

Plant Research Interviews Codebook

Research Question: “What are user needs for a technology-based solution to help novice plant owners find the best plants suited to their living environments?”

A.0 Attributes

Code when participant is asked demographic information related to the four categories below.

A.0.1_Age

A.0.2_Gender identity

A.0.3_Location

A.0.4_Property type

A.1 Category One: Level of House Plant Experience

Code when level of house plant owning experience is mentioned: such as plant survival rate, how many house plants the participant owns or has owned, and any descriptive or in-vivo codes describing level of current experience.

A.1.1_Above 50%

A.1.2_Below 50%

A.1.3_Experience

A.1.4_Number of plants owned

A.2 Category Two: Concerns and Limitations

Code when participant mentions current or future concerns about owning house plants, their limitations due to their property type, time availability, or

other cost concerns, etc., and any barriers they might have to owning their current plants or how this may affect what plants they purchase in the future.

A.2.1_Concerns

A.2.2_Limitations

A.2.3_New plant barrier

A.3 Category Three: Research Process

Code when the participant describes their research process: whether it be before, during, or after plant purchase. Also code for overall current and past general research processes. Code also for when the participant describes their future research process, particularly if it will differ or stay the same from current. Also code for the sites or resources participants use to do their research.

A.3.1_Research before

A.3.2_Research during

A.3.3_Research after

A.3.4_Process

A.3.5_New process

A.3.6_Sites used

A.4 Category Four: Plant Choices

Code when participants list or describe their current, past, and future plant choices. Also code for when participants list or describe where participants have bought their plants and where they will buy them in the future. If the plant was a gift, code this as well.

A.4.1_New plant choice

A.4.2_Old plant choice

A.4.3_New plant store

A.4.4_Old plant store

A.4.5_Old plants gift

A.5 Category Five: Challenges

Code when participants describe their past and current struggles with their plants, or if they were surprised by anything during the purchasing process, or with the maintenance and care of their plants, and why.

A.5.1_Struggles

A.5.2_Emotion_Surprise

A.6 Category Six: Preferences

Code when participants describe their preferences for a technology that would help them with finding and maintaining their ideal plant.

A.6.1_Preferences

Discussion

Category One: Level of House Plant Experience

Participants were asked: “What is your estimated plant survival rate? If it is above 50%, why do you think you are successful? If it is below 50%, why do you think you have struggled?” Five participants answered “above 50%”, and three answered either at 50% or slightly below. Four participants described themselves as “novice” plant owners, two participants described themselves as “a little past novice,” and the last two were either advanced or intermediate. Additionally, six out of the eight participants currently own or have owned at least three or more plants. The other two participants have owned or currently

own two plants. It was also noted that there were two uses of the number of plants code for participants that started out with more plants and now only have one or two left.

Given that half of the participants consider themselves to be “novice” plant owners, it is interesting to observe that six out of eight participants own three or more plants. It was almost half-and-half for plant survival rate outcomes as well, which shows a wide variety of plant experiences and levels of success.

Quotes:

P1: “Above 50%...I try to choose plants that are resilient.”

P2: “I think I’m successful because when I can, I usually pay attention to my plants to see if they need to be repotted...I just watch my plants. I don’t over-water.”

P8: “60%. I take care of them almost every day.”

P7: “About 50%. Because my balcony is damp despite it having natural light, it was tougher in the beginning, but then it grew better after I looked up a ton of tutorials on the internet.”

P6: “I’ve struggled a lot probably because my apartment is garden-level, and because of that it doesn’t get a lot of light...I’ve also just been kind of forgetful about watering.”

Category Two: Concerns and Limitations

Participants were asked if they face any limitations or barriers to purchasing certain types of plants they would ideally like to own. There were two mentions of barriers due to the size of the living space, and four mentions of light-related limitations, such as tropical plants that need more sun and humidity. Two participants mention the level of care required for certain plants would be too much effort—such as purchasing extra tools that also come with a higher expense (ex: grow lights, propagation tools, etc.).

In this category, the most salient limitation is light and humidity requirements and apartment space barriers.

Quotes

P1: “I would love to have a palm tree, but, you know, that’s not really an indoor thing.”

P7: “I really want to have a Mexican Fence Post cactus, but considering my apartment space, probably not enough space for that.”

P5: “There are a few I’ve seen in the store and got really excited about, but then saw that they’re tropical plants that need a lot of humidity and full sunlight.”

P5: “I could probably create those conditions at home, like getting a grow light or some kind of grow tank, but that’s just not a process I’m really willing to go through.”

P6: “I usually like to have my blinds closed since I live in a garden-level apartment.”

Category Three: Research Process

We asked participants to share which sites they use for plant research, and the most common resource mentioned is Google, a search method used by six participants. With Google, participants typically use keywords related to caring for the plant they just purchased while searching through various articles until they find one that answers their questions.

In this category, the most salient code was “research after” with nine uses. “Research during” was used five times, and “research before” was used three times. This illustrates that most plant research happens after a participant has already bought their new plant. It was surprising to see how many times “research during” was used as well. In the original pilot interviews done by group members, we did not ask participants if they researched during the

purchase process—we only asked if they did research before or after. Pilot interviews showed this would be a necessary question.

From the research process-related questions, the coding results show that every participant who researched during the purchase process asked store staff for guidance, tips, and recommendations (mentioned by five participants).

For participants who researched their plants after the purchase process, a common reason was that they wanted to better understand their plant's needs—such as watering and light requirements (mentioned by four participants). Other participants said they only researched their plant after purchase if it had a glaring health issue they were trying to diagnose.

Only two participants did research before plant purchase. One participant asked friends with plant care experience for advice, and the other participant watched YouTube videos because they found them more educational and interesting than reading online articles. Aside from how participants conducted research, it is important to note that *all* eight participants did some level of research.

We also asked participants to describe how they would conduct their research process if they were to purchase more plants in the future. Five participants said that they would do more research ahead of purchase in the future. Three other participants said they would not purchase more plants because they have had low plant survival rates and do not want to kill more plants. These themes show that participants believe they will have more success with their plants if they perform more research ahead of plant purchase and believe it is important to have a plant in mind when they go to a store.

Quotes:

P3: “I just like checking to see what the light requirements and watering requirements are.”

P3: “I wasn’t doing great with like the watering schedule. I went to Google again to try to like find out more information and see if I was doing something wrong. Or if it was something with my like environment or something.”

P3: “I just Googled [the problem] and then looked at whatever came up and looked at least moderately reliable..I checked multiple ones to like make sure they were all saying the same thing.”

P1: “I asked a clerk at the store approximately how much and how often I should water [the plant].”

P5: “I talked to some of the staff before making a decision on which ones I wanted to buy, just to make sure they would actually work for me and to make sure I knew enough about the plant’s care before leaving.”

Category Four: Plant Choices

We asked participants to tell us which plants they previously owned, own now, or would own in the future. For previously and currently owned plants, monstera plants had the most mentions (3). There were no other overlapping plant types among participants for this category. For future plants, there were two more mentions of monstera, and two mentions of plants with “more foliage,” “leafy” and “green.”

For store choices, five participants used local plant shops. Home Depot was used by three participants. For future plant purchases, almost all participants said they would continue to use the ones they usually go to.

From the interviews, buying plants locally is the most popular choice. This also corresponds with the positive experiences several of the participants had with asking staff members at these stores to provide guidance and expert advice. Monstera plants were overwhelmingly popular with participants as well, and one monstera plant owner mentioned they would even purchase a second because they do well.

Quotes:

P2: “Probably [would buy] another green, leafy plant. Like a snake plant, like those are a good indoor plant for the house.”

P7: “Maybe [buy] some foliage plants because they are soothing to look at.”

P4: “I want to get another Monstera, because all the aesthetic pictures of people’s houses always look nice.”

Category Five: Challenges

The “struggle” code was the most salient code and category used across all eight interviews and was coded 26 times. The most common challenges that participants have with their plants based on these findings are: watering struggles (under or overwatering, and remembering to water), lighting issues (not enough light in their spaces), diagnosing unknown plant issues and figuring out how to repot plants if they outgrow their pots. Watering struggles were mentioned four times, sunlight issues were mentioned three times, and repotting was mentioned three times. General plant issue diagnosing was mentioned the most—seven times. Related to this category, participants complained that general Googling can be difficult because online articles are generally too broad.

If participants were surprised by something during their purchase process or maintenance phase of plant ownership, it was something unexpected related to each specific plant. For example, one participant was surprised that succulents needed more water than they thought. Another participant encountered an indoor plant pest for the first time and had never heard of this type of pest or how to handle it.

Quotes:

P2: “Browning of leaves, like sometimes the leaves turn brown at the edges, so I gotta research what I could do about that.”

P8: “It’s hard to tell which plant is good or healthy when purchasing.”

P8: “Over fertilization, encountering fertilizer burn [is a challenge].”

P7: “There was a time I was too busy to water it, and it almost dried out.”

P7: “It makes me angry when plants die without known reasons.”

P5: “I have a tendency to overwater plants.”

P5: “Sometimes it’s really hard to tell just based on a Google search how easy the plant is to take care of really.”

P4: “I would say that there’s some plants that don’t get enough sun.”

Category Six: Preferences

The “preferences” code was the second most salient category found across all eight interviews and was coded 21 times. The richest feedback interviewees gave was related to this category. We asked participants to envision an ideal technology that could help them find and maintain their plants and asked them to describe what features they would want it to have.

Two participants wanted a “centralized” source of plant information or a “one-stop-shop” for everything indoor plant owners need to know. The second participant described it as a “database.” Features related to watering were mentioned five times: watering reminders and care tips/watering schedule help. Live support features were mentioned twice: these participants wanted the ability to ask for expert opinions. General tips and tricks were mentioned four times. These participants want common tips and tricks related to each plant, and features that can help to identify common issues with an individual plant and how to address them. Participants also liked the idea of a feature that lets the user know how “hardy” a plant is and what level of work is required to maintain it properly. They also wanted to be able to search based on their level of experience as a plant owner.

General plant descriptions are also necessary: watering needs, light requirements, tools or special potting requirements, humidity needs, if they are toxic to animals, etc.

Some other interesting suggestions were: a “plant quiz” that asks users a series of questions about their living environment, their preferences for plant styles/types, preference for low or high maintenance, climate information, how experienced the user is, etc. Then this technology would provide a list of appropriate plants for the user based on their responses.

Another interesting suggestion was to have the technology tell the user the indoor temperature and humidity levels and to warn the user if they were either good or bad for the plant they have/want.

Based on the interview responses, participants are mainly concerned with watering, proper lighting, and the ability to accurately assess the plant’s level of maintenance before purchase. This group of participants also highly values expert opinions, tips, and tricks for common issues related to each specific plant.

Quotes:

P1: “Like you pull up a screen and it says like where do you live, is the plant indoor? Outdoor? What type of light? You know, how experienced are you? You know, you answer all those questions, and it just kind of kicks out what would be a good option for you. And then maybe even includes a link where you click it to buy it.”

P1: “You know, maybe have a more central location. Just like a one-stop shop. Like right now, if I were to want to research plants, I have no idea where I’d look. I mean, I’d go on Google and do a Google search and see what sites it brings up...but if there was like a plant.com site, that was like a one-stop resource, that’d be very helpful.”

P2: “The level of somebody’s experience with plants, like novice, intermediate, expert. Your level of light in your home...level of care, like low maintenance, high maintenance. Also too like if there’s certain features in the plants, like if the plant may bloom.”

P7: “It would be nice if there is a database that organizes the description of the plants.”

P8: "Perhaps the accessibility to ask experts."

P8: "Something that can remind me to water the plant regularly and tells me the weather types that are harmful to the plants."

P5: "It would be interesting if there was some kind of live support feature for plant care."