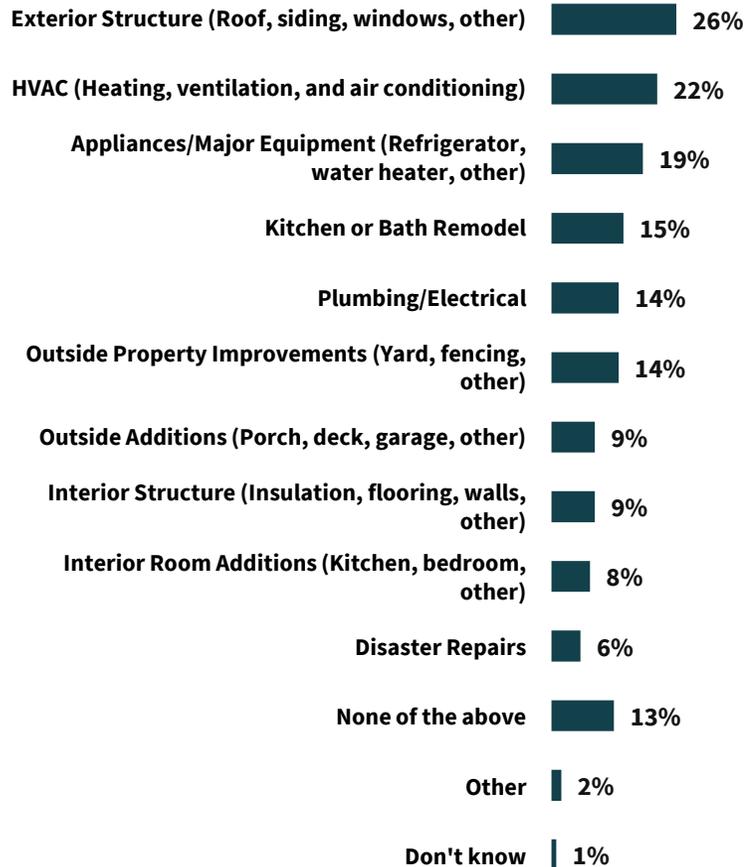
A/B/C, D/E/F, G/H, I/J : Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level

Exterior structure, HVAC, and appliances/major equipment are identified as the most cost burdensome repairs.

- First-time homeowners are more likely than repeat homeowners to do repairs due to the house being older, while repeat homeowners are more likely than first-time homeowners to do repairs for remodeling.

Most Cost Burdensome Home Repairs

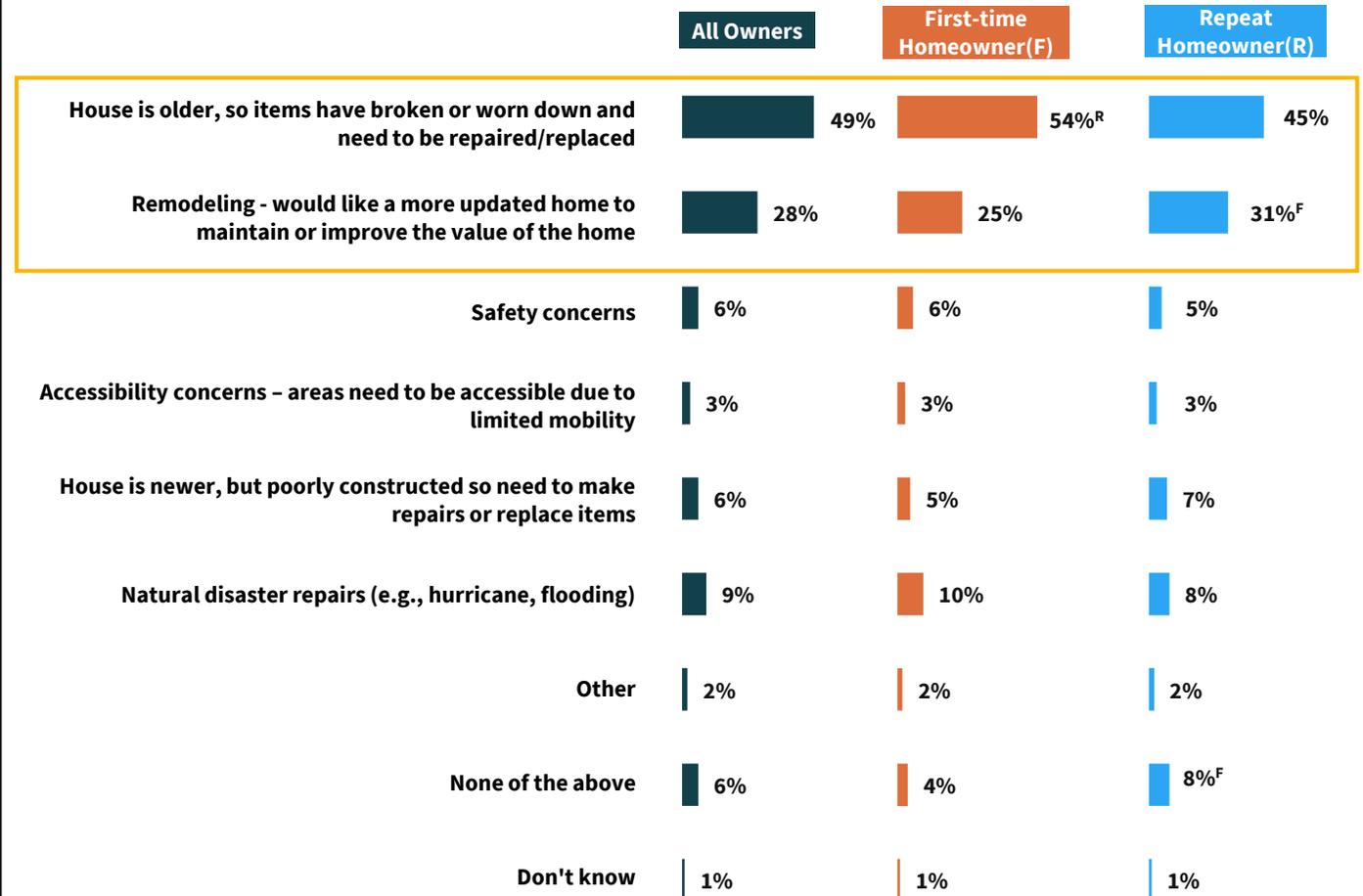
All Owners



Q: What home maintenance or repair items have been most cost-burdensome, if any?

Main Reasons for Needing Home Repairs

Homeowners, Showing %, Ranked by Owners



Q: What are your main reasons for needing these home repairs?

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F/R: Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level within the year

A Note on October-December 2021 Survey Collection

PSB has partnered with ReconMR (our previous vendor partner Opinion Access has merged with ReconMR) to conduct some NHS interviews on our behalf. PSB continues to process and analyze the data and complete all regular deliverables.

While ReconMR has call centers based in Florida and Texas, they also have a very extensive remote workforce that can conduct interviews from their homes. This ensures our continued work on the NHS even if their call centers are forced to close or if a portion of the work force gets sick.

PSB trained interviewers to ensure interviewing is consistent with PSB's procedures. We also monitor interviews for quality control. This minimized any noise in the data from using different interviewers. PSB also regularly reviews the results of the interviews as they are completed.

There were no changes in the sample composition, as PSB provided our vendor partners with the survey sample and dialing procedures. The sample quotas and targets remained unchanged from previous months and the data was weighted by PSB in the same way as past months to be representative of the US population.

Research Methodology: Q4 2021 GP Sample

- Since June 2010, approximately 1,000 live (not automated) telephone interviews with Americans age 18 and older via landline and cell phone are conducted primarily by PSB (with supplemental support from ReconMR) each month, in coordination with Fannie Mae. For the sample to accurately represent the U.S. population, 70% of calls are made to cell phones. The margin of error for the total sample is $\pm 3.1\%$ at the 95% confidence level and larger for sub-groups. Most of the data collection occurs during the first two weeks of each month.
- The General Population data presented in this study has been weighted to make it reflective of the U.S. Census American Community Survey demographic statistics in terms of gender, age, race/ethnicity, income, education, housing tenure, and the Centers for Disease Control (CDC) National Health Interview Survey (NHIS) phone type statistics.
- Respondents can volunteer a “don’t know” response on each question, which is why, in some cases, the total responses may not add up to 100%.

	Sample Size	Margin of Error
General Population (GP), including:	3,010	$\pm 1.79\%$
Mortgage Holders	1,204	$\pm 2.82\%$
Owners	1,926	$\pm 2.23\%$
Renters	1,023	$\pm 3.06\%$

Research Methodology – Sample Sizes by Demographic Groups (GP Sample)

Q4 2021 Sample	Sample Size	Margin of Error
<i>By Income</i>		
<80% AMI	932	±3.21%
80%-120% AMI	448	±4.63%
120%+ AMI	1125	±2.92%
<i>By Race</i>		
White, non-Hispanic	1,790	±2.32%
Hispanic	569	±4.11%
Black, non-Hispanic	358	±5.18%
Asian, non-Hispanic	179	±7.32%
<i>By Age</i>		
18-34	903	±3.26%
35-44	512	±4.33%
45-64	963	±3.16%
65+	623	±3.93%

*AMI ratio status for NHS respondents was determined by matching zip code to AMI, and using the mid point of a respondent's income category in Q142 as a proxy for income. Those who answered with "don't know" for income or zip code, or where AMI data was not available for a zip code were not able to be coded.

Interest in Installing Solar Panels if Costs are included in Mortgage Loan

How interested would you be in installing solar panels, if you could include the cost in your mortgage loan?
Among all owners

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Very interested	13%	13%	12%	8%	27%	13%	15%	12%	19%	14%	13%	8%
Somewhat interested	19%	19%	25%	16%	13%	22%	23%	18%	29%	27%	18%	11%
Not very interested	12%	13%	12%	11%	2%	18%	9%	11%	16%	10%	12%	12%
Not at all interested	53%	54%	46%	62%	43%	45%	52%	56%	34%	48%	54%	66%
Don't know	3%	2%	4%	2%	15%	2%	1%	3%	2%	.%	3%	4%

Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Interest in Making Home Energy Efficiency Improvements if Costs are included in Mortgage Loan

How interested would you be in making energy efficiency improvements to your home (e.g., additional insulation, HVAC replacement, energy efficient appliances) if you could include the costs in your mortgage loan? *Among All Owners*

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Very interested	14%	14%	14%	16%	22%	14%	14%	16%	20%	15%	15%	8%
Somewhat interested	20%	20%	24%	19%	23%	28%	23%	18%	31%	25%	19%	14%
Not very interested	13%	14%	13%	8%	7%	14%	12%	14%	13%	18%	11%	14%
Not at all interested	49%	50%	46%	56%	30%	42%	50%	49%	33%	40%	53%	59%
Don't know	3%	2%	3%	2%	18%	2%	2%	4%	3%	1%	3%	4%

Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Interest in Home Energy Assessment that Gives Recommendations and Estimated Cost Savings

How interested would you be in an overall home energy assessment, with a one-time fee of a few hundred dollars, that gives you recommendations on home energy improvement projects and the estimated cost savings? *Among All Owners*

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Very interested	5%	4%	7%	10%	13%	7%	6%	4%	7%	8%	5%	3%
Somewhat interested	12%	9%	21%	13%	31%	16%	9%	12%	19%	14%	11%	8%
Not very interested	15%	16%	15%	12%	7%	17%	17%	14%	24%	16%	13%	11%
Not at all interested	65%	69%	54%	62%	47%	58%	66%	67%	48%	61%	70%	73%
Don't know	2%	2%	4%	3%	3%	2%	1%	2%	1%	1%	1%	5%

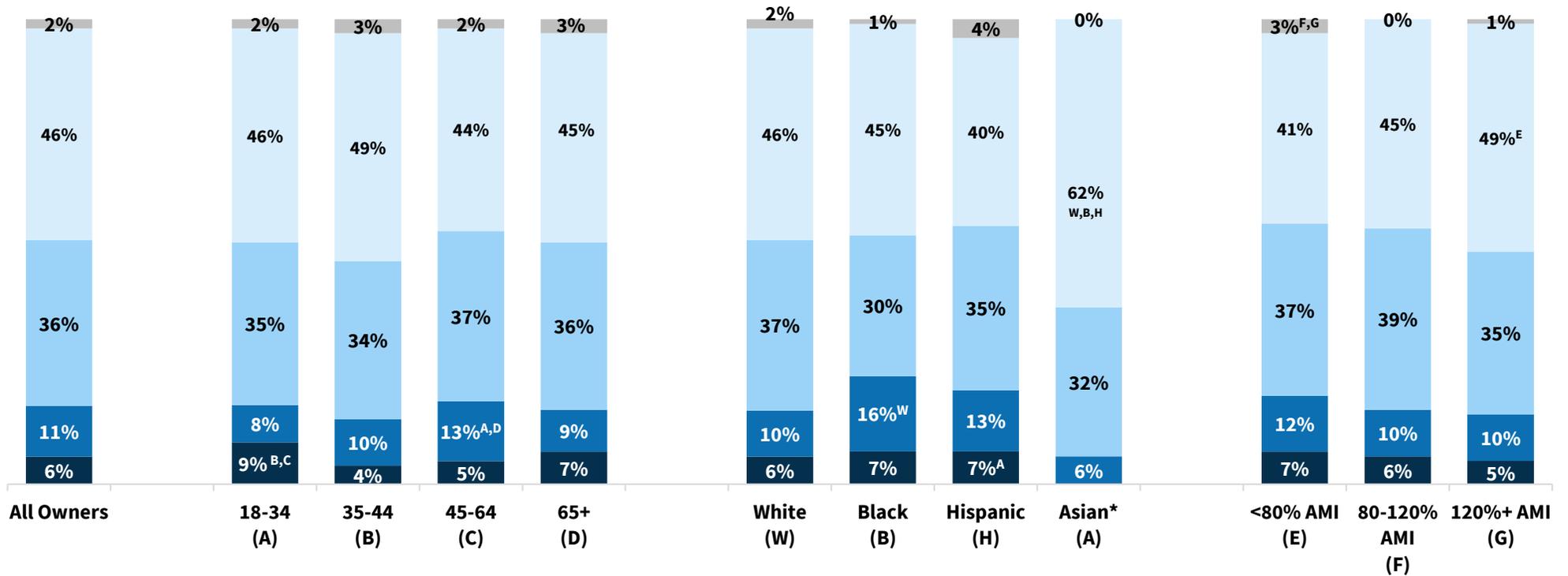
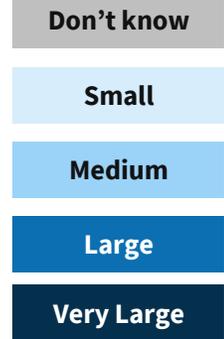
Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Size of Home Repair Costs Needed to Maintain Home – By All Owners, Age, Race, and AMI

Size of Home Repairs Needed to Maintain Home (Homeowners)

Since you have owned your home, how would you describe the amount of repairs needed to keep your home well-maintained?

Size of repairs, in addition to typical maintenance costs:



*AMI = Area Median Income

Q: Since you have owned your home, how would you describe the amount of repairs needed to keep your home well-maintained?

* Small sample size: Asian Owners (N=69)

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A/B/C/D, W/B/H/A, E/F/G : Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level

Amount of Home Repairs Needed to Keep Home Well-Maintained

Since you have owned your home, how would you describe the amount of repairs needed to keep your home well-maintained?
Among All Owners

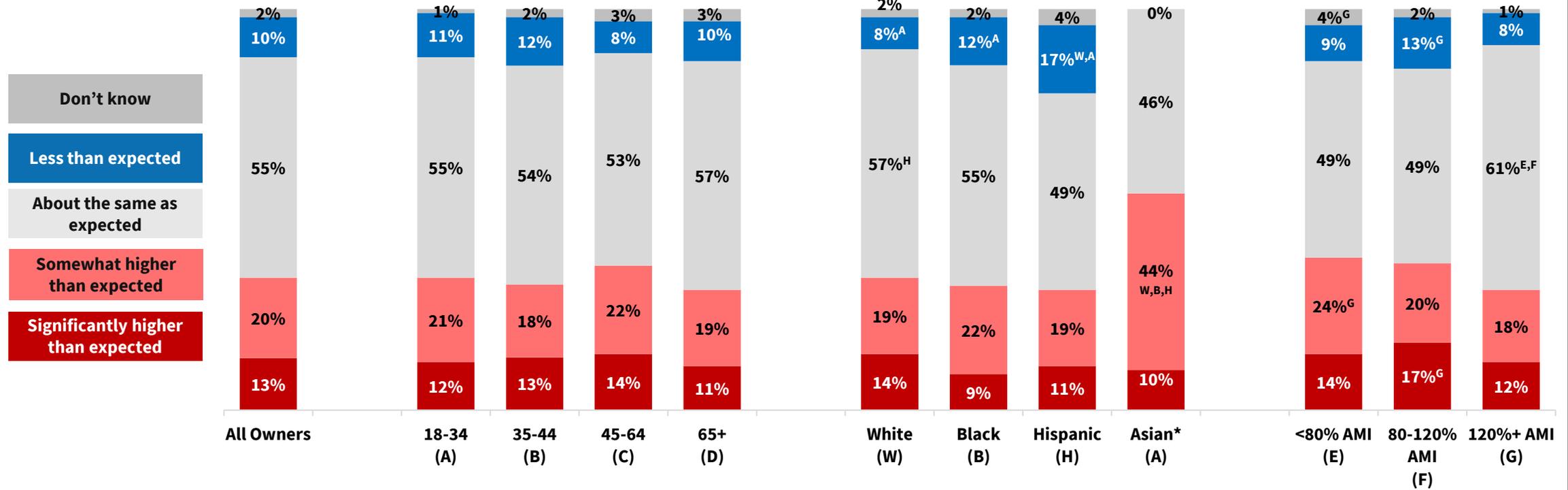
GP Sample	GP											
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Very large – major repairs required every year, plus typical maintenance costs	6%	6%	7%	7%	0%	7%	6%	5%	9%	4%	5%	7%
Large – a few major repairs required, plus typical maintenance costs	11%	10%	13%	16%	6%	12%	10%	10%	8%	10%	13%	9%
Medium – a few moderate repairs required, plus typical maintenance costs	36%	37%	35%	30%	32%	37%	39%	35%	35%	34%	37%	36%
Small – just small repairs, plus typical maintenance costs	46%	46%	40%	45%	62%	41%	45%	49%	46%	49%	44%	45%
Don't know	2%	2%	4%	1%	0%	3%	0%	1%	2%	3%	2%	3%

Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Home Repair Costs Required vs. Expected – By All Owners, Age, Race, and AMI

Costs Required vs. Expected to Make Repairs (Homeowners)

Were the costs required to make these repairs to your home...



*AMI = Area Median Income

Q: Were the costs required to make these repairs to your home...

* Small sample size: Asian Owners (N=69)

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A/B/C/D, W/B/H/A, E/F/G : Superscript denotes a % is significantly higher than the segment that the letter represents at the 95% confidence level

Costs Required vs. Expected for Home Repairs

Were the costs required to make these repairs to your home...
Among All Owners

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Significantly higher than expected	13%	14%	11%	9%	10%	14%	17%	12%	12%	13%	14%	11%
Somewhat higher than expected	20%	19%	19%	22%	44%	24%	20%	18%	21%	18%	22%	19%
About the same as expected	55%	57%	49%	55%	46%	49%	49%	61%	55%	54%	53%	57%
Less than expected	10%	8%	17%	12%	0%	9%	13%	8%	11%	12%	8%	10%
Don't know	2%	2%	4%	2%	0%	4%	2%	1%	1%	2%	3%	3%

Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Concern Over Unexpected Home Repair Costs

How concerned are you, if at all, over unexpected home repair costs that could make it difficult to pay your mortgage or other regular monthly bills?
Among All Owners

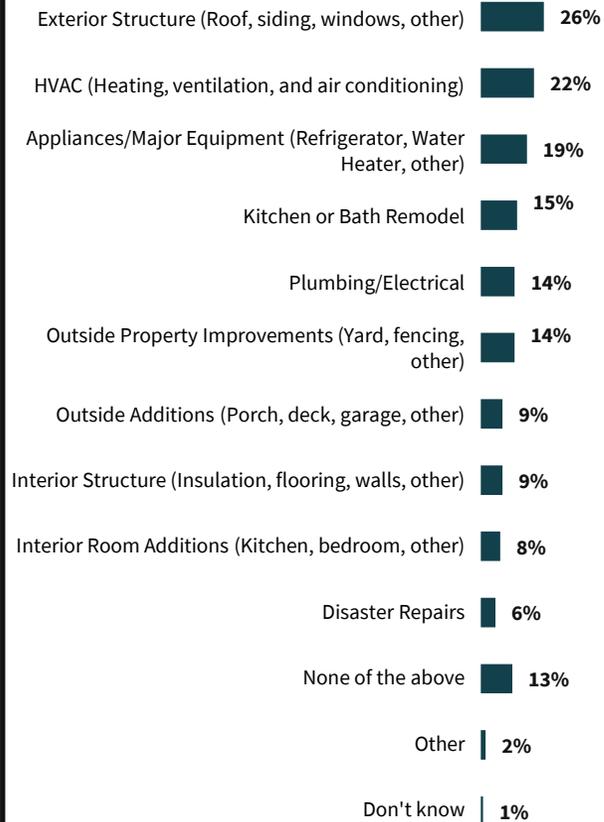
GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Very concerned	7%	6%	8%	13%	1%	10%	9%	5%	4%	7%	8%	6%
Somewhat concerned	21%	21%	28%	14%	21%	30%	27%	16%	26%	20%	21%	19%
Not very concerned	28%	29%	22%	27%	45%	24%	25%	30%	33%	34%	27%	22%
Not at all concerned	43%	43%	43%	45%	32%	34%	39%	48%	36%	37%	44%	51%
Don't know	1%	1%	.%	1%	0%	2%	0%	.%	.%	2%	.%	1%

Note: A cell value of “.%” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).

Most Cost Burdensome Home Repairs – By All Owners, Race, and AMI

All Owners

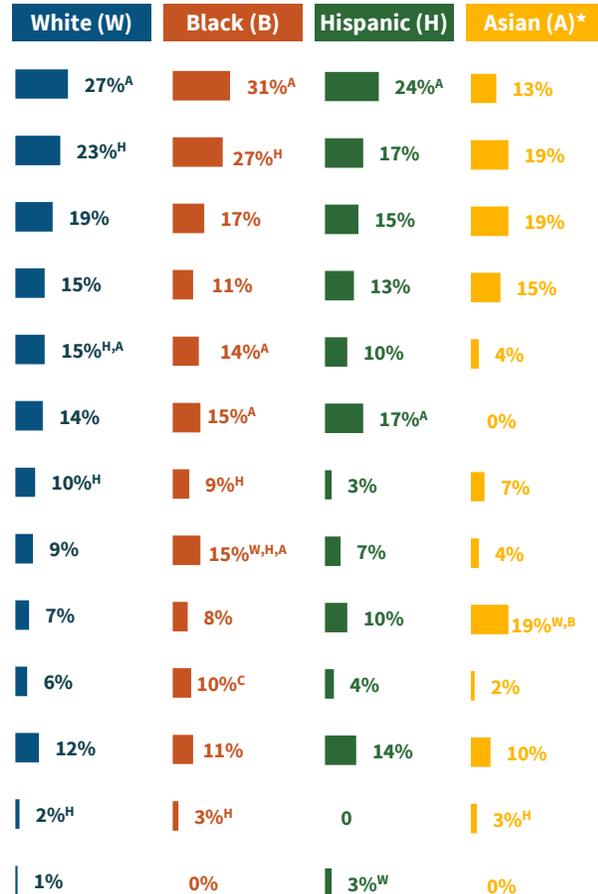
Showing %, Ranked by Owners



Most Cost Burdensome Home Repair Items (Homeowners)

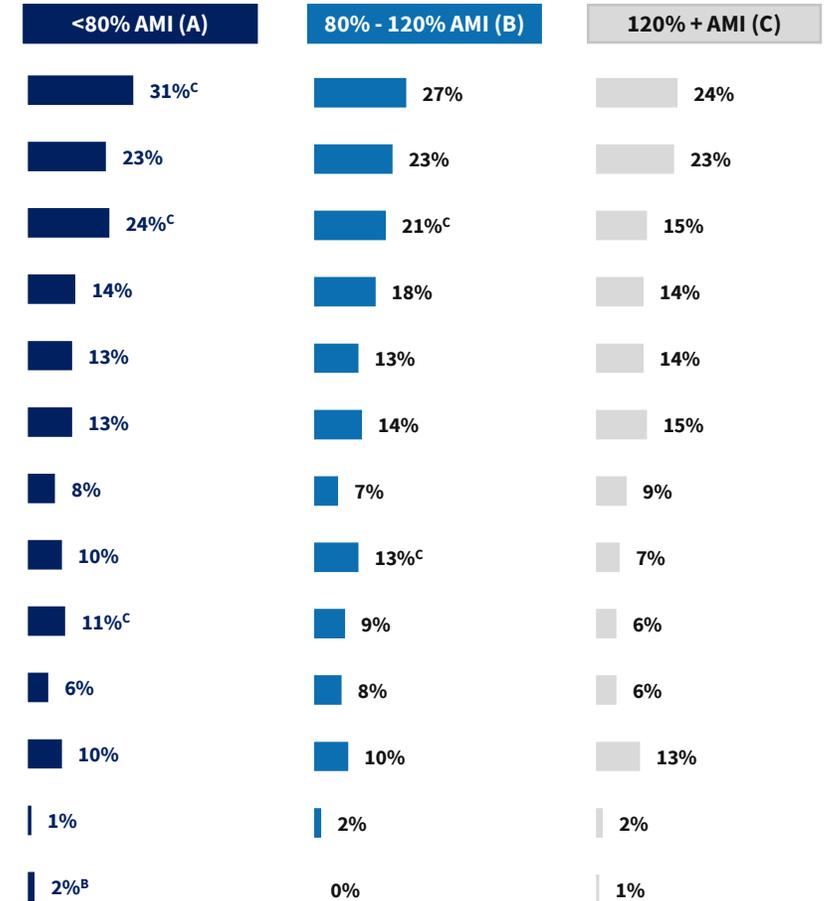
By Race

Showing %, Ranked by Owners



By AMI

Showing %, Ranked by Owners



Q: What home maintenance or repair items have been most cost-burdensome, if any?

* Small sample size: Asian Owners (N=69)

Most Cost-Burdensome Home Maintenance or Repair Items

What home maintenance or repair items have been most cost-burdensome, if any?
Among All Owners

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1926	1342	293	161	69	431	298	880	337	302	770	512
Kitchen or Bath Remodel	15%	15%	13%	11%	15%	14%	18%	14%	11%	13%	15%	18%
Interior Room Additions (Kitchen, bedroom, other)	8%	7%	10%	8%	19%	11%	9%	6%	6%	10%	7%	10%
Outside Additions (Porch, deck, garage, other)	9%	10%	3%	9%	7%	8%	7%	9%	4%	7%	11%	9%
Exterior Structure (Roof, siding, windows, other)	26%	27%	24%	31%	13%	31%	27%	24%	17%	17%	30%	32%
Interior Structure (Insulation, flooring, walls, other)	9%	9%	7%	15%	4%	10%	13%	7%	8%	5%	11%	8%
Plumbing/Electrical	14%	15%	10%	14%	4%	13%	13%	14%	20%	10%	14%	11%
HVAC (Heating, ventilation, and air conditioning)	22%	23%	17%	27%	19%	23%	23%	23%	20%	21%	24%	21%
Appliances/Major Equipment (Refrigerator, Water Heater, other)	19%	19%	15%	17%	19%	24%	21%	15%	23%	14%	18%	20%
Disaster Repairs	6%	6%	4%	10%	2%	6%	8%	6%	4%	9%	6%	6%
Outside Property Improvements (Yard, fencing, other)	14%	14%	17%	15%	0%	13%	14%	15%	22%	21%	10%	12%
Other	2%	2%	.%	3%	3%	1%	2%	2%	1%	1%	1%	2%
None of the above	13%	12%	14%	11%	10%	10%	10%	13%	10%	12%	12%	16%
Don't know	1%	1%	3%	0%	.%	2%	.%	1%	2%	1%	.%	2%

Main Reasons for Needing Home Repairs – By All Owners, Race, and AMI

Main Reasons for Needing Home Repairs

Homeowners

All Owners

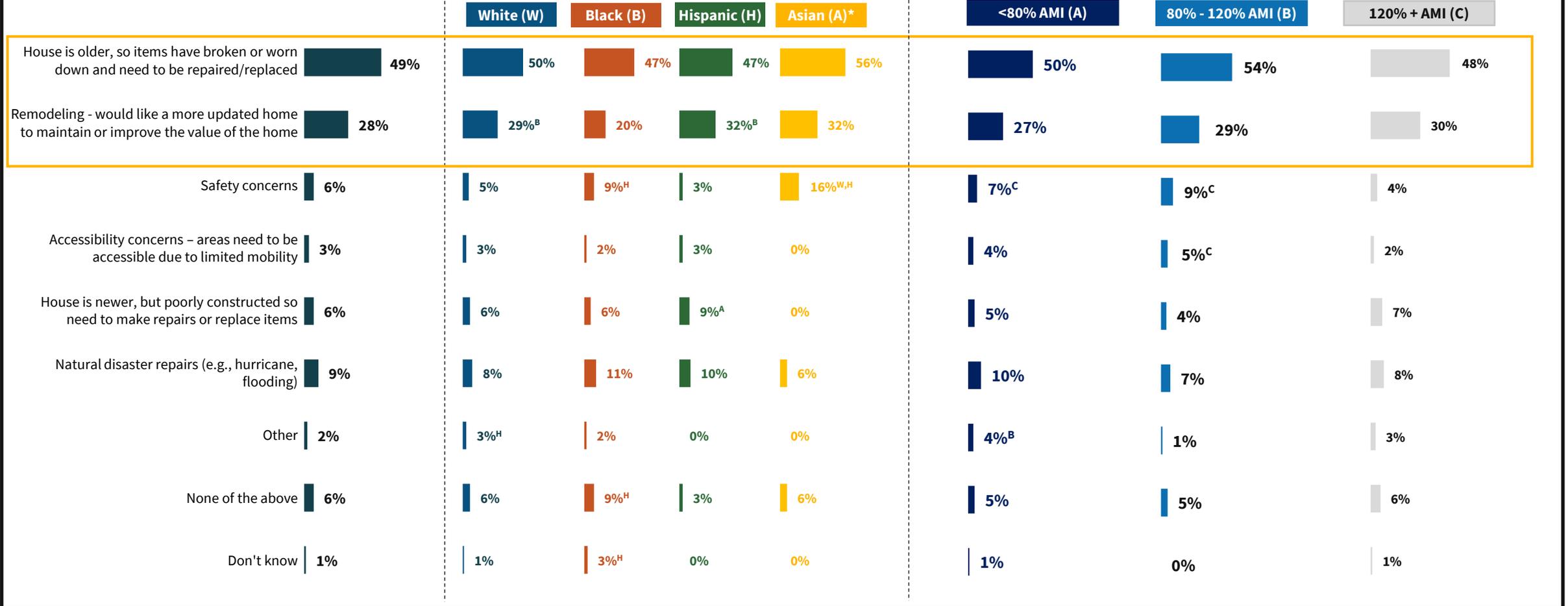
Showing %, Ranked by Owners

By Race

Showing %, Ranked by Owners

By AMI

Showing %, Ranked by Owners



Q: What are your main reasons for needing these home repairs?

* Small sample size: Asian Owners (N=62)

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Main Reasons for Home Repairs

What are your main reasons for needing these home repairs?
Among All Owners

GP Sample	GP	RACE				AMI STATUS			AGE			
		WHITE	HISPANIC	BLACK	ASIAN	<80% AMI	80%-120% AMI	120%+ AMI	18-34	35-44	45-64	65+
N=	1661	1165	242	143	62	382	266	757	297	264	674	422
House is older, so items have broken or worn down and need to be repaired/replaced	49%	50%	47%	47%	56%	50%	54%	48%	48%	40%	52%	53%
Remodeling - would like a more updated home to maintain or improve the value of the home	28%	29%	32%	20%	32%	27%	29%	30%	25%	32%	31%	24%
Safety concerns	6%	5%	3%	9%	16%	7%	9%	4%	8%	5%	5%	6%
Accessibility concerns – areas need to be accessible due to limited mobility	3%	3%	3%	2%	0%	4%	5%	2%	2%	5%	2%	4%
House is newer, but poorly constructed so need to make repairs or replace items	6%	6%	9%	6%	0%	5%	4%	7%	7%	9%	5%	6%
Natural disaster repairs (e.g., hurricane, flooding)	9%	8%	10%	11%	6%	10%	7%	8%	10%	12%	8%	6%
Other	2%	3%	.%	2%	0%	4%	1%	3%	4%	1%	2%	3%
None of the above	6%	6%	3%	9%	6%	5%	5%	6%	4%	4%	7%	9%
Don't know	1%	1%	.%	3%	0%	1%	.%	1%	.%	1%	1%	2%

Note: A cell value of “.” in a table means that the value is a non-zero number that was rounded to 0% (example: 0.3%).