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**Perspectives of Southwest Florida Homeowners and Real Estate Agents Before Hurricane
Ian**

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Abstract. In September of 2022, Hurricane Ian made landfall in southwest Florida, causing an estimated \$67 billion in damage and the loss of almost 150 lives. Before this date, demand and house prices in this area were rising faster than anywhere else in the country. What did homeowners in southwest Florida believe about flood risk to their own homes, and what did real estate agents believe about the role of flood risk in the residential housing market? The survey research summarized in this paper shows that not only did residents feel that they were not particularly at risk from flooding, but also that damaging floods would not affect future home values in their neighborhoods or for their own house. We found that political party affiliation was strongly correlated with the direction and strength of these beliefs. Real estate agents also reported strong demand for low elevation coastal housing, noting that coastal lifestyle outweighed the prospect of flooding in residential decision-making. They also observed that the detailed maps of flood risk that are now available at [realtor.com](https://www.realtor.com) for anyone browsing for houses for sale had no effect on homebuyers, and that most of their customers were generally unconcerned with flood risk.

Key words: housing market, Florida, Hurricane Ian, flood hazard, real estate agents

Introduction

On September 28, 2022, a category 4 hurricane with sustained winds of 150 miles per hour made landfall in southwest Florida. An investigation by NBC news reporters involving extensive reviews of local and state police agencies, medical examiners' offices and emergency management agencies attributed 148 deaths related to Hurricane Ian, of which 119 were caused by "flooding, winds and other dangerous conditions during the storm" (Schuppe et al. 2022). Although the hurricane affected some areas inland, most of the reported deaths were in Lee County including Fort Myers and Cape Coral (Figure 1). Just before this hurricane, record numbers of new residents were moving to these and other communities in southwest Florida, and coastal housing was in high demand despite rapidly rising prices.

Two questions are addressed in this paper: first, were homeowners aware of and concerned by the flood risks to their homes? and second, did real estate professionals believe that homebuyers in southwest Florida were concerned enough about flood risks to affect the property market? To answer these questions, the authors conducted two surveys: the first in late 2018 of homeowners in south Florida, and the second in late 2020 of real estate agents in south Florida. Before reporting on the survey results, we review previous research concerning perceived risk of increased storm intensity and flooding associated with climate change, with particular reference to the influence of partisanship, as well as a description of the landscape of available risk information in southwest Florida.

Perceived Vulnerability to Climate Change and Flood Risks

Sea-level rise linked to global climate change threatens coastal regions across the world and could displace millions of people and cause massive economic and environmental damage (Hauer et al. 2016; Hinkel et al. 2014). Yet the threats posed by flooding because of rising seas

are not viewed as a salient issue among much of the US public due to, at least in part, perceptions that it will only affect populations in distant locations or future generations (Akerlof et al. 2010; Rayner and Malone 1997; Leiserowitz 2005; Lewandowsky 2021; Moser and Dilling 2007). Nonetheless, experiencing storms, flooding or wildfires firsthand has been shown to increase the salience of climate-related risk perceptions, particularly if these events are attributed to climate change (Akerlof et al. 2013; Egan and Mullin 2012; Howe and Leiserowitz 2013; Ogunbode et al. 2019; Spence et al. 2011; Myers et al. 2013). Therefore, “personalizing climate risk messages” by emphasizing local and concrete impacts has been recommended as a way to increase its salience and decrease its psychological distance (McDonald et al. 2015; Spence and Pidgeon 2010).

The empirical evidence that has accumulated on the effects of personalizing the risks of climate change yields mixed results. Some studies demonstrate increased awareness resulting from exposure to messages that emphasize the local impacts of climate change (Brügger et al. 2016; Scannell and Gifford 2013; Spence et al. 2012). Other studies report no effect of exposure such information (Schwom et al. 2008; Schuldt et al. 2018), while still others have found this type of information can *reduce* concern among those likely to be impacted by climate change (Devine-Wright 2013; Spence and Pidgeon 2010). Mildenberger et al. (2019), for instance, show that providing locally resolved sea-level rise risk information (e.g., a flood map based on zip code) to individuals *decreased* concern that sea-level rise would affect them personally.

One hurdle to effective communication about the local effects of climate change, such as flooding due to sea-level rise in coastal locations, is that individuals’ political and ideological orientations can have a greater influence on risk perceptions than physical environmental factors (Cutler et al. 2018; Howe et al. 2015; Howe et al. 2014). A 2022 survey of Americans, for

instance, reported that 46 percent of those who identify as “conservative Republican” reported believing that climate change is happening compared to 97 percent of those who identify as a “liberal Democrat.” Similarly, 96 percent of liberal Democrats expressed concern about the effects of climate change causing “harm to future generations” compared with 42 percent of conservative Republicans (YPCCC 2022). Because pre-existing beliefs about climate change and ideological attachments can influence perceived vulnerability to specific risks and how people evaluate personalized risk information, it is important to recognize the psychological, cultural and political characteristics of audiences and to identify the contexts in which personalized flood risk messages are mostly likely to succeed (Druckman and McGrath 2019; Egan et al. 2022; Howe and Leiserowitz 2013; McCright and Dunlap 2011; Mildemberger et al. 2017).

Should Southwest Florida residents be aware of flood risk?

It has been argued that providing more detailed and specific information about flood risk to prospective homebuyers can affect their decisions and make them safer (Rollason et al. 2018; Snel et al. 2019; Huang and Lubell 2022; Hino and Burke 2021; Snyder and Kulesza 2020; Yi and Choi 2020). The State of Florida, along with the states of Missouri, New York, and New Jersey, has been characterized as having among the “worst disclosure laws” with respect to flood history for a property (Rabb 2021): no law in Florida requires home sellers or landlords to disclose to new residents that there has been damage to the property from previous floods (Harris 2022; Kaufman 2021). Despite this, Florida homebuyers have several sources of information about the flood-risks associated with any property. These include (1) prior familiarity with the area, (2) information freely available on government websites, (3) information obtained in the

process of buying the mandatory flood insurance required of those seeking a mortgage loan from a federally insured lender, and (4) information from the real estate industry itself.

Most Florida homebuyers have prior familiarity with the neighborhood because most are moving only short distance. For example, between 2020 and 2021, 14.4 percent of the population of Lee County changed residence. Of these 104,000 movers, most had lived in a different county but within Florida (65,531) and almost eighteen percent were moving within Lee County (19,031) (Censusreporter.org 2021).

Government websites also provide flood maps based on a combination of canal and stream flows, tides associated with storms, rainfall, hydraulic analysis, and topographic surveys. The FEMA website as well as those of county governments provide detailed information about the risks associated with specific properties. For example, for the City of Sanibel, one can view a FEMA map with detailed information on base elevation and flood insurance classification by simply entering an address at the website “mysanibel.com” under “FEMA flood insurance rate maps.” Maps of projected flooding are also available from independent organizations such as Climate Central, which has produced “surging seas” risk maps for US coastal areas.

Prospective homebuyers of properties located within a Special Flood Hazard Zone, one that has been designated by FEMA of having at least a 1 percent chance of being flooded in any given year, must obtain flood insurance as a condition of completing the home purchase. In this process, the buyer must obtain an “elevation certificate” containing information about the elevation of the bottom floor or basement, the garage, and the machinery or equipment that services the building such as the heating system. From this elevation certificate, the reader can deduce the effect of storm surge likely to affect the property.

Finally, detailed information about flood risk is available to anyone doing a web search of properties for sale. In August of 2020, the First Street Foundation reached an agreement with the National Association of Realtors[®] to include their maps, now known as “Flood Factor,” on all listings (First Street Foundation 2021). Maps of estimated depth of flooding from a combination of rain, rivers, tides, and storm surge is displayed for individual property listings. Each property is also assigned a risk number ranging from 1 to 10 based on the probability of “inundation of 5 cm or more to the building in the 500-year return period” or 0.2 percent annual risk (First Street Foundation Flood Model). In sum, despite the absence of state or federal law mandating the disclosure of previous flooding to the particular house, flood risk information is easily available to prospective Florida homebuyers.

Homeowner perception of flood risk in southwest Florida

To assess the response of south Florida residents to an environment susceptible to rising sea-levels and an increasing intensity of devastating storms, we administered a survey to approximately 1000 residents in 166 coastal zip-codes (Palm and Bolsen 2020). In the last three months of 2018, Qualtrics solicited panel respondents residing in the zip codes that we had identified, leveraging the “routers” of its partners to “select respondents for surveys where respondents are highly likely to qualify” (ESOMAR 2014). We pre-specified quotas with respect to party and gender: half of the respondents were to be women, and one-third of the respondents were to be Republicans, one-third Democrats, and one-third Independents. Of the full set of approximately 1000 respondents, 461 were homeowners living in southwest Florida, and we focus on this subset of respondents in the analyses reported here. Most of the southwest Florida respondents were long-term residents, with the median time in Florida being 22 years.

Notably, despite their location in flood-prone areas, only 38 percent responded that they have flood insurance in addition to their homeowner's policy.

We embedded a randomized experiment within the survey of homeowners to evaluate the effects of exposure to local visual information from the FloodIQ.com website (FloodIQ.com 2018). Respondents were randomly assigned to a treatment (n=230) or control condition (n=231). Individuals in the control condition received the questionnaire but with no supplemental information about projected flooding. Individuals in the treatment group were provided with a local map detailing storm-surge related flooding associated with a category 3 hurricane on the Saffir-Simpson scale projected for 15 years from now, given present rates of sea-level rise. Treated respondents in Southwest Florida were presented with one of three maps corresponding with their location: Fort Myers-Cape Coral, St. Petersburg, or Tampa.ⁱ Thus, we were testing two conditions: respondents not presented with a map within the questionnaire and respondents who were presented with such a local map. The maps were at a scale that would permit the respondents to easily locate their own residence if they lived within the area portrayed. Some of the respondents lived in outlying suburbs of these cities, and although they would have been familiar with the area portrayed, they would not have been able to visualize their own home. They were also provided with the source website information (FloodIQ.com) where they could have looked up their own home address for more detailed information. We expected an effect from such a treatment based on the results of previous research that has shown that maps, moving pictures and photos have been shown to have powerful impacts on public opinion, particularly when they reduce the “psychological distance” between the viewer and the impacts of flooding (Hart and Feldman 2016; Leiserowitz 2006; O’Neill 2013; Sheppard et al. 2011). For example, images have been found to have a greater impact if they portray the local effects of

sea-level rise and climate change on audiences rather than portrayals of effects on exotic species or locations such as polar bears at the North Pole (Bolsen et al. 2018; Feldman and Hart 2018; Lorenzoni et al. 2007; Myers et al. 2012; Pidgeon and Fischhoff 2011; Retchless 2018).

We asked about homeowners' beliefs that climate change is happening (1-7 scale, "definitely not" to "definitely happening"), that it is responsible for more intense storms (1-5 scale, "not at all" to "a great deal"), that sea-level rise is related to climate change (1-7 scale, "definitely is not" to "definitely is"), that their home is susceptible to sea-level rise (1-7 scale, "definitely not" to "definitely yes"), and the extent that sea-level rise would have an effect on their property's value (1-5 scale, "none at all" to "a great deal"). The survey questionnaire appears in the Appendix.

For the full set of respondents ("all"), we found that exposure to the image showing the projected flooding that would occur from a direct hit from a category 3 hurricane had virtually **no impact** on homeowners' beliefs about whether climate change is happening, whether it is causing more intense storms, or the degree to which sea-level rise is related to climate change (Table 1). Instead, political affiliation had a dramatic effect. The sample in southwest Florida included 191 homeowners who identified as Republicans, 142 who identified as Independents, and 128 who identified as Democrats. For Democrat homeowners in the control and treatment conditions, mean scores were 4.3 and 4.2, respectively (on a 5-point scale), on the question that asked if climate change is responsible for more intense coastal storms: in other words, an average score of between "a lot" and "a great deal". Average scores for Republican homeowners on this question in the control and treatment conditions were 2.8 and 2.3, respectively (i.e., between "a little" and a "moderate amount" on the response scale). In other words, consistent with national

opinion trends, we observe significant levels of partisan polarization in comparing Democrats and Republicans' beliefs in both the treated and control conditions in these areas of southwest Florida directly threatened by coastal flooding due to climate change. We also found differences in the effect of the treatment on climate change beliefs by party. There was a significant *negative* shift among Republican homeowners who were exposed to the projected flood map of their local communities. In other words, the treated Republican respondents were *less likely* than Republican homeowners in the control condition to believe that climate change is happening ($p = .05$, two-tailed t-test), that it is causing more intense coastal storms ($p = .01$, two-tailed t-test), or that sea-level rise is related to climate change ($p = .09$, two-tailed t-test).ⁱⁱ

Finally, we asked respondents if their own "home is susceptible to sea-level rise," and, if sea-level rise occurs, the "extent to which will it reduce the property value of your own home." The experimental treatment (i.e., the local flood map) had **no effect** on any respondents' beliefs about the threat of sea-level rise to their own home or its impact on their property's value. However, the party identification of respondents had an influence on reported susceptibility to sea-level rise (Table 2). Across the entire sample of homeowners in southwest Florida, 38 percent of Republicans, 42 percent of Democrats, and 55 percent of Independents believed that their home is susceptible to flooding due to sea-level rise. Party identification also affected homeowners' views as to whether their property values would be reduced by sea-level rise. For Republican homeowners, 55 percent reported that sea-level rise will impact their property's value either "not at all" or "a little", whereas only 38 percent of Democrats and 36 percent of Independents expressed the same view. Further, only a quarter of Republicans reported that sea-level rise will impact their property's value "moderately" or "a great deal", while the 37 percent of Democrats and 44 percent of Independents expressed those views. The results from our

survey of homeowners living in southwest Florida reveal high levels of partisan polarization on climate change and toward localized flood risks; consequently, it may not be surprising that we did not observe any “positive effect” of providing information about flood risks to residents who live and own in property in these coastal locations. This polarization can also generate resistance to public policies seeking to address the environmental and social impacts that will occur even in local areas where people’s property and lives are directly at risk (Egan, Konisky, and Mullin 2022).

Real Estate Agent Opinions Before the Hurricane

Several studies have found evidence of the negative impact of sea-level rise on low-elevation coastal property values (Fu and Nijman 2021; Harrison et al. 2020; Kropp 2012; Keenan, Hill, and Gumber 2018; Bernstein et al. 2019; McAlpine and Porter 2018; Ortega and Taspinar 2018). These studies are based on econometric analyses of house price trends, comparing areas that are relatively more or less vulnerable to flooding. In contrast to these findings, our survey of homeowners had found little concern about future home values, even when the respondents were shown flood maps of their own neighborhood. Because of this discrepancy, we wanted to get another perspective on how the housing market is currently integrating flood hazard by seeking the perspective of those professionals working in the real estate market every day and who monitor the changing preferences of homebuyers: the real estate agents.

From September through November 2020, we administered an internet-based survey to real estate brokers and sales associates with office addresses in 13 counties in south Florida (Palm and Bolsen 2022). The names and email addresses of these agents were obtained from the

“Email List Company,” one of many companies that compile listings of email addresses of various occupational groups to sell to marketers. The cover letter inviting the real estate brokers to respond promised a \$10 Amazon gift card for completing the survey, and the letter to the sales associates promised a \$1.00 gift card. Over the course of October 19 – November 4, we emailed surveys to the list of all 15,388 brokers, and from November 16–23, to the list of 80,059 sales associates with business offices in South Florida.ⁱⁱⁱ Individuals who had not contacted us to “opt out” and who had not submitted the survey were recontacted twice after 3 days and after 7 days to remind them to complete the survey.

The south Florida-wide respondent pool consisted of 330 brokers and 350 sales associates, all affiliated with the Florida Association of Realtors. Of these, 94 brokers and 104 sales associates listed and sold property in southwest Florida. In this paper, we analyze the responses of 198 southwest Florida real estate agents, focusing on the cities including Tampa, St. Petersburg, Fort Myers, Cape Coral, Sarasota, and Venice that were particularly affected by Hurricane Ian.

The respondents were experienced real estate agents, 62 percent of whom had been in the profession for more than 10 years. Most (72 percent) had lived in Florida for more than 10 years. Their median age was 58, they were almost equally divided between male and female, and 71 percent identified their race as white with another 17 percent as Hispanic. Almost all reported having had at least “some college” (95 percent) and most at least a bachelor’s degree (78 percent). Most described themselves as Republican (43 percent) or Independent (31 percent). The respondents were very experienced with the housing market and their responses were of high quality, including comments on several open-ended questions.

The key issue we were investigating in this survey was whether real estate agents found that prospective buyers were avoiding low-lying areas susceptible to flooding, and whether they agreed that house prices in low-elevation coastal areas to either be falling or not rising as rapidly as houses elsewhere. Related to these questions, we wanted to see whether they had experienced either lenders or appraisers considering property elevation or susceptibility to coastal flooding in their decisions.

The real estate agents who responded to this survey generally reported that buyers were not avoiding low-elevation property, with a total of 28 percent saying “somewhat frequently”, “very frequently” or “all the time”. Respondents explained that:

“There is only so much water and beach, and the demand remains strong.”

“Coastal properties will always be a luxury in demand items and people with money will pay for them.”

“We are six feet above sea level and drain very quickly. My city even as a peninsula has never flooded.”

“Most buyers who are looking in flood prone neighborhoods know the risks that come with it and realize S. Florida in general is flood prone. It is a way of life that buyers recognize.”

“Buyers consider the proximity of waterfront homes. The closer to the river the better it is for boating. Flood insurance is available, and they are willing to take the risk.”

“Not too often do they avoid these areas. Flood insurance is not near as expensive as people are led to believe. The issue is basically irrelevant to cash buyers.”

They attributed any reluctance to buy homes in low-elevation areas to the cost of flood insurance. With the implementation of Risk Rating 2.0 which promises flood insurance rates that “are actuarially sound, equitable, easier to understand and better reflect a property’s flood risk” (FEMA 2021), the issue of the cost of flood insurance may become more salient. As the real estate agents put it:

“The cost of homeowners insurance and flood insurance is more of a deterrent, than the possibility of property loss due to flooding.”

“The cost of flood insurance is a HUGE factor.”

We reasoned that even if a small fraction of homebuyers avoids a class of property such as low-lying coastal areas, overall demand would be weakened and that prices would either fall or not rise as rapidly as in other areas. The real estate agents did not agree, with only 5 percent reporting that they had seen prices fall or not rise as quickly “somewhat” or “very frequently” and, 84 percent reporting that they had never or only rarely seen this price response. They said that there was little difference in price response to potential flooding among those who planned to be full time residents vs. second homebuyers or investors. They also reported that there was no difference between buyers in the “high end of the market” as opposed to those buying less expensive housing, with 44 percent saying there is no difference and the remainder divided almost equally between saying that elevation matters more at the high end or that elevation matters more at the low end.

One of the services commonly performed by real estate agents is the linkage of buyers with mortgage lenders and home appraisers (Weintraub 2020). They would therefore have had opportunities to observe the response of these groups to low-lying property with lenders declining loan applications or increasing charges, and appraisers considering elevation or the likelihood of flooding in their assessment of home value. Previous econometric research on this issue has produced conflicting results with Nguyen et al. (2021) identifying a “*sea-level rise premium*” in interest rates while Keys and Mulder (2020) concluded that lenders have not been responding to this risk. The real estate agents reported little concern from lenders, with 81 percent saying that they rarely or never observed a lender response. Sixty percent said that they rarely or never observed appraisers considering elevation or flood susceptibility.

Real Estate Agent Perspective on the 5–10-year Future

Finally, we wanted their perspective on how flooding would affect the housing market in southwest Florida over the next 5-10 years. We expected that the real estate agents might be unduly optimistic about the future of flood-prone areas because such optimism serves their interests in selling houses. We asked: “how do you see the near-term future for residential property in low elevation coastal areas? Will the residential property market see less demand and lower prices in areas prone to flooding in the next 5–10 years?” Response options ranged from little or no effect to large effects of flooding. Less than 10 percent of the survey respondents predicted a large or very large effect of flooding on the housing market, while almost 30 percent predicted no effect or almost no effect.

We found no impact of either political affiliation or belief in the reality of climate change or sea-level rise in differentiating the distribution of this response. In a supplemental survey

conducted in December of 2020 to seek elaborations on these responses, we got these explanations:

“I don't believe the demand for coastal property will diminish. Humans LOVE their water, sports, boating, the peace and the tranquility of the ocean waves, a sunset over the water. Water has always been a draw for humans, I don't see that changing.”

“The Sarasota area is absolutely gorgeous, breathtaking even; it was in the 1970's, is currently, and I'm betting it will continue to be in the future. I truly do not believe humans will ever give up their need to be near the water.”

“For now, coastal property will be in high demand as a luxury item for many years, but only for homeowners who have a lot of discretionary funds to pay for the additional flood insurance, repairs, and newer, elevated construction projects. Even if they don't have flood insurance homeowners with enough cash will be able to repair any flood damage or re-build newer elevated homes. Wealthy buyers will spend a lot of money to live on the water and I don't see that changing.”

“Demand will remain strong. South Florida proved to be an exceedingly strong real estate market this past year, with no indication of that demand slowing anytime soon.”

The real estate market in southwest Florida was very strong at the time of these surveys. As of October 2022, Naples, one of the cities in this region, had the fastest growing sales price in the nation, according to Redfin (2022), with prices rising 27.9 percent between August 2021 and

August 2022, compared with a US average of a 6.7 percent increase. Of the top 10 “hottest neighborhoods” based on days on the market, share of homes selling above listing price and sale-to-list price ratio, the first five in the nation were located were in this region: South Sarasota, East Venice, Englewood, Venice, and Nokomis (Katz and Walzer 2022). Real estate agents had every reason to believe that climate change and sea-level rise were not having an impact on their markets, and that sales of low-lying coastal property would continue to be brisk.

Conclusions

Hurricane Ian wreaked havoc on coastal properties in southwest Florida, hitting communities such as Sanibel Island, Captiva, Ft. Myers Beach, Cape Coral, and Ft. Myers particularly hard. Before the hurricane, this area had been an attractive destination for homebuyers from abroad as well as from Florida and other parts of the United States, as prospective homebuyers continued to seek coastal property. In our survey, real estate agents reported that lenders and appraisers seemed not to discount property even if it highly susceptible to coastal flooding.

Our surveys of homeowners and real estate agents in southwest Florida reflect not only the optimism of the market before Hurricane Ian, but also the effect of politicization on the extent to which these actors take flood risk seriously. Republicans in the “treated group” of homeowners (who had been shown flood risk maps) were even less likely than their counterparts in the control condition to believe that their own neighborhoods or homes were at risk or that their property values would not decline. Confirming this view, most real estate agents responded that they had never or rarely have a customer show concern with flood-prone areas, even with house-specific flood maps available from their national trade association, the National

Association of Realtors. We note that some of the optimism of the real estate agent respondents to our surveys are likely due to the effects of COVID on the Florida real estate market, given the timing of that survey (late 2020). Writing from this perspective of the spring of 2022, Shwedel noted that the pandemic accelerated the moves of homebuyers from northern states who were taking advantage both of fewer COVID restrictions and also of new opportunities for remote working (Shwedel 2022). The recent rise in mortgage interest rates may bring a decrease of such demand from out-of-state buyers, although Florida's appeal is still projected to result in an increase in new migrants and investors (Kolaj 2022).

As estimates of the total flood damage associated with Hurricane Ian mount, homeowners will struggle with insurance reimbursements or face the fact that having no flood insurance has made them liable for high repair costs. This may, at least temporarily, put a halt to price inflation and demand for housing in southwest Florida, although if experience is a guide, this effect could be relatively short in duration (Gallagher 2014; Kousky et al. 2020). In fact, less than one month following the hurricane's landfall, the *Wall Street Journal* included a story with the headline "Home Buyers Flock to Florida Cities Devasted by Hurricane Ian" (Friedman 2022). The report noted some of these prospective buyers are seeking distressed or discounted properties, but others are simply continuing to purchase homes in what they have decided is a desirable environment. The housing market in Florida is not immune to other contextual factors such as changes in home mortgage rates or the impacts of the popularity of remote work on household location decisions. Whether or not the reality of the risk of coastal living becomes more integrated into the views of residents and real estate agents will be important to continue to monitor.

End Notes

ⁱ The three maps are included with the questionnaire in the Appendix.

ⁱⁱ We found nearly identical estimates the treatment effect using OLS regression with the inclusion of demographic covariates (see Appendix Table 1).

ⁱⁱⁱ The original list contained errors in email addresses, as well as contact information for individuals who had retired or were no longer in real estate sales, as well as those who specialized in commercial rather than residential sales. The respondents are not a “random sample” of Florida real estate agents, but the sample was of sufficient size and their answers were of high quality, particularly with respect to open-ended questions. Age and demographic characteristics of this sample were comparable to the national average as reported by the National Association of Realtors[®] (Linsell 2020).

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