



# Messaging strategies to drive heat pump adoption in Minnesota

Center for Energy and Environment

Behavioral Insights Team

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# ACKNOWLEDGEMENTS

In 2021, the State Legislature authorized Minnesota's Department of Commerce to approve establishment of a new energy efficiency program to accelerate the deployment and reduce the cost of innovative technologies and approaches. Minnesota's Efficient Technology Accelerator is a partnership funded by the state's investor-owned utilities (IOUs), administered by the Minnesota Department of Commerce, Division of Energy Resources (DER), and implemented by Center for Energy and Environment (CEE).

**Center for Energy and Environment (CEE)**, seeks a healthy, carbon-neutral economy that works for all people. A 501(c)(3) clean energy nonprofit with more than 30 years' experience in energy efficiency, we align our strategies behind technical research, program development and implementation, community engagement, policy advocacy, and project financing. Working across homes, businesses, and communities, CEE discovers and deploys the most effective energy solutions to improve the environment and strengthen the economy for everyone.

**The Behavioral Insights Team (BIT)** is a global leader in using behavioral science research to design services, policies, and interventions that improve people's lives. We created the term "behavioral insights," an approach that combines evidence about human behavior with robust evaluation to develop solutions to practical problems. Our expert team partners with all levels of government, nonprofits, and the private sector to reach their goals. We design complex interventions, run mixed-methods evaluations, develop and inform policy, and help organizations build their capacity to use behavioral science and evidence.

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# EXECUTIVE SUMMARY

## Background and approach

The Minnesota Air Source Heat Pump (ASHP) Collaborative aims to make heat pumps the first choice over traditional air conditioners for contractors and homeowners seeking efficient heating and cooling systems. The MN ASHP Collaborative contracted with Behavioral Insights Team (BIT) to conduct mixed-methods research to support this goal. Together, we uncovered barriers that diverse customer audiences face in heat pump adoption, as well as strategies to overcome these challenges. Our approach included a **review of current evidence, focus groups with Minnesota homeowners**, and an **online survey and trial with over 4,000 participants from homeowners in Minnesota, Illinois, Michigan, and Wisconsin** (referred to collectively as the Midwest in study findings). The survey included over 1,750 participants from Minnesota and was broadened to include participants from the other midwestern states to increase confidence in the findings.

## Customer segments

**We identified four key customer segments in Minnesota based on the barriers and motivations they have around purchasing ASHPs.** Minnesota heat pump organizations can use these segments to guide their marketing strategies and messaging to more effectively reach these audiences and encourage adoption.



### **Lifetime Value-seekers (47% of Minnesotans)**

Lifetime Value-seekers are a risk-averse group who are primarily concerned with the holistic time and monetary costs of owning a heating system. Their chief concerns include ease and cost of installation, ease and frequency of maintenance, and longevity. They are responsible and engaged heat system owners, and value certainty around maintenance and energy costs.



### **Discerning Investors (32% of Minnesotans)**

Discerning Investors consider a heating or cooling system purchase as an investment in their comfort, health, or the environment. When considering heating or cooling system options, cost is certainly a factor but not necessarily the deciding factor.



### **Eco-conscious Innovators (21% of Minnesotans)**

Eco-conscious Innovators are interested in exciting new technologies that reduce their carbon footprint. They are less concerned with cost compared to other groups.



### Nearly-there Converts (35% of Minnesotans)

Nearly-there Converts are enthusiastic about the idea of ASHPs, but they don't have them yet. This segment learned about heat pumps from family, friends, or coworkers, and are excited to talk about them with others. While they are interested in installing a heat pump, the time has either not been right to replace their current heating or cooling or cooling system or they are unsure if a heat pump is a good fit for their home.

## Study findings and recommendations

Note that unless specified, study findings indicate findings from participants across midwestern states.

- **45% of survey participants knew nothing about ASHPs and 34% knew “a little” about ASHPs.** Low-income participants were even less likely to be aware of ASHPs; 50% knew nothing and 34% knew “a little” about them.
- **The costs of installing and running a home heating or cooling system were the most important factors in participants’ purchasing decisions.** Another important factor was that the system provides the same or better level of comfort as their current one. Only 3.1% of Minnesotans consider carbon emissions to be the most important factor in their purchasing decision.
- **Friends and family are the most trusted sources of information about home heating and cooling systems,** followed by an energy provider or utility’s website, and then contractors.
- **A participants’ customer segment was predictive of a wide range of barriers, motivations, and preferences** regarding messaging.
- **Minnesotan respondents most commonly self-identified as “Lifetime Value-seekers” who are concerned about the time and money** they have to spend on a heating and cooling system. Compared to other groups, they are less likely to care about comfort, required maintenance, or carbon emissions, and more likely to trust friends and family as their primary information source.
- **Messaging framing did not significantly impact the likelihood of participants to consider buying a heat pump.** This held true across customer segments and demographic groups, which means that the act of simply providing educational information about ASHPs to receptive audiences may be more important than landing on the perfect wording.

Based on the findings above and the detailed analysis within this report, we recommend the following strategies for organizations to market ASHPs in Minnesota.

<b>Recommendations</b>
<b>Use messages that address cost barriers</b> , such as those promoting available rebates and reduced running costs.
<b>Consider how to integrate messaging about efficiency</b> , which is very attractive to customers but may lead to inaccurate conclusions about cost savings.
<b>Use messages and implement programs that promote and shift social norms</b> , such as demonstrating that heat pumps are popular (or becoming more popular) among the potential customer's community.
<b>Consider how to accurately represent ASHP benefits</b> that resonate with people, such as efficiency and air-quality improvements.
When selecting images to include in communications, <b>favor real-life product images that feature heat pumps.</b>
<b>Focus on delivering messages frequently to a broad population</b> , as preferences were largely consistent across population subgroups.
<b>Use customer segment descriptions to quickly profile potential customers' barriers and motivations.</b>
<b>Consider targeted messaging efforts for key groups:</b> <ul style="list-style-type: none"><li>■ Use awareness-building messaging for low-income residents</li><li>■ Highlight benefits besides cost savings to urban residents</li><li>■ Promote improved indoor air-quality messaging to those who prioritize health</li></ul>
Messaging strategies for specific customer segments and demographics in Minnesota is provided in Appendix A.

## BACKGROUND

The MN Air Source Heat Pump (ASHP) Collaborative was formed in 2019 by Center for Energy and Environment (CEE). It is a joint effort with utilities to promote heat pump adoption across Minnesota. The Minnesota ASHP Collaborative aims to make heat pumps the first choice over traditional air conditioners for contractors and homeowners seeking efficient and eco-friendly heating and cooling systems.

The MN ASHP Collaborative is funded through Minnesota's Efficient Technology Accelerator, a partnership funded by the state's investor-owned utilities (IOUs), administered by the Minnesota Department of Commerce, Division of Energy Resources (DER), and implemented by CEE.

CEE recognizes that overcoming market barriers to ASHP adoption requires creating powerful tools, messaging, and resources that cities, the state, utilities, and others can use to drive customer awareness. In service of that goal, CEE contracted with Behavioral Insights Team (BIT) to conduct the work presented in this report to develop actionable messaging recommendations and insights for different customer segments in Minnesota.

## OUR APPROACH AND FINDINGS

The BIT team conducted mixed-methods research to identify and overcome specific barriers to product adoption among diverse customer audiences. Our approach comprised three iterative stages to refine and investigate customer segments among Minnesota homeowners.

- **A document review** to identify characteristics that are likely to impact Minnesota residents' motivations, barriers, and awareness regarding heat pumps.
- **Focus groups with Minnesota homeowners** to gain a nuanced understanding of awareness, barriers, and motivations around heat pumps.
- **An online survey and trial** to 1) validate and quantify customer segments and their awareness levels, barriers, and motivations; and 2) identify best-performing messaging strategies.

### Document review

We reviewed over 25 documents to identify characteristics of Minnesota homeowners that may influence their adoption of ASHPs, including research reports from internal and external organizations (e.g., Home Energy Squad, ACEEE) provided by CEE, and BIT's previous original research.

We identified more than twenty characteristics that can influence ASHP adoption. These include characteristics related to the home itself (e.g., year it was built), homeowner location (e.g., urban or rural), attitudes and perception (e.g., perceived social proof, confidence in the efficacy of heat pumps), timing (e.g., planning to move into a new home, undergoing major basement renovations), and demographics (e.g., income, age, having children living at home). We also

identified value proposition characteristics (e.g., characteristics that influence whether someone will see ongoing savings after installing a heat pump). However, for this project, we were primarily interested in the characteristics that do not require a value proposition.

## Focus groups

We used focus groups to build a nuanced understanding of how Minnesota homeowners think about heat pump adoption. Specifically, our objectives were to:

1. Identify segments of customers with overlapping demographic, behavioral, and psychographic characteristics
2. Understand Minnesotans’ attitudes, barriers, and facilitators to ASHP adoption, and how these differ by customer segment
3. Inform the development of heat pump messaging tailored to target audience segments (these messages would be tested in an online experiment – see Online Study section)

## Sample and recruitment

Through a panel provider, we recruited 30 homeowners in Minnesota who did not have heat pumps. We excluded owners of multifamily homes, homeowners who already had heat pumps, and people working in the HVAC industry. Due to our requirement that participants use video-conferencing to participate in the focus groups, our sample under-represented people who were digitally disconnected.

**Figure 1. Demographics and characteristics of homeowner focus group participants (n = 30)**

	Amount	Percent
<b>Gender</b>		
Male	14	47%
Female	15	50%
Non-binary	1	3%
<b>Age</b>		
30-39	8	27%
40-49	6	20%
50-59	8	27%
60-69	5	17%
70+	3	10%
<b>Children in house</b>		
Yes	19	63%



No	11	37%
<b>Household income</b>		
\$25–49K	2	7%
\$50–74K	6	20%
\$75–99K	5	17%
\$100–124K	5	17%
\$125–149K	3	10%
\$150K+	9	30%
<b>Race and ethnicity</b>		
White/Caucasian	22	73%
African American/Black	5	17%
Asian & White/Caucasian	1	3%
Hispanic/Latin American	1	3%
<b>Residence</b>		
Suburban	15	50%
Urban	8	27%
Rural	7	23%
<b>Current heating system</b>		
Natural Gas	17	57%
Electricity & Natural Gas	8	27%
Electricity	3	10%
Propane	1	3%
Electricity & Propane	1	3%

To explore characteristics that we found were likely to influence ASHP adoption in our document review, we ensured representation from urban, suburban, rural, low-income (as [defined](#) by the US Department of Housing and Urban Development for Minnesota), and “fresh starter” homeowners (those planning to move within the year, or have moved in the past six months).

Separately, we recruited a focus group of small rental property (1–3 units) owners in Minnesota.

## Methodology

We conducted six virtual focus groups over video call. We asked participants if they had heard about ASHPs, and, if yes, what they heard and where they heard it. We also gave a brief description of ASHPs and asked what other information they would be interested in learning. Finally, we asked if they would consider an ASHP for their home.

We conducted a thematic framework analysis to organize focus group data according to key topics that emerged from the document review and our pre-defined objectives and research questions. The research team held debrief meetings after each focus group to discuss key themes and topics.

## Population segments

The following four customer segments emerged from our analysis.

### Lifetime Value-seekers

Lifetime Value-seekers are a risk-averse group who are primarily concerned with the holistic time and monetary costs of owning a heating or cooling system. Their chief concerns include ease and cost of installation, ease and frequency of maintenance, and longevity. They are responsible and engaged heat system owners, and value certainty around maintenance and energy costs.



*"I don't want to put in a new system every five years if there's something out there that can last 15 to 20 [yrs]."*

*"I do like the rebate. When you give me two grand, I don't mind spending 9 grand. And when you give me 10 years parts and labor, you got a deal."*

Primary barriers for Lifetime Value-seekers	Primary motivators for Lifetime Value-seekers
<ul style="list-style-type: none"> <li>■ Low awareness of heat pumps</li> <li>■ Fears about additional space and maintenance costs (especially related to the backup system)</li> <li>■ Risk aversion to trying a new, "unproven" technology</li> <li>■ Perception that high-efficiency gas furnaces are the more practical option</li> <li>■ Concerns about fluctuations in electric rates</li> </ul>	<ul style="list-style-type: none"> <li>■ Rebates and subsidies</li> <li>■ Payback period</li> <li>■ Warranties and maintenance plans</li> <li>■ Reliability of the system</li> <li>■ Social proof that others are installing heat pumps</li> </ul>

## Discerning Investors

Discerning Investors consider a heating or cooling system purchase as an investment in their comfort, health, or the environment. When considering heating or cooling system options, cost is certainly a factor but not necessarily the deciding factor.



*"Right now, my air conditioner...cools my house great. I would really want to test this out. I'd want to...see what do they consider cool versus what do I consider cool."*

*"We've got one kid that has a lot of allergies...So [air quality] would be the number one for us over cost and the carbon footprint."*

Primary barriers for Discerning Investors	Primary motivators for Discerning Investors
<ul style="list-style-type: none"> <li>■ Low awareness of the benefits of heat pumps</li> <li>■ Lack of personal experience with heat pump efficacy (e.g., being able to feel its heating or cooling abilities), amplified by concerns about Minnesota's cold climate</li> <li>■ Skepticism around environmental and air quality claims</li> </ul>	<ul style="list-style-type: none"> <li>■ Comfortable, consistent heating and cooling</li> <li>■ Improvements to indoor air quality (especially relating to household members with asthma or allergies)</li> <li>■ Reduced environmental impact</li> <li>■ Rebates and subsidies</li> </ul>

## Eco-conscious Innovators

Eco-conscious Innovators are interested in exciting new technologies that help them reduce their carbon footprint. They are less concerned with cost compared to other groups.



*"Why we went solar? It was both environmental and just wanting to not have fossil fuels...My ultimate goal – if I was made out of money – would just to be 100% carbon neutral and just have buildings that just sort of take care of themselves."*

Primary barriers for Eco-conscious Innovators	Primary motivators for Eco-conscious Innovators
<ul style="list-style-type: none"> <li>■ Limited awareness of ASHPs</li> <li>■ Limited understanding of how ASHPs improve household efficiency</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduced environmental impact</li> <li>■ Ability to use solar panels to power a heat pump</li> <li>■ Exciting advances in technology</li> <li>■ Ability to be an "early adopter"</li> </ul>

## Nearly-there Converts

Nearly-there Converts are enthusiastic about the idea of ASHPs, but they don't have them yet. This segment learned about heat pumps from family, friends, or coworkers, and are excited to talk about them with others. While they are interested in installing a heat pump, the time has either not been right to replace their current heating or cooling system or they are unsure if a heat pump is a good fit for their home.



*“My sister who lives in Boston had [a heat pump] installed in her house...[she’s] happy with it, [it’s] cheaper to run...but it’s hard to make the decision to change.”*

Primary barriers for Nearly-there Converts	Primary motivators for Nearly-there Converts
<ul style="list-style-type: none"> <li>■ Limited understanding of the different types of heat pump technologies (e.g., air source, ground source, ducted, mini-splits)</li> <li>■ Effort and friction costs of installing new equipment</li> <li>■ Concerns about whether a heat pump is a good fit for their home</li> </ul>	<ul style="list-style-type: none"> <li>■ Strong recommendations from people in their network</li> <li>■ Rebates and subsidies</li> <li>■ Ease of installation</li> </ul>

### Rental property owners

Rental property owners choose the heating/cooling option that reduces their own time and monetary costs (i.e., the system that is preferred by their contractors, fastest to install, and least likely to need maintenance). They are risk averse and suspicious of new technology. They primarily trust their current contractors and other property owners in their networks.



*“I want to eliminate work, stress, amount of service calls. Spending money should make my life easier, not more difficult. If I’m not saving lots of money, it’s not worth it.”*

Primary barriers for rental property owners	Primary motivators for rental property owners
<ul style="list-style-type: none"> <li>■ Lack of financial incentive to lower energy bills, especially with Minneapolis’s hot housing market</li> <li>■ Concerns about maintenance and very quick replacements (even stronger than for homeowners)</li> <li>■ Unwillingness to use a new contractor</li> <li>■ Risk aversion to trying a new, “unproven” technology</li> </ul>	<ul style="list-style-type: none"> <li>■ Ease and speed of installation</li> <li>■ Less frequent servicing</li> <li>■ Their current, trusted contractor being able to install and service the heat pump</li> <li>■ Significant energy bill cost savings (&gt;50%) because that price reduction could be added to the rent price</li> </ul>

In addition to these segments, the focus groups revealed valuable insights across all groups:

- Timing considerations were relevant to all customer segments and have important implications around how receptive participants are to heat pump adoption. Many Minnesotans describe buying new HVAC systems in emergency situations when their old system breaks. There are opportunities to ensure that ASHPs are the default choice for panicked customers, and opportunities to reach customers before their system breaks when they have the time to be deliberative.

- Participants would only consider purchasing a new heating and cooling system if their current one was failing or had broken.

## Online study

Based on focus group findings and insights from behavioral science, we developed messages to increase people’s interest in heat pumps as a replacement for their current home heating and cooling systems. We evaluated the impact of these messages in an online study.

Our research questions were:

### **RQ1: Which messages increase homeowners’ interest in heat pumps as the replacement option for their home heating and cooling system?**

- **Primary outcome:** Participants’ stated preference to consider purchasing an ASHP
- **Secondary outcome:** Participants’ interest in learning more about ASHPs

### **RQ2: How many participants fall into each customer segment/demographic subgroup?**

We conducted exploratory descriptive analyses to see how many participants fall into each customer segment or subgroup.

### **RQ3: What are the characteristics and messaging preferences of participants in different customer segments/demographic subgroups?**

We examined the impact of different messages for each customer segment or subgroup (but were not powered to do significance tests on outcomes for these groups). We also conducted exploratory analysis to discern different preferences and behaviors among subgroups (e.g., their preferred information sources, prior knowledge of ASHPs).

## Sample and Recruitment

We conducted the online study using BIT’s in-house platform Predictiv, which recruits from the sample provider, Lucid. The sample included homeowners who did not own a heat pump in Minnesota, Illinois, Michigan, and Wisconsin. The sample excluded renters and people who already owned heat pumps.

The following is a breakdown of the sample we recruited for the online study. Most participants were White, older than 25, and living in urban/suburban areas. Forty-four percent of the sample resided in Minnesota; the rest lived in surrounding states.

**Figure 2. Demographics and characteristics of online study participants (N = 4,007)**

Demographic / characteristic	Percent
<b>Gender</b>	
Male	57.8%
Female	41.8%
Non-binary	0.4%

<b>Race and ethnicity</b>	
White	89.8%
Black	5.0%
Other	5.2%
<b>Age</b>	
18–24	3.6%
25–54	44.2%
55+	52.2%
<b>States</b>	
Minnesota	43.7%
Illinois	23.6%
Michigan	20.8%
Wisconsin	11.8%
Iowa, South Dakota, and North Dakota	0.1%
<b>Household income</b>	
Low-income	47.0%
Not low-income	53.0%
<b>Neighborhood</b>	
Urban	20.5%
Suburban	48.1%
Rural	31.4%

## Methodology

The online study comprised two elements:

- A randomized controlled trial to test whether messaging strategies impacted participants' interest in heat pumps
- A survey to better understand participants' preferences regarding home heating and cooling systems

To establish a causal relationship between messages and interest in heat pumps (RQ1), we randomly assigned homeowners to see one of four treatment messages or a control message.

The treatment groups were exposed to general information about ASHPs, plus either a message about rebates (Treatment 1), durability and dependability (Treatment 2), social proof (Treatment 3; see Figure 3), or comfort (Treatment 4). The control group was only exposed to general information about ASHPs. The messages are included in the Appendix.

**Figure 3. Example treatment message: Social proof**

The screenshot shows a webpage from HVAC Reporter.com. The header includes the site name, a search bar, and a user profile icon. Below the header is a navigation menu with links for 'Our Picks', 'Heating', 'Ventilation', 'Air Conditioning', and 'Contractors'. The main content area features an article titled 'Demand for heat pumps is on the rise in colder states' by Lucy Cridyn, updated on May 15, 2024. The article includes a photograph of an outdoor air source heat pump unit installed on a concrete pad next to a house. To the left of the photo are social media sharing icons for Facebook, Instagram, Twitter, LinkedIn, and Print. To the right is an 'EXPLORE' sidebar with buttons for 'Our Picks', 'Heating', 'Ventilation', 'Air Conditioning', and 'Contractors'. The article text explains that air source heat pumps are HVAC systems that provide heating and cooling similar to a combination of a furnace and central air conditioner, and are roughly 2-4 times more efficient than traditional systems. It also notes that heat pump installations are on the rise in states with cold winters, citing Minnesota and Maine as examples. A 'Continue Reading' button is located at the bottom of the article preview.

After being exposed to a message, participants were asked:

- “In the next 5 years, if you need to replace your heating or cooling system, how likely are you to consider choosing an air source heat pump?” (1 = Very unlikely, 7 = Very likely; our primary outcome)
- “How interested are you in learning more about air source heat pumps?” (1 = Not at all interested, 4 = Very interested; our secondary outcome)

To better understand the demographics, barriers, motivations, and messaging preferences of our customer segments (RQ2 and RQ3), we asked participants to self-identify with one of our customer segments. We also asked them a series of questions about their knowledge of ASHPs, the factors that influence their decisions about heating and cooling systems, the sources of information that they consult, their trust in different sources of information, and to what degree different statements or images about ASHPs increases their interest in ASHPs.

## Findings from the online study

### Lifetime Value-seekers were the biggest customer segment.

All participants were asked to identify as one of three segments (Lifetime Value-seekers, Discerning Investors, or Eco-conscious Innovators). Then, all participants were also asked whether they identified as a Nearly-there Convert.

**Participants were more likely to identify as Lifetime Value-seekers than Discerning Investors or Eco-conscious Innovators.** Almost half of participants identified as Lifetime Value-seekers.

**Lifetime Value-seekers were the least likely to also identify as Nearly-there Converts.** In the Midwest sample:

- 25% of Lifetime Value-seekers were also Nearly-there Converts
- 34% of Discerning Investors were also Nearly-there Converts
- 41% of Eco-conscious Innovators were also Nearly-there Converts

**Figure 4. Customer segments in the Midwest and Minnesota samples**

Segment	Description selected by participants	Midwest sample n = 4,007	Minn. sample n = 1,751
Lifetime Value-seekers	<i>"I am concerned about the <b>time and money I have to spend on</b> my heating and cooling system. I want a system that is fast to install, easy to maintain, and will last a long time."</i>	47.6%	46.7%
Discerning Investors	<i>"I am concerned about the <b>quality of life</b> that my heating and cooling system offers. I am interested in the <b>comfort</b> that the system provides, the <b>health benefits</b> (for example, better air quality inside my home), and the <b>environmental benefits</b> it offers."</i>	32.0%	32.0%
Eco-conscious Innovators	<i>"I am concerned about the <b>energy consumption</b> of my heating and cooling system. I like to learn about new and more efficient technologies that allow me to <b>reduce my carbon footprint</b>."</i>	20.4%	21.3%
Nearly-there Converts	<i>"I have heard about air source <b>heat pumps before today</b>, and I was <b>already interested</b>. I just need to find out if it's the right choice for me and my home."</i>	31.6%	35.0%

**Further, the survey results indicate that the short descriptions in Figure 4 are an efficient way to profile potential customers' barriers and motivations** regarding home heating and cooling



systems. Participants' self-selected customer segment, based on the one-sentence description, was predictive of a wide range of barriers, motivations, and preferences regarding messaging. Notably:

- 73% of Nearly-there Converts said that they were likely or very likely to be interested in purchasing an ASHP in the following five years, compared to 35% of other participants
- 39% of Lifetime Value-seekers considered the final cost of purchasing and installing a system to be the most important factor in a purchasing decision, compared to 30% of other participants
- 21% of Discerning Investors considered the comfort provided by a system to be the most important factor in a purchasing decisions, compared to 15% of other participants

### Awareness of ASHPs is low.

**Prior to the survey, almost 78% of Midwest participants had little or no awareness of ASHPs.**

Only around 20% of Midwest participants knew “a moderate amount” or “a lot” about ASHPs. Among Minnesota participants, 75% had little or no awareness of ASHPs.

**Awareness among low-income participants was lower than in the general Midwest sample.**

Among low-income participants, 49.5% know “nothing at all” about ASHPs.

Figure 5. Awareness of ASHPs prior to survey in the Midwest sample (n = 4,007)

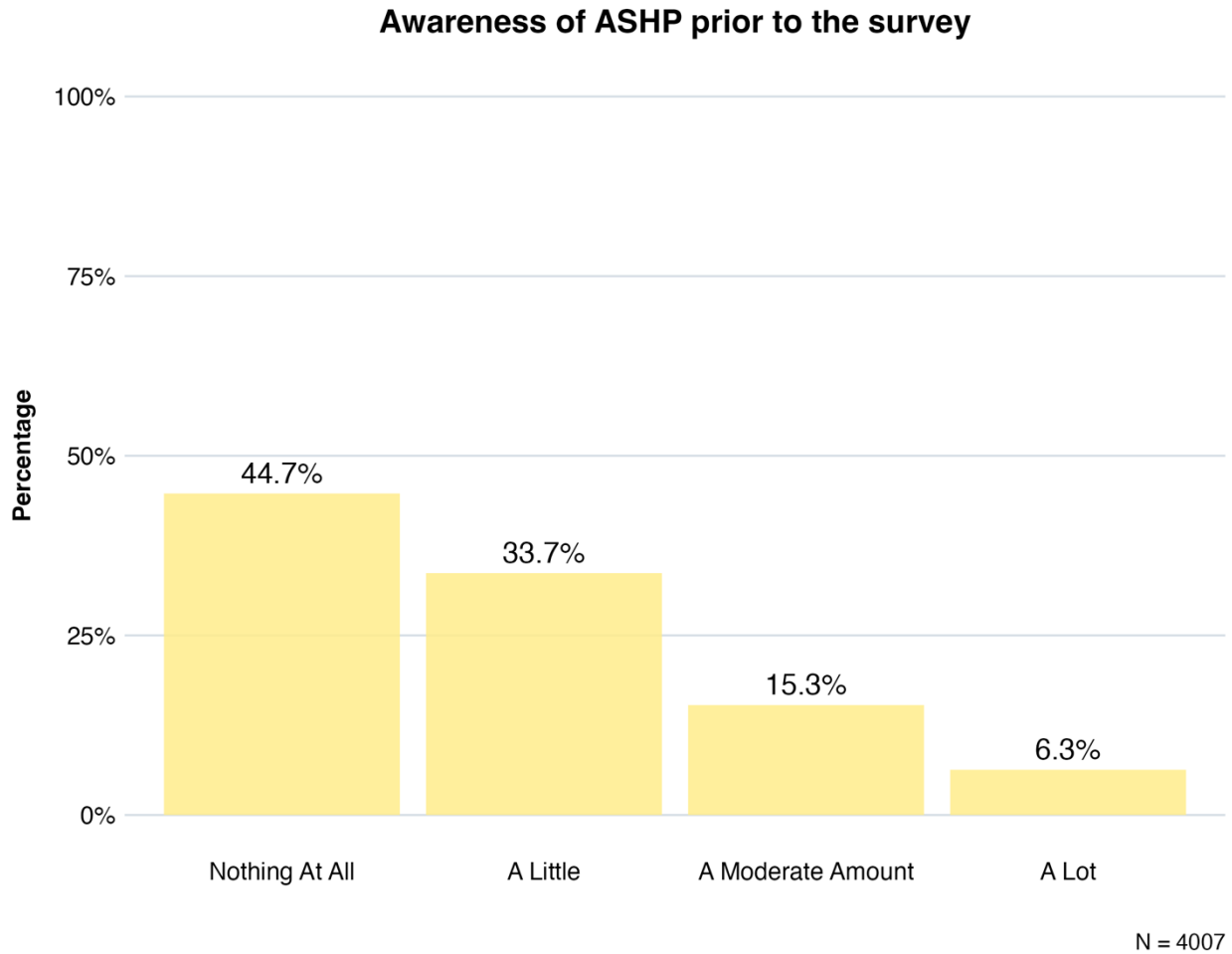


Figure 6. Awareness of ASHPs prior to survey in the Midwest and Minnesota samples

Awareness of ASHP prior to the survey	Midwest sample n = 4,007	Minn. sample n = 1,751
<i>Nothing at all</i>	44.7%	40.5%
<i>A little</i>	33.7%	34.2%
<i>A moderate amount</i>	15.3%	18.2%
<i>A lot</i>	6.3%	7.1%

Interest in purchasing or learning more about ASHPs did not vary with the control or treatment messages.

**Our primary and secondary outcomes were not significantly affected by any of the messaging tested.** There are several possible reasons why we did not detect a difference in ASHP interest.

- The sample had low levels of awareness of ASHPs, meaning participants may have been more influenced by the information we provided everyone about ASHPs than by the specific treatment message they saw.
- A home heating or cooling system is a big purchase, and a single message may not be enough to influence that decision. More intensive messaging from multiple channels and trusted messengers may be required to shift interest in ASHPs.
- Our sample size allowed us to measure a change in interest in purchasing ASHPs that was larger than 9.3% on a five-point scale. This means that if the messages did make an impact, it was smaller than 9.3%.

In Figures 7, 8, 9, and 10, the orange bars indicate the 95% confidence interval around the estimate.

**Figure 7. Primary outcome – Interest in purchasing an ASHP in the Midwest sample (n = 4,007)**

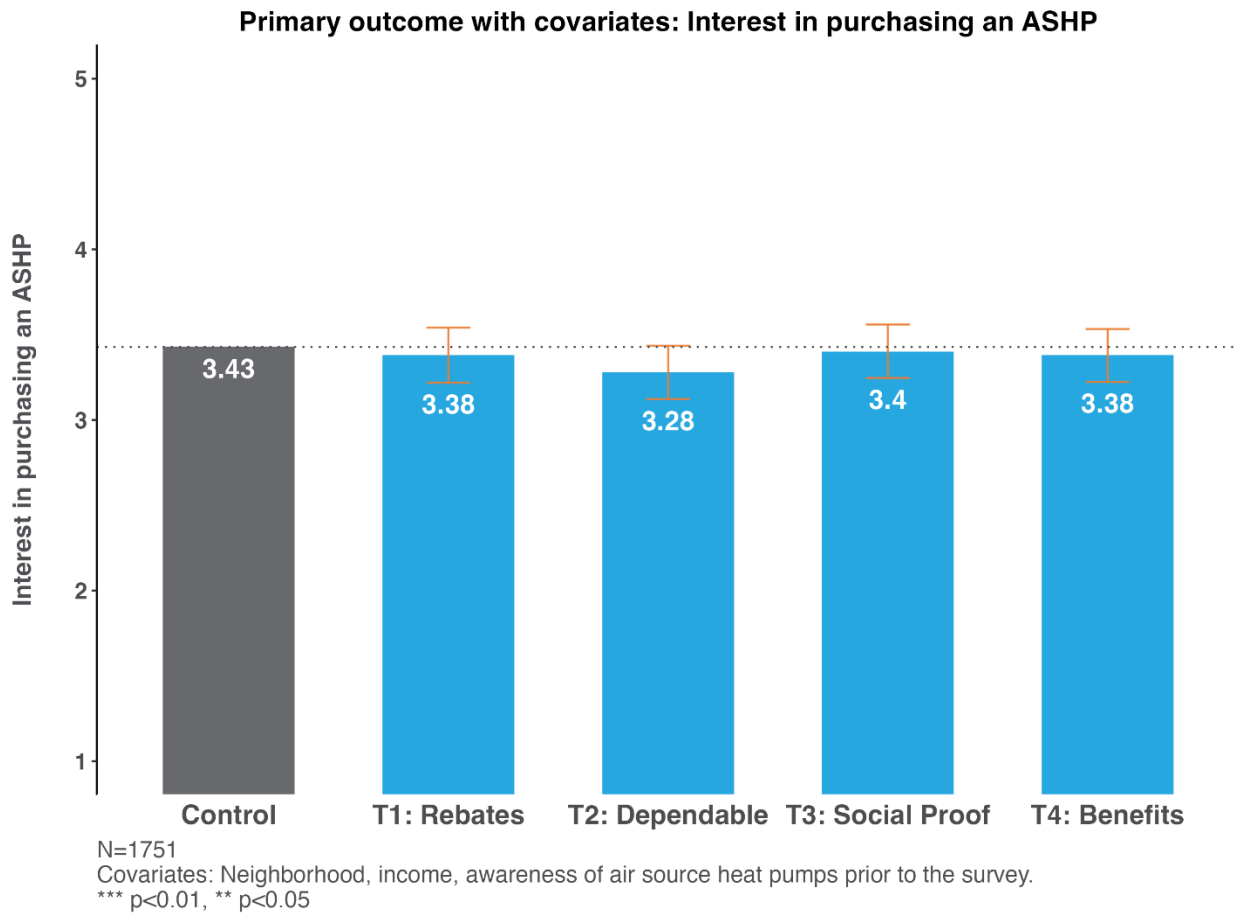
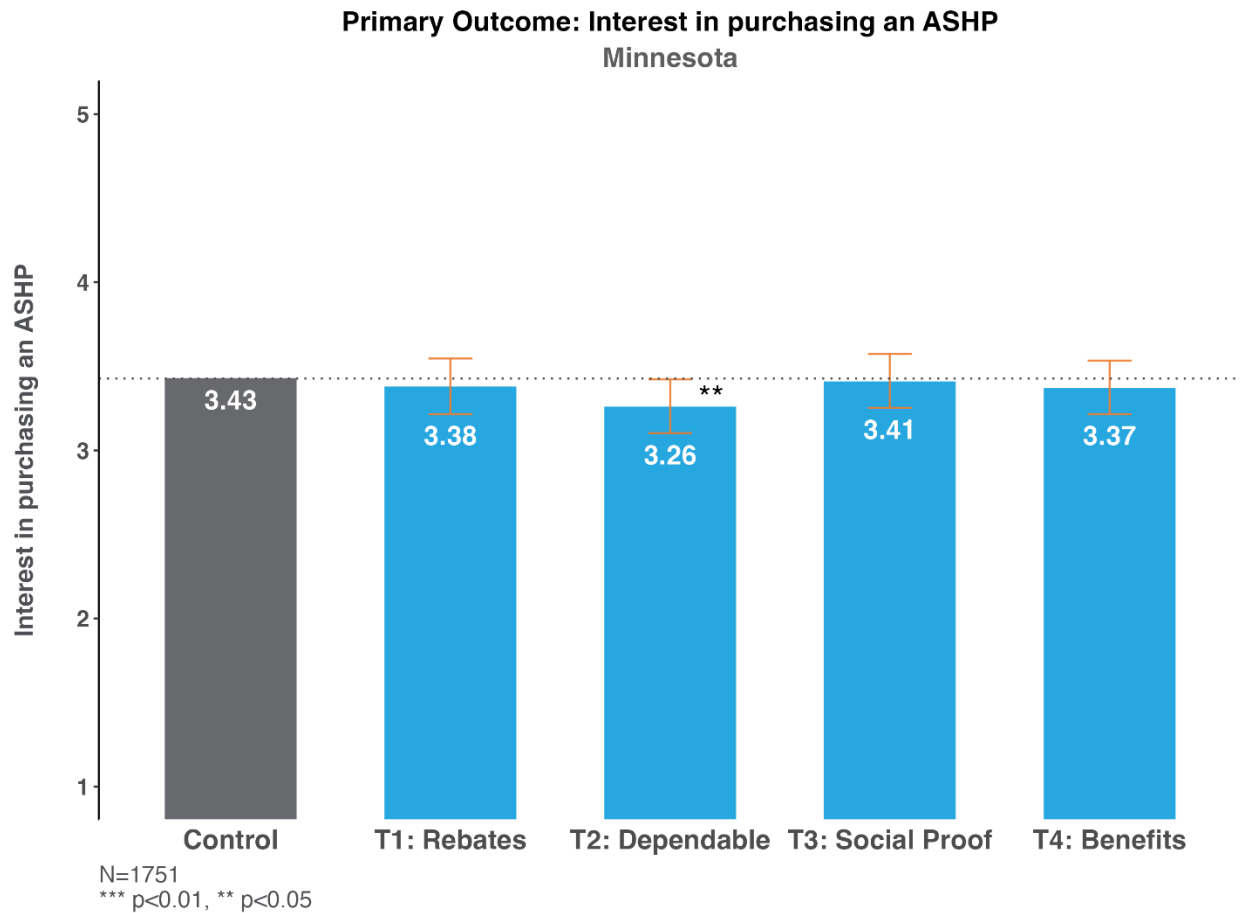


Figure 8. Primary outcome – Interest in purchasing an ASHP in the Minnesota sample (n = 1,751)



*In the Minnesota sample, those who saw the “dependable” messaging were significantly less likely to be interested in purchasing an ASHP. However, that message was slightly longer than others, and did not effect interest in learning more, so that result should be interpreted cautiously.*

Figure 9. Secondary outcome – Interest in learning more about ASHPs in the Midwest sample (n = 4,007)

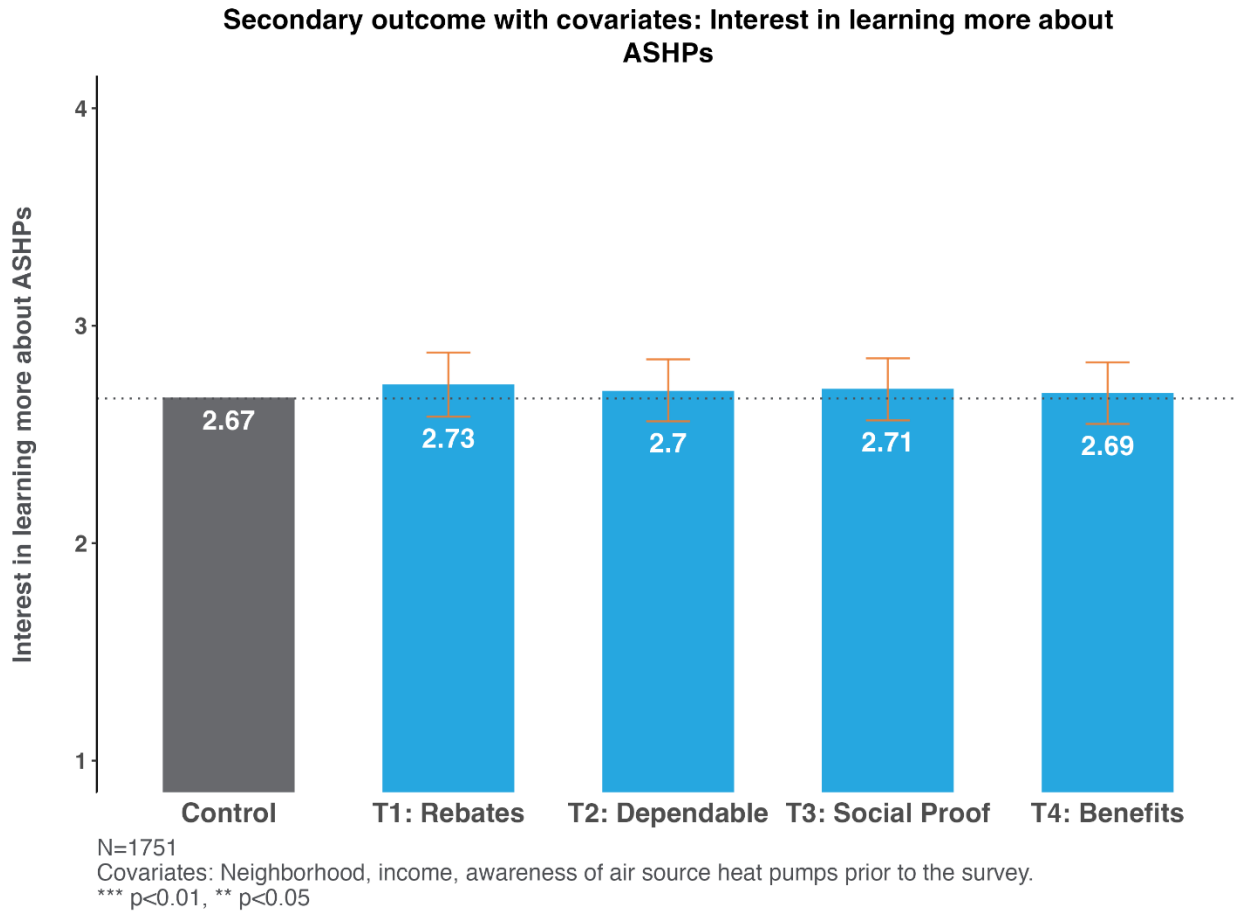
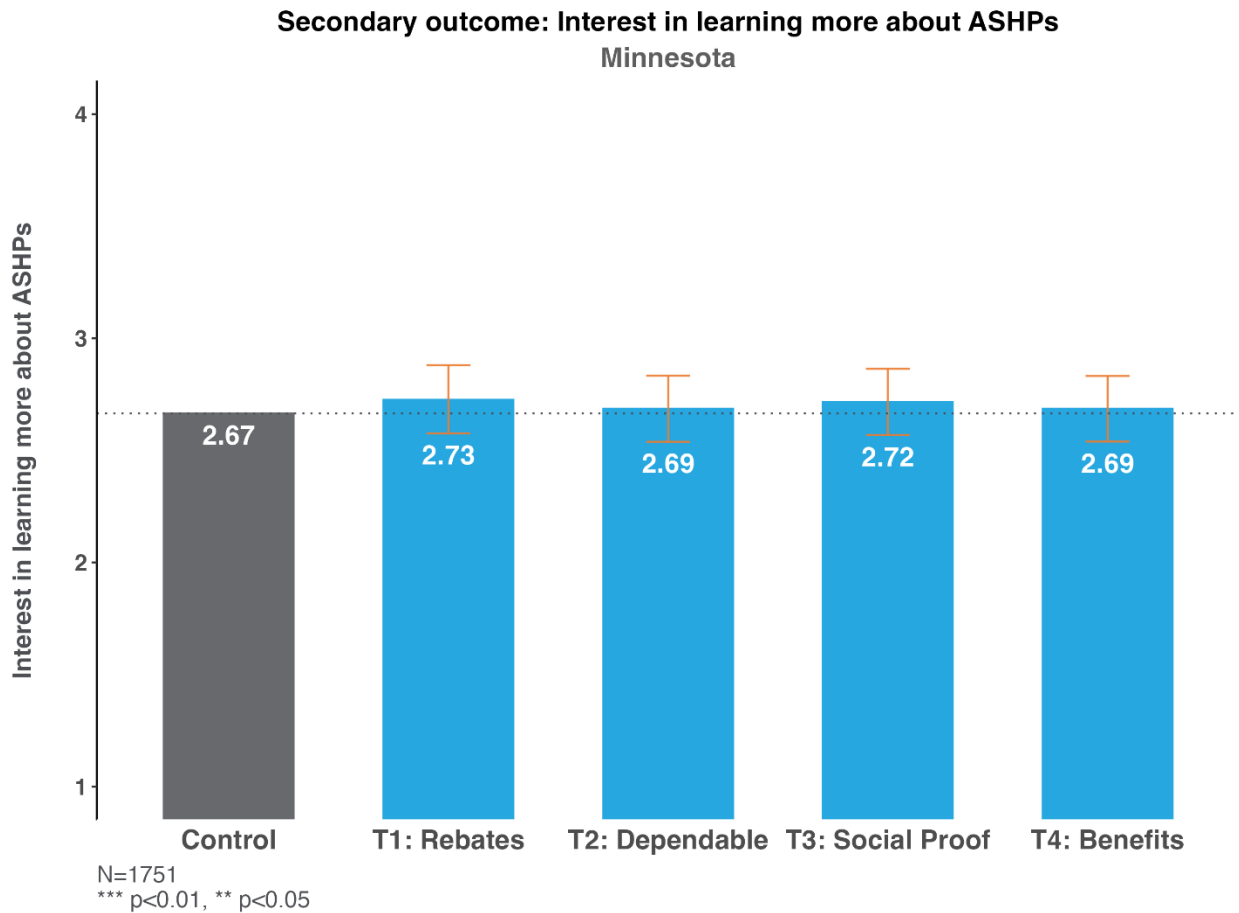


Figure 10. Secondary outcome – Interest in learning more about ASHPs in the Minnesota sample (n = 1,751)



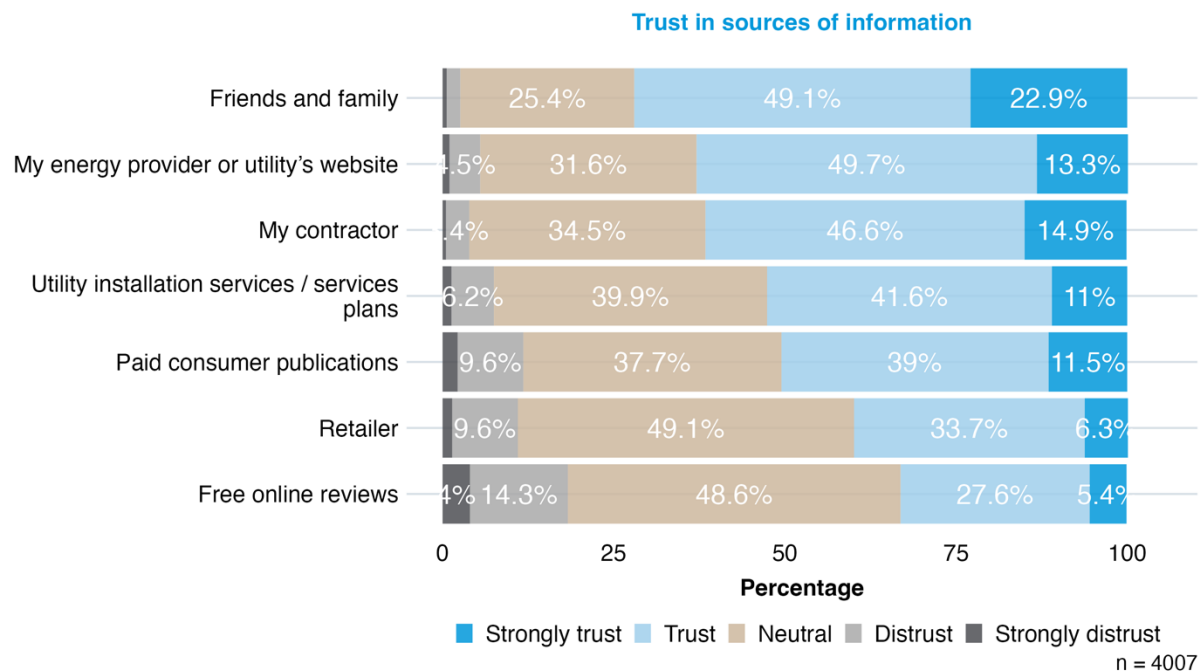
Trusted messengers about home heating and cooling systems include friends and family, energy providers, and contractors.

**We found that participants trusted their close contacts or institutions with whom they have an ongoing relationship** (e.g., friends, utilities, contractors, service plans) more than they trusted general information sources (e.g., consumer publications, retailers, online reviews). This finding suggests that the network in which a person is embedded matters a great deal for their home heating and cooling decisions.

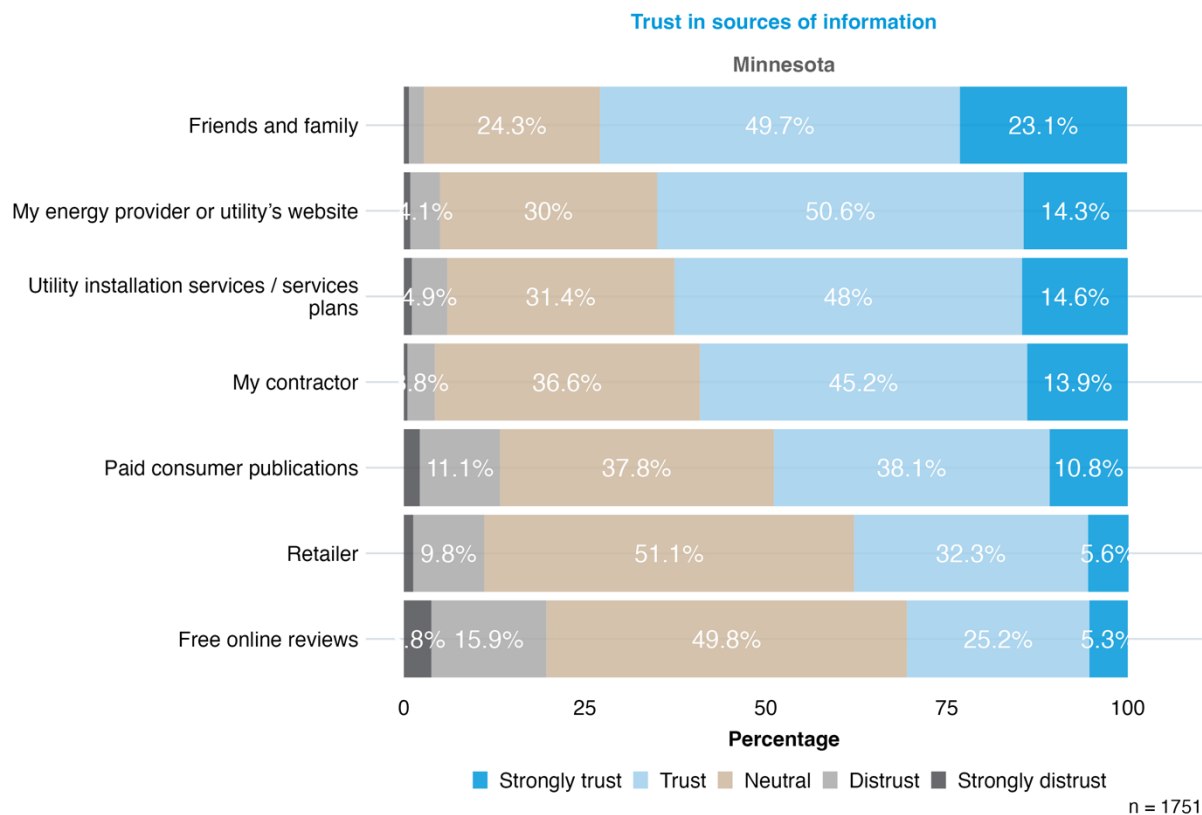
**Figure 11. Information sources that participants would consult first if they were looking to replace their furnace or AC, Midwest and Minnesota samples**

Information source	Midwest Sample n = 4,007	Minn. Sample n = 1,751
Utility installation services / service plans	17.9%	24.2%
My energy provider or utility's website	17.4%	17.9%
Friends and family	18.0%	17.4%
Free online reviews	13.1%	12.2%
Retailer	12.2%	11.4%
My contractor	13.6%	9.4%
Paid consumer publications	7.9%	7.4%

**Figure 12. Sources of information that participants trust in the Midwest sample (n = 4,007)**



**Figure 13. Sources of information participants trust in the Minnesota sample (n = 1,751)**



Cost is the most important concern when choosing a heating or cooling system, followed by quality.

**Costs – from purchase and installation to monthly bills – were considered very important by the majority of participants** and were the top factors influencing home heating and cooling purchasing decisions. Quality concerns, such as the durability and comfort that a system provides, were the second most important factors.

**Figure 14: Factors influencing home heating and cooling system purchasing decisions in the Midwest and Minnesota samples**

Factors rated as “very important” for home heating and cooling system purchasing decisions		Midwest n=4,007	Minn. n=1,733
<b>Cost factors</b>	The final cost of purchasing and installing the system	74%	71%
	The monthly cost of running the system	72%	71%
	That the system provides the same level of comfort or better than my current system	66%	63%

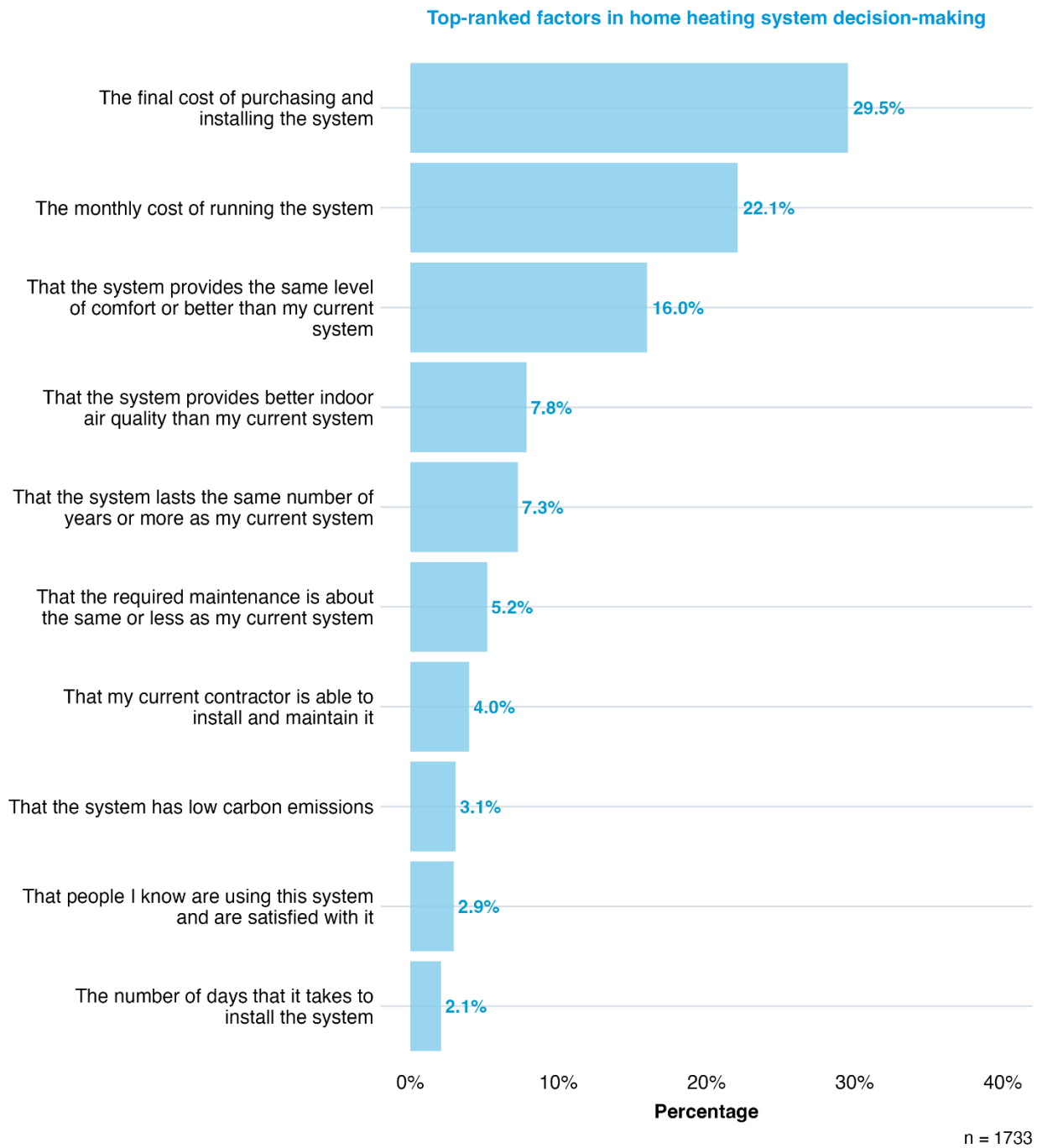


Quality and performance factors	That the system lasts the same number of years or more as my current system	66%	64%
	That the required maintenance is about the same or less as my current system	56%	52%
	That the system provides better indoor air quality than my current system	48%	45%
	That my current contractor is able to install and maintain it	38%	35%
Other	That people I know are using this system and are satisfied with it	30%	29%
	That the system has low carbon emissions	30%	30%
	The number of days that it takes to install the system	25%	22%

Survey participants ranked the factors “people I know are using this system” and “number of days it takes to install” as less important than other factors. This contrasts with what we heard in focus groups. However, it aligns well with a general behavioral science finding – people often [underestimate the influence that social norms](#) and [momentary convenience](#) have on their behavior.

When asked to select the single most important factor when making home heating or cooling purchasing decisions, **8% of Minnesota participants selected “that the system provides better indoor air quality than my current system.”** Our focus groups indicated that this group was likely people with household members who suffer from respiratory illness, such as asthma. Sources of outdoor smoke, such as wildfires and outdoor fire pits, were also mentioned as motivating factors.

**Figure 15. Top-ranked factors for home heating and cooling decisions in the Minnesota sample (n = 1,733)**



**The carbon emissions of a heating or cooling system were not important for most participants, compared to other factors.** Notably, this holds true even for the Eco-conscious Innovator customer segment; only 5% of this segment considered low carbon emissions to be the most important factor when making home heating or cooling purchasing decisions.

**Figure 16. Carbon emissions as the top factor for home heating or cooling decisions, by customer segment in the Minnesota sample (n = 1,733)**

Customer segment, Minn. sample	Percentage
Lifetime Value-seekers (n=809)	1.4%
Eco-conscious Innovators (n=369)	4.9%
Discerning Investors (n=555)	4.3%
Nearly-there Converts (n=607)	4.6%

When analyzing whether important factors differed between urban, suburban, and rural participants, we found that **rural participants were more focused on cost factors**, suburban residents were more focused on the level of comfort that a system provides, and urban residents were more focused on other non-cost benefits, such as durability, maintenance, and carbon emissions. However, all of these differences were relatively slight, and costs remained the most important factors across all three groups.

**Figure 17. Top factor influencing home heating or cooling purchasing decisions in the Midwest sample (n = 4,007)**

Top factor influencing home heating and cooling purchasing decisions	Urban n=808	Suburban n=1896	Rural n=1242
The final cost of purchasing and installing the system	26%	30%	<b>33%</b>
The monthly cost of running the system	19%	<b>23%</b>	<b>24%</b>
That the system provides the same level of comfort or better than my current system	13%	<b>17%</b>	15%
That the system provides better indoor air quality than my current system	<b>9%</b>	8%	7%
That the system lasts the same number of years or more as my current system	<b>9%</b>	7%	7%
That the required maintenance is about the same or less as my current system	<b>6%</b>	4%	5%
That my current contractor is able to install and maintain it	<b>6%</b>	3%	4%
That people I know are using this system and are satisfied with it	<b>5%</b>	3%	3%
That the system has low carbon emissions	<b>4%</b>	3%	3%
The number of days that it takes to install the system	<b>3%</b>	1%	1%

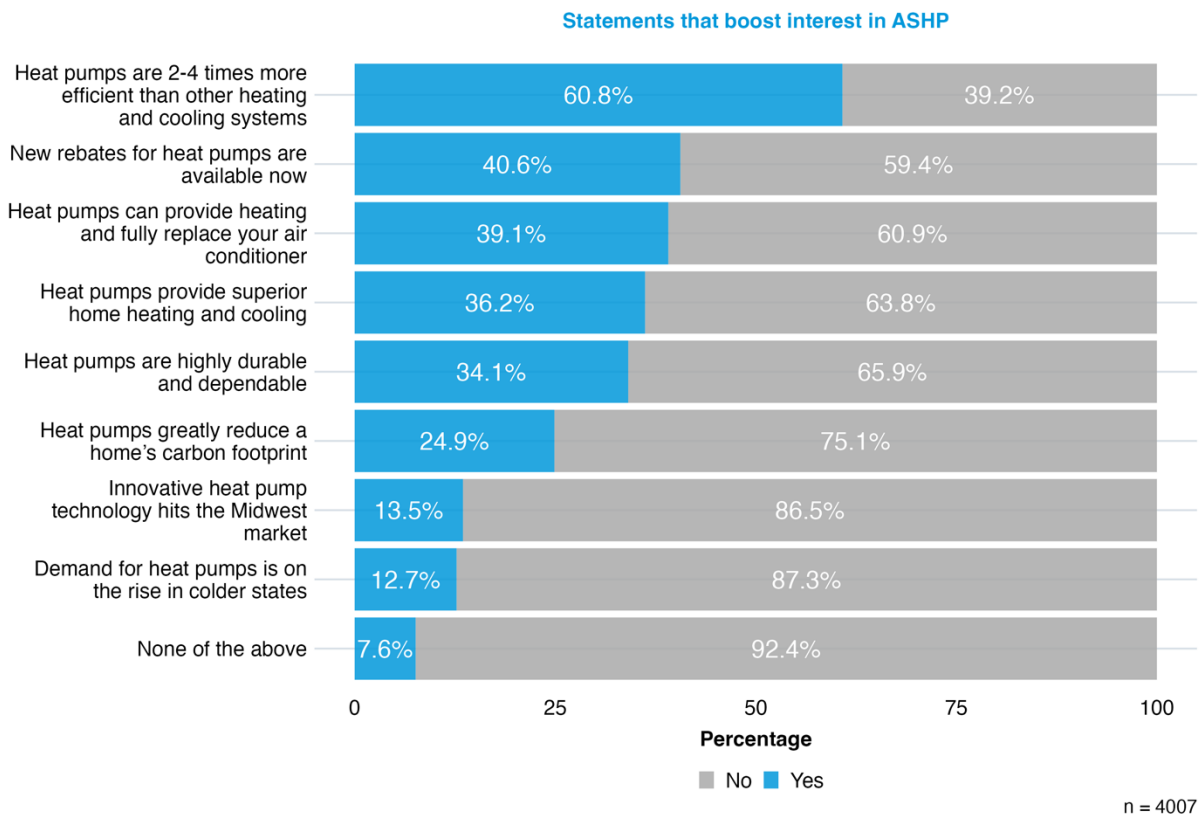
Statements about efficiency and rebates were the most likely to boost interest in ASHPs.

When asked which statements were most likely to boost their interest in ASHPs, participants were most likely to select a message about ASHPs' efficiency. This may be because people associate increased efficiency with decreased operating costs – a theory supported by participants indicating that cost is a very important factor in their home heating and cooling decisions, and by the second most popular statement also being related to costs (“New rebates for heat pumps are available now”).

All customer segments preferred the efficiency message to all others. Beyond that top message, we found that customer segments responded to messages that addressed their unique priorities. For instance:

- Lifetime Value-seekers were more likely to indicate that messages about the durability and dependability of heat pumps boosted their interest
- Discerning Investors were more likely to indicate that a message about ASHPs providing superior home heating and cooling boosted their interest
- Eco-conscious Innovators were more likely to indicate that a message about ASHPs reducing a households' carbon footprint boosted their interest

Figure 18. Statements that boosted interest in ASHPs in the Midwest sample (n = 4,007)



**Figure 19. Statements that boosted interest in ASHPs in the Midwest and Minnesota samples**

Statement	Midwest Sample n = 4,007	Minn. Sample n = 1,751
<i>Heat pumps are 2–4 times more efficient than other heating and cooling systems</i>	60.8%	60.4%
<i>New rebates for heat pumps are available now</i>	40.6%	42.9%
<i>Heat pumps can provide heating and fully replace your air conditioner</i>	39.1%	38.0%
<i>Heat pumps provide superior home heating and cooling</i>	34.1%	34.7%
<i>Heat pumps are highly durable and dependable</i>	36.2%	34.3%
<i>Heat pumps greatly reduce a home’s carbon footprint</i>	24.9%	26.1%
<i>Innovative heat pump technology hits the Midwest market</i>	13.5%	13.9%
<i>Demand for heat pumps is on the rise in colder states</i>	12.7%	13.8%
<i>None of the above</i>	7.6%	5.9%

Product images of heat pumps increased interest, potentially by clarifying what a heat pump is.

**Participants indicated that product images of ASHPs increased their interest** more than other kinds of images (i.e., illustrations or lifestyle shots). This may be because participants had low awareness of ASHPs, and the product images helped them visualize what one might look like in their home.

Figure 20. ASHP product images



Figure 21: Changes in interest in ASHP based on type of images seen, Midwest and Minnesota samples

	Illustrated images		Lifestyle images		Product images	
	Midwest	Minn.	Midwest	Minn.	Midwest	Minn.
Decrease or significantly decrease interest	8.4%	9.8%	3.1%	3.4%	7.0%	8.6%
Neither	69.8%	66.8%	66.0%	64.6%	56.4%	54.0%
Increase or significantly increase interest	21.9%	23.3%	30.7%	32.0%	<b>36.5%</b>	<b>37.4%</b>

# RECOMMENDATIONS

Based on our findings from the focus groups and online study, we recommend the following for messaging ASHPs in Minnesota.

Recommendation	Rationale and detail
<p>Use messages that address cost barriers, such as those promoting available rebates and reduced running costs.</p>	<ul style="list-style-type: none"> <li>■ Our focus groups and survey showed that the costs of purchasing, installing, and running the system dominated participants’ heating and cooling system decisions. Out of the survey participants who were aware of ASHPs prior to the survey, the majority were not aware that heat pumps qualify for multiple rebates.</li> <li>■ Messages about efficiency and rebates were the most likely to boost participants’ interest in ASHPs.</li> </ul>
<p>Consider how to integrate messaging about efficiency, which is very attractive to customers but may lead them to inaccurate conclusions about cost savings.</p>	<ul style="list-style-type: none"> <li>■ Our survey showed that the message “Heat pumps are 2–4 times more efficient than other heating and cooling systems” was the most likely to drive interest in ASHPs in every group and customer segment we analyzed.</li> <li>■ It is important to conduct future research to understand why survey participants preferred this message and ensure that it is not leading customers to make inaccurate conclusions about cost savings.</li> </ul>
<p>Use messages and implement programs that promote and shift social norms, such as demonstrating that heat pumps are popular (or becoming more popular) among the potential customer’s community.</p>	<ul style="list-style-type: none"> <li>■ Through our focus groups and survey, we found that many people are not aware that heat pumps can work well in cold climates, and friends and family are highly trusted sources of information about home heating/cooling systems. Thus, messaging promoting the fact that others, especially friends and neighbors, are installing heat pumps in this climate can be effective. Additional methods for promoting social norms are included in our messaging strategy recommendations.</li> <li>■ Community programs that go beyond messaging could help spread new social norms – these could include programs that incentivize contractors (e.g., subsidize contractors’ first few ASHP installations), leverage converted community members (e.g., referral programs for rental property owners), or make heat pumps more visible to neighbors (e.g., yard signs, a visit a heat pump program).</li> </ul>
<p>Consider how to accurately represent ASHP benefits that resonate with people.</p>	<ul style="list-style-type: none"> <li>■ A message promoting heat pumps’ efficiency was the most influential in all groups. Further research should be conducted to understand whether people associate “efficiency” with cost savings, which may be inaccurate for some customers.</li> <li>■ In our focus groups and survey, we found a contingent of people who care deeply about indoor air quality. Future analysis could be conducted to quantify air quality benefits.</li> </ul>
<p>When selecting images to include in communications,</p>	<ul style="list-style-type: none"> <li>■ In our survey, we found that images that centered heat pumps were the most likely to increase participants’ interest.</li> </ul>

<p>favor images that center heat pumps.</p>	<ul style="list-style-type: none"> <li>■ 78% of survey participants knew a little or nothing at all about heat pumps, so images of heat pumps may help them understand what they are.</li> </ul>
<p>Focus on delivering the messages frequently to a broad population, as preferences were largely consistent across population subgroups.</p>	<ul style="list-style-type: none"> <li>■ In our survey, we found very similar results across all subgroups in terms of knowledge about heat pumps, trusted sources, and preferences for messaging. In the short term, heavy investments in targeted messaging may not pay off because there are not major differences in people’s understanding of and interest in ASHPs yet.</li> <li>■ Low-income and environmental justice communities are a priority for many of CEE’s partner organizations. Messages that work well for this group are also likely to work well for the general population.</li> <li>■ Our focus groups showed that people should be encouraged to consider ASHPs before their current system breaks, as it is difficult to convince people to make a new choice in a moment of crisis.</li> </ul>
<p>Use customer segment descriptions to quickly profile potential customers’ barriers and motivations.</p>	<ul style="list-style-type: none"> <li>■ Our survey found that participants’ self-selected customer segment, based on a one-sentence description, was predictive of a wide range of barriers, motivations, and preferences regarding messaging. Notably, 73% of Nearly-there Converts said that they were likely or very likely to be interested in purchasing an ASHP in the following five years, compared to 35% of other participants.</li> <li>■ Asking customers to self-identify (e.g., at an event, when signing up for utility emails or rewards programs) could be an efficient way to understand and address customers’ specific concerns.</li> </ul>
<p>Targeted messaging efforts to some groups may be beneficial:</p> <ul style="list-style-type: none"> <li>■ Awareness for low-income residents</li> <li>■ Non-cost benefits to urban residents</li> <li>■ Air quality messaging to those who prioritize it</li> </ul>	<ul style="list-style-type: none"> <li>■ Low-income participants were less likely to be aware of ASHPs than the general population or any other subgroups.</li> <li>■ Urban participants were more interested in the non-cost benefits of ASHPs than suburban and rural participants.</li> <li>■ In our focus groups and survey, we found a contingent of people who care deeply about indoor air quality. Our focus groups suggested that these people usually have someone in their household with respiratory issues, and that outdoor sources of smoke are also motivating factors.</li> </ul>



# APPENDIX A: MESSAGING STRATEGIES BY CUSTOMER SUBGROUP SUMMARY TABLE

The table below summarizes what we found in our qualitative and quantitative research into a single matrix that can be used to guide future messaging and communication strategies for different customer segments.

Segment	About this group	Messaging strategy
<b>All segments</b>	<ul style="list-style-type: none"> <li>■ <b>Cost rates as a key factor.</b> Messaging should emphasize the financial benefits of ASHPs, including upfront and operating costs.</li> <li>■ <b>Messaging about the efficiency of ASHPs resonates</b> with all groups – however, caution must be used to ensure that messaging about energy efficiency does not imply inaccurate conclusions about cost savings.</li> <li>■ <b>The source of information</b> affects the extent to which people trust the message. Across all groups, people trust friends and family and utility providers to give them information about heating and cooling systems.</li> <li>■ <b>Timing</b> messaging is crucial. People across segments are only interested in purchasing heating and cooling systems when their existing system fails, but that time often feels like a crisis, making it difficult to evaluate new options. Messaging should help people plan to install an ASHP before they are in the crisis mode brought on by a cooling or heating system failure.</li> </ul>	<p>Across all segments, messaging should emphasize cost benefits, be delivered by trusted sources, and help people plan before their heating or cooling system fails.</p>
<p><b>In addition to cost, information source, and timing, different customer segments have specific priorities, motivators, and concerns that messaging can address</b></p>		
<b>Lifetime Value-seekers</b>	<p><b>Lifetime Value-seekers are a risk-averse group primarily concerned with the holistic time and monetary costs of owning a heating or cooling system.</b> Their chief concerns include ease and cost of installation, ease and frequency of maintenance, and longevity. They are responsible and engaged heating system</p>	<p>Lifetime Value-seekers want to make sure the system they purchase will provide good value over its lifetime, so messages should emphasize both upfront and running cost savings. Messages should also reduce the perceived risk of installing an ASHP, such as by emphasizing:</p>

	owners, and value certainty around maintenance and energy costs.	<ul style="list-style-type: none"> <li>■ The availability of maintenance plans</li> <li>■ The durability and longevity of ASHPs</li> <li>■ That ASHPs are common or well-liked within the customer’s network</li> </ul>
<b>Discerning Investors</b>	<b>Discerning Investors consider a heating or cooling system purchase as an investment in their comfort, health, or the environment.</b> When considering heating and cooling system options, cost is certainly a factor, but not necessarily the deciding factor.	<p>Discerning Investors' preference is not just for cost, but also for a high-quality product that would have a long-term impact on their health, comfort, and the environment. Messages should emphasize that heat pumps provide superior home heating and cooling.</p> <p>For Discerning Investors who live with people with respiratory illnesses, superior air quality may be the most impactful message.</p>
<b>Eco-conscious Innovators</b>	<b>Eco-conscious Innovators are interested in exciting new technologies</b> that reduce their carbon footprint. They are less concerned with cost compared to other groups.	<p>Eco-conscious Innovators value reducing their carbon footprint, although they (like all customer segments) typically care even more about price. Along with price messaging, Eco-conscious Innovators may respond to messaging that emphasizes:</p> <ul style="list-style-type: none"> <li>■ A heat pump reduces a home’s carbon footprint</li> <li>■ A heat pump could give them the opportunity to be “first movers” on an exciting new technology</li> <li>■ A heat pump can be powered using a home’s solar panels</li> </ul>
<b>Nearly-there Converts</b>	<b>Nearly-there Converts are enthusiastic about the idea of ASHPs, but they don’t have them yet.</b> This segment learned about heat pumps from family, friends, or coworkers, and are excited to talk about them with others. While they are interested in installing a heat pump, the time has either not been right to replace their current heating or cooling system, or they are unsure if a heat pump is a good fit for their home.	<p>Nearly-there Converts are interested in the logistics and practical implications of installing ASHPs. Messages that resonate with this group may include:</p> <ul style="list-style-type: none"> <li>■ Reassurances about ease of installation and maintenance</li> <li>■ Free energy audits to determine whether a heat pump is applicable for their home</li> <li>■ Peer-to-peer learning and validation through yard signs, or home tour programs, such as <a href="#">MSP Home Tour</a>, <a href="#">Parade of Homes</a>, or <a href="#">Visit a Heat Pump</a></li> </ul>

<p><b>Rental property owners</b></p>	<p><b>Rental property owners choose the heating/cooling option that reduces their own time and monetary costs</b> (i.e., the system that is preferred by their contractors, fastest to install, and least likely to need maintenance). They are risk-averse and suspicious of new technology. They primarily trust their current contractors, and other property owners in their networks.</p>	<p>Rental property owners are deeply embedded in their social networks, and so are likely to look to what others are doing as guidance. Messaging could be deployed through:</p> <ul style="list-style-type: none"> <li>■ Peer-to-peer networks, such as Facebook groups for local property owners</li> <li>■ Contractors that property owners are already using (not ones with whom they don't have existing relationships)</li> </ul>
<p><b>Low-income</b></p>	<p>Low-income homeowners are most concerned about the short- and long-term costs of home heating and cooling systems. They exhibited a lower level of awareness of ASHPS and lower levels of interest in purchasing or learning about ASHPs than other groups.</p>	<p>Homeowners in Minnesota with low incomes have lower levels of awareness about heat pumps, so explanatory messaging and repeated exposure is likely to be helpful.</p>
<p><b>Urban, suburban, rural</b></p>	<p>When considering home heating and cooling options, rural participants are slightly more focused on cost factors than suburban or urban residents. Although cost factors also dominate for suburban and urban residents, suburban residents also focus on the level of comfort that a system provides, and urban residents focus on other non-cost benefits, such as durability, maintenance, and carbon emissions.</p>	<p>The best practices outlined for all groups (emphasizing cost benefits, leveraging close networks to distribute information, and timing messages) will likely work across urban, suburban, and rural customers. Cost-related messaging may be slightly more effective with rural residents compared to other groups.</p>

# APPENDIX B: TREATMENT AND CONTROL MESSAGES

Figure 22. Control (desktop and mobile)

The image displays two versions of an article titled "What is a heat pump?" from HVAC Reporter.com. The top version is a mobile view, showing a dark header with the site name, a search bar, and navigation icons. The article title is in green, followed by the author "By Lucy Cridyn" and the date "Updated May 15, 2024". A large photo of an outdoor heat pump unit is featured. Below the photo is a paragraph of text and a "Continue Reading" button. The bottom version is a desktop view, showing a similar layout but with a navigation menu (Our Picks, Heating, Ventilation, Air Conditioning, Contractors) and social media sharing icons (Facebook, Twitter, LinkedIn, Email, Print) to the left of the article content. The text and "Continue Reading" button are also present in the desktop view.

Figure 23. Treatment 1: Rebates (desktop and mobile)

**HVAC Reporter.com**

**New rebates for heat pumps are available now!**

By Lucy Cridyn  
Updated May 15, 2024

Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling, similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner or pair with a furnace or other supplemental heating sources.

**Homeowners can benefit from multiple incentives when they install a heat pump in their home.** Utility rebates of up to \$2,400 are currently available to help cover heat pump installation costs. Homeowners who install a heat pump also claim a federal tax credit of up to \$2,000. With a hybrid system, homeowners can decide whether to use the heat pump or furnace depending on fuel prices. Pairing a heat pump with a natural gas or propane furnace is a smart way to manage energy bills.

Continue Reading

Figure 24. Treatment 2: Dependable (desktop and mobile)

The image shows two versions of an article on the HVAC Reporter.com website. The top version is a mobile view, and the bottom version is a desktop view. Both feature a dark header with the site name, a search bar, and user icons. The article title is "Heat pumps are highly durable and dependable" by Lucy Cridyn, updated May 15, 2024. It includes a photo of an outdoor heat pump unit and a "Continue Reading" button. The desktop view also shows a social media sharing sidebar and a navigation menu.

HVAC Reporter.com



Q

## Heat pumps are highly durable and dependable

By Lucy Cridyn  
Updated May 15, 2024



Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner AC or pair with a furnace or other supplemental heating sources.

**For homeowners seeking a durable heating and cooling solution, heat pumps are an excellent option.** Properly maintained, a quality heat pump can provide years of reliable, energy-efficient performance with similar warranties to a furnace or air conditioner. Like any heating or cooling system, heat pumps should be serviced once or twice per year. You can find quality heat pump installers and servicers through the Preferred Contractor Network, which lists contractors with exceptional training and qualifications.

Continue Reading

HVAC Reporter.com

Q



Our Picks Heating Ventilation Air Conditioning Contractors

## Heat pumps are highly durable and dependable

By Lucy Cridyn  
Updated May 15, 2024



Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner AC or pair with a furnace or other supplemental heating sources.

**For homeowners seeking a durable heating and cooling solution, heat pumps are an excellent option.** Properly maintained, a quality heat pump can provide years of reliable, energy-efficient performance with similar warranties to a furnace or air conditioner. Like any heating or cooling system, heat pumps should be serviced once or twice per year. You can find quality heat pump installers and servicers through the Preferred Contractor Network, which lists contractors with exceptional training and qualifications.

Continue Reading

Heat pumps are a series of electric coils that circulate air and are used for heating and cooling.

EXPLORE

- Our Picks
- Heating
- Ventilation
- Air Conditioning
- Contractors

Figure 25. Treatment 3: Social proof (desktop and mobile)

**HVAC Reporter.com**

Our Picks Heating Ventilation Air Conditioning Contractors

## Demand for heat pumps is on the rise in colder states

By Lucy Cridyn  
Updated May 15, 2024

Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner or pair with a furnace or other supplemental heating sources.

**Heat pump installations are on the rise in states with cold winters.** The number of applications for utility rebates for heat pumps more than doubled over four years in Minnesota. Maine, the fourth-coldest state in America, is one of the leading states in heat pump adoption. "I'm installing more and more heat pumps in homes because we've seen how much homeowners like them, and they are asking for them!" says Andrew Rehelek of BIT HVAC, Minneapolis.

Continue Reading

EXPLORE

- Our Picks
- Heating
- Ventilation
- Air Conditioning
- Contractors

Continue Reading

Figure 26. Treatment 4: Benefits (desktop and mobile)

The image shows two versions of a website article. The top version is a mobile view, and the bottom version is a desktop view. Both feature the same content: a title 'Heat pumps provide superior home heating and cooling', author 'By Lucy Cridyn', date 'Updated May 15, 2024', a photo of an outdoor heat pump unit, and a 'Continue Reading' button.

**Mobile View (Top):**

- Header: HVAC Reporter.com
- Search bar with magnifying glass icon.
- Article Title: Heat pumps provide superior home heating and cooling
- Author: By Lucy Cridyn
- Date: Updated May 15, 2024
- Image: Outdoor heat pump unit on a concrete pad.
- Text: Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner or pair with a furnace or other supplemental heating sources.
- Text: **You can get superior home comfort by choosing an advanced heat pump over a traditional HVAC (heating, ventilation, and air conditioning) system.** Heat pumps provide consistent, efficient heating or cooling throughout the living space, which maintains a cozy environment. In the summer, advanced heat pumps provide lower overall indoor humidity levels compared to central air conditioners.
- Button: Continue Reading

**Desktop View (Bottom):**

- Header: HVAC Reporter.com
- Navigation: Our Picks, Heating, Ventilation, Air Conditioning, Contractors
- Search bar with magnifying glass icon.
- Article Title: Heat pumps provide superior home heating and cooling
- Author: By Lucy Cridyn
- Date: Updated May 15, 2024
- Image: Outdoor heat pump unit on a concrete pad.
- Social Media Icons: Facebook, Twitter, LinkedIn, YouTube, Instagram.
- Text: Air source heat pumps are HVAC (heating, ventilation, and air conditioning) systems that provide heating and cooling similar to a combination of a furnace and central air conditioner. Heat pumps are roughly 2-4 times more efficient than traditional heating and cooling systems. A heat pump can either fully replace an existing furnace and air conditioner or pair with a furnace or other supplemental heating sources.
- Text: **You can get superior home comfort by choosing an advanced heat pump over a traditional HVAC (heating, ventilation, and air conditioning) system.** Heat pumps provide consistent, efficient heating or cooling throughout the living space, which maintains a cozy environment. In the summer, advanced heat pumps provide lower overall indoor humidity levels compared to central air conditioners.
- Button: Continue Reading



# APPENDIX C: DATA TABLES

## Minnesota sample

### Primary analysis: Interest in purchasing an ASHP

Table 1. Interest in purchasing an ASHP by customer segments

Variable	Primary Outcome: Interest in purchasing an ASHP																								
	All Minnesotans					Lifetime value-seekers					Eco-conscious innovators					Discerning investors					Nearly-there converts				
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	3.4***	0.059	3.3, 3.5	<0.001	<0.001	3.2***	0.093	3.0, 3.4	<0.001	<0.001	3.5***	0.121	3.3, 3.7	<0.001	<0.001	3.7***	0.096	3.5, 3.9	<0.001	<0.001	3.9***	0.085	3.8, 4.1	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	-0.05	0.084	-0.21, 0.12	0.6	0.7	-0.04	0.130	-0.30, 0.21	0.8	>0.9	0.05	0.175	-0.29, 0.39	0.8	0.9	-0.08	0.136	-0.35, 0.18	0.5	0.6	-0.01	0.117	-0.24, 0.22	>0.9	>0.9
T2. Dependable	-0.16*	0.082	-0.33, 0.00	0.043	0.11	-0.08	0.126	-0.32, 0.17	0.5	>0.9	-0.04	0.164	-0.36, 0.28	0.8	0.9	-0.35**	0.134	-0.61, -0.09	0.010	0.024	-0.10	0.116	-0.33, 0.13	0.4	>0.9
T3. Social Proof	-0.01	0.082	-0.17, 0.15	0.9	0.9	0.23	0.127	-0.02, 0.48	0.066	0.2	-0.06	0.164	-0.39, 0.26	0.7	0.9	-0.31*	0.133	-0.57, -0.05	0.020	0.034	-0.07	0.117	-0.30, 0.16	0.6	>0.9
T4. Benefits	-0.05	0.081	-0.21, 0.11	0.5	0.7	-0.01	0.122	-0.26, 0.23	>0.9	>0.9	0.03	0.166	-0.29, 0.36	0.9	0.9	-0.07	0.136	-0.34, 0.20	0.6	0.6	-0.03	0.115	-0.26, 0.19	0.8	>0.9
No. Obs.	1,751					822					372					557					608				

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

Table 2. Interest in purchasing an ASHP by groups

Variable	Primary Outcome: Interest in purchasing an ASHP																								
	All Minnesotans					Low-income					Urban/Suburban					Rural					Customers with ducted natural gas or propane				
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	3.4***	0.059	3.3, 3.5	<0.001	<0.001	3.3***	0.097	3.1, 3.5	<0.001	<0.001	3.4***	0.072	3.3, 3.6	<0.001	<0.001	3.4***	0.105	3.2, 3.7	<0.001	<0.001	3.4***	0.072	3.3, 3.5	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	-0.05	0.084	-0.21, 0.12	0.6	0.7	-0.13	0.139	-0.41, 0.14	0.3	0.6	0.00	0.100	-0.20, 0.20	>0.9	>0.9	-0.16	0.155	-0.46, 0.15	0.3	0.4	-0.04	0.103	-0.24, 0.16	0.7	0.7
T2. Dependable	-0.16*	0.082	-0.33, 0.00	0.043	0.11	-0.09	0.131	-0.35, 0.17	0.5	0.6	-0.03	0.098	-0.22, 0.16	0.8	>0.9	-0.47**	0.147	-0.76, -0.18	0.002	0.004	-0.22*	0.098	-0.42, -0.03	0.023	0.057
T3. Social Proof	-0.01	0.082	-0.17, 0.15	0.9	0.9	0.03	0.136	-0.24, 0.29	0.8	0.8	0.08	0.098	-0.11, 0.28	0.4	>0.9	-0.22	0.147	-0.51, 0.06	0.13	0.2	-0.03	0.100	-0.23, 0.16	0.7	0.7
T4. Benefits	-0.05	0.081	-0.21, 0.11	0.5	0.7	-0.14	0.132	-0.40, 0.12	0.3	0.6	-0.05	0.097	-0.24, 0.14	0.6	>0.9	-0.06	0.144	-0.35, 0.22	0.7	0.7	-0.08	0.098	-0.27, 0.11	0.4	0.7
No. Obs.	1,751					696					1,197					554					1,231				

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

# Secondary analysis: Interest in learning more about ASHPs

**Table 3. Interest in learning more about ASHPs by customer segments**

Secondary Outcome: Interest in learning more about ASHPs																									
Variable	All Minnesotans					Lifetime value-seekers					Eco-conscious innovators					Discerning investors				Nearly-there converts					
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>					
(Intercept)	2.7***	0.055	2.6, 2.8	<0.001	<0.001	2.5***	0.082	2.3, 2.6	<0.001	<0.001	2.8***	0.113	2.6, 3.1	<0.001	<0.001	2.8***	0.093	2.6, 3.0	<0.001	<0.001	3.2***	0.079	3.1, 3.4	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	0.06	0.078	-0.09, 0.21	0.4	0.8	0.05	0.115	-0.17, 0.28	0.6	0.6	0.00	0.164	-0.32, 0.32	>0.9	>0.9	0.13	0.133	-0.13, 0.40	0.3	0.8	0.00	0.108	-0.21, 0.21	>0.9	>0.9
T2. Dependable	0.02	0.075	-0.13, 0.17	0.8	0.8	0.07	0.112	-0.15, 0.29	0.6	0.6	0.09	0.154	-0.22, 0.39	0.6	>0.9	-0.07	0.131	-0.33, 0.18	0.6	0.8	-0.10	0.108	-0.31, 0.12	0.4	0.6
T3. Social Proof	0.05	0.075	-0.13, 0.20	0.5	0.8	0.23*	0.113	0.01, 0.45	0.043	0.11	-0.17	0.154	-0.48, 0.13	0.3	0.7	-0.04	0.130	-0.29, 0.22	0.8	0.8	-0.06	0.108	-0.27, 0.15	0.6	0.7
T4. Benefits	0.02	0.075	-0.13, 0.17	0.8	0.8	0.06	0.109	-0.15, 0.28	0.6	0.6	-0.01	0.156	-0.31, 0.30	>0.9	>0.9	0.04	0.133	-0.22, 0.30	0.7	0.8	-0.10	0.106	-0.31, 0.11	0.3	0.6
No. Obs.	1,751					822					372					557				608					

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

**Table 4. Interest in learning more about ASHPs by groups**

Secondary Outcome: Interest in learning more about ASHPs																									
Variable	All Minnesotans					Low-income					Urban/Suburban					Rural				Customers with ducted natural gas or propane					
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	2.7***	0.055	2.6, 2.8	<0.001	<0.001	2.6***	0.088	2.4, 2.7	<0.001	<0.001	2.8***	0.066	2.6, 2.9	<0.001	<0.001	2.5***	0.096	2.3, 2.7	<0.001	<0.001	2.6***	0.065	2.5, 2.8	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	0.06	0.078	-0.09, 0.21	0.4	0.8	0.00	0.126	-0.25, 0.24	>0.9	>0.9	0.06	0.092	-0.12, 0.24	0.5	0.6	0.01	0.142	-0.27, 0.29	>0.9	>0.9	0.04	0.093	-0.14, 0.22	0.7	0.8
T2. Dependable	0.02	0.075	-0.13, 0.17	0.8	0.8	-0.01	0.119	-0.24, 0.23	>0.9	>0.9	-0.06	0.090	-0.24, 0.11	0.5	0.6	0.18	0.134	-0.08, 0.44	0.2	0.3	-0.04	0.089	-0.21, 0.14	0.7	0.8
T3. Social Proof	0.05	0.075	-0.10, 0.20	0.5	0.8	0.00	0.123	-0.24, 0.24	>0.9	>0.9	0.02	0.091	-0.16, 0.19	0.9	0.9	0.11	0.134	-0.16, 0.37	0.4	0.5	0.06	0.090	-0.11, 0.24	0.5	0.8
T4. Benefits	0.02	0.075	-0.13, 0.17	0.8	0.8	0.07	0.120	-0.17, 0.30	0.6	>0.9	-0.13	0.090	-0.30, 0.05	0.2	0.4	0.31*	0.132	0.06, 0.57	0.017	0.043	0.02	0.088	-0.16, 0.19	0.8	0.8
No. Obs.	1,751					696					1,197					554				1,231					

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

## Exploratory analysis:

### Awareness

**Table 5. Awareness of ASHP prior to the survey by customer segments**

Variable	Awareness of ASHP prior to the survey				
	All Minnesotans N = 1,751 <sup>1</sup>	Lifetime value-seekers N = 822 <sup>1</sup>	Eco-conscious innovators N = 372 <sup>1</sup>	Discerning investors N = 557 <sup>1</sup>	Nearly-there converts N = 608 <sup>1</sup>
<b>Awareness about ASHP</b>					
Nothing at all	710 (41%)	379 (46%)	134 (36%)	197 (35%)	49 (8.1%)
A little	599 (34%)	282 (34%)	123 (33%)	194 (35%)	237 (39%)
A moderate amount	318 (18%)	112 (14%)	85 (23%)	121 (22%)	227 (37%)
A lot	124 (7.1%)	49 (6.0%)	30 (8.1%)	45 (8.1%)	95 (16%)
<b>They are very energy efficient</b>	737 (71%)	297 (67%)	177 (74%)	263 (73%)	436 (78%)
<b>They can provide both heating and cooling</b>	757 (73%)	303 (68%)	196 (82%)	258 (72%)	456 (82%)
<b>They can replace a traditional air conditioner</b>	656 (63%)	280 (63%)	156 (66%)	220 (61%)	378 (68%)
<b>They can reduce carbon emissions</b>	569 (55%)	211 (48%)	153 (64%)	205 (57%)	356 (64%)
<b>They are able to work well in the midwest's cold climate</b>	571 (55%)	245 (55%)	123 (52%)	203 (56%)	332 (59%)
<b>They qualify for multiple rebates</b>	453 (44%)	175 (40%)	109 (46%)	169 (47%)	283 (51%)

<sup>1</sup> n (%)

**Table 6. Awareness of ASHP prior to the survey by groups**

Variable	All Minnesotans N = 1,751 <sup>1</sup>	Low-income N = 696 <sup>1</sup>	Urban/Suburban N = 1,197 <sup>1</sup>	Rural N = 554 <sup>1</sup>	Ducted natural gas or propane N = 1,231 <sup>1</sup>
	<b>Awareness about ASHPs</b>				
Nothing at all	710 (41%)	322 (46%)	487 (41%)	223 (40%)	545 (44%)
A little	599 (34%)	249 (36%)	410 (34%)	189 (34%)	434 (35%)
A moderate amount	318 (18%)	87 (13%)	217 (18%)	101 (18%)	174 (14%)
A lot	124 (7.1%)	38 (5.5%)	83 (6.9%)	41 (7.4%)	78 (6.3%)
<b>They are very energy efficient</b>	837 (48%)	313 (45%)	560 (47%)	277 (50%)	573 (47%)
<b>They can provide both heating and cooling</b>	824 (47%)	274 (39%)	559 (47%)	265 (48%)	521 (42%)
<b>They can replace a traditional air conditioner</b>	742 (42%)	277 (40%)	497 (42%)	245 (44%)	497 (40%)
<b>They can reduce carbon emissions</b>	642 (37%)	226 (32%)	446 (37%)	196 (35%)	428 (35%)
<b>They are able to work well in the midwest's cold climate</b>	645 (37%)	253 (36%)	436 (36%)	209 (38%)	432 (35%)
<b>They qualify for multiple rebates</b>	518 (30%)	195 (28%)	363 (30%)	155 (28%)	352 (29%)

<sup>1</sup> n (%)

# Factors influencing home heating system decisions

**Table 7. Factors influencing home heating system decisions by customer segments**

Variable	All Minnesotans N = 1,751 <sup>†</sup>	Lifetime value-seekers N = 822 <sup>†</sup>	Eco-conscious innovators N = 372 <sup>†</sup>	Discerning investors N = 557 <sup>†</sup>	Nearly-there converts N = 608 <sup>†</sup>
<b>The final cost of purchasing and installing the system</b>					
Not at all important	18 (1.0%)	9 (1.1%)	4 (1.1%)	5 (0.9%)	9 (1.5%)
A little important	144 (8.2%)	48 (5.8%)	39 (10%)	57 (10%)	82 (13%)
Somewhat important	346 (20%)	128 (16%)	86 (23%)	132 (24%)	159 (26%)
Very important	1,243 (71%)	637 (77%)	243 (65%)	363 (65%)	358 (59%)
<b>The monthly cost of running the system</b>					
Not at all important	23 (1.3%)	11 (1.3%)	5 (1.3%)	7 (1.3%)	11 (1.8%)
A little important	117 (6.7%)	43 (5.2%)	24 (6.5%)	50 (9.0%)	56 (9.2%)
Somewhat important	375 (21%)	150 (18%)	101 (27%)	124 (22%)	169 (28%)
Very important	1,236 (71%)	618 (75%)	242 (65%)	376 (68%)	372 (61%)
<b>That the system lasts the same number of years or more as my current system</b>					
Not at all important	26 (1.5%)	15 (1.8%)	6 (1.6%)	5 (0.9%)	10 (1.6%)
A little important	161 (9.2%)	70 (8.5%)	41 (11%)	50 (9.0%)	76 (13%)
Somewhat important	451 (26%)	182 (22%)	107 (29%)	162 (29%)	177 (29%)
Very important	1,113 (64%)	555 (68%)	218 (59%)	340 (61%)	345 (57%)
<b>That the system provides the same level of comfort or better than my current system</b>					
Not at all important	18 (1.0%)	10 (1.2%)	4 (1.1%)	4 (0.7%)	2 (0.3%)
A little important	158 (9.0%)	70 (8.5%)	35 (9.4%)	53 (9.5%)	75 (12%)
Somewhat important	474 (27%)	221 (27%)	118 (32%)	135 (24%)	182 (30%)
Very important	1,101 (63%)	521 (63%)	215 (58%)	365 (66%)	349 (57%)
<b>That the required maintenance is about the same or less as my current system</b>					
Not at all important	36 (2.1%)	17 (2.1%)	7 (1.9%)	12 (2.2%)	14 (2.3%)
A little important	162 (9.3%)	69 (8.4%)	38 (10%)	55 (9.9%)	77 (13%)
Somewhat important	636 (36%)	275 (33%)	147 (40%)	214 (38%)	212 (35%)
Very important	917 (52%)	461 (56%)	180 (48%)	276 (50%)	305 (50%)
<b>That the system provides better indoor air quality than my current system</b>					
Not at all important	52 (3.0%)	35 (4.3%)	8 (2.2%)	9 (1.6%)	19 (3.1%)
A little important	233 (13%)	115 (14%)	59 (16%)	59 (11%)	85 (14%)
Somewhat important	676 (39%)	339 (41%)	131 (35%)	206 (37%)	225 (37%)
Very important	790 (45%)	333 (41%)	174 (47%)	283 (51%)	279 (46%)
<b>That my current contractor is able to install and maintain it</b>					
Not at all important	205 (12%)	117 (14%)	35 (9.4%)	53 (9.5%)	42 (6.9%)
A little important	341 (19%)	166 (20%)	72 (19%)	103 (18%)	93 (15%)
Somewhat important	596 (34%)	257 (31%)	135 (36%)	204 (37%)	228 (38%)
Very important	609 (35%)	282 (34%)	130 (35%)	197 (35%)	245 (40%)
<b>That the system has low carbon emissions</b>					
Not at all important	164 (9.4%)	115 (14%)	11 (3.0%)	38 (6.8%)	28 (4.6%)
A little important	397 (23%)	240 (29%)	63 (17%)	94 (17%)	121 (20%)
Somewhat important	668 (38%)	299 (36%)	144 (39%)	225 (40%)	227 (37%)
Very important	522 (30%)	168 (20%)	154 (41%)	200 (36%)	232 (38%)
<b>That people I know are using this system and are satisfied with it</b>					
Not at all important	162 (9.3%)	67 (8.2%)	39 (10%)	56 (10%)	37 (6.1%)
A little important	423 (24%)	192 (23%)	107 (29%)	124 (22%)	136 (22%)
Somewhat important	664 (38%)	303 (37%)	148 (40%)	213 (38%)	253 (42%)
Very important	502 (29%)	260 (32%)	78 (21%)	164 (29%)	182 (30%)
<b>The number of days that it takes to install the system</b>					
Not at all important	168 (9.6%)	74 (9.0%)	38 (10%)	56 (10%)	52 (8.6%)
A little important	513 (29%)	227 (28%)	118 (32%)	168 (30%)	185 (30%)
Somewhat important	681 (39%)	340 (41%)	128 (34%)	213 (38%)	227 (37%)
Very important	389 (22%)	181 (22%)	88 (24%)	120 (22%)	144 (24%)

<sup>†</sup> n (%)

**Table 8. Factors influencing home heating system decisions by groups**

Variable	All Minnesotans	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 1,751 <sup>†</sup>	N = 696 <sup>†</sup>	N = 1,197 <sup>†</sup>	N = 554 <sup>†</sup>	N = 1,231 <sup>†</sup>
<b>The final cost of purchasing and installing the system</b>					
Not at all important	18 (1.0%)	7 (1.0%)	17 (1.4%)	1 (0.2%)	6 (0.5%)
A little important	144 (8.2%)	54 (7.8%)	105 (8.8%)	39 (7.0%)	62 (5.0%)
Somewhat important	346 (20%)	125 (18%)	236 (20%)	110 (20%)	215 (17%)
Very important	1,243 (71%)	510 (73%)	839 (70%)	404 (73%)	948 (77%)
<b>The monthly cost of running the system</b>					
Not at all important	23 (1.3%)	10 (1.4%)	19 (1.6%)	4 (0.7%)	13 (1.1%)
A little important	117 (6.7%)	41 (5.9%)	79 (6.6%)	38 (6.9%)	51 (4.1%)
Somewhat important	375 (21%)	131 (19%)	265 (22%)	110 (20%)	219 (18%)
Very important	1,236 (71%)	514 (74%)	834 (70%)	402 (73%)	948 (77%)
<b>That the system lasts the same number of years or more as my current system</b>					
Not at all important	26 (1.5%)	10 (1.4%)	22 (1.8%)	4 (0.7%)	16 (1.3%)
A little important	161 (9.2%)	68 (9.8%)	114 (9.5%)	47 (8.5%)	85 (6.9%)
Somewhat important	451 (26%)	161 (23%)	310 (26%)	141 (25%)	282 (23%)
Very important	1,113 (64%)	457 (66%)	751 (63%)	362 (65%)	848 (69%)
<b>That the system provides the same level of comfort or better than my current system</b>					
Not at all important	18 (1.0%)	11 (1.6%)	13 (1.1%)	5 (0.9%)	11 (0.9%)
A little important	158 (9.0%)	68 (9.8%)	109 (9.1%)	49 (8.8%)	82 (6.7%)
Somewhat important	474 (27%)	186 (27%)	334 (28%)	140 (25%)	301 (24%)
Very important	1,101 (63%)	431 (62%)	741 (62%)	360 (65%)	837 (68%)
<b>That the required maintenance is about the same or less as my current system</b>					
Not at all important	36 (2.1%)	16 (2.3%)	28 (2.3%)	8 (1.4%)	23 (1.9%)
A little important	162 (9.3%)	69 (9.9%)	119 (9.9%)	43 (7.8%)	80 (6.5%)
Somewhat important	636 (36%)	253 (36%)	441 (37%)	195 (35%)	441 (36%)
Very important	917 (52%)	358 (51%)	609 (51%)	308 (56%)	687 (56%)
<b>That the system provides better indoor air quality than my current system</b>					
Not at all important	52 (3.0%)	20 (2.9%)	38 (3.2%)	14 (2.5%)	34 (2.8%)
A little important	233 (13%)	94 (14%)	154 (13%)	79 (14%)	155 (13%)
Somewhat important	676 (39%)	247 (35%)	463 (39%)	213 (38%)	475 (39%)
Very important	790 (45%)	335 (48%)	542 (45%)	248 (45%)	567 (46%)
<b>That my current contractor is able to install and maintain it</b>					
Not at all important	205 (12%)	81 (12%)	140 (12%)	65 (12%)	153 (12%)
A little important	341 (19%)	132 (19%)	244 (20%)	97 (18%)	230 (19%)
Somewhat important	596 (34%)	237 (34%)	400 (33%)	196 (35%)	415 (34%)
Very important	609 (35%)	246 (35%)	413 (35%)	196 (35%)	433 (35%)
<b>That the system has low carbon emissions</b>					
Not at all important	164 (9.4%)	65 (9.3%)	98 (8.2%)	66 (12%)	126 (10%)
A little important	397 (23%)	160 (23%)	255 (21%)	142 (26%)	270 (22%)
Somewhat important	668 (38%)	241 (35%)	471 (39%)	197 (36%)	471 (38%)
Very important	522 (30%)	230 (33%)	373 (31%)	149 (27%)	364 (30%)
<b>That people I know are using this system and are satisfied with it</b>					
Not at all important	162 (9.3%)	77 (11%)	104 (8.7%)	58 (10%)	122 (9.9%)
A little important	423 (24%)	171 (25%)	289 (24%)	134 (24%)	295 (24%)
Somewhat important	664 (38%)	247 (35%)	446 (37%)	218 (39%)	467 (38%)
Very important	502 (29%)	201 (29%)	358 (30%)	144 (26%)	347 (28%)
<b>The number of days that it takes to install the system</b>					
Not at all important	168 (9.6%)	64 (9.2%)	113 (9.4%)	55 (9.9%)	125 (10%)
A little important	513 (29%)	199 (29%)	347 (29%)	166 (30%)	354 (29%)
Somewhat important	681 (39%)	281 (40%)	469 (39%)	212 (38%)	491 (40%)
Very important	389 (22%)	152 (22%)	268 (22%)	121 (22%)	261 (21%)

<sup>†</sup> n (%)

## Effect of headlines on interest in learning more about ASHP

**Table 9. Effect of headlines on interest in learning more about ASHP by customer segment**

	All Minnesotans N = 1,751 <sup>†</sup>	Lifetime value-seekers N = 822 <sup>†</sup>	Eco-conscious innovators N = 372 <sup>†</sup>	Discerning investors N = 557 <sup>†</sup>	Nearly-there converts N = 608 <sup>†</sup>
Do any of the following statements increase your interest in learning more about ASHP?					
Heat pumps are 2-4 times more efficient than other heating and cooling systems	1,057 (60%)	521 (63%)	216 (58%)	320 (57%)	340 (56%)
New rebates for heat pumps are available now	751 (43%)	356 (43%)	170 (46%)	225 (40%)	247 (41%)
Heat pumps can provide heating and fully replace your air conditioner	665 (38%)	297 (36%)	138 (37%)	230 (41%)	244 (40%)
Heat pumps provide superior home heating and cooling	608 (35%)	294 (36%)	115 (31%)	199 (36%)	217 (36%)
Heat pumps are highly durable and dependable	601 (34%)	294 (36%)	109 (29%)	198 (36%)	248 (41%)
Heat pumps greatly reduce a home's carbon footprint	457 (26%)	141 (17%)	142 (38%)	174 (31%)	189 (31%)
Innovative heat pump technology hits the Midwest market	244 (14%)	94 (11%)	60 (16%)	90 (16%)	127 (21%)
Demand for heat pumps is on the rise in colder states	241 (14%)	101 (12%)	50 (13%)	90 (16%)	117 (19%)
None of the above	103 (5.9%)	70 (8.5%)	15 (4.0%)	18 (3.2%)	5 (0.8%)

<sup>†</sup> n (%)

**Table 10. Effect of headlines on interest in learning more about ASHP by groups**

	All Minnesotans N = 1,751 <sup>†</sup>	Low-income N = 696 <sup>†</sup>	Urban/Suburban N = 1,197 <sup>†</sup>	Rural N = 554 <sup>†</sup>	Ducted natural gas or propane N = 1,231 <sup>†</sup>
Do any of the following statements increase your interest in learning more about ASHP?					
Heat pumps are 2-4 times more efficient than other heating and cooling systems	1,057 (60%)	418 (60%)	715 (60%)	342 (62%)	788 (64%)
New rebates for heat pumps are available now	751 (43%)	292 (42%)	502 (42%)	249 (45%)	559 (45%)
Heat pumps can provide heating and fully replace your air conditioner	665 (38%)	258 (37%)	467 (39%)	198 (36%)	483 (39%)
Heat pumps provide superior home heating and cooling	608 (35%)	241 (35%)	423 (35%)	185 (33%)	416 (34%)
Heat pumps are highly durable and dependable	601 (34%)	224 (32%)	420 (35%)	181 (33%)	405 (33%)
Heat pumps greatly reduce a home's carbon footprint	457 (26%)	173 (25%)	338 (28%)	119 (21%)	304 (25%)
Innovative heat pump technology hits the Midwest market	244 (14%)	85 (12%)	170 (14%)	74 (13%)	155 (13%)
Demand for heat pumps is on the rise in colder states	241 (14%)	91 (13%)	168 (14%)	73 (13%)	143 (12%)
None of the above	103 (5.9%)	58 (8.3%)	61 (5.1%)	42 (7.6%)	79 (6.4%)

<sup>†</sup> n (%)

## Effect of images on interest in considering purchasing an ASHP

**Table 11. Effect of images on interest in considering purchasing an ASHP by customer segments**

	All Minnesotans N = 1,751 <sup>†</sup>	Lifetime value-seekers N = 822 <sup>†</sup>	Eco-conscious innovators N = 372 <sup>†</sup>	Discerning investors N = 557 <sup>†</sup>	Nearly-there converts N = 608 <sup>†</sup>
Does the following images increase or decrease your interest in considering an ASHP for your home?					
<b>Product images</b>					
Decrease or significantly decrease	150 (8.6%)	74 (9.0%)	43 (12%)	33 (5.9%)	52 (8.6%)
Neither	946 (54%)	494 (60%)	168 (45%)	284 (51%)	238 (39%)
Increase or Significantly increase	655 (37%)	254 (31%)	161 (43%)	240 (43%)	318 (52%)
<b>Lifestyle images</b>					
Decrease or significantly decrease	59 (3.4%)	32 (3.9%)	15 (4.0%)	12 (2.2%)	19 (3.1%)
Neither	1,132 (65%)	600 (73%)	225 (60%)	307 (55%)	281 (46%)
Increase or Significantly increase	560 (32%)	190 (23%)	132 (35%)	238 (43%)	308 (51%)
<b>Illustrated images</b>					
Decrease or significantly decrease	173 (9.9%)	82 (10.0%)	47 (13%)	44 (7.9%)	42 (6.9%)
Neither	1,170 (67%)	605 (74%)	226 (61%)	339 (61%)	308 (51%)
Increase or Significantly increase	408 (23%)	135 (16%)	99 (27%)	174 (31%)	258 (42%)

<sup>†</sup> n (%)

**Table 12. Effect of images on interest in considering purchasing an ASHP by groups**

Does the following images increase or decrease your interest in considering an ASHP for your home?	All Minnesotans	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 1,751 <sup>†</sup>	N = 696 <sup>†</sup>	N = 1,197 <sup>†</sup>	N = 554 <sup>†</sup>	N = 1,231 <sup>†</sup>
<b>Product images</b>					
Decrease or significantly decrease	150 (8.6%)	47 (6.8%)	116 (9.7%)	34 (6.1%)	82 (6.7%)
Neither	946 (54%)	390 (56%)	627 (52%)	319 (58%)	720 (58%)
Increase or Significantly increase	655 (37%)	259 (37%)	454 (38%)	201 (36%)	429 (35%)
<b>Lifestyle images</b>					
Decrease or significantly decrease	59 (3.4%)	29 (4.2%)	40 (3.3%)	19 (3.4%)	30 (2.4%)
Neither	1,132 (65%)	483 (69%)	750 (63%)	382 (69%)	888 (72%)
Increase or Significantly increase	560 (32%)	184 (26%)	407 (34%)	153 (28%)	313 (25%)
<b>Illustrated images</b>					
Decrease or significantly decrease	173 (9.9%)	66 (9.5%)	107 (8.9%)	66 (12%)	118 (9.6%)
Neither	1,170 (67%)	490 (70%)	785 (66%)	385 (69%)	896 (73%)
Increase or Significantly increase	408 (23%)	140 (20%)	305 (25%)	103 (19%)	217 (18%)

<sup>†</sup> n (%)

## Most important factor in deciding on a home heating/cooling system

**Table 13. Most important factor in deciding on a home heating/cooling system by customer segments**

Variable	All Minnesotans	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
	N = 1,733 <sup>†</sup>	N = 809 <sup>†</sup>	N = 369 <sup>†</sup>	N = 555 <sup>†</sup>	N = 607 <sup>†</sup>
<b>Most important factor when making decisions about participants' homes' heating system</b>					
The final cost of purchasing and installing the system	512 (30%)	302 (37%)	98 (27%)	112 (20%)	131 (22%)
The monthly cost of running the system	383 (22%)	201 (25%)	82 (22%)	100 (18%)	108 (18%)
That the system provides the same level of comfort or better than my current system	277 (16%)	106 (13%)	55 (15%)	116 (21%)	107 (18%)
That the system provides better indoor air quality than my current system	136 (7.8%)	38 (4.7%)	26 (7.0%)	72 (13%)	60 (9.9%)
That the system lasts the same number of years or more as my current system	126 (7.3%)	57 (7.0%)	25 (6.8%)	44 (7.9%)	52 (8.6%)
That the required maintenance is about the same or less as my current system	90 (5.2%)	34 (4.2%)	23 (6.2%)	33 (5.9%)	44 (7.2%)
That my current contractor is able to install and maintain it	69 (4.0%)	26 (3.2%)	20 (5.4%)	23 (4.1%)	39 (6.4%)
That the system has low carbon emissions	53 (3.1%)	11 (1.4%)	18 (4.9%)	24 (4.3%)	28 (4.6%)
That people I know are using this system and are satisfied with it	51 (2.9%)	22 (2.7%)	9 (2.4%)	20 (3.6%)	18 (3.0%)
The number of days that it takes to install the system	36 (2.1%)	12 (1.5%)	13 (3.5%)	11 (2.0%)	20 (3.3%)

<sup>†</sup> n (%)

**Table 14. Most important factor in deciding on a home heating/cooling system by groups**

Variable	All Minnesotans	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 1,733 <sup>†</sup>	N = 685 <sup>†</sup>	N = 1,183 <sup>†</sup>	N = 550 <sup>†</sup>	N = 1,219 <sup>†</sup>
<b>Most important factor when making decisions about participants' homes' heating system</b>					
The final cost of purchasing and installing the system	512 (30%)	212 (31%)	342 (29%)	170 (31%)	414 (34%)
The monthly cost of running the system	383 (22%)	167 (24%)	261 (22%)	122 (22%)	272 (22%)
That the system provides the same level of comfort or better than my current system	277 (16%)	101 (15%)	186 (16%)	91 (17%)	198 (16%)
That the system provides better indoor air quality than my current system	136 (7.8%)	48 (7.0%)	102 (8.6%)	34 (6.2%)	81 (6.6%)
That the system lasts the same number of years or more as my current system	126 (7.3%)	43 (6.3%)	90 (7.6%)	36 (6.5%)	88 (7.2%)
That the required maintenance is about the same or less as my current system	90 (5.2%)	30 (4.4%)	61 (5.2%)	29 (5.3%)	55 (4.5%)
That my current contractor is able to install and maintain it	69 (4.0%)	22 (3.2%)	43 (3.6%)	26 (4.7%)	39 (3.2%)
That the system has low carbon emissions	53 (3.1%)	23 (3.4%)	39 (3.3%)	14 (2.5%)	26 (2.1%)
That people I know are using this system and are satisfied with it	51 (2.9%)	27 (3.9%)	36 (3.0%)	15 (2.7%)	30 (2.5%)
The number of days that it takes to install the system	36 (2.1%)	12 (1.8%)	23 (1.9%)	13 (2.4%)	16 (1.3%)

<sup>†</sup> n (%)

# Primary source of information to consult when looking for HVAC replacement

**Table 15. Primary source of information to consult when looking for HVAC replacement by customer segments**

Variable	All Minnesotans	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
	N = 1,751 <sup>†</sup>	N = 822 <sup>†</sup>	N = 372 <sup>†</sup>	N = 557 <sup>†</sup>	N = 608 <sup>†</sup>
<b>Primary source of information to consult when looking for HVAC replacement</b>					
Utility installation services / services plans	423 (24%)	197 (24%)	85 (23%)	141 (25%)	157 (26%)
My energy provider or utility's website	314 (18%)	143 (17%)	71 (19%)	100 (18%)	119 (20%)
Friends and family	305 (17%)	156 (19%)	58 (16%)	91 (16%)	79 (13%)
Free online reviews	214 (12%)	104 (13%)	46 (12%)	64 (11%)	70 (12%)
Retailer	200 (11%)	79 (9.6%)	61 (16%)	60 (11%)	81 (13%)
My contractor	165 (9.4%)	87 (11%)	21 (5.6%)	57 (10%)	49 (8.1%)
Paid consumer publications	130 (7.4%)	56 (6.8%)	30 (8.1%)	44 (7.9%)	53 (8.7%)
<b>Trust level: Friends and family</b>					
Strongly distrust	13 (0.7%)	6 (0.7%)	5 (1.3%)	2 (0.4%)	4 (0.7%)
Distrust	37 (2.1%)	15 (1.8%)	9 (2.4%)	13 (2.3%)	21 (3.5%)
Neutral	425 (24%)	204 (25%)	85 (23%)	136 (24%)	160 (26%)
Trust	871 (50%)	414 (50%)	187 (50%)	270 (48%)	276 (45%)
Strongly trust	405 (23%)	183 (22%)	86 (23%)	136 (24%)	147 (24%)
<b>Trust level: My energy provider or utility's website</b>					
Strongly distrust	16 (0.9%)	9 (1.1%)	2 (0.5%)	5 (0.9%)	3 (0.5%)
Distrust	72 (4.1%)	38 (4.6%)	16 (4.3%)	18 (3.2%)	21 (3.5%)
Neutral	526 (30%)	255 (31%)	110 (30%)	161 (29%)	151 (25%)
Trust	886 (51%)	422 (51%)	179 (48%)	285 (51%)	304 (50%)
Strongly trust	251 (14%)	98 (12%)	65 (17%)	88 (16%)	129 (21%)
<b>Trust level: Utility installation services / services plans</b>					
Strongly distrust	20 (1.1%)	13 (1.6%)	3 (0.8%)	4 (0.7%)	2 (0.3%)
Distrust	85 (4.9%)	36 (4.4%)	24 (6.5%)	25 (4.5%)	28 (4.6%)
Neutral	549 (31%)	269 (33%)	105 (28%)	175 (31%)	145 (24%)
Trust	841 (48%)	411 (50%)	174 (47%)	256 (46%)	300 (49%)
Strongly trust	256 (15%)	93 (11%)	66 (18%)	97 (17%)	133 (22%)
<b>Trust level: My contractor</b>					
Strongly distrust	9 (0.5%)	5 (0.6%)	3 (0.8%)	1 (0.2%)	4 (0.7%)
Distrust	66 (3.8%)	27 (3.3%)	17 (4.6%)	22 (3.9%)	30 (4.9%)
Neutral	641 (37%)	312 (38%)	127 (34%)	202 (36%)	192 (32%)
Trust	791 (45%)	371 (45%)	168 (45%)	252 (45%)	270 (44%)
Strongly trust	244 (14%)	107 (13%)	57 (15%)	80 (14%)	112 (18%)
<b>Trust level: Retailer</b>					
Strongly distrust	23 (1.3%)	15 (1.8%)	4 (1.1%)	4 (0.7%)	6 (1.0%)
Distrust	171 (9.8%)	71 (8.6%)	36 (9.7%)	64 (11%)	55 (9.0%)
Neutral	894 (51%)	438 (53%)	190 (51%)	266 (48%)	265 (44%)
Trust	565 (32%)	263 (32%)	120 (32%)	182 (33%)	214 (35%)
Strongly trust	98 (5.6%)	35 (4.3%)	22 (5.9%)	41 (7.4%)	68 (11%)
<b>Trust level: Paid consumer publications</b>					
Strongly distrust	38 (2.2%)	24 (2.9%)	6 (1.6%)	8 (1.4%)	5 (0.8%)
Distrust	195 (11%)	105 (13%)	38 (10%)	52 (9.3%)	55 (9.0%)
Neutral	662 (38%)	312 (38%)	129 (35%)	221 (40%)	190 (31%)
Trust	667 (38%)	302 (37%)	154 (41%)	211 (38%)	254 (42%)
Strongly trust	189 (11%)	79 (9.6%)	45 (12%)	65 (12%)	104 (17%)
<b>Trust level: Free online reviews</b>					
Strongly distrust	67 (3.8%)	28 (3.4%)	21 (5.6%)	18 (3.2%)	14 (2.3%)
Distrust	278 (16%)	136 (17%)	61 (16%)	81 (15%)	97 (16%)
Neutral	872 (50%)	417 (51%)	175 (47%)	280 (50%)	265 (44%)
Trust	442 (25%)	209 (25%)	92 (25%)	141 (25%)	174 (29%)
Strongly trust	92 (5.3%)	32 (3.9%)	23 (6.2%)	37 (6.6%)	58 (9.5%)

<sup>†</sup> n (%)



**Table 16. Primary source of information to consult when looking for HVAC replacement by groups**

Variable	All Minnesotans	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 1,751 <sup>†</sup>	N = 696 <sup>†</sup>	N = 1,197 <sup>†</sup>	N = 554 <sup>†</sup>	N = 1,231 <sup>†</sup>
<b>Primary source of information to consult when looking for HVAC replacement</b>					
Utility installation services / services plans	423 (24%)	183 (26%)	311 (26%)	112 (20%)	314 (26%)
My energy provider or utility's website	314 (18%)	123 (18%)	207 (17%)	107 (19%)	228 (19%)
Friends and family	305 (17%)	101 (15%)	195 (16%)	110 (20%)	198 (16%)
Free online reviews	214 (12%)	79 (11%)	155 (13%)	59 (11%)	147 (12%)
Retailer	200 (11%)	82 (12%)	137 (11%)	63 (11%)	126 (10%)
My contractor	165 (9.4%)	73 (10%)	90 (7.5%)	75 (14%)	125 (10%)
Paid consumer publications	130 (7.4%)	55 (7.9%)	102 (8.5%)	28 (5.1%)	93 (7.6%)
<b>Trust level: Friends and family</b>					
Strongly distrust	13 (0.7%)	4 (0.6%)	9 (0.8%)	4 (0.7%)	11 (0.9%)
Distrust	37 (2.1%)	18 (2.6%)	24 (2.0%)	13 (2.3%)	19 (1.5%)
Neutral	425 (24%)	188 (27%)	293 (24%)	132 (24%)	294 (24%)
Trust	871 (50%)	333 (48%)	587 (49%)	284 (51%)	649 (53%)
Strongly trust	405 (23%)	153 (22%)	284 (24%)	121 (22%)	258 (21%)
<b>Trust level: My energy provider or utility's website</b>					
Strongly distrust	16 (0.9%)	7 (1.0%)	10 (0.8%)	6 (1.1%)	12 (1.0%)
Distrust	72 (4.1%)	31 (4.5%)	53 (4.4%)	19 (3.4%)	41 (3.3%)
Neutral	526 (30%)	210 (30%)	350 (29%)	176 (32%)	360 (29%)
Trust	886 (51%)	354 (51%)	603 (50%)	283 (51%)	647 (53%)
Strongly trust	251 (14%)	94 (14%)	181 (15%)	70 (13%)	171 (14%)
<b>Trust level: Utility installation services / services plans</b>					
Strongly distrust	20 (1.1%)	8 (1.1%)	12 (1.0%)	8 (1.4%)	13 (1.1%)
Distrust	85 (4.9%)	31 (4.5%)	56 (4.7%)	29 (5.2%)	61 (5.0%)
Neutral	549 (31%)	234 (34%)	370 (31%)	179 (32%)	376 (31%)
Trust	841 (48%)	329 (47%)	573 (48%)	268 (48%)	614 (50%)
Strongly trust	256 (15%)	94 (14%)	186 (16%)	70 (13%)	167 (14%)
<b>Trust level: My contractor</b>					
Strongly distrust	9 (0.5%)	6 (0.9%)	6 (0.5%)	3 (0.5%)	4 (0.3%)
Distrust	66 (3.8%)	26 (3.7%)	52 (4.3%)	14 (2.5%)	34 (2.8%)
Neutral	641 (37%)	264 (38%)	462 (39%)	179 (32%)	464 (38%)
Trust	791 (45%)	305 (44%)	516 (43%)	275 (50%)	567 (46%)
Strongly trust	244 (14%)	95 (14%)	161 (13%)	83 (15%)	162 (13%)
<b>Trust level: Retailer</b>					
Strongly distrust	23 (1.3%)	11 (1.6%)	13 (1.1%)	10 (1.8%)	15 (1.2%)
Distrust	171 (9.8%)	61 (8.8%)	116 (9.7%)	55 (9.9%)	113 (9.2%)
Neutral	894 (51%)	368 (53%)	600 (50%)	294 (53%)	680 (55%)
Trust	565 (32%)	219 (31%)	393 (33%)	172 (31%)	381 (31%)
Strongly trust	98 (5.6%)	37 (5.3%)	75 (6.3%)	23 (4.2%)	42 (3.4%)
<b>Trust level: Paid consumer publications</b>					
Strongly distrust	38 (2.2%)	18 (2.6%)	21 (1.8%)	17 (3.1%)	28 (2.3%)
Distrust	195 (11%)	85 (12%)	133 (11%)	62 (11%)	130 (11%)
Neutral	662 (38%)	279 (40%)	431 (36%)	231 (42%)	451 (37%)
Trust	667 (38%)	254 (36%)	467 (39%)	200 (36%)	492 (40%)
Strongly trust	189 (11%)	60 (8.6%)	145 (12%)	44 (7.9%)	130 (11%)
<b>Trust level: Free online reviews</b>					
Strongly distrust	67 (3.8%)	26 (3.7%)	48 (4.0%)	19 (3.4%)	51 (4.1%)
Distrust	278 (16%)	122 (18%)	190 (16%)	88 (16%)	203 (16%)
Neutral	872 (50%)	350 (50%)	570 (48%)	302 (55%)	641 (52%)
Trust	442 (25%)	164 (24%)	321 (27%)	121 (22%)	296 (24%)
Strongly trust	92 (5.3%)	34 (4.9%)	68 (5.7%)	24 (4.3%)	40 (3.2%)

<sup>†</sup> n (%)

# Midwest sample

## Primary analysis: Interest in purchasing an ASHP

Table 17. Interest in purchasing an ASHP by customer segments

Primary Outcome: Interest in purchasing an ASHP																									
Variable	Overall sample				Lifetime value-seekers				Eco-conscious innovators				Discerning investors				Nearly-there converts								
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	3.4***	0.059	3.3, 3.5	<0.001	<0.001	3.2***	0.093	3.0, 3.4	<0.001	<0.001	3.5***	0.121	3.3, 3.7	<0.001	<0.001	3.7***	0.096	3.5, 3.9	<0.001	<0.001	3.9***	0.085	3.8, 4.1	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	-0.05	0.084	-0.21, 0.12	0.6	0.7	-0.04	0.130	-0.30, 0.21	0.8	>0.9	0.05	0.175	-0.29, 0.39	0.8	0.9	-0.08	0.136	-0.35, 0.18	0.5	0.6	-0.01	0.117	-0.24, 0.22	>0.9	>0.9
T2. Dependable	-0.16*	0.082	-0.33, 0.00	0.043	0.11	-0.08	0.126	-0.32, 0.17	0.5	>0.9	-0.04	0.164	-0.36, 0.28	0.8	0.9	-0.35**	0.134	-0.61, -0.09	0.010	0.024	-0.10	0.116	-0.33, 0.13	0.4	>0.9
T3. Social Proof	-0.01	0.082	-0.17, 0.15	0.9	0.9	0.23	0.127	-0.02, 0.48	0.066	0.2	-0.06	0.164	-0.39, 0.26	0.7	0.9	-0.31*	0.133	-0.57, -0.05	0.020	0.034	-0.07	0.117	-0.30, 0.16	0.6	>0.9
T4. Benefits	-0.05	0.081	-0.21, 0.11	0.5	0.7	-0.01	0.122	-0.26, 0.23	>0.9	>0.9	0.03	0.166	-0.29, 0.36	0.9	0.9	-0.07	0.136	-0.34, 0.20	0.6	0.6	-0.03	0.115	-0.26, 0.19	0.8	>0.9
No. Obs.	1,751				822				372				557				608								

<sup>1</sup> \*p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

Table 18. Interest in purchasing an ASHP by groups

Primary Outcome: Interest in purchasing an ASHP																									
Variable	Overall sample				Low-income				Urban/Suburban				Rural				Customers with ducted natural gas or propane								
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	3.4***	0.059	3.3, 3.5	<0.001	<0.001	3.3***	0.097	3.1, 3.5	<0.001	<0.001	3.4***	0.072	3.3, 3.6	<0.001	<0.001	3.4***	0.105	3.2, 3.7	<0.001	<0.001	3.4***	0.072	3.3, 3.5	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	-0.05	0.084	-0.21, 0.12	0.6	0.7	-0.13	0.139	-0.41, 0.14	0.3	0.6	0.00	0.100	-0.20, 0.20	>0.9	>0.9	-0.16	0.155	-0.46, 0.15	0.3	0.4	-0.04	0.103	-0.24, 0.16	0.7	0.7
T2. Dependable	-0.16*	0.082	-0.33, 0.00	0.043	0.11	-0.09	0.131	-0.35, 0.17	0.5	0.6	-0.03	0.098	-0.22, 0.16	0.8	>0.9	-0.47**	0.147	-0.76, -0.18	0.002	0.004	-0.22*	0.098	-0.42, -0.03	0.023	0.057
T3. Social Proof	-0.01	0.082	-0.17, 0.15	0.9	0.9	0.03	0.136	-0.24, 0.29	0.8	0.8	0.08	0.098	-0.11, 0.28	0.4	>0.9	-0.22	0.147	-0.51, 0.06	0.13	0.2	-0.03	0.100	-0.23, 0.16	0.7	0.7
T4. Benefits	-0.05	0.081	-0.21, 0.11	0.5	0.7	-0.14	0.132	-0.40, 0.12	0.3	0.6	-0.05	0.097	-0.24, 0.14	0.6	>0.9	-0.06	0.144	-0.35, 0.22	0.7	0.7	-0.08	0.098	-0.27, 0.11	0.4	0.7
No. Obs.	1,751				696				1,197				554				1,231								

<sup>1</sup> \*p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

# Secondary analysis: Interest in learning more about ASHPs

**Table 19. Interest in learning more about ASHPs by customer segments**

Variable	Secondary Outcome: Interest in learning more about ASHPs																								
	Overall sample					Lifetime value-seekers					Eco-conscious innovators					Discerning investors				Nearly-there converts					
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>					
(Intercept)	2.7***	0.055	2.6, 2.8	<0.001	<0.001	2.5***	0.082	2.3, 2.6	<0.001	<0.001	2.8***	0.113	2.6, 3.1	<0.001	<0.001	2.8***	0.093	2.6, 3.0	<0.001	<0.001	3.2***	0.079	3.1, 3.4	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	0.06	0.078	-0.09, 0.21	0.4	0.8	0.05	0.115	-0.17, 0.28	0.6	0.6	0.00	0.164	-0.32, 0.32	>0.9	>0.9	0.13	0.133	-0.13, 0.40	0.3	0.8	0.00	0.108	-0.21, 0.21	>0.9	>0.9
T2. Dependable	0.02	0.075	-0.13, 0.17	0.8	0.8	0.07	0.112	-0.15, 0.29	0.6	0.6	0.09	0.154	-0.22, 0.39	0.6	>0.9	-0.07	0.131	-0.33, 0.18	0.6	0.8	-0.10	0.108	-0.31, 0.12	0.4	0.6
T3. Social Proof	0.05	0.075	-0.10, 0.20	0.5	0.8	0.23*	0.113	0.01, 0.45	0.043	0.11	-0.17	0.154	-0.48, 0.13	0.3	0.7	-0.04	0.130	-0.29, 0.22	0.8	0.8	-0.06	0.108	-0.27, 0.15	0.6	0.7
T4. Benefits	0.02	0.075	-0.13, 0.17	0.8	0.8	0.06	0.109	-0.15, 0.28	0.6	0.6	-0.01	0.156	-0.31, 0.30	>0.9	>0.9	0.04	0.133	-0.22, 0.30	0.7	0.8	-0.10	0.106	-0.31, 0.11	0.3	0.6
No. Obs.	1,751					822					372					557				608					

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

**Table 20. Interest in learning more about ASHPs by groups**

Variable	Secondary Outcome: Interest in learning more about ASHPs																								
	Overall sample					Low-income					Urban/Suburban					Rural				Customers with ducted natural gas or propane					
	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>	Estimate <sup>1</sup>	SE <sup>2</sup>	95% CI <sup>2</sup>	p-value	q-value <sup>3</sup>
(Intercept)	2.7***	0.055	2.6, 2.8	<0.001	<0.001	2.6***	0.088	2.4, 2.7	<0.001	<0.001	2.8***	0.066	2.6, 2.9	<0.001	<0.001	2.5***	0.096	2.3, 2.7	<0.001	<0.001	2.6***	0.065	2.5, 2.8	<0.001	<0.001
<b>Treatment</b>																									
Control	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T1. Rebates	0.06	0.078	-0.09, 0.21	0.4	0.8	0.00	0.126	-0.25, 0.24	>0.9	>0.9	0.06	0.092	-0.12, 0.24	0.5	0.6	0.01	0.142	-0.27, 0.29	>0.9	>0.9	0.04	0.093	-0.14, 0.22	0.7	0.8
T2. Dependable	0.02	0.075	-0.13, 0.17	0.8	0.8	-0.01	0.119	-0.24, 0.23	>0.9	>0.9	-0.06	0.090	-0.24, 0.11	0.5	0.6	0.18	0.134	-0.08, 0.44	0.2	0.3	-0.04	0.089	-0.21, 0.14	0.7	0.8
T3. Social Proof	0.05	0.075	-0.10, 0.20	0.5	0.8	0.00	0.123	-0.24, 0.24	>0.9	>0.9	0.02	0.091	-0.16, 0.19	0.9	0.9	0.11	0.134	-0.16, 0.37	0.4	0.5	0.06	0.090	-0.11, 0.24	0.5	0.8
T4. Benefits	0.02	0.075	-0.13, 0.17	0.8	0.8	0.07	0.120	-0.17, 0.30	0.6	>0.9	-0.13	0.090	-0.30, 0.05	0.2	0.4	0.31*	0.132	0.06, 0.57	0.017	0.043	0.02	0.088	-0.16, 0.19	0.8	0.8
No. Obs.	1,751					696					1,197					554				1,231					

<sup>1</sup> p<0.05; \*\*p<0.01; \*\*\*p<0.001  
<sup>2</sup> SE = Standard Error, CI = Confidence Interval  
<sup>3</sup> Benjamini & Hochberg correction for multiple testing  
 Dependent variable: Interest in purchasing an ASHP.

## Exploratory analysis:

### Awareness

**Table 21. Awareness of ASHPs prior to the survey by customer segments**

Variable	Awareness of ASHP prior to the survey				
	Overall sample N = 4,007 <sup>1</sup>	Lifetime value-seekers N = 1,906 <sup>1</sup>	Eco-conscious innovators N = 818 <sup>1</sup>	Discerning investors N = 1,283 <sup>1</sup>	Nearly-there converts N = 1,265 <sup>1</sup>
<b>Awareness about ASHP</b>					
Nothing at all	1,793 (45%)	928 (49%)	332 (41%)	533 (42%)	127 (10%)
A little	1,349 (34%)	653 (34%)	261 (32%)	435 (34%)	516 (41%)
A moderate amount	613 (15%)	227 (12%)	162 (20%)	224 (17%)	424 (34%)
A lot	252 (6.3%)	98 (5.1%)	63 (7.7%)	91 (7.1%)	198 (16%)
<b>They are very energy efficient</b>	1,631 (74%)	673 (69%)	383 (79%)	575 (77%)	918 (81%)
<b>They can provide both heating and cooling</b>	1,569 (71%)	652 (67%)	382 (79%)	535 (71%)	911 (80%)
<b>They can replace a traditional air conditioner</b>	1,430 (65%)	617 (63%)	328 (67%)	485 (65%)	805 (71%)
<b>They can reduce carbon emissions</b>	1,224 (55%)	472 (48%)	310 (64%)	442 (59%)	731 (64%)
<b>They are able to work well in the midwest's cold climate</b>	1,269 (57%)	547 (56%)	282 (58%)	440 (59%)	718 (63%)
<b>They qualify for multiple rebates</b>	943 (43%)	375 (38%)	224 (46%)	344 (46%)	576 (51%)

<sup>1</sup> n (%)

**Table 22. Awareness of ASHPs prior to the survey by groups**

Variable	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 4,007 <sup>1</sup>	N = 1,883 <sup>1</sup>	N = 2,749 <sup>1</sup>	N = 1,258 <sup>1</sup>	N = 3,023 <sup>1</sup>
<b>Awareness about ASHPs</b>					
Nothing at all	1,793 (45%)	932 (49%)	1,225 (45%)	568 (45%)	1,434 (47%)
A little	1,349 (34%)	635 (34%)	914 (33%)	435 (35%)	1,037 (34%)
A moderate amount	613 (15%)	218 (12%)	428 (16%)	185 (15%)	394 (13%)
A lot	252 (6.3%)	98 (5.2%)	182 (6.6%)	70 (5.6%)	158 (5.2%)
<b>They are very energy efficient</b>	1,631 (74%)	689 (72%)	1,103 (72%)	528 (77%)	1,175 (74%)
<b>They can provide both heating and cooling</b>	1,569 (71%)	622 (65%)	1,056 (69%)	513 (74%)	1,083 (68%)
<b>They can replace a traditional air conditioner</b>	1,430 (65%)	602 (63%)	966 (63%)	464 (67%)	1,018 (64%)
<b>They can reduce carbon emissions</b>	1,224 (55%)	488 (51%)	862 (57%)	362 (52%)	853 (54%)
<b>They are able to work well in the midwest's cold climate</b>	1,269 (57%)	552 (58%)	870 (57%)	399 (58%)	885 (56%)
<b>They qualify for multiple rebates</b>	943 (43%)	387 (41%)	671 (44%)	272 (39%)	657 (41%)

<sup>1</sup> n (%)

# Factors influencing home heating/cooling system decisions

**Table 23. Factors influencing home heating/cooling system decisions by customer segments**

Variable	Overall sample N = 4,007 <sup>1</sup>	Lifetime value-seekers N = 1,906 <sup>1</sup>	Eco-conscious innovators N = 818 <sup>1</sup>	Discerning investors N = 1,283 <sup>1</sup>	Nearly-there converts N = 1,265 <sup>1</sup>
<b>The final cost of purchasing and installing the system</b>					
Not at all important	45 (1.1%)	18 (0.9%)	11 (1.3%)	16 (1.2%)	11 (0.9%)
A little important	249 (6.2%)	86 (4.5%)	60 (7.3%)	103 (8.0%)	112 (8.9%)
Somewhat important	753 (19%)	281 (15%)	202 (25%)	270 (21%)	304 (24%)
Very important	2,960 (74%)	1,521 (80%)	545 (67%)	894 (70%)	838 (66%)
<b>The monthly cost of running the system</b>					
Not at all important	52 (1.3%)	23 (1.2%)	12 (1.5%)	17 (1.3%)	14 (1.1%)
A little important	211 (5.3%)	84 (4.4%)	46 (5.6%)	81 (6.3%)	79 (6.2%)
Somewhat important	812 (20%)	324 (17%)	195 (24%)	293 (23%)	337 (27%)
Very important	2,932 (73%)	1,475 (77%)	565 (69%)	892 (70%)	835 (66%)
<b>That the system lasts the same number of years or more as my current system</b>					
Not at all important	69 (1.7%)	34 (1.8%)	16 (2.0%)	19 (1.5%)	15 (1.2%)
A little important	278 (6.9%)	121 (6.3%)	69 (8.4%)	88 (6.9%)	98 (7.7%)
Somewhat important	1,009 (25%)	428 (22%)	223 (27%)	358 (28%)	366 (29%)
Very important	2,651 (66%)	1,323 (69%)	510 (62%)	818 (64%)	786 (62%)
<b>That the system provides the same level of comfort or better than my current system</b>					
Not at all important	52 (1.3%)	29 (1.5%)	10 (1.2%)	13 (1.0%)	5 (0.4%)
A little important	277 (6.9%)	115 (6.0%)	64 (7.8%)	98 (7.6%)	106 (8.4%)
Somewhat important	1,037 (26%)	492 (26%)	234 (29%)	311 (24%)	357 (28%)
Very important	2,641 (66%)	1,270 (67%)	510 (62%)	861 (67%)	797 (63%)
<b>That the required maintenance is about the same or less as my current system</b>					
Not at all important	78 (1.9%)	35 (1.8%)	15 (1.8%)	28 (2.2%)	21 (1.7%)
A little important	339 (8.5%)	152 (8.0%)	74 (9.0%)	113 (8.8%)	121 (9.6%)
Somewhat important	1,347 (34%)	611 (32%)	302 (37%)	434 (34%)	417 (33%)
Very important	2,243 (56%)	1,108 (58%)	427 (52%)	708 (55%)	706 (56%)
<b>That the system provides better indoor air quality than my current system</b>					
Not at all important	110 (2.7%)	67 (3.5%)	19 (2.3%)	24 (1.9%)	23 (1.8%)
A little important	486 (12%)	268 (14%)	102 (12%)	116 (9.0%)	140 (11%)
Somewhat important	1,484 (37%)	756 (40%)	296 (36%)	432 (34%)	452 (36%)
Very important	1,927 (48%)	815 (43%)	401 (49%)	711 (55%)	650 (51%)
<b>That my current contractor is able to install and maintain it</b>					
Not at all important	430 (11%)	229 (12%)	88 (11%)	113 (8.8%)	89 (7.0%)
A little important	691 (17%)	321 (17%)	149 (18%)	221 (17%)	178 (14%)
Somewhat important	1,352 (34%)	630 (33%)	281 (34%)	441 (34%)	463 (37%)
Very important	1,534 (38%)	726 (38%)	300 (37%)	508 (40%)	535 (42%)
<b>That the system has low carbon emissions</b>					
Not at all important	366 (9.1%)	255 (13%)	29 (3.5%)	82 (6.4%)	68 (5.4%)
A little important	892 (22%)	565 (30%)	115 (14%)	212 (17%)	229 (18%)
Somewhat important	1,530 (38%)	700 (37%)	306 (37%)	524 (41%)	477 (38%)
Very important	1,219 (30%)	386 (20%)	368 (45%)	465 (36%)	491 (39%)
<b>That people I know are using this system and are satisfied with it</b>					
Not at all important	420 (10%)	195 (10%)	88 (11%)	137 (11%)	82 (6.5%)
A little important	885 (22%)	424 (22%)	209 (26%)	252 (20%)	241 (19%)
Somewhat important	1,490 (37%)	694 (36%)	294 (36%)	502 (39%)	495 (39%)
Very important	1,212 (30%)	593 (31%)	227 (28%)	392 (31%)	447 (35%)
<b>The number of days that it takes to install the system</b>					
Not at all important	364 (9.1%)	161 (8.4%)	81 (9.9%)	122 (9.5%)	97 (7.7%)
A little important	1,074 (27%)	472 (25%)	246 (30%)	356 (28%)	313 (25%)
Somewhat important	1,556 (39%)	775 (41%)	292 (36%)	489 (38%)	505 (40%)
Very important	1,013 (25%)	498 (26%)	199 (24%)	316 (25%)	350 (28%)

<sup>1</sup> n (%)

**Table 24. Factors influencing home heating/cooling system decisions by groups**

Variable	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 4,007 <sup>†</sup>	N = 1,883 <sup>†</sup>	N = 2,749 <sup>†</sup>	N = 1,258 <sup>†</sup>	N = 3,023 <sup>†</sup>
<b>The final cost of purchasing and installing the system</b>					
Not at all important	45 (1.1%)	30 (1.6%)	37 (1.3%)	8 (0.6%)	28 (0.9%)
A little important	249 (6.2%)	99 (5.3%)	184 (6.7%)	65 (5.2%)	131 (4.3%)
Somewhat important	753 (19%)	320 (17%)	514 (19%)	239 (19%)	521 (17%)
Very important	2,960 (74%)	1,434 (76%)	2,014 (73%)	946 (75%)	2,343 (78%)
<b>The monthly cost of running the system</b>					
Not at all important	52 (1.3%)	29 (1.5%)	40 (1.5%)	12 (1.0%)	34 (1.1%)
A little important	211 (5.3%)	93 (4.9%)	151 (5.5%)	60 (4.8%)	117 (3.9%)
Somewhat important	812 (20%)	340 (18%)	575 (21%)	237 (19%)	534 (18%)
Very important	2,932 (73%)	1,421 (75%)	1,983 (72%)	949 (75%)	2,338 (77%)
<b>That the system lasts the same number of years or more as my current system</b>					
Not at all important	69 (1.7%)	44 (2.3%)	54 (2.0%)	15 (1.2%)	49 (1.6%)
A little important	278 (6.9%)	136 (7.2%)	190 (6.9%)	88 (7.0%)	162 (5.4%)
Somewhat important	1,009 (25%)	445 (24%)	697 (25%)	312 (25%)	705 (23%)
Very important	2,651 (66%)	1,258 (67%)	1,808 (66%)	843 (67%)	2,107 (70%)
<b>That the system provides the same level of comfort or better than my current system</b>					
Not at all important	52 (1.3%)	37 (2.0%)	34 (1.2%)	18 (1.4%)	34 (1.1%)
A little important	277 (6.9%)	139 (7.4%)	197 (7.2%)	80 (6.4%)	174 (5.8%)
Somewhat important	1,037 (26%)	483 (26%)	713 (26%)	324 (26%)	713 (24%)
Very important	2,641 (66%)	1,224 (65%)	1,805 (66%)	836 (66%)	2,102 (70%)
<b>That the required maintenance is about the same or less as my current system</b>					
Not at all important	78 (1.9%)	50 (2.7%)	56 (2.0%)	22 (1.7%)	57 (1.9%)
A little important	339 (8.5%)	170 (9.0%)	241 (8.8%)	98 (7.8%)	207 (6.8%)
Somewhat important	1,347 (34%)	615 (33%)	929 (34%)	418 (33%)	974 (32%)
Very important	2,243 (56%)	1,048 (56%)	1,523 (55%)	720 (57%)	1,785 (59%)
<b>That the system provides better indoor air quality than my current system</b>					
Not at all important	110 (2.7%)	60 (3.2%)	75 (2.7%)	35 (2.8%)	81 (2.7%)
A little important	486 (12%)	241 (13%)	318 (12%)	168 (13%)	345 (11%)
Somewhat important	1,484 (37%)	651 (35%)	1,014 (37%)	470 (37%)	1,133 (37%)
Very important	1,927 (48%)	931 (49%)	1,342 (49%)	585 (47%)	1,464 (48%)
<b>That my current contractor is able to install and maintain it</b>					
Not at all important	430 (11%)	188 (10.0%)	288 (10%)	142 (11%)	339 (11%)
A little important	691 (17%)	305 (16%)	486 (18%)	205 (16%)	513 (17%)
Somewhat important	1,352 (34%)	620 (33%)	919 (33%)	433 (34%)	1,008 (33%)
Very important	1,534 (38%)	770 (41%)	1,056 (38%)	478 (38%)	1,163 (38%)
<b>That the system has low carbon emissions</b>					
Not at all important	366 (9.1%)	177 (9.4%)	222 (8.1%)	144 (11%)	301 (10.0%)
A little important	892 (22%)	431 (23%)	564 (21%)	328 (26%)	664 (22%)
Somewhat important	1,530 (38%)	654 (35%)	1,069 (39%)	461 (37%)	1,172 (39%)
Very important	1,219 (30%)	621 (33%)	894 (33%)	325 (26%)	886 (29%)
<b>That people I know are using this system and are satisfied with it</b>					
Not at all important	420 (10%)	229 (12%)	257 (9.3%)	163 (13%)	341 (11%)
A little important	885 (22%)	413 (22%)	617 (22%)	268 (21%)	663 (22%)
Somewhat important	1,490 (37%)	650 (35%)	1,008 (37%)	482 (38%)	1,120 (37%)
Very important	1,212 (30%)	591 (31%)	867 (32%)	345 (27%)	899 (30%)
<b>The number of days that it takes to install the system</b>					
Not at all important	364 (9.1%)	168 (8.9%)	243 (8.8%)	121 (9.6%)	289 (9.6%)
A little important	1,074 (27%)	475 (25%)	719 (26%)	355 (28%)	811 (27%)
Somewhat important	1,556 (39%)	736 (39%)	1,068 (39%)	488 (39%)	1,183 (39%)
Very important	1,013 (25%)	504 (27%)	719 (26%)	294 (23%)	740 (24%)

<sup>†</sup>n (%)

## Effect of headlines on interest in learning more about ASHPs

**Table 25. Effect of headlines on interest in learning more about ASHPs by customer segment**

	Overall sample	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
<b>Do any of the following statements increase your interest in learning more about ASHP?</b>	<b>N = 4,007<sup>†</sup></b>	<b>N = 1,906<sup>†</sup></b>	<b>N = 818<sup>†</sup></b>	<b>N = 1,283<sup>†</sup></b>	<b>N = 1,265<sup>†</sup></b>
Heat pumps are 2-4 times more efficient than other heating and cooling systems	2,438 (61%)	1,176 (62%)	494 (60%)	768 (60%)	741 (59%)
New rebates for heat pumps are available now	1,626 (41%)	810 (42%)	348 (43%)	468 (36%)	523 (41%)
Heat pumps can provide heating and fully replace your air conditioner	1,568 (39%)	738 (39%)	307 (38%)	523 (41%)	516 (41%)
Heat pumps provide superior home heating and cooling	1,449 (36%)	680 (36%)	254 (31%)	515 (40%)	465 (37%)
Heat pumps are highly durable and dependable	1,368 (34%)	709 (37%)	246 (30%)	413 (32%)	489 (39%)
Heat pumps greatly reduce a home's carbon footprint	997 (25%)	308 (16%)	318 (39%)	371 (29%)	373 (29%)
Innovative heat pump technology hits the Midwest market	539 (13%)	216 (11%)	133 (16%)	190 (15%)	252 (20%)
Demand for heat pumps is on the rise in colder states	508 (13%)	214 (11%)	105 (13%)	189 (15%)	256 (20%)
None of the above	304 (7.6%)	184 (9.7%)	44 (5.4%)	76 (5.9%)	16 (1.3%)

<sup>†</sup> n (%)

**Table 26. Effect of headlines on interest in learning more about ASHPs by groups**

	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
<b>Do any of the following statements increase your interest in learning more about ASHP?</b>	<b>N = 4,007<sup>†</sup></b>	<b>N = 1,883<sup>†</sup></b>	<b>N = 2,749<sup>†</sup></b>	<b>N = 1,258<sup>†</sup></b>	<b>N = 3,023<sup>†</sup></b>
Heat pumps are 2-4 times more efficient than other heating and cooling systems	2,438 (61%)	1,132 (60%)	1,654 (60%)	784 (62%)	1,907 (63%)
New rebates for heat pumps are available now	1,626 (41%)	745 (40%)	1,091 (40%)	535 (43%)	1,283 (42%)
Heat pumps can provide heating and fully replace your air conditioner	1,568 (39%)	743 (39%)	1,107 (40%)	461 (37%)	1,197 (40%)
Heat pumps provide superior home heating and cooling	1,449 (36%)	668 (35%)	1,008 (37%)	441 (35%)	1,090 (36%)
Heat pumps are highly durable and dependable	1,368 (34%)	609 (32%)	956 (35%)	412 (33%)	1,008 (33%)
Heat pumps greatly reduce a home's carbon footprint	997 (25%)	453 (24%)	718 (26%)	279 (22%)	721 (24%)
Innovative heat pump technology hits the Midwest market	539 (13%)	230 (12%)	380 (14%)	159 (13%)	361 (12%)
Demand for heat pumps is on the rise in colder states	508 (13%)	233 (12%)	361 (13%)	147 (12%)	330 (11%)
None of the above	304 (7.6%)	178 (9.5%)	188 (6.8%)	116 (9.2%)	247 (8.2%)

<sup>†</sup> n (%)

## Effect of images on interest in considering purchasing an ASHP

**Table 27. Effect of images on interest in considering purchasing an ASHP by customer segments**

	Overall sample	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
<b>Does the following images increase or decrease your interest in considering an ASHP for your home?</b>	<b>N = 4,007<sup>†</sup></b>	<b>N = 1,906<sup>†</sup></b>	<b>N = 818<sup>†</sup></b>	<b>N = 1,283<sup>†</sup></b>	<b>N = 1,265<sup>†</sup></b>
<b>Product images</b>					
Decrease or significantly decrease	283 (7.1%)	137 (7.2%)	67 (8.2%)	79 (6.2%)	90 (7.1%)
Neither	2,259 (56%)	1,187 (62%)	406 (50%)	666 (52%)	488 (39%)
Increase or Significantly increase	1,465 (37%)	582 (31%)	345 (42%)	538 (42%)	687 (54%)
<b>Lifestyle images</b>					
Decrease or significantly decrease	130 (3.2%)	70 (3.7%)	26 (3.2%)	34 (2.7%)	36 (2.8%)
Neither	2,646 (66%)	1,398 (73%)	498 (61%)	750 (58%)	598 (47%)
Increase or Significantly increase	1,231 (31%)	438 (23%)	294 (36%)	499 (39%)	631 (50%)
<b>Illustrated images</b>					
Decrease or significantly decrease	335 (8.4%)	169 (8.9%)	74 (9.0%)	92 (7.2%)	86 (6.8%)
Neither	2,797 (70%)	1,421 (75%)	537 (66%)	839 (65%)	662 (52%)
Increase or Significantly increase	875 (22%)	316 (17%)	207 (25%)	352 (27%)	517 (41%)

<sup>†</sup> n (%)

**Table 28. Effect of images on interest in considering purchasing an ASHP by groups**

	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
Does the following images increase or decrease your interest in considering an ASHP for your home?	N = 4,007 <sup>1</sup>	N = 1,883 <sup>1</sup>	N = 2,749 <sup>1</sup>	N = 1,258 <sup>1</sup>	N = 3,023 <sup>1</sup>
<b>Product images</b>					
Decrease or significantly decrease	283 (7.1%)	117 (6.2%)	208 (7.6%)	75 (6.0%)	177 (5.9%)
Neither	2,259 (56%)	1,091 (58%)	1,498 (54%)	761 (60%)	1,816 (60%)
Increase or Significantly increase	1,465 (37%)	675 (36%)	1,043 (38%)	422 (34%)	1,030 (34%)
<b>Lifestyle images</b>					
Decrease or significantly decrease	130 (3.2%)	69 (3.7%)	88 (3.2%)	42 (3.3%)	79 (2.6%)
Neither	2,646 (66%)	1,284 (68%)	1,748 (64%)	898 (71%)	2,165 (72%)
Increase or Significantly increase	1,231 (31%)	530 (28%)	913 (33%)	318 (25%)	779 (26%)
<b>Illustrated images</b>					
Decrease or significantly decrease	335 (8.4%)	150 (8.0%)	209 (7.6%)	126 (10%)	243 (8.0%)
Neither	2,797 (70%)	1,354 (72%)	1,879 (68%)	918 (73%)	2,268 (75%)
Increase or Significantly increase	875 (22%)	379 (20%)	661 (24%)	214 (17%)	512 (17%)

<sup>1</sup> n (%)

## Most important factor in deciding about home heating/cooling system

**Table 29. Most important factor in deciding about home heating/cooling system by customer segments**

Variable	Overall sample	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
	N = 3,946 <sup>1</sup>	N = 1,872 <sup>1</sup>	N = 806 <sup>1</sup>	N = 1,268 <sup>1</sup>	N = 1,263 <sup>1</sup>
<b>Most important factor when making decisions about participants' homes' heating system</b>					
The final cost of purchasing and installing the system	1,190 (30%)	728 (39%)	199 (25%)	263 (21%)	290 (23%)
The monthly cost of running the system	890 (23%)	460 (25%)	186 (23%)	244 (19%)	238 (19%)
That the system provides the same level of comfort or better than my current system	599 (15%)	221 (12%)	116 (14%)	262 (21%)	203 (16%)
That the system provides better indoor air quality than my current system	314 (8.0%)	96 (5.1%)	61 (7.6%)	157 (12%)	114 (9.0%)
That the system lasts the same number of years or more as my current system	286 (7.2%)	135 (7.2%)	58 (7.2%)	93 (7.3%)	106 (8.4%)
That the required maintenance is about the same or less as my current system	188 (4.8%)	74 (4.0%)	43 (5.3%)	71 (5.6%)	82 (6.5%)
That my current contractor is able to install and maintain it	154 (3.9%)	63 (3.4%)	40 (5.0%)	51 (4.0%)	79 (6.3%)
That people I know are using this system and are satisfied with it	134 (3.4%)	58 (3.1%)	29 (3.6%)	47 (3.7%)	55 (4.4%)
That the system has low carbon emissions	126 (3.2%)	17 (0.9%)	54 (6.7%)	55 (4.3%)	59 (4.7%)
The number of days that it takes to install the system	65 (1.6%)	20 (1.1%)	20 (2.5%)	25 (2.0%)	37 (2.9%)

<sup>1</sup> n (%)

**Table 30. Most important factor in deciding about home heating/cooling system by groups**

Variable	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 3,946 <sup>1</sup>	N = 1,841 <sup>1</sup>	N = 2,704 <sup>1</sup>	N = 1,242 <sup>1</sup>	N = 2,976 <sup>1</sup>
<b>Most important factor when making decisions about participants' homes' heating system</b>					
The final cost of purchasing and installing the system	1,190 (30%)	587 (32%)	786 (29%)	404 (33%)	978 (33%)
The monthly cost of running the system	890 (23%)	448 (24%)	597 (22%)	293 (24%)	699 (23%)
That the system provides the same level of comfort or better than my current system	599 (15%)	255 (14%)	416 (15%)	183 (15%)	457 (15%)
That the system provides better indoor air quality than my current system	314 (8.0%)	145 (7.9%)	230 (8.5%)	84 (6.8%)	212 (7.1%)
That the system lasts the same number of years or more as my current system	286 (7.2%)	118 (6.4%)	203 (7.5%)	83 (6.7%)	219 (7.4%)
That the required maintenance is about the same or less as my current system	188 (4.8%)	73 (4.0%)	131 (4.8%)	57 (4.6%)	120 (4.0%)
That my current contractor is able to install and maintain it	154 (3.9%)	63 (3.4%)	101 (3.7%)	53 (4.3%)	98 (3.3%)
That people I know are using this system and are satisfied with it	134 (3.4%)	68 (3.7%)	101 (3.7%)	33 (2.7%)	89 (3.0%)
That the system has low carbon emissions	126 (3.2%)	59 (3.2%)	92 (3.4%)	34 (2.7%)	75 (2.5%)
The number of days that it takes to install the system	65 (1.6%)	25 (1.4%)	47 (1.7%)	18 (1.4%)	29 (1.0%)

<sup>1</sup> n (%)



# Primary source of information to consult when looking for HVAC replacement

**Table 31. Primary source of information to consult when looking for HVAC replacement by customer segments**

Variable	Overall sample	Lifetime value-seekers	Eco-conscious innovators	Discerning investors	Nearly-there converts
	N = 4,007 <sup>1</sup>	N = 1,906 <sup>1</sup>	N = 818 <sup>1</sup>	N = 1,283 <sup>1</sup>	N = 1,265 <sup>1</sup>
<b>Primary source of information to consult when looking for HVAC replacement</b>					
Friends and family	720 (18%)	384 (20%)	130 (16%)	206 (16%)	177 (14%)
Utility installation services / services plans	719 (18%)	341 (18%)	144 (18%)	234 (18%)	248 (20%)
My energy provider or utility's website	697 (17%)	296 (16%)	158 (19%)	243 (19%)	252 (20%)
My contractor	544 (14%)	285 (15%)	83 (10%)	176 (14%)	154 (12%)
Free online reviews	524 (13%)	250 (13%)	110 (13%)	164 (13%)	160 (13%)
Retailer	488 (12%)	217 (11%)	121 (15%)	150 (12%)	167 (13%)
Paid consumer publications	315 (7.9%)	133 (7.0%)	72 (8.8%)	110 (8.6%)	107 (8.5%)
<b>Trust level: Friends and family</b>					
Strongly distrust	24 (0.6%)	11 (0.6%)	7 (0.9%)	6 (0.5%)	5 (0.4%)
Distrust	81 (2.0%)	36 (1.9%)	20 (2.4%)	25 (1.9%)	34 (2.7%)
Neutral	1,017 (25%)	486 (25%)	201 (25%)	330 (26%)	307 (24%)
Trust	1,969 (49%)	946 (50%)	403 (49%)	620 (48%)	571 (45%)
Strongly trust	916 (23%)	427 (22%)	187 (23%)	302 (24%)	348 (28%)
<b>Trust level: My energy provider or utility's website</b>					
Strongly distrust	41 (1.0%)	26 (1.4%)	5 (0.6%)	10 (0.8%)	8 (0.6%)
Distrust	179 (4.5%)	102 (5.4%)	38 (4.6%)	39 (3.0%)	42 (3.3%)
Neutral	1,265 (32%)	622 (33%)	241 (29%)	402 (31%)	297 (23%)
Trust	1,991 (50%)	962 (50%)	400 (49%)	629 (49%)	635 (50%)
Strongly trust	531 (13%)	194 (10%)	134 (16%)	203 (16%)	283 (22%)
<b>Trust level: Utility installation services / services plans</b>					
Strongly distrust	52 (1.3%)	40 (2.1%)	5 (0.6%)	7 (0.5%)	8 (0.6%)
Distrust	249 (6.2%)	119 (6.2%)	61 (7.5%)	69 (5.4%)	72 (5.7%)
Neutral	1,599 (40%)	796 (42%)	286 (35%)	517 (40%)	351 (28%)
Trust	1,667 (42%)	796 (42%)	353 (43%)	518 (40%)	577 (46%)
Strongly trust	440 (11%)	155 (8.1%)	113 (14%)	172 (13%)	257 (20%)
<b>Trust level: My contractor</b>					
Strongly distrust	22 (0.5%)	11 (0.6%)	5 (0.6%)	6 (0.5%)	9 (0.7%)
Distrust	137 (3.4%)	69 (3.6%)	32 (3.9%)	36 (2.8%)	61 (4.8%)
Neutral	1,384 (35%)	689 (36%)	265 (32%)	430 (34%)	347 (27%)
Trust	1,866 (47%)	889 (47%)	389 (48%)	588 (46%)	581 (46%)
Strongly trust	598 (15%)	248 (13%)	127 (16%)	223 (17%)	267 (21%)
<b>Trust level: Retailer</b>					
Strongly distrust	55 (1.4%)	35 (1.8%)	10 (1.2%)	10 (0.8%)	16 (1.3%)
Distrust	383 (9.6%)	183 (9.6%)	78 (9.5%)	122 (9.5%)	107 (8.5%)
Neutral	1,966 (49%)	975 (51%)	391 (48%)	600 (47%)	494 (39%)
Trust	1,352 (34%)	626 (33%)	278 (34%)	448 (35%)	471 (37%)
Strongly trust	251 (6.3%)	87 (4.6%)	61 (7.5%)	103 (8.0%)	177 (14%)
<b>Trust level: Paid consumer publications</b>					
Strongly distrust	89 (2.2%)	52 (2.7%)	21 (2.6%)	16 (1.2%)	15 (1.2%)
Distrust	384 (9.6%)	211 (11%)	71 (8.7%)	102 (8.0%)	95 (7.5%)
Neutral	1,511 (38%)	738 (39%)	282 (34%)	491 (38%)	372 (29%)
Trust	1,562 (39%)	728 (38%)	334 (41%)	500 (39%)	544 (43%)
Strongly trust	461 (12%)	177 (9.3%)	110 (13%)	174 (14%)	239 (19%)
<b>Trust level: Free online reviews</b>					
Strongly distrust	161 (4.0%)	83 (4.4%)	35 (4.3%)	43 (3.4%)	41 (3.2%)
Distrust	572 (14%)	280 (15%)	117 (14%)	175 (14%)	156 (12%)
Neutral	1,949 (49%)	954 (50%)	373 (46%)	622 (48%)	515 (41%)
Trust	1,107 (28%)	508 (27%)	242 (30%)	357 (28%)	402 (32%)
Strongly trust	218 (5.4%)	81 (4.2%)	51 (6.2%)	86 (6.7%)	151 (12%)

<sup>1</sup> n (%)

**Table 32. Primary source of information to consult when looking for HVAC replacement by groups**

Variable	Overall sample	Low-income	Urban/Suburban	Rural	Ducted natural gas or propane
	N = 4,007 <sup>†</sup>	N = 1,883 <sup>†</sup>	N = 2,749 <sup>†</sup>	N = 1,258 <sup>†</sup>	N = 3,023 <sup>†</sup>
<b>Primary source of information to consult when looking for HVAC replacement</b>					
Friends and family	720 (18%)	331 (18%)	481 (17%)	239 (19%)	527 (17%)
Utility installation services / services plans	719 (18%)	339 (18%)	526 (19%)	193 (15%)	542 (18%)
My energy provider or utility's website	697 (17%)	347 (18%)	475 (17%)	222 (18%)	526 (17%)
My contractor	544 (14%)	250 (13%)	338 (12%)	206 (16%)	451 (15%)
Free online reviews	524 (13%)	233 (12%)	363 (13%)	161 (13%)	396 (13%)
Retailer	488 (12%)	250 (13%)	338 (12%)	150 (12%)	342 (11%)
Paid consumer publications	315 (7.9%)	133 (7.1%)	228 (8.3%)	87 (6.9%)	239 (7.9%)
<b>Trust level: Friends and family</b>					
Strongly distrust	24 (0.6%)	11 (0.6%)	14 (0.5%)	10 (0.8%)	20 (0.7%)
Distrust	81 (2.0%)	41 (2.2%)	56 (2.0%)	25 (2.0%)	59 (2.0%)
Neutral	1,017 (25%)	526 (28%)	683 (25%)	334 (27%)	784 (26%)
Trust	1,969 (49%)	898 (48%)	1,360 (49%)	609 (48%)	1,525 (50%)
Strongly trust	916 (23%)	407 (22%)	636 (23%)	280 (22%)	635 (21%)
<b>Trust level: My energy provider or utility's website</b>					
Strongly distrust	41 (1.0%)	19 (1.0%)	26 (0.9%)	15 (1.2%)	32 (1.1%)
Distrust	179 (4.5%)	90 (4.8%)	120 (4.4%)	59 (4.7%)	129 (4.3%)
Neutral	1,265 (32%)	614 (33%)	850 (31%)	415 (33%)	955 (32%)
Trust	1,991 (50%)	926 (49%)	1,365 (50%)	626 (50%)	1,549 (51%)
Strongly trust	531 (13%)	234 (12%)	388 (14%)	143 (11%)	358 (12%)
<b>Trust level: Utility installation services / services plans</b>					
Strongly distrust	52 (1.3%)	27 (1.4%)	33 (1.2%)	19 (1.5%)	39 (1.3%)
Distrust	249 (6.2%)	116 (6.2%)	167 (6.1%)	82 (6.5%)	196 (6.5%)
Neutral	1,599 (40%)	823 (44%)	1,064 (39%)	535 (43%)	1,237 (41%)
Trust	1,667 (42%)	735 (39%)	1,156 (42%)	511 (41%)	1,271 (42%)
Strongly trust	440 (11%)	182 (9.7%)	329 (12%)	111 (8.8%)	280 (9.3%)
<b>Trust level: My contractor</b>					
Strongly distrust	22 (0.5%)	15 (0.8%)	16 (0.6%)	6 (0.5%)	11 (0.4%)
Distrust	137 (3.4%)	71 (3.8%)	98 (3.6%)	39 (3.1%)	96 (3.2%)
Neutral	1,384 (35%)	709 (38%)	979 (36%)	405 (32%)	1,051 (35%)
Trust	1,866 (47%)	832 (44%)	1,244 (45%)	622 (49%)	1,444 (48%)
Strongly trust	598 (15%)	256 (14%)	412 (15%)	186 (15%)	421 (14%)
<b>Trust level: Retailer</b>					
Strongly distrust	55 (1.4%)	31 (1.6%)	32 (1.2%)	23 (1.8%)	39 (1.3%)
Distrust	383 (9.6%)	175 (9.3%)	256 (9.3%)	127 (10%)	288 (9.5%)
Neutral	1,966 (49%)	939 (50%)	1,302 (47%)	664 (53%)	1,582 (52%)
Trust	1,352 (34%)	633 (34%)	961 (35%)	391 (31%)	986 (33%)
Strongly trust	251 (6.3%)	105 (5.6%)	198 (7.2%)	53 (4.2%)	128 (4.2%)
<b>Trust level: Paid consumer publications</b>					
Strongly distrust	89 (2.2%)	45 (2.4%)	54 (2.0%)	35 (2.8%)	68 (2.2%)
Distrust	384 (9.6%)	200 (11%)	253 (9.2%)	131 (10%)	265 (8.8%)
Neutral	1,511 (38%)	777 (41%)	987 (36%)	524 (42%)	1,126 (37%)
Trust	1,562 (39%)	704 (37%)	1,096 (40%)	466 (37%)	1,242 (41%)
Strongly trust	461 (12%)	157 (8.3%)	359 (13%)	102 (8.1%)	322 (11%)
<b>Trust level: Free online reviews</b>					
Strongly distrust	161 (4.0%)	74 (3.9%)	112 (4.1%)	49 (3.9%)	133 (4.4%)
Distrust	572 (14%)	293 (16%)	388 (14%)	184 (15%)	445 (15%)
Neutral	1,949 (49%)	949 (50%)	1,292 (47%)	657 (52%)	1,520 (50%)
Trust	1,107 (28%)	480 (25%)	787 (29%)	320 (25%)	816 (27%)
Strongly trust	218 (5.4%)	87 (4.6%)	170 (6.2%)	48 (3.8%)	109 (3.6%)

<sup>†</sup> n (%)

