

Letter of Transmittal

Date: December 15, 2020
To: AmazonFresh Design & Development Teams
From: Kara Cox, Sarah Hu, Natasha Schmid
Subject: AmazonFresh Usability Study Final Report

To the AmazonFresh Team,

Enclosed in this email is the final report for the AmazonFresh usability study that was conducted at the University of Washington as part of the Human Centered Design & Engineering 417 course “Usability Research Techniques.”

Our team conducted five usability sessions between November 21, 2020 and November 25, 2020. We had participants complete four tasks that encapsulate the end-to-end grocery shopping experience, which allowed us to better understand the overall usability of the AmazonFresh website.

At the conclusion of all usability study sessions, our team analyzed the results and synthesized them into five key findings that each correspond with a part of the user’s journey while online grocery shopping. Each finding has been labeled with a severity level, which should be kept in mind when prioritizing the order of features to address. We have also provided recommendations for each finding, intended to serve as a starting point for addressing the usability issues. For your reference, here is a [link](#) to a Powerpoint Presentation overviewing the major findings and recommendations.

We are grateful for the opportunity to work with the AmazonFresh team to help improve the user experience. Thank you for your time reviewing the usability findings presented in this report. If you have any questions regarding the content of this report, please do not hesitate to contact our team.

Regards,
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Usability Study – Final Report

HCDE 417

15 December 2020

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Executive Summary

Background

AmazonFresh is an Amazon.com subsidiary that provides online grocery delivery services. AmazonFresh serves the purpose of creating a more holistic user experience for Amazon.com customers, by enabling them to complete all of their shopping on a single platform. AmazonFresh has a goal of maintaining low prices and delivering fresh, local products in a safe and efficient manner.

Purpose

The goal of this usability study is to evaluate the discoverability, learnability, and satisfaction of AmazonFresh for new users by assessing the end-to-end online grocery shopping experience. Five usability study sessions were conducted, each of which involved a screener survey, pre-test interview, task completion, post-task questionnaire, post-test questionnaire, and post test interview.

Major Findings

- Participants are able to navigate from Amazon.com to the AmazonFresh page through the Navigation Bar. However, some participants felt that the process **could have been simplified and the button could have been more distinguishable.**
- Participants added all grocery list items to the cart eventually but mentioned **search results were unreliable or confusing.**
- Some participants struggled with the **usability of the filter sidebar** while others **missed the feature all together.**
- Although participants were able to change the delivery address successfully, they **initially struggled locating where to make the change.**
- While participants seamlessly checked out and found the delivery sections helpful, some found the **item suggestion page was unnecessary and were confused why there was no “back” button on the page.**

Based on the major findings, the research team outlined recommendations to address the issues identified and improve the overall usability and user experience of the AmazonFresh platform. In particular, consistent branding, improved visibility of key features, and error recovery could be better implemented. Moreover, the user's process of searching for desired grocery items to add to their cart should be prioritized.

Introduction

Product Overview

AmazonFresh is an online grocery store that provides fast home delivery service in major cities. It is a subsidiary of Amazon.com and a partner of Whole Foods Market. Despite being online, it offers all of the same kinds of products you can find at a grocery store, including highly perishable items. AmazonFresh serves the purpose of creating a more holistic user experience for Amazon.com customers, by enabling them to complete all of their shopping on a single platform, whether it be for physical items or perishable foods. AmazonFresh has a goal of maintaining low prices and delivering fresh, local products in a safe and efficient manner. Amid the COVID-19 crisis, AmazonFresh has seen an unprecedented demand for grocery delivery. As a result, new customers (who are not Prime members) currently must request an invitation to use the service. Amazon aims to gradually remove the invite list in most cities, to accommodate new customers at a higher rate and expand delivery services to more areas worldwide.

Purpose

The goal of this usability study is to evaluate the discoverability, learnability, and satisfaction of AmazonFresh for new users. This involves assessing the end-to-end online grocery shopping experience, including finding desired grocery items, setting a delivery address, date and time, and completing the purchase.

Research Questions

Our team aimed to address the following research questions while conducting this usability study. These questions guided our overall study, particularly during task creation and results analysis. Overall, they helped narrow our focus while exploring the end-to-end online grocery shopping experience.

- Discoverability
 - How do users navigate to AmazonFresh from the Amazon.com homepage?
 - What obstacles do users face as they try to find the groceries they need?
- Learnability
 - How do users find grocery items that fit their needs?
 - Including but not limited to:

- searching based on cost, reviews, dietary restrictions, etc.
- finding a specific item they have in mind
- browsing for ideas of items to buy
- What obstacles do users face when they set their delivery preferences, including address, date, and time?
 - How do they change these preferences for future deliveries?
- What obstacles do users face when they remove/edit items in the cart?
- What obstacles do users face when they add a payment method?
 - How do they edit the payment method?
- Are users able to complete all of the above successfully on the first try?
- Satisfaction
 - How satisfied are users with the AmazonFresh online grocery shopping experience?
 - Are users able to meet all of their grocery shopping needs?
 - Are they able to do so with minimal confusion?
 - Are they able to do so with minimal frustration?

Testing Team

This usability study was conducted by three undergraduate students for the HCDE 417 class as part of the University of Washington Human Centered Design & Engineering department curriculum. The team members were HCDE senior Kara Cox, Informatics senior Sarah Hu, and HCDE junior Natasha Schmid. Refer to [page 1](#) of this report for the testing team's contact information.

Unique Terms

- *Amazon.com*: world's largest online shopping retailer, selling products across all departments, including but not limited to: electronics, home, food, clothing, beauty, toys, sports, outdoors, video, music, books, etc.
- *AmazonPrime member*: annual membership subscription that offers various benefits, including free one-day and two-day shipping, AmazonFresh services, video and music streaming, photo storage, and e-book lending
- *AmazonFresh*: online grocery delivery service that is a subsidiary of Amazon.com; available exclusively to AmazonPrime members
- See [Appendix XIII](#) for screenshots and definitions of various AmazonFresh screens that are referenced in this report

Overview of Organization

The rest of this report contains the following sections:

- Methods
- Metrics
- Results and Recommendations
 - Task 1: Navigate to AmazonFresh Findings
 - Task 2: Shop for items on grocery list Findings
 - Task 3: Change delivery address Findings
 - Task 4: Checkout Findings
- Conclusion (Next Steps and Final Recommendations)
- Final Reflection
- Appendix

Methods

Participant Criteria

The research team recruited participants via FaceBook, Slack, and verbal communication among friends and family. Potential participants were asked to fill out a screener questionnaire ([Appendix I](#)).

To reflect the first-time AmazonFresh shopping experience, *must-have* criteria for the participants are as follows:

- Have never used AmazonFresh before (new user)
- Are an AmazonPrime member
- Between the age of 18-55
- English speaking
- Familiar with online shopping
- Reside in a city that supports AmazonFresh delivery service
- Have access to technology that allows them to online shop & join a Zoom call

To diversify the participants, *nice-to-have* criteria are displayed in the table below (collected in the recruitment screener survey):

Characteristic	Desired number of participants
Participant type	
Pilot	1
Regular	6
Backup	1
Total number of participants	8
Levels of online shopping experience	
Very familiar: online shop on a regular basis	2
Moderately familiar: online shop occasionally	2
Not familiar: have online shopped less than 4 times ever	2
Frequency of shopping on Amazon.com	
Very often: 1+ times per week	2
Moderately often: 1 - 2 times per month	2
Infrequently: 1- 5 times per year (or less)	2

Age	
18 - 25	2
26 - 40	2
41 - 55	1
55+	1

Participant Analysis

We recruited five participants that met the inclusion criteria for our study. Their demographics are summarized in the table below:

Participant	Age	Gender	Frequency Shopping on Amazon.com	Online Shopping Experience
1	18-24	Female	Once every few weeks	A few times a week
2	18-24	Female	Once a month/monthly	Every few months/several times a year
3	18-24	Male	Once a month/monthly	Once a month/monthly
4	18-24	Male	Once per week/weekly	Once per week/weekly
5	18-24	Male	Once per week/weekly	A few times a week

Study Session Environment

Dates: November 21st - November 25th, 2020 (about 60 minutes per session)

Location: All sessions were conducted remotely via Zoom

Method: One moderator and two observers/notetakers were present during all test sessions. One researcher shared their screen and gave the participant remote control access, allowing participants to control the screen as if it was their own. The researcher sharing screen used <https://fast.com/> before hand, to ensure they have high-speed internet connection of at least 25 Mbps so that the shared screen was not laggy. The participants were asked to keep their computer video and microphone on throughout the session so that the research team could observe their facial expressions and hear their thoughts. The moderator had their microphone and video on, while the other two researchers (acting as observers/notetakers) were muted with video off the whole time to minimize distractions.

Equipment: Computer with camera (participant, moderator, and each observer),

Amazon.com website, computer video/audio recording software, Zoom.

Study Session Format

Sessions were conducted one-on-one remotely via Zoom, with one participant and one moderator. Two observers were also on the call to take notes, but had video and audio off for the entire session to avoid distracting the user. The moderator acted as the main communicator, guiding the participant through the session and stating the tasks in an unbiased manner. They first introduced the session, then conducted a short background interview, and then introduced the tasks. Unscripted follow-up questions were asked as needed to clarify participant behavior and expectations. Participants were asked to think out loud as they went through each task. Both observers took detailed notes throughout the session. The moderator did not take any notes so that they could focus mainly on facilitation. One observer was responsible for recording the session with both video and audio (given the participant provided consent) and sending tasks into the chat. The other observer was responsible for sharing their computer screen with the AmazonFresh page for the participants to control. The recording was only used for the researchers to reference during the analysis phase. The usability sessions all took place within one week. Each session lasted approximately 60 minutes.

Study Session Procedure

1. Welcome
 - Participants joined the Zoom call, using link provided via email
 - One researcher (moderator) greeted the participant
 - The other two researchers (observers/notetakers) had their video and microphone off
 - Overviewed how the session would proceed, debriefed procedure and expectations, and reviewed the consent form that participants signed
 - Explained that "We are testing the product, not you as the participant"
 - Explained the "think aloud" protocol, which asks participants to think aloud by narrating their thought process as they completed the tasks
 - Asked for permission to video and audio recording
 - If yes, started recording
2. Pre-Test Background Questions
 - Started with easy introduction questions to make participants feel more comfortable and get them in the interview mindset

3. Tasks

- Walked through the four tasks, reminding participants to think aloud
- Post-task interview
 - Satisfaction rating of each task (likert scale 1-5)
 - Ease of each task (likert scale 1-5)
 - Overall experience with the task (qualitative)

4. Post-Test

- Post-test questionnaire (Google Forms link) sent to participant in the chat
- Post-test interview (closing questions)
 - Observers had the opportunity to ask any additional questions
- Thanked the participant and re-sent researcher contact information

Study Session Roles

Each session involved all three researchers, with the following roles:

- Moderator (1) – facilitated the session, interacted with the participant
- Observer & Notetaker (2) – observed the session and took detailed notes

The researchers rotated between these roles for each study session.

Tasks

See [Appendix V](#) for more detail on the full tasks, as well as [Appendix XIII](#) for definitions of AmazonFresh pages mentioned in starting state and successful completion.

Please note, the following task order remained the same for each participant. This is because it should align with the natural flow of a traditional in-person grocery shopping and the tasks build on one another.

#	Task	Objective
1	<p>Starting on the Amazon.com Home page, navigate to AmazonFresh.</p> <p>→ Starting state: Amazon.com Home page</p> <p>→ Successful completion: User is on the AmazonFresh page</p>	Discoverability of AmazonFresh

2	<p>Imagine this is your grocery list. Please shop for the items on the list, adding them to your cart as you go.</p> <ul style="list-style-type: none"> → Starting state: AmazonFresh page → Successful completion: All items from the grocery list are accurately placed in the cart. <p>Grocery List: (send in Zoom chat)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cream Cheese, Strawberry Flavor, 15.5 oz <input type="checkbox"/> 3 organic apples, cheapest option <input type="checkbox"/> 2 bags of spinach from Whole Foods Market <input type="checkbox"/> Gluten Free Crackers, the Best Seller <input type="checkbox"/> 2 dozen eggs, the cheapest one but the rating needs to be higher than 4 stars <input type="checkbox"/> Raw shrimp, the price should less than \$8 <input type="checkbox"/> Actually I want 6 organic apples (change the quantity) <input type="checkbox"/> Soda of your choice, must be 0 calories 	Discoverability, Learnability, and Satisfaction of grocery shopping process as users look for desired grocery items
3	<p>Imagine you have recently moved. Change your address in the AmazonFresh system to 123 Pine St, Seattle, WA 98105.</p> <ul style="list-style-type: none"> → Starting state: AmazonFresh page → Successful completion: Delivery address has been successfully changed. 	Discoverability and Learnability of changing delivery address (common scenario during COVID-19 and among students)
4	<p>Now that you have the items from your list, please check out.</p> <ul style="list-style-type: none"> → Starting state: AmazonFresh cart → Successful completion: Correct delivery address, date, and time are set. Payment method has been selected. Order is ready to submit (but will not actually be submitted due to financial constraints). 	Learnability and Satisfaction of checkout process

Metrics

Throughout the duration of the study, we used many different metrics and methods to collect data. This includes various data collection methods that were implemented before, during, and after each study session, summarized in the table below.

	Summary of Data Collected
Screener Survey	A Google Form was sent out with a series of questions used to determine if potential participants fit our study criteria. Based on the results, we followed up with five respondents who met the requirements to participate in the usability study sessions. The data collected in this survey also provided quantitative measurements regarding a participant's previous online shopping experience and familiarity with Amazon.com. This provided context for our results and allowed for further comparison between participants. After being selected from the screener survey, each participant was sent a consent form (Appendix II) via email, outlining the study protocol and expectations. This was necessary to establish informed consent with the participants. (See Appendix I for Screener Survey questions).
Pre-Test Interview	The pre-test interview was conducted verbally with participants. First, they were welcomed and asked some basic background questions to get them comfortable with speaking their thoughts. The primary questions aimed toward obtaining qualitative data regarding the participant's prior online shopping experience and familiarity with the Amazon.com platform to elaborate on the data they provided in the screener survey. (See Appendix IV for Pre-Test Interview questions).
Tasks	While participants completed the four tasks, the two observers/notetakers present took detailed notes throughout the session, tracking both quantitative and qualitative data points. We aimed to make particular note of positive and negative comments and facial expressions, as well as points of confusion or frustration. (See Appendix V for Data Logging Tables and Note Taking Form. Please note that these forms were used as a guide while observing and taking notes, but

	were not strictly followed. During the sessions, we frequently found that it was overall more effective to focus mainly on qualitative data collection, and then re-watch the session recordings to obtain more specific evidence and quantitative data).
Post-Task Questionnaire	After the participant completed each of the four tasks, the moderator verbally asked a series of three questions. Two of these were likert scale (1-5) questions used to gather data about how easy the task was to complete and how satisfied the participant was after completing the task. The third question was more open ended, asking the user about their overall experience with the task. (See Appendix VI for the Post-Task Questionnaire).
Post-Test Questionnaire	After all four tasks were completed, the participant completed a Post-Test Questionnaire via an online Google Form. This form consisted of eight likert scale questions inquiring about the participant's overall experience using AmazonFresh. There was also one open-ended question, allowing the participant to provide any additional commentary on their experience. (See Appendix VII for the Post-Test Questionnaire).
Post-Test Interview	To conclude the usability study session, the moderator verbally conducted a post-test interview. The questions were geared towards gathering more qualitative data surrounding the participant's experience, asking about their difficulties, confusions, and frustrations. (See Appendix VIII for the Post-Test Interview questions).
Study Session Recording	Each usability study session was recorded with both video and audio. This allowed us to capture the facial expressions of participants, the audio as they followed the think aloud protocol throughout the session, and the participant's screen activity on the AmazonFresh website. We were able to reference these recordings after the session for further data collection, which involved acquiring participant quotes and video clips of the session. (See Appendix XII for links to the session recordings).

Data Metrics Collected During the Session

	Definition	Type	Collection	Analysis
Effectiveness	Task success – binary Assists from moderator Steps taken Errors	Quantitative, objective	Observation: count	Descriptive stats
Satisfaction	Perceived ease of use Emotional satisfaction Overall user experience	Quantitative, subjective	Likert scale, interview & observation	Descriptive stats Content analysis

Results and Recommendations

To analyze and synthesize the data gathered during our usability study sessions, we utilized multiple methods. First, we created affinity diagrams by reviewing the session recordings and notes. This involved compiling the data across all five sessions and grouping them by task. Then, we created sub-groupings within each task to identify patterns and determine key issues. The affinity diagram maps were instrumental in eliciting key findings and determining relevant recommendations and next steps. Next, we created a severity rating scale which was used to prioritize the findings based on their impact on the user experience. Overall, we came up with five key findings (and corresponding severity ratings) which are presented in this section along with recommendations to address them.

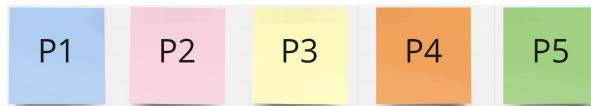
Affinity Diagramming

Miro Board Link:

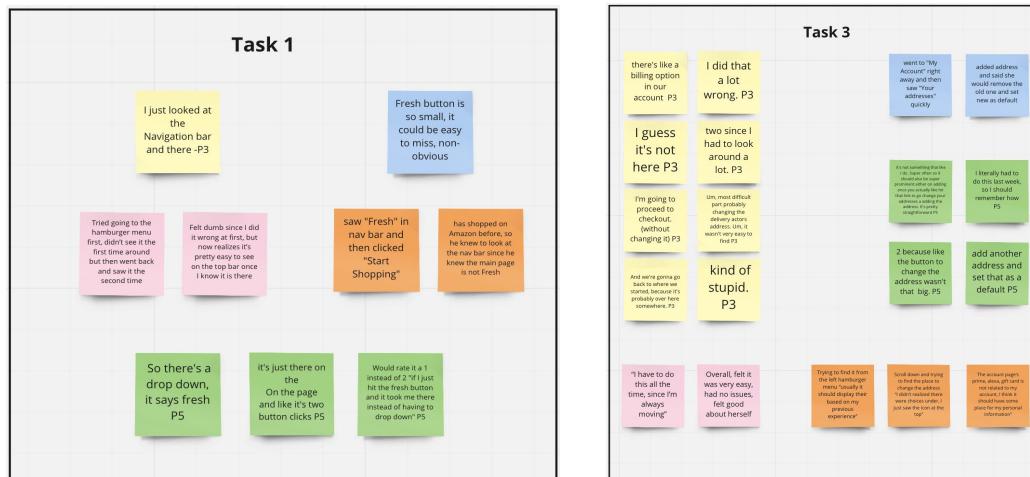
<https://miro.com/welcomeonboard/OOfc3s5EWZUrx9HQBF7QmzxknPyS5f261oXCpM0ENksrHXpoM1kNSdHWkUxGLTz>

As the first step of our results analysis, we did two rounds of affinity diagramming. First, we did so by each task (color coded by participant), then organized them into sub-categories.

Participant Color Key



Affinity Diagramming by Task (1st Round)

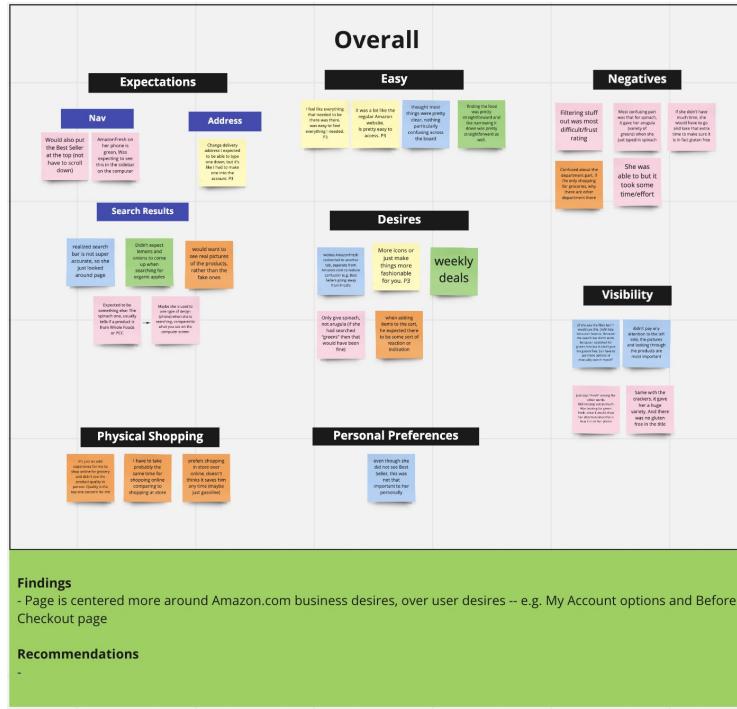


Task 2				Task 4			
show up at the top for me and I can easily find the cheapest option if it's the lowest option P3	expected to be able to sort by Best Seller	"why is there an onion ... weird"	didn't notice Best Seller tag until being prompted by researcher (too small)	I'll go check out. I'm gonna have to do a search because different sections, but check out this part first. P3	I wish there was an option to combine P3	chose cheaper delivery option (2-hour window over 1-hour window)	would be more satisfied if the items she wanted were available at her address
I just assumed there's a section for that P3	can I use this toolbar... I'll just type in cream cheese here -P3	click on the best seller bar for the dropdown menu and selected	expected to be able to change the creamy cheese from the product page	Really likes how there is the column on the right side, super easy to find	This is advertising food to me that I can't find! (Looking at the page full of grocery suggestion during the checkout)	- Kind of annoying - Wanted these items	"I wish knew previously that changing the address would affect the availability"
I'm assuming best seller would show up first. I don't know. P3	It didn't work. So I'm just going to assume the top one is the best seller. P3	didn't notice Best Seller tag until being prompted by researcher (too small)	Resurface on the computer is a little bit different from the phone. It was supposed to have seen it on the phone.	Annoyed that there's an additional shipping fee	Likes how there is a summary of what she chose at the very bottom		
And since I already looked at the sidebar before I knew that was this thing P3	We can just do it over here. I saw this button before p3	clicked on "Best Sellers" in the nav bar, which took her away from Fresh	"surface on my computer is a little bit different from the phone ... I think I would have seen it on the phone"	I didn't realize you could change your delivery address for free. So I sort of signed over P3, but then re-entered the order I just put in and paid \$40.00 that is pretty easy to get off. P3	I'm going to proceed to checkout. P5	Didn't see the address change on the first screen	The before you checkout page is not necessary. It interrupts the smoothness of the experience
only confusing part was a best seller P3	one is pretty satisfying and I found everything I needed. I think I completed the task. P3	Seeing "Newcomer" listing for the top option as I scroll down the list, rather than the rest of the items on sale P5	Wouldn't like the Best option was like a lemon or something. And not even on sale P5	Looking at the "before you checkout". It might be helpful sometimes to remind me that I might have something forgotten in my cart	"But kind of annoying to read it every time"	Clicked the address change at the first time but realized that the address didn't change	"I thought it means that "Don't change other stuff in my cart!"
I like the sidebar option. I wish I looked at that earlier. P3	found the sidebar useful. I found it towards the end of the task P3	Yeah there should be a lemon. When you search for organic apples. P5	How do I tell which one's the best seller. P5	Looking at the "before you checkout". It might be helpful sometimes to remind me that I might have something forgotten in my cart			
Says "light" once she is considered about "front" and "from Whole Foods Market is the same	I don't know how to find one from Whole Foods Market	Best seller was "randomly placed" P5	Organic whole food, and I think that's what I'm looking for. I'm looking for organic apples. I'm not sure if it's healthy or not	More icons or just make things more fashionable for you. P3			
very confused why the filter search bar went away	"Do I have to look for myself the cheapest one?" "Why did it go away ... it's always there!"	Was expecting to just see this in the descriptions	Was looking for a way to have Best Seller at the top	More icons or just make things more fashionable for you. P3			
After prompted by researcher, she tends to select the department	"Why would it be under toys and games?"	"Wow, I do feel dumb for not seeing that."	This was very unhelpful, did not think it would shift to different departments	More icons or just make things more fashionable for you. P3			
Assumed that Amazon is giving the results she wanted based on the result	You need to know your own brands when buying, since it will tell always fit you	"more very interesting - really want I just want to know what have planned the right answer [be generous]"	Did do something that made it go back to the department list? Was that my fault?	More icons or just make things more fashionable for you. P3			
P4 doesn't usually shop with grocery list (just looks around)	immediately goes to search bar to look for the items	"I'm trying to figure out the difference between the first two tabs. I'm not sure now I'm looking at the price or the description"	looking for cheaper option] "I think I can use a sorting feature here ... where is it?"	More icons or just make things more fashionable for you. P3			
clicks on the "Cart" button to change apple quantity from 1 to 3	when looking for sorting, he was looking for a button with price	gives in "Cart" every time he wants to check if the quantity is correct or the quantity	accidentally added kale instead of spinach (except all search results to be spinach)	More icons or just make things more fashionable for you. P3			
I almost feel like I missed something because I didn't have a grote to let me sort. But I don't ... [see if]	"I think it's better to do a search for the item. That's what I do. I just click on the search bar and type in the word I'm looking for."	"I'm trying to figure out the difference between the first two tabs. I'm not sure now I'm looking at the price or the description"	"Oh ... this part [the department] doesn't go away"	More icons or just make things more fashionable for you. P3			
Looked at cart since cheeses based on the item quantity by price (not just cheap, not best deal)	"I didn't know I needed to add it specifically to the shopping cart" (goes to the cart to check)	"I'm expecting a sorting feature that can make me sort. I have successfully added the item (a change on the screen)"	"doesn't go in minimum price [user clicks 'Under 10' filter] more effort to type than click"	More icons or just make things more fashionable for you. P3			
(when searching for coke) "Where is the add button?" (then laughs)	(when he doesn't see the Add button) "It's weird ... I have to like click on it, I don't know why"	(ease rating) "It's probably just my problem!"	"searching [sorting/filtering] like those features are not displayed on the screen. It's hard to find them features"	More icons or just make things more fashionable for you. P3			
Name: "Don't forget to check the add on there when the add on items is added to the cart or success message would help"	"I'm just a really bad experience to go back to cart and then go back to this page"	"I'm not sure if the add on items are added to the cart or not because I'm not seeing anything on the screen"	"I'm not sure if the add on items are added to the cart or not because I'm not seeing anything on the screen"	More icons or just make things more fashionable for you. P3			

Overall							
I feel like everything that needs to be done was easy to find everything I need. P3	Change delivery address I expected to be able to type one down, but it's like I had to make one into the account. P3	thought things were pretty clear, nothing particularly confusing across the board	even though she did not see Best Seller, this was not that important to her personally	didn't pay any attention to the left side, she just scrolls and looking through the products are most important			
It was all it was a lot like the regular Amazon website. Is pretty easy to access. P3	Wishes AmazonFresh redirected to another link so that Amazon.com to reduce confusion about Best Sellers going away from Fresh	realized search bar is not super accurate, so she just looked around page	If I see the Best bar I would use this. Definitely. Because I don't know the search bar don't know the address. I'm not sure if I didn't give the address to use these options or manually navigate				
Filtering stuff out was most difficult/frust rating	Most confusing part was that for somach, it gave her angula [angula or green] when she just typed in spinach	Same with the crackers, it gave her a huge variety of green when she was not green free in the title	If she didn't have much time, she would have to go and scroll down to make time to make sure it is in fact gluten free	She was able to but it took some time/effort			
Expected to be one type of design [she sees the search results to be different compared to what she saw on the computer screen]	Maybe she is used to one type of design [she sees the search results to be different compared to what she saw on the computer screen]	Amazon Fresh on her phone is green. Was expecting to see this in the sidebar on the computer	Jill says "forget" among the other words. Did she mean it much more? I'm not sure. I'm not sure if she's referring to her phone since this is how it was on phone	Only give spinach, not enough if she had seen the "green" then that would have been fine)			
Finding the food was pretty straightforward and the narrowing it down was pretty straightforward as well	Didn't expect lemons and onions to come up when searching for organic apples	I C can't wait	Confused about the department part of it. Only shopping for groceries, why that's in the top products	Would also put the Best Seller at the top (not have to scroll down)			
I have to take probably the same time for shopping online compared to shopping at store	Confused about the department part of it. Only shopping for groceries, why that's in the top products	prefers shopping in-store over online, doesn't think it saves him any time (because just gasoline)	when adding items to the cart, he expected there to be some sort of notification	would want to see real photos of the products, rather than the fake ones			

Affinity Diagramming by Task Sub-Categories w/ Initial Findings & Recommendations (2nd Round)





Positive Findings

The AmazonFresh website had many successes and features that were already working well for participants. Users felt that their prior experience shopping on Amazon.com translated to their ability to navigate AmazonFresh for the first time. Additionally, *all* of the participants were able to successfully complete all of the tasks by the end of the study. The *average* ease of use rating and average satisfaction rating were both 2 or below for all four tasks. This means that overall, participants felt that the tasks were easy or very easy and were satisfied or very satisfied with their experience. This demonstrates that many things are already working well for participants on the AmazonFresh platform. Some data to quantify these successes:

- 5 out of 5 participants were able to get all of the grocery list items
- 4 out of 5 participants were Satisfied or Very Satisfied with their overall experience using AmazonFresh
- 4 out of 5 participants Agreed or Strongly Agreed that they can locate the content they need

Participant quotes:

- "It was a lot like the regular Amazon website, it is pretty easy to access." – P3
- "Finding the food was pretty straightforward and narrowing it down was pretty straightforward as well." – P5

Severity Ratings

Below is the severity rating scale we used to aid in prioritizing our findings and recommendations moving forward. Referencing the severity ratings will help the team scope which part of the product should be addressed first based on which issues have the greatest impact on the usability and user's experience. We decided on a high, medium, low scale to keep it simple. The simplicity of a three category rating allows the team to efficiently scope the work as well as easily distinguish between high or low priority.



High

Causes user extreme confusion or frustration, incites errors during task



Medium

Causes user some confusion or frustration, may cause delay of task



Low

Has minor effect on usability experience, causes some hesitation

User Journey

We decided to structure our findings to follow along with the user's journey using AmazonFresh (which also corresponds to the four tasks). Grocery shopping can be a methodical process, as it would not make sense for users to complete the tasks in a different order than the one displayed below. Moreover, our study goal was to address the *end-to-end* online grocery shopping experience. For this reason, we wanted to keep our findings consistent with the user journey and task order. The key findings each correspond to a certain step in the user journey, ensuring that the entire process is accounted for in improving the user's online grocery shopping experience. Meanwhile, the severity ratings help prioritize which step of the journey should be addressed first.



Summary of Key Findings

Finding	Severity	User Journey Step
AmazonFresh not clearly differentiated on Amazon.com	Low 	(1) Navigate to AmazonFresh
Search results sparked confusion and could be unreliable	High 	(2) Shop for items on grocery list
Struggles with discoverability and usability of filter sidebar	High 	(2) Shop for items on grocery list
Despite minor delay, address change success	Low 	(3) Change delivery address
Helpful checkout process with minor frustration	Medium 	(4) Checkout

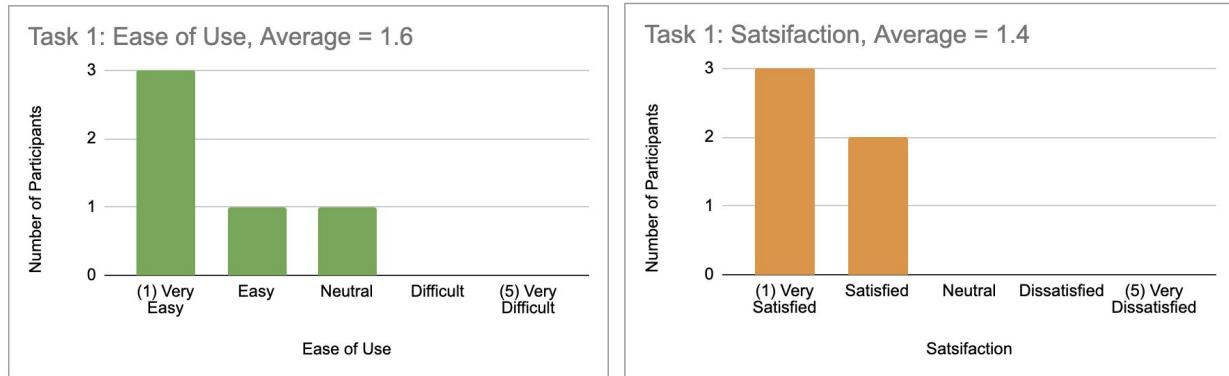
Key Findings

Task 1: Navigate to AmazonFresh

Finding	Severity
<p>AmazonFresh not clearly differentiated on Amazon.com</p> <p>All participants were able to navigate from Amazon.com to the AmazonFresh page through the Navigation Bar. However, some participants felt that the process could have been simplified and the button could have been more distinguishable.</p>	Low

Data

- 3 out of 5 participants had difficulties navigating to AmazonFresh.
- For the satisfaction of this task, Participant 5 mentioned that they would rate it a 1 instead of 2 "if I just hit the fresh button and it took me there instead of having to drop down."



Evidence

UI Example

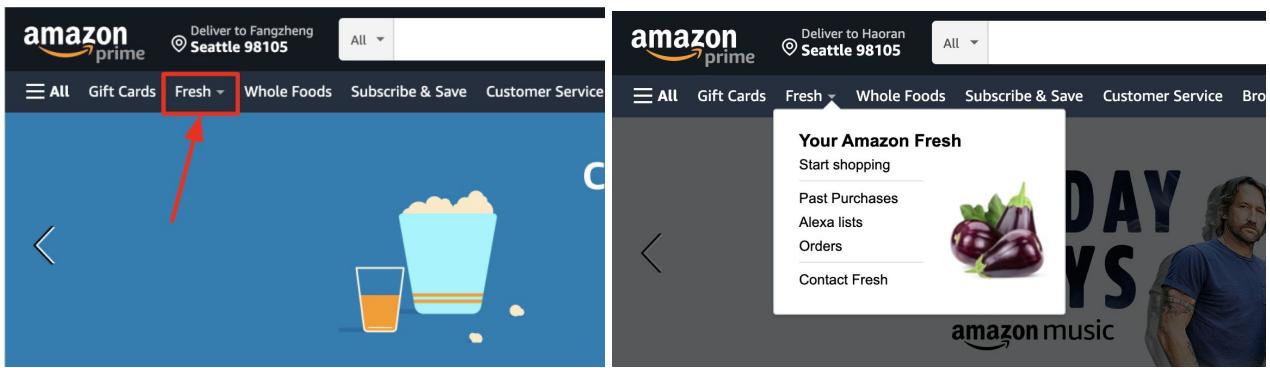


Figure 1 (left) & 2 (right). Screenshot of the navigation bar on the Amazon.com Homepage that includes the entry point for AmazonFresh. Drop down menu appears when the arrow is clicked.

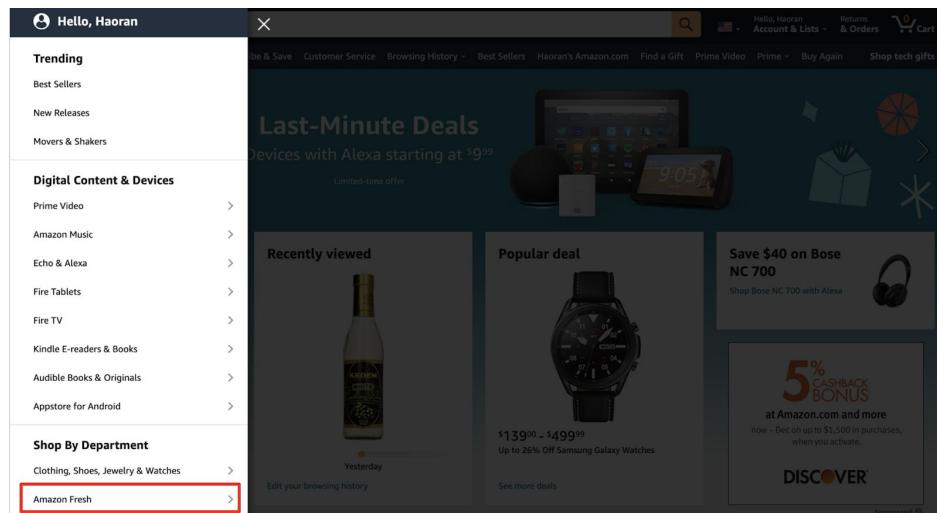


Figure 3. Screenshot of the expansion of the hamburger menu in Amazon Homepage that includes an entry point for AmazonFresh.

Participant Quotes

- "The Fresh button is so small, it could be easy to miss. It's not obvious" – P1
- "Wow, I do feel dumb for not seeing that." – P2 (Tried going to the hamburger menu first, didn't see it the first time around but then went back and saw it the second time)
- "AmazonFresh on my phone is usually green which I can see in the tabs or the sidebar so I was also expecting to see that on the computer ... It didn't really pop out as much, I was looking for green Fresh. That would draw my attention to it." – P2

Recommendation

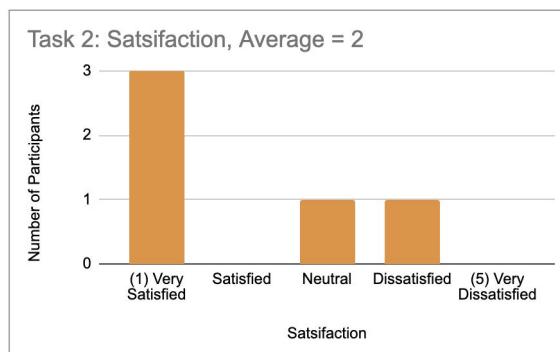
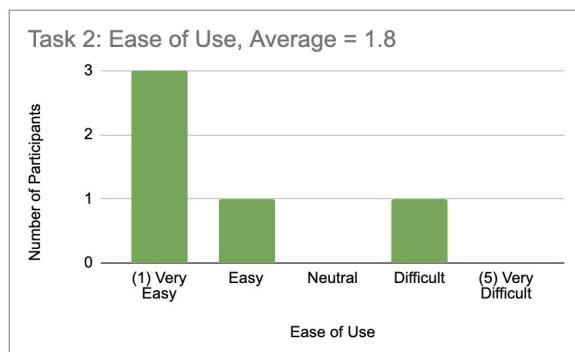
Based on the findings from Task 1, the team recommends differentiating the "Fresh" button on the Amazon.com page from the other Amazon.com related buttons. This will help increase the visibility and maintain consistent AmazonFresh branding. Also, we suggest redirecting users to a new AmazonFresh webpage directly after clicking "Fresh" instead of a dropdown menu to help clear up some initial confusion.

Task 2: Shop for items on grocery list

Finding	Severity
<p>Search results sparked confusion and could be unreliable</p> <p>Participants added all grocery list items to the cart eventually but mentioned search results were unreliable or confusing.</p>	High 

Data

- 4 out of 5 participants mentioned search results were unreliable or confusing, causing them to manually look for desired products knowing the results may not be accurate



Evidence

UI Example

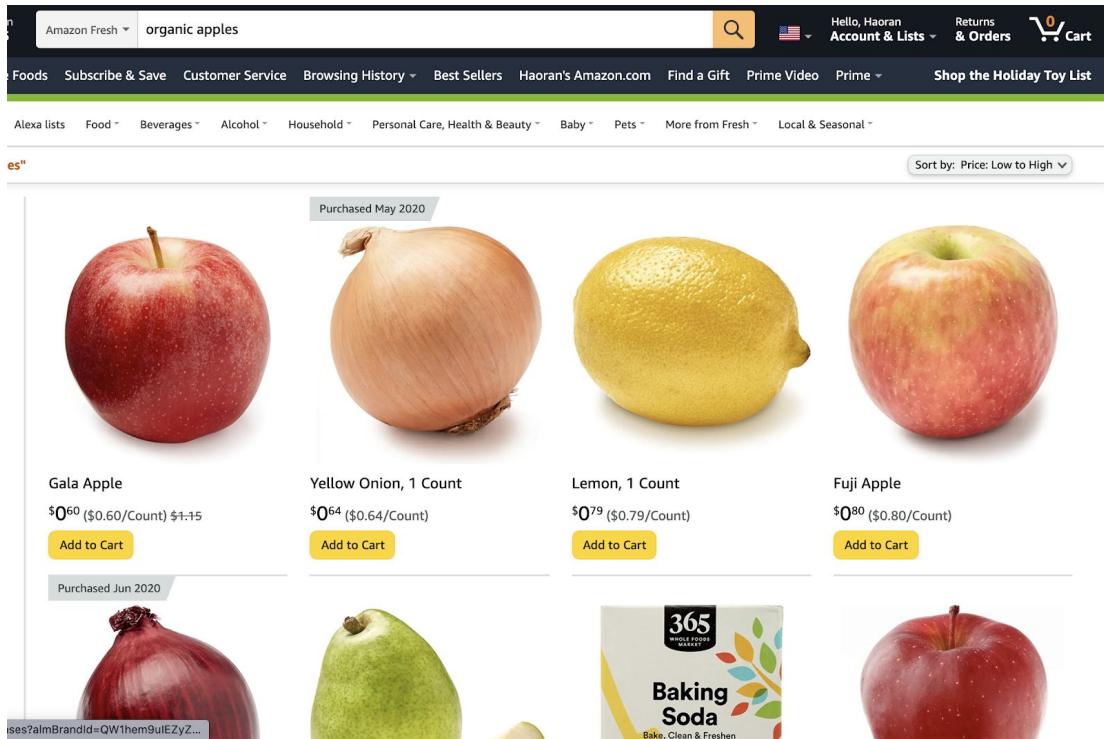


Figure 4. Screenshot of AmazonFresh search results for "organic apple." Resulting products include onion, lemon, & baking soda, in addition to various apples without organic in the name.

Participant Quotes

- "Why us there an onion ... weird" – P1
- "There shouldn't be a lemon when I search for organic apples" – P5
- "I realized the search bar is not super accurate, so I had to look around the page myself [for desired groceries]." –P1

Video Evidence

https://drive.google.com/file/d/1An8LUtQ0pgL4V1j0gh4oa_SS7on5z65W/view?usp=sharing

Recommendation

Based on the findings from Task 2, the team recommends incorporating more complex searching options to help improve the accuracy of search results. This might include options similar to that the Google Search Engine provides, such as utilizing quotation marks ("") to search for keywords, or allowing users to add criteria to their search (e.g. Brand:Whole Foods, Price:<10, Calories:0).

Task 2: Shop for items on grocery list

Finding	Severity
<p>Struggles with discoverability and usability of filter sidebar</p> <p>Some participants struggled with the usability of the filter sidebar while others missed the feature all together.</p>	<p>High</p> 

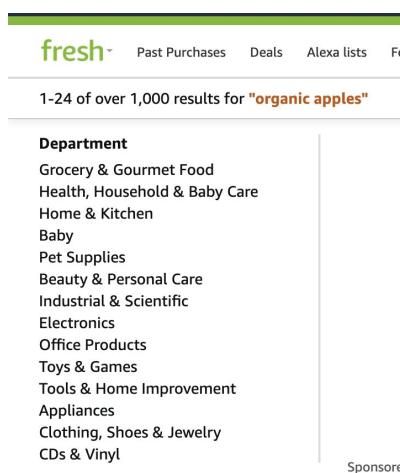
Data

- 2 out of 5 did not find or use the filter sidebar
- 2 out of 3 who used the filter sidebar required moderator assistance to find it
- 2 out of 3 participants who found the filter sidebar had difficulty using the built-in sorting features



Evidence: Discoverability Issues

UI Example



fresh past purchases deals Alexa lists

1-24 of over 1,000 results for "organic apples"

Department

- Grocery & Gourmet Food
- Health, Household & Baby Care
- Home & Kitchen
- Baby
- Pet Supplies
- Beauty & Personal Care
- Industrial & Scientific
- Electronics
- Office Products
- Toys & Games
- Tools & Home Improvement
- Appliances
- Clothing, Shoes & Jewelry
- CDs & Vinyl

Sponsor

To sort, select a department from the sidebar

Figure 5 (left) & 6 (right). Screenshot of the sidebar and corresponding instructions on the search results page which led to **discoverability** issues. Users were required to click on "Grocery & Gourmet Food" (as indicated in Figure 6) in order for the filters to appear, but many struggled figuring this out, causing them to not use the filter feature at all during the task.

Participant Quotes

- “I assume that nobody is going to notice this feature without previous experience.” – P4
- “I like the sidebar option. I wish I looked at that earlier.” – P3

Video

<https://drive.google.com/file/d/122adOEybGhPUnE5QYWZMoCluIA1cMRO4/view?usp=sharing>

Evidence: Usability Issues

UI Example

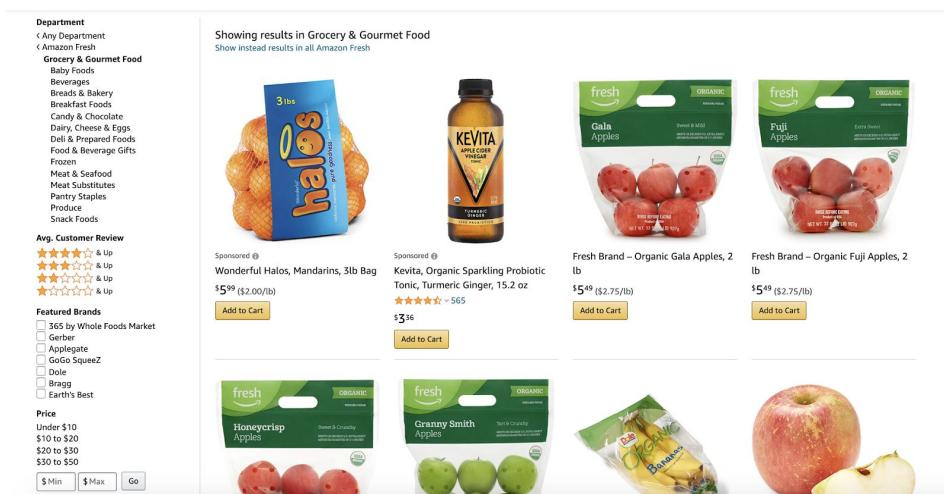


Figure 7. Screenshot of the filter sidebar on the search results page that implements parallel scrolling. As the user scrolls down the page, the filters and product results scroll in tandem, leading to **usability** issues.

Participant Quotes

- “Did I do something that made it go back to the department list? Was that my fault?” – P2
- “Why would organic apples be under toys and games?” – P2
- “I would have expected the filters to be higher up on the page.” – P1

Video

<https://drive.google.com/file/d/1i7GTT9krsS7PQdIpIwXWZDiush1Zi2RR/view?usp=sharing>

Recommendation

Based on the findings from Task 2, the team recommends improving the visibility of the filter sidebar, when shopping within Fresh, the sidebar should automatically select "Grocery & Gourmet Food" department, allow users to customize order of filters, allowing the users filter preferences shown on the top, and consider incorporating separate scrolling for filter sidebar and the search results.

Task 3: Change delivery address

Finding	Severity
<p>Despite minor delay, address change success</p> <p>Although participants were able to change the delivery address successfully, they initially struggled with locating where to make the change.</p> <p>Previous Amazon.com experience helped some participants complete this task. More specifically, users knew to go to "My Account" but mentioned that the "Your addresses" button is not visible and took some time to find.</p>	<p>Low</p> 

Data

- 2 out of 5 participants had difficulty finding the "Your addresses" directly
- 3 out of 5 participants mentioned that they expected the "Your addresses" button to be among the large, colorful icons at the top of the "Your Account" page"
- 1 participant mentioned they had just changed their address last week. At first, they said "I don't remember" how to do this, before finding it shortly after
- 2 participants mentioned that they would want to have the most recently added address set as the default



Evidence

UI Example

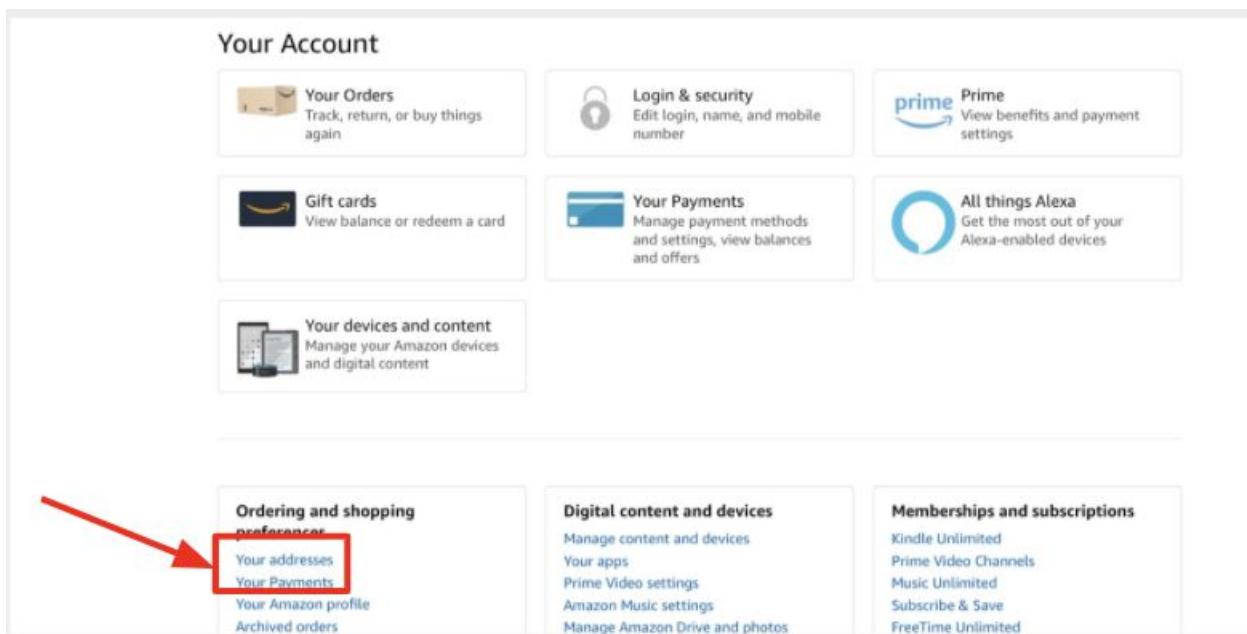


Figure 8. Screenshot of the Amazon.com "Your Account" page, which includes the entry point for adding or changing a delivery address. The colorful icons at the top of the page caught user attention, while the "Your addresses" button highlighted in red was often missed.

Participant Quotes

- "I didn't realize there were choices under, I just saw the icons at the top." – P4
- "The most difficult part is probably changing the delivery address. It wasn't very easy to find." – P3
- "The account page's icons for Prime, Alexa, Gift card are not related to my account. I think the top should be a place for my personal information." – P4

Video

<https://drive.google.com/file/d/1a5k2qBXH7BerZSKsWsdhcg2RPEiCw2vi/view?usp=sharing>

Recommendation

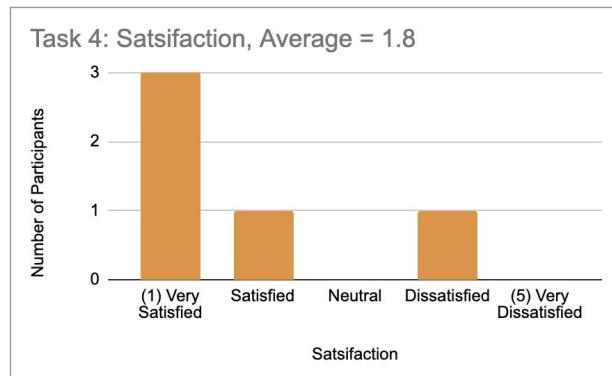
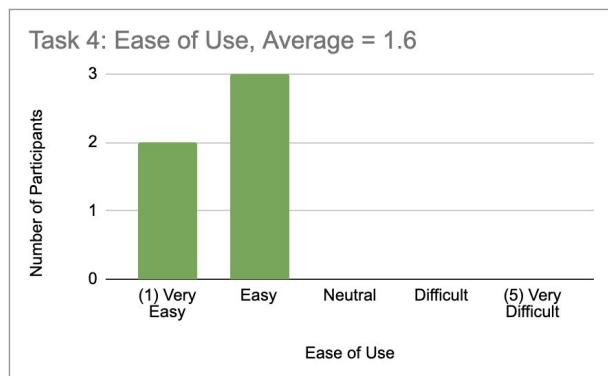
Based on the findings from Task 3, the team recommends improving the visibility of the "Your Addresses" button potentially using an icon. This would serve to prioritize the user's personal needs on the account settings page. Moreover, users indicated that it would be helpful if they also had the option to add a new delivery address during checkout.

Task 4: Checkout

Finding	Severity
Helpful checkout process with minor frustration While participants seamlessly checked out and found the delivery sections helpful, some found the item suggestion page was unnecessary and were confused why there was no "back" button on the page.	Medium 

Data

- Most participants were able to checkout pretty seamlessly
- 3 out of 5 participants found the Before Checkout page, advertising additional items, to be unnecessary (see video clip)
- 2 out of 5 participants found the overview of delivery selections during checkout helpful
- 2 out of 5 participants expressed confusion that there was not a back button during the checkout process (required to use web browser back button)
- 2 participants mentioned that they value cost when choosing a shipping option



Evidence

UI Example

The screenshot shows the 'Before you checkout' page on Amazon. At the top, there's a navigation bar with 'amazon.com', 'SIGN IN', 'SHIPPING & PAYMENT', 'GIFT OPTIONS', and 'PLACE ORDER'. Below this, a large heading says 'Before you checkout' with a 'Continue' button. A section titled 'Did you forget?' displays six grocery items with their prices and star ratings:

- Bud Light Beer, 18 pk, 12 oz cans: \$17.99 (4.8 stars)
- Coca-Cola, Zero Soda, 12 oz (pack of 12): \$5.08 (\$0.04/Fl Oz) (4.5 stars)
- Mountain Dew Diet Soda, 12 Fl Oz (pack of 12): \$4.99 (\$0.03/Fl Oz) (4.1 stars)
- Cucumber English Seedless Conventional, 1 Each: \$1.79 (\$1.79/Count) (4.1 stars)
- Organic Valley, Organic Vitamin D Whole Milk, 128 Fl Oz: \$6.78 (2.3 stars)
- Diet Dr. Pepper, 12 Fl Oz (pack of 12): \$4.99 (\$0.03/Fl Oz) (4.0 stars)

Each item has an 'Add to Cart' button below it. To the left and right of the items are navigation arrows. The page is labeled 'Page 1 of 9'.

Below this, another section titled 'Recommended for you' displays six more grocery items:

- Philadelphia Strawberry Cream Cheese Spread (15.5 oz Tub): \$5.28 (\$5.98) (4.2 stars)
- Prego Italian Pasta Sauce, Three Cheese, 24 Ounce (Packaging May Vary): \$1.89 (\$2.79) (4.5 stars)
- Amazon Brand - Happy Belly Strawberry Cream Cheese Spread, 8 Ounce: \$1.29 (2.3 stars)
- Jimmy Dean Meat Lovers Casserole Bites, 9 oz (Frozen): \$7.07 (2.1 stars)
- Pepsi, Zero Sugar Cola, 12oz (pack of 12): \$4.98 (\$0.03/Fl Oz) (4.8 stars)
- Prego Pasta Sauce, Roasted Garlic & Herb, 24 oz: \$1.89 (\$0.08/Ounce) (4.9 stars)

Each item has an 'Add to Cart' button below it. Navigation arrows are on the left and right. The page is labeled 'Page 1 of 9'.

Figure 8: Screenshot of the Amazon “Before you checkout” page that appears after the user clicks “Proceed to checkout” from their cart. This page advertises many additional grocery items, and lacks a back button to revert to prior steps in the checkout process.

The screenshot shows the 'Schedule your order' page. At the top, it says 'Schedule your order'. Below this, there's a 'Select a location' section with a note about doorstep delivery and a 'Delivery to:' field showing 'Haoran Yu - 4060 9TH AVE NE APT 306, SEATTLE, WA 98105-6475' with a 'Change' link. There's also a 'Learn more' link. Below this, a 'Select a day' section shows 'Today Dec 15' as the selected option, with 'Tomorrow Dec 16' and 'Thursday Dec 17' as other options. Under 'Select a time', there are two sections: '1-hour delivery windows' and '2-hour delivery windows'. The '1-hour delivery windows' section shows '8:00 PM - 9:00 PM' for \$9.99. The '2-hour delivery windows' section shows '8:00 PM - 10:00 PM' for \$4.99, '9:00 PM - 10:00 PM' for \$9.99, and '10:00 PM - 12:00 AM' for \$4.99. At the bottom, it says 'Doorstep Delivery: Today, Dec 15, 8:00 PM - 9:00 PM' and has a 'Continue' button.

Figure 9. Screenshot of Amazon “Schedule your order” page, in which selected delivery preferences are previewed at the bottom of the screen, a feature that participants appreciated.

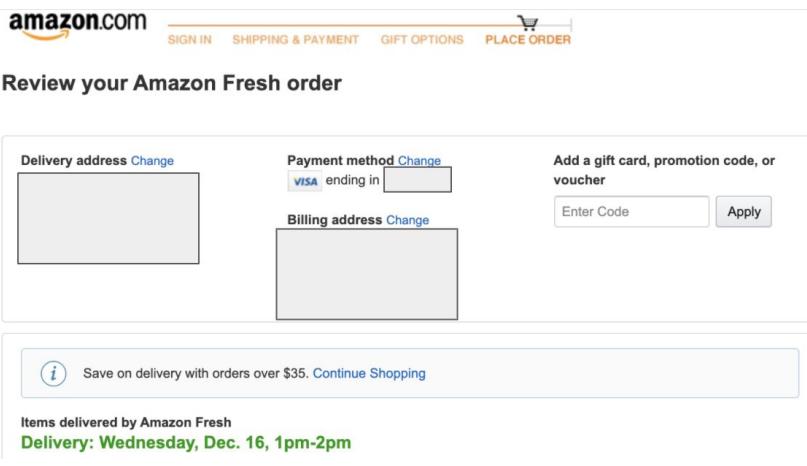


Figure 10. Screenshot of the "Review your Amazon Fresh order" page, displaying the selected delivery address, payment methods. and all products the user is purchasing. Participants indicated this additional verification page to be useful.

Participant Quotes

- "The before you checkout page is not necessary. It interrupts the smoothness of the experience." – P4
- "Kind of annoying to read it every time during checkout." – P4
- [after selecting the wrong date] "Looks like I have to go back. Oh, there's no back button on the page." – P3

Video

https://drive.google.com/file/d/10L2ENUqEgplkQT_bdtDmiSSyfvo1_x1n/view?usp=sharing

Recommendation

Based on the findings from Task 4, the team recommends integrating the item suggestions into the checkout page (rather than consuming its own page) or removing this feature altogether. Additionally, adding a back button during the checkout process would allow users to seamlessly recover from mistakes.

Conclusion

Next Steps

Contingent on participant availability, these same tasks should be conducted with the same group of participants between two weeks and one month from now (December 15, 2020). This can allow us to better understand the learnability of the AmazonFresh platform for new users, by comparing the results from this initial test with their experience and performance on the tasks the second time, after the designated time frame.

We also suggest conducting another usability study session, using an open-ended grocery list, rather than a provided one. This can allow us to better understand how participants naturally shop for grocery items they personally desire, compared to the somewhat artificial shopping experience created in this round of tests.

Other next steps to improve the usability of AmazonFresh would be to implement some of the recommendations provided in this report. After each major iteration, additional testing and research should be conducted in order to understand the real impact and effectiveness of the changes on the customer experience. Continuous iteration of the designs and testing of the new iteration will be key in understanding the product and customer experience in great depth. The next rounds of testing can be unmoderated, as this type of testing will provide faster results that will allow for a more efficient process of analysis and testing as new iterations are created. Ideally, these tests would include a wider age range of participants, to more accurately reflect the AmazonFresh user group.

Final Recommendations

Overall, the AmazonFresh page successfully achieves the main goal of providing customers with an online grocery shopping experience that fulfills user's grocery needs. This was reflected by the fact that all participants (who were also new AmazonFresh users) were able to successfully complete all tasks. To make things even more seamless, consistent branding, improved visibility of key features, and error recovery could be better implemented. Also, creating a smoother flow with fewer distractions and interruptions throughout the AmazonFresh grocery shopping process will help reduce overall time to complete tasks and more effectively get users the products they need. Reducing time to complete tasks will be beneficial by minimizing frustration and confusion, and therefore motivate new customers to use the product again, and become returning customers.

Final Reflection

If we were to conduct this usability study again, we would use a demo Amazon account to enable the full process of purchasing groceries online until completion. This could have improved our findings by minimizing our interactions and interruptions during the task process. With the demo account, we would have been able to observe the participants more naturally. Also, we would have liked to include participants from a more diverse age range in order to better reflect the AmazonFresh user group. This would allow us to evaluate how different participant profiles, with differing levels of technology literacy, interact with the product.

As highlighted in our next steps, if we had more time we would run through the tasks with the same participants after a specific time frame (ideally 2 weeks to one month later) in order to better understand the learnability of the product. Understanding the learnability of AmazonFresh was one of the main goals for this study. The data metrics and testing methods were structured to address learnability to the best of our ability; however, due to time constraints, we were unable to conduct a second round of test sessions to most accurately target this goal.

Appendix I: Screener Survey

Introduction

Participate in a HCDE 417 Usability Research Study!

Our research team is currently looking for people with some online shopping experience and familiarity with the Amazon platform. If you have previously used Amazon, we would love to hear from you.

If you fit the criteria for this study, we will reach out with further details.

Study Details

Session Date: November 23rd - December 4th

Session Length: 60 minutes

Session Location: Remote via Zoom Meeting

Session Format: 1v1 with UX Researcher

Screening Questions

1. Please provide us with your name and contact information. We will contact you by email if you are selected to participate in our study. (*open-ended*)

Name:

Email:

Phone (optional):

2. How often do you shop online?

[Looking for a range]

- a. Daily/almost every day
- b. A few times a week
- c. Once per week/weekly
- d. Once every few weeks
- e. Once a month/monthly
- f. Every few months/several times a year
- g. Rarely

3. What Amazon membership do you currently have? Check all that apply.

[Looking for a Prime membership]

- Prime (annual or monthly fee)
- Prime Video
- Prime Student (annual or monthly fee)
- Prime free trial
- Prime for EBT card holders
- I do not have an Amazon membership
- I'm not sure

4. Have you previously placed an order on AmazonFresh?

[Must be No]

- a. Yes
- b. No
- c. I'm not sure

5. What types of devices do you use to access Amazon through? Check all that apply.

[Looking for Laptop/Desktop Computer]

- Smartphone (iPhone, Android, etc.)
- Tablet (iPad, etc.)
- Laptop/Desktop Computer
- I don't use any of these devices

6. How often do you shop on Amazon.com?

[Looking for a range]

- a. Daily/almost every day
- b. A few times a week
- c. Once per week/weekly
- d. Once every few weeks
- e. Once a month/monthly
- f. Every few months/several times a year
- g. Rarely

7. What is your age range?

[Looking for a range]

- a. Under 18
- b. 18 - 24
- c. 25 - 34
- d. 35- 44
- e. 45 - 54
- f. 55 - 64
- g. 65 - 74
- h. 75 years and older

8. What language(s) do you speak fluently? (*open ended*)

[Must be English]

9. Do you reside in one of the following cities where AmazonFresh is currently available:
Las Vegas, Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Houston, Los Angeles,
Miami, Minneapolis, New York, Philadelphia, Phoenix, San Diego, San Francisco, Seattle
and Washington, D.C.?

[Must be Yes]

- a. Yes
- b. No
- c. I'm not sure

10. Do you have access to a computer or laptop with a microphone and video camera for
this study?

[Must be Yes]

- a. Yes
- b. No

11. Do you have access to a quiet and private environment for this study?

[Must be Yes]

- a. Yes
- b. No

12. Please select all of the days and times that you would be available for a session. Note,
all sessions are listed in PACIFIC TIME.

[Exclude if all are None]

Monday 11/23	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Tuesday 11/24	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Wednesday 11/25	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Monday 11/30	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Tuesday 12/1	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Wednesday 12/2	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Thursday 12/3	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times
Friday 12/4	9-10am	11-12pm	1-2pm	3-4pm	5-6pm	Available during All of these times	Available during None of these times

Closing

Thank you for your response! We greatly appreciate your willingness to participate in our usability test. If you meet our recruitment criteria, we will contact you to confirm the time for your session. If you have any questions, please feel free to reach out to our team.

Best,

Kara Cox, karacox@uw.edu

Sarah Hu, fhu49@uw.edu

Natasha Schmid, njschmid@uw.edu

Follow-up Email for Selected Participants

Hi _____,

Thank you for filling out our survey [HCDE 417 Research Study]. You look like a great fit for the study! If you are still interested in participating in this study, please fill out and respond with the attached consent form.

In the survey, you indicated that you are available on _____. Does this day and time still work for you?

Thank you,

Kara, Sarah & Natasha

HCDE 417 AmazonFresh Research Team

[attach the consent form]

Confirmation Email

Hi _____,

Thank you so much for sending your consent form. Please accept this calendar invite to confirm your session with _____ researcher on _____.

We will send a reminder email and a Zoom link 24 hours before your session.

Looking forward to meeting with you,

Kara, Sarah & Natasha

HCDE 417 AmazonFresh Research Team

Reminder Email

Hi _____,

Friendly reminder that you are scheduled to meet with _____ tomorrow at [time] for an AmazonFresh usability test session. Here's the Zoom link for the meeting: _____.

We look forward to meeting with you,

Kara, Sarah & Natasha

HCDE 417 AmazonFresh Research Team

Appendix II: Consent Form

Researchers: Kara Cox, Sarah Hu, Natasha Schmid, Undergraduate HCDE students

Researchers' Statement

We are asking you to be in a usability study. The purpose of this consent form is to give you the information you will need to help you decide whether to participate in the study or not. Please review the form carefully. You may ask any questions/clarifications before deciding if you want to participate or not. We will give you a copy of this form for your records.

Purpose of the Study

The purpose of this study is to evaluate the learnability and satisfaction of AmazonFresh for new users. We are conducting this study as part of a course in the Human Centered Design and Engineering department at the University of Washington.

Study Procedures

This study will be conducted remotely via Zoom. We will need to video & audio record the entire session for further research analysis purposes. The whole study should take approximately 60 minutes. First, you will have a short interview with us. Then, you will complete a series of tasks on AmazonFresh, answering some questions as we go along. Finally, we will give you a post-test questionnaire. Please do not try using AmazonFresh before the study, so that you still qualify as a new user at the time the study is conducted.

Your participation for this study is voluntary and you have the option not to participate. You may choose to withdraw your participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Confidentiality of Research Information

We will be using the information you provide in our report and presentation for a Usability Test course in the HCDE undergraduate program. We may record, take pictures, or use direct quotes from your responses, however your profile and other personal information will not be revealed. These files will be stored in an online Google Drive that is only accessible by our research team. All of the information you provide will remain strictly confidential, as the quotes and findings we present will in no way be tied back to you.

Contact Information

If you have any questions about this study, you may contact:

Kara Cox, karacox@uw.edu

Sarah Hu, fhu49@uw.edu

Natasha Schmid, njschmid@uw.edu

Printed name of researcher

Signature

Date

Participant Statement

This study has been explained to me. I volunteer to take part in this study. I have had a chance to ask questions. I can contact one of the researchers if I have questions or concerns later about the study. I can choose to withdraw my participation at any time without penalty.

Printed name of participant

Signature

Date

Thank you! We appreciate your participation.

Appendix III: Session Script

Introduction

Hello _____. My name is _____, I am the Researcher for today's session. You will also notice a couple people on the call who are just here to observe. Thank you for filling out our screener and taking the time to meet with me today. I appreciate you taking the time to help us understand our customers better.

Today I am going to ask you to complete a series of tasks regarding AmazonFresh. As you go through the tasks, I ask that you please think out loud, by narrating your thoughts so we can understand your process. I will also be asking you a series of probing questions alongside the tasks. In addition to this, you will fill out a few questions in a Google Form at the conclusion of each task. While you go through the tasks, I may interrupt to clarify a point or ask a question. This is not intended to be rude, it is just to better understand your thought process and experience of completing the tasks. There is no right or wrong way to complete the task or answer the questions. We are testing the product and not you, I am just here to learn from you.

We have 60 minutes blocked out for today's session. As stated in the consent form you have read and filled out, we can stop this study at any time. You may also decline to complete any task or answer any question. I will be recording this session. The recording will be used for my own use during the research analysis phase, and kept confidential. Direct quotes may be used to illustrate learnings from the research, but they will not be tied to your name.

Before we get started, do you have any questions?

[Hit record]

Pre-Test

Before we get started with the tasks, I have a couple of questions.

1. Tell me about yourself, what do you like to do for fun?
2. Have you made a purchase from Amazon.com before?
 - o If yes, how often do you order from Amazon.com, on average?

- What was your last time making the purchase from Amazon? Tell me about it.
 - What did you get?
 - Why?
 - How was your overall experience with that purchase?
- 3. What previous experience do you have with online grocery shopping, if any?
 - If applicable, what platform did you use?
 - Why
 - If applicable, how satisfied were you with the experience?
 - Why?
 - If not applicable, what has prevented you from trying online grocery shopping?
- 4. What has your grocery shopping experience looked like during COVID?
 - Have you encountered any difficulties during your grocery shopping experience?
 - What would your ideal grocery shopping experience entail during COVID?

*Note: The following task order should not change. It should remain the same for each participant, as it should align with the natural flow of a traditional in-person grocery shopping and the tasks build on one another.

Task #1

[Observing Researcher # will begin screen-sharing with the Amazon.com Homepage pulled up and logged into a Prime account]

[Observing Researcher #2 will paste the task into the Zoom chat]

- Starting state: Amazon.com Home page
- Successful completion: Users are on the AmazonFresh page.

Let's get started with the tasks. Imagine you are a college student living off campus. You need to go grocery shopping and decide to order from AmazonFresh. Starting on the Amazon Home page, navigate to AmazonFresh. Please talk to me about what you are seeing on this page, you can go ahead and explore the page but please hold off on clicking anywhere just yet.

If unable to navigate to AmazonFresh

- How would you expect to navigate to the AmazonFresh page from the Amazon Home page?
 - Could you walk me through what that would look like?

[Post Task]

On a scale of 1 - 5, how easy or difficult do you rate this task?

- 1 = Very easy
- 2 = Easy
- 3 = Not easy or difficult
- 4 = Difficult
- 5 = Very difficult

On a scale of 1 - 5, how satisfied or dissatisfied were you with your overall experience during the task?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Not satisfied or dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

Overall, how did you feel about the task?

Task #2

[Observing Researcher #1 will adjust the page to the starting state: AmazonFresh page]

[Observing Researcher #2 will paste the task into the Zoom chat]

- Starting state: AmazonFresh page
- Successful completion: All items from the grocery list are accurately placed in the cart.

Thank you. Now let's move on to the next task. Please remember to think out loud, this helps us better understand your thought process. [Send grocery list in the Zoom chat and email to participant] A grocery list has been sent in the Zoom chat and emailed to you. Please shop for the items on the list, adding them to your cart as you go.

If unable to shop for the items on the list:

- How would you expect to find ___ items from the list?
 - Could you walk me through what that would look like?
- How would you expect to complete the grocery list?
 - Could you walk me through what that would look like?

[Post Task]

On a scale of 1 - 5, how easy or difficult do you rate this task?

- 1 = Very easy
- 2 = Easy
- 3 = Not easy or difficult
- 4 = Difficult
- 5 = Very difficult

On a scale of 1 - 5, how satisfied or dissatisfied were you with your overall experience during the task?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Not satisfied or dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

Overall, how did you feel about the task?

Task #3

[Observing Researcher #1 will adjust the page to the starting state: AmazonFresh page]

[Observing Researcher #2 will paste the task into the Zoom chat]

- Starting state: AmazonFresh page
- Successful completion: Delivery address has been successfully changed.

Thank you! Now let's move on to the third task. Again, please remember to think out loud. Imagine you have recently moved into new housing and the address on the account does not match where you currently live. Change your address to 123 Pine St, Seattle, WA 98105.

If unable to change the address:

- How would you expect to change the address in the AmazonFresh system?
 - Could you walk me through what that would look like?

[Post Task]

On a scale of 1 - 5, how easy or difficult do you rate this task?

- 1 = Very easy
- 2 = Easy
- 3 = Not easy or difficult
- 4 = Difficult
- 5 = Very difficult

On a scale of 1 - 5, how satisfied or dissatisfied were you with your overall experience during the task?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Not satisfied or dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

Overall, how did you feel about the task?

Task #4

[Observing Researcher #1 will adjust the page to the starting state: AmazonFresh cart]

[Observing Researcher #2 will paste the task into the Zoom chat]

- Starting page: AmazonFresh cart
- Successful completion: Correct delivery address, date, and time are set. Payment method has been selected. Order is ready to submit (we will not have them actually submit/pay for it, however due to financial constraints).

Thank you for walking me through that. We will now move on to the final task. Now that you have all of the items from your list, you must select delivery preferences. You want the items to be delivered the day after tomorrow during the afternoon at some time between 12pm-4pm. Go to check out all your items. Then, select the proper delivery address, date, and time. Finally, select a credit card for the payment method.

If unable to select set delivery preferences:

- How would you expect to set ____ preference?
 - Could you walk me through what that would look like?

[Post Task]

On a scale of 1 - 5, how easy or difficult do you rate this task?

- 1 = Very easy
- 2 = Easy
- 3 = Not easy or difficult
- 4 = Difficult
- 5 = Very difficult

On a scale of 1 - 5, how satisfied or dissatisfied were you with your overall experience during the task?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Not satisfied or dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

Overall, how did you feel about the task?

Post-Test

That was the final task so now we will move on to some final questions. First, please go to the link for a Google Form and fill out the Post-Test questionnaire. [\[send link into Zoom chat\]](#) Go ahead and fill that out, let me know when you are finished.

Thank you, now I have a few final questions for you.

1. What was the most difficult aspect of navigating through the AmazonFresh website?
 - a. Why?
2. Were there any aspects of the AmazonFresh website that were confusing?
 - a. If so, what are those aspects?
 - b. What made them confusing?

3. Were you able to locate all the content you wanted?
 - a. If not, what were you not able to locate?

4. Was there anything that you clicked on that you expected to be something else?
 - a. If so, what was it?
 - b. What did you expect to see?

5. Do you have any other comments about the website that you would like to share with us?

6. If I gave you a magic wand, what changes would you make to the AmazonFresh page?

Closing

Thank you so much for all of your thoughtful answers! That is all of the questions I have for you. I am going to check in with my team and see if they have any further questions.

[Check with team, ask additional questions if applicable]

That concludes the session. Do you have any final thoughts or questions for me or the team?

Thank you again for taking the time to meet with me today. If anything comes up after the session is concluded, please feel free to reach out to myself or the team.

[Send contact info into Zoom chat]

Kara Cox karacox@uw.edu

Sarah Hu fhu49@uw.edu

Natasha Schmid njschmid@uw.edu

[Stop the recording and save the file with the participant's ID, e.g. AmazonFresh_P1]

Appendix IV: Pre-Test Interview

1. Tell me about yourself, what do you like to do for fun?
2. Have you made a purchase from Amazon.com before?
 - If yes, how often do you order from Amazon.com, on average?
 - What was your last time making the purchase from Amazon/other online shopping websites? Tell me about it.
 - What did you get?
 - Why?
 - How was your overall experience with that purchase?
3. Have you made a purchase from Amazon.com before?
 - If yes, how often do you order from Amazon.com, on average?
4. What previous experience do you have with online grocery shopping, if any?
 - If applicable, what platform did you use?
 - Why
 - If applicable, how satisfied were you with the experience?
 - Why?
 - If not applicable, what has prevented you from trying online grocery shopping?
5. What has your grocery shopping experience looked like during COVID?
 - Have you encountered any difficulties during your grocery shopping experience?
 - What would your ideal grocery shopping experience entail during COVID?

Appendix V: Task Scenarios

Task Scenarios

Users will be given a grocery list at the start of the test, which will contain various types of grocery items (e.g. perishable and non-perishable). The grocery list will be sent into the Zoom chat, as well as emailed to the participant at the start of the test for their reference. All participants will receive the same grocery list, to allow for comparing data between tests.

Grocery List

- Cream Cheese, Strawberry Flavor, 15.5 oz
- 3 organic apples, cheapest option
- 2 bags of spinach from Whole Foods Market
- Gluten Free Crackers, the Best Seller
- 2 dozen eggs, the cheapest one but the rating needs to be higher than 4 stars
- Raw shrimp, the price should less than \$8
- Actually I want 6 organic apples (change the quantity)
- Soda of your choice, must be 0 calories

Email with Grocery List Attachment

Hi _____,

Friendly reminder that our AmazonFresh usability test session will start in 10 minutes.
Here's the Zoom link for the meeting: _____.

A grocery list is attached in this email for one of the tasks we will have you do. No need to take a close look at it right now, but please make sure you have access to it during our test session.

[Attach the grocery list]

We look forward to meeting with you,
Kara, Sarah & Natasha
HCDE 417 AmazonFresh Research Team

Scenario and task setting

1. Starting on the Amazon Home page, navigate to AmazonFresh.
 - Starting state: Amazon.com Home page
 - Successful completion: Users are on the AmazonFresh page.
2. Please shop for the items on the list, adding them to your cart as you go.
 - Cream Cheese, Strawberry Flavor, 15.5 oz
 - 3 organic apples, cheapest option
 - 2 bags of spinach from Whole Foods Market
 - Gluten Free Crackers, the Best Seller
 - 2 dozen eggs, the cheapest one but the rating needs to be higher than 4 stars
 - Raw shrimp, the price should less than \$8
 - Actually I want 6 organic apples (change the quantity)
 - Soda of your choice, must be 0 calories
 - Starting state: AmazonFresh page
 - Successful completion: All items from the grocery list are accurately placed in the cart.
3. Change your address in the AmazonFresh system to 123 Pine St, Seattle, WA 98105?
 - Starting state: AmazonFresh page
 - Successful completion: Delivery address has been successfully changed.
4. Now that you have the items from your list, please check out.
 - a. Set your delivery address, date (2 days from the test date), and time (5:00pm)
 - b. Walk me through the payment options and select credit.
 - Starting page: AmazonFresh cart
 - Successful completion: Correct delivery address, date, and time are set. Payment method has been selected. Order is ready to submit (we will not have them actually submit/pay for it, however due to financial constraints).

Task #1	
Goals/Output	Navigate to AmazonFresh
Scenario	During quarantine, you almost ran out of food but going to the grocery store is really dangerous. You heard that AmazonFresh could deliver groceries to your door so you decided to use it for

	this time. Starting on the Amazon Home page, navigate to AmazonFresh.
Task #2	
Goals/Output	Add all items from the grocery list to the cart
Scenario	<p>You are responsible to grocery shop for the whole house this week. You and your roommates have created a grocery list containing all the items you need to buy. Shop for all of the items, adding them into the cart as you go.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cream Cheese, Strawberry Flavor, 15.5 oz <input type="checkbox"/> 3 organic apples, cheapest option <input type="checkbox"/> 2 bags of spinach from Whole Foods Market <input type="checkbox"/> Gluten Free Crackers, the Best Seller <input type="checkbox"/> 2 dozen eggs, the cheapest one but the rating needs to be higher than 4 stars <input type="checkbox"/> Raw shrimp, the price should less than \$8 <input type="checkbox"/> Actually I want 6 organic apples (change the quantity) <input type="checkbox"/> Soda of your choice, must be 0 calories
Task #3	
Goals/Output	Change your delivery address in the AmazonFresh system
Scenario	Imagine you have recently moved, change your address in the AmazonFresh system to your new address: 123 Pine St, Seattle, WA 98105
Task #4	
Goals/Output	Finalize the order
Scenario	Now that you have all of the items from your list, you must select delivery preferences. You want the items to be delivered the day after tomorrow during the afternoon at some time between 12pm-4pm. Go to check out all your items. Then, select the proper delivery address, date, and time. Finally, select a credit card for the payment method.

Appendix VI: Post-Task Questionnaire

1. On a scale of 1 - 5, how easy or difficult do you rate this task?
 - 1 = Very easy
 - 2 = Easy
 - 3 = Not easy or difficult
 - 4 = Difficult
 - 5 = Very difficult
2. On a scale of 1 - 5, how satisfied or dissatisfied were you with your overall experience during the task?
 - 1 = Very satisfied
 - 2 = Satisfied
 - 3 = Not satisfied or dissatisfied
 - 4 = Dissatisfied
 - 5 = Very dissatisfied
3. Overall, how did you feel about the task?

Appendix VII: Post-Test Questionnaire

Please indicate your level of agreement/disagreement with each of the following statements. [Distributed via Google Form]

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I was able to complete the tasks without having to remember a lot of information from the previous task.					
I feel confident in my ability to understand where I am within the website.					
I feel confident in my ability to locate the content I need.					
The website is hard to use and navigate.					
I feel that the content is organized in a way that makes sense.					
It was easy for me to understand the main functions of the website.					
It was hard for me to perform the tasks.					
	Strongly dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
How satisfied are you with the overall experience of the AmazonFresh website?					

Any other comments you would like to share with us regarding your experience using AmazonFresh?

Appendix VIII: Post-Test Interview

[Note: Ad-hoc questions based on the individual participant's experience will be asked after each task to minimize the cognitive load of the participant having to remember their experiences for each task.]

1. What was the most difficult aspect of navigating through the AmazonFresh website?
 - a. Why?
2. Were there any aspects of the AmazonFresh website that were confusing?
 - a. If so, what are those aspects?
 - b. What made them confusing?
3. Were you able to locate all the content you wanted?
 - a. If not, what were you not able to locate?
4. Was there anything that you clicked on that you expected to be something else?
 - a. If so, what was it?
 - b. What did you expect to see?
5. Do you have any other comments about the website that you would like to share with us?
6. If you have a magic wand, what kind of change do you want to make on AmazonFresh website?

Appendix IX: Data Logging Tables

(Quantitative Data Collection)

Task Description	Task Completed?	Task Success?	# of Steps	# of Errors	Type of Errors
Navigate to the AmazonFresh					
Get all groceries in the list					
Change the address					
Checkout the items					

Task Description	# positive comments	# positive facials	# negative comments	# negative facials	# questions	# suggestions
Navigate to the Amazon Fresh						
Get all groceries in the list						
Change the address						
Checkout the items						

Appendix X: Note Taking Form

(Qualitative Data Collection)

Participant ID: _____

Task: _____



Positives



Negatives

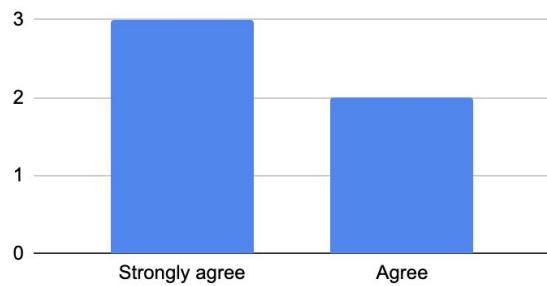


General Notes

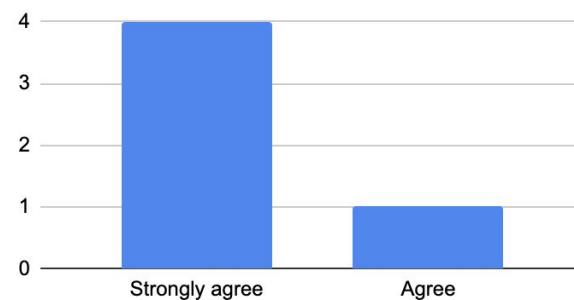
Appendix XI: Survey Results

Please indicate your level of agreement/disagreement with each of the following statements.

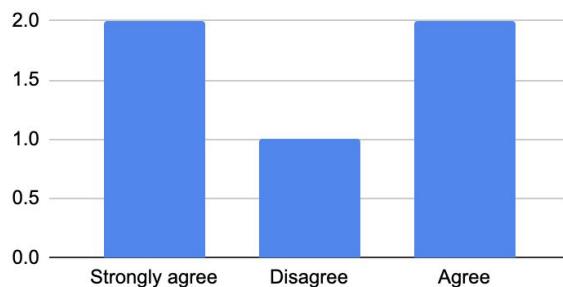
I was able to complete the tasks without having to remember a lot of information from the previous task.



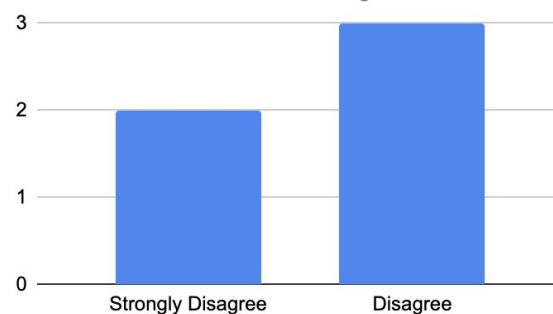
I feel confident in my ability to understand where I am within the website.



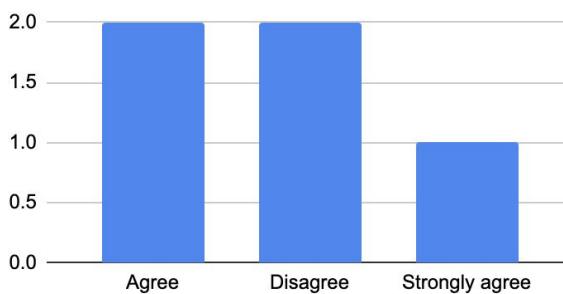
I feel confident in my ability to locate the content I need.



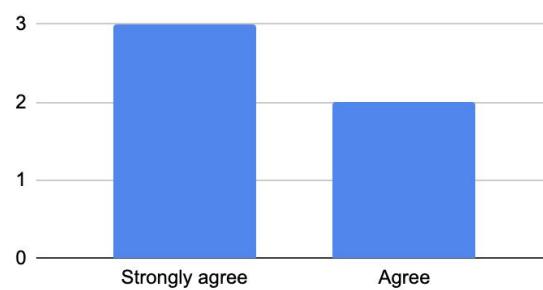
The website is hard to use and navigate.



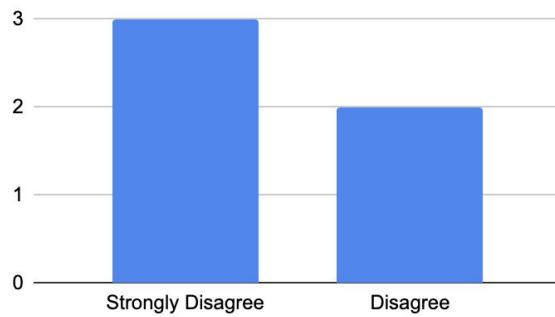
I feel that the content is organized in a way that makes sense.



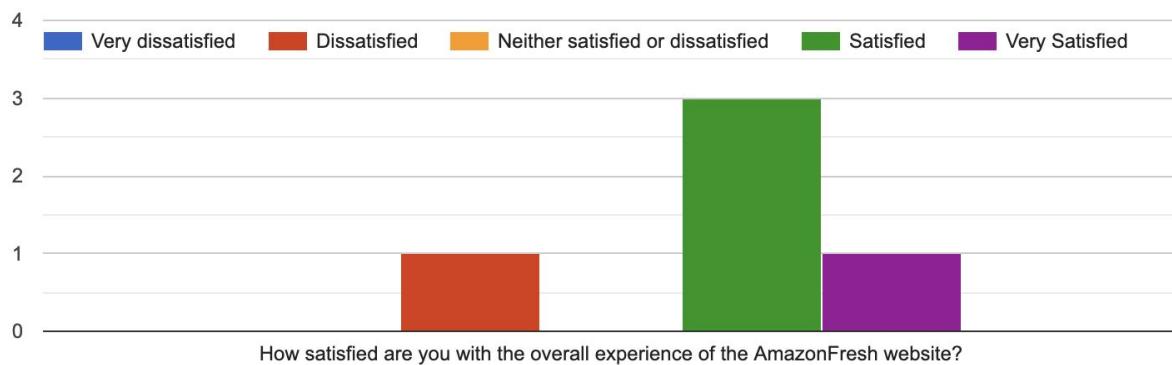
It was easy for me to understand the main functions of the website.



It was hard for me to perform the tasks.



Please indicate your level of satisfaction/dissatisfaction with the following statement.



Any other comments you would like to share with us regarding your experience using AmazonFresh?

- It encountered some step backs but was able to figure out how to move past them in order to complete the task. However, I would have been more satisfied if those issues didn't arise. I also think that they should highlight amazon fresh in a different color to make it more noticeable on the sidebar.
- It was fine. Just need more visuals sometimes.
- The reason that I chose dissatisfied because shopping online is a little odd for me without actually seeing the items.

Appendix XII: Session Recording Links

Participant 1 https://washington.zoom.us/rec/share/MUzdbALx8EFGeTGJCOe6ccEYUj8qwBbq9AJICPOrUEUYOERrhYB49_Ut6X79GWXZ.CQT3yve-WYQOUy0-

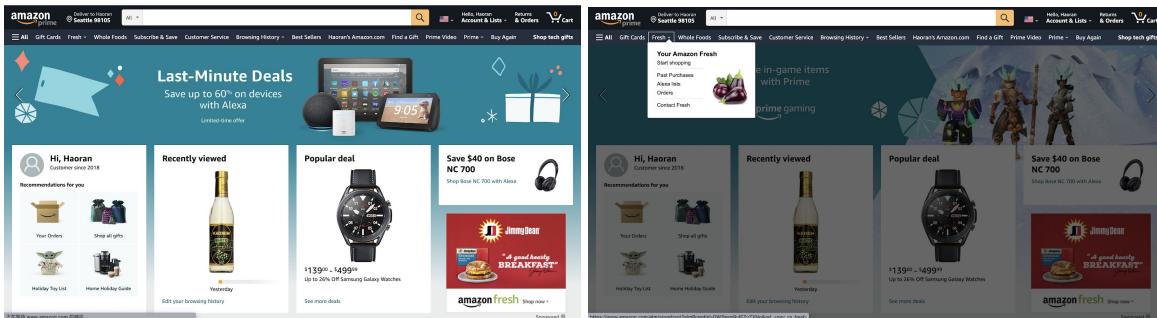
Participant 2 https://washington.zoom.us/rec/share/McD-fGWKBwX-LVIIlsAPK2HN23iDxTroiKa9CiCCUpMbgg3MejTptPzyzMO6QV7z.XxT2ir6_PmO0EjFO?startTi me=1606249991000

Participant 3 <https://washington.zoom.us/rec/share/pDncLqSIErlqRzfW4iVVIqdnvnYDS o89A-n6JPTECi3cRZPKCyoAxpTrBYcpnwwh.o3J5aBxkalTIjavW?startTime=1606273374000>

Participant 4 <https://washington.zoom.us/rec/share/PQs0vdO2VQJlgsz2UEgE4ho0S6EQWoorj8RY3V3eDL47PoQ3aDUK2DR3U17eh8ry.hOLFha6a-3SkxozY?start Time=1606343586000>

Participant 5 <https://washington.zoom.us/rec/share/PQs0vdO2VQJlgsz2UEgE4ho0S6EQWoorj8RY3V3eDL47PoQ3aDUK2DR3U17eh8ry.hOLFha6a-3SkxozY?start Time=1606348999000>

Appendix XIII: AmazonFresh Pages



[Amazon.com Homepage](#)

[AmazonFresh button on Amazon.com Homepage](#)

[AmazonFresh Homepage](#)

[AmazonFresh "Eggs" Search Page](#)

[AmazonFresh "Eggs" added to cart](#)

Schedule your order

Delivery to: **Hacon Yu - 4060 9TH AVE NE APT 306, SEATTLE, WA 98105-6475** Change

Select a day

Today Dec 15	Tomorrow Dec 16	Thursday Dec 17
-----------------	--------------------	--------------------

Select a time

1-hour delivery windows 8:00 PM - 9:00 PM \$9.99	2-hour delivery windows 8:00 PM - 10:00 PM \$4.99
9:00 PM - 10:00 PM \$9.99	10:00 PM - 12:00 AM \$4.99
10:00 PM - 11:00 PM \$9.99	

Doorstep Delivery: Today, Dec 15, 8:00 PM - 9:00 PM Continue

AmazonFresh "Before you Checkout" page

Review your Amazon Fresh order

Delivery address **Change**

Payment method **Change**

Add a gift card, promotion code, or voucher **Enter Code** **Apply**

Billing address **Change**

Place your order

By placing your order, you agree to Amazon's privacy notice and conditions of use.

You consent to receive automated text messages from Amazon about your order.

Order Summary

Item: Amazon Fresh - Happy Belly Cage Free Large White Eggs, Grade AA, 18 Count	\$2.99
Delivery Fee:	\$0.99
Total before tax:	\$12.98
Estimated tax to be collected*	\$0.00
Tip (optional): \$0.00	

Order total: **\$17.98**

Save on delivery with orders over \$35. Continue Shopping

Items delivered by Amazon Fresh
Delivery: Wednesday, Dec. 16, 1pm-2pm

Amazon Fresh - Happy Belly Cage Free Large White Eggs, Grade AA, 18 Count
Quantity: 1 Change
Sent by: AmazonFresh

*Why has sales tax been applied? See tax and seller information
Do you need help? Explore our Help pages or contact us
For an item sold by Amazon.com: When you click the "Place your order" button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we receive payment and you accept the delivery terms and conditions we've proposed.
Colorado, Louisiana and Puerto Rico Purchasers: Import/export information regarding sales tax you may owe in your State
Within 30 days of delivery, you may return new, unopened merchandise in its original condition. Exceptions and restrictions apply. See Amazon.com's Returns Policy
Go to the Amazon.com homepage without completing your order.

AmazonFresh Delivery Preference Page

AmazonFresh "Review your Amazon Fresh order" Page

Your Account

Your Orders Track, return, or buy things again

Login & security Edit login, name, and mobile number

prime View benefits and payment settings

Gift cards View balance or redeem a card

Your Payments Manage payment methods and settings, view balances and offers

All things Alexa Get the most out of your Alexa-enabled devices

Your devices and content Manage your Amazon devices and digital content

Ordering and shopping preferences

- Your Payments
- Your Amazon profile
- Address book
- Manage your lists
- 1-Click settings

Digital content and devices

- Manage content and devices
- Kindle Content
- Prime Video settings
- Amazon Music settings
- Manage your devices
- Manage your Kindle
- Digital games and software
- Twitch settings

Memberships and subscriptions

- Kindle Unlimited
- Prime Video Channels
- Amazon Music settings
- Manage your devices
- Manage your Kindle
- Digital games and software
- Audible membership
- Your Essentials

Your Addresses

Add Address

Default: **amazon**
Add delivery instructions
2 active suboptions
Edit | Remove

Default: **fresh**
Add delivery instructions
5 active suboptions
Edit | Remove | Set as Default

Add delivery instructions
Edit | Remove

Add delivery instructions
Edit | Remove | Set as Default

Submitted: 12:39

Add \$12.91 of items from Fresh
Proceed to checkout
Continue shopping on Fresh

Amazon.com "Your Account" page

Amazon.com Address page (change address here)