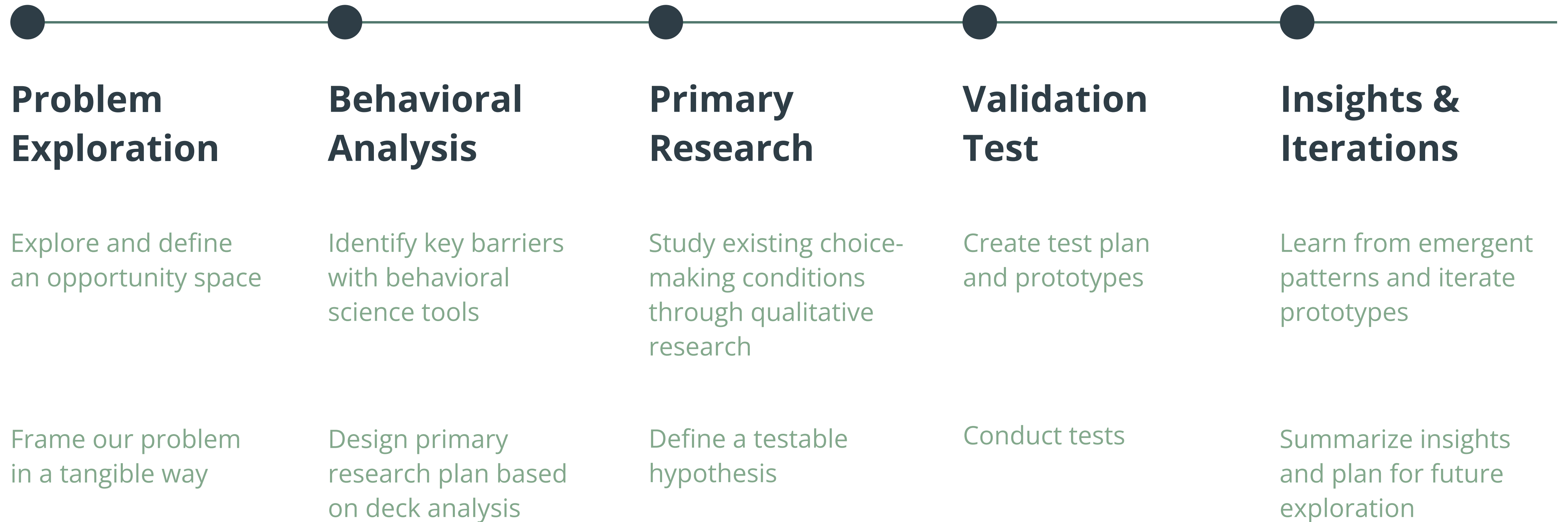# Rooted Leaf

Testing Behavioral Boosts on Migrant's Potential to Purchase Unfamiliar Produce with Sustainable Impact

Behavioral Design Workshop | Fall 2022

Kat Gowland, Roxanne Hoffman, Mengjie Dong, Yong Shan Lee

Overview

Problem Exploration

Behavioral Analysis

Primary Research

Validation Test

Insights & Iterations

Explore and define an opportunity space

Identify key barriers with behavioral science tools

Study existing choice-making conditions through qualitative research

Create test plan and prototypes

Learn from emergent patterns and iterate prototypes

Frame our problem in a tangible way

Design primary research plan based on deck analysis

Define a testable hypothesis

Conduct tests

Summarize insights and plan for future exploration

International Migrant Communities

People who live in the U.S or will stay in the country for years but grew up with cultures other than American culture.

have their own cultural identity and diet preferences

unfamiliar with local food systems

International Migrant Communities

Current behaviors related to food
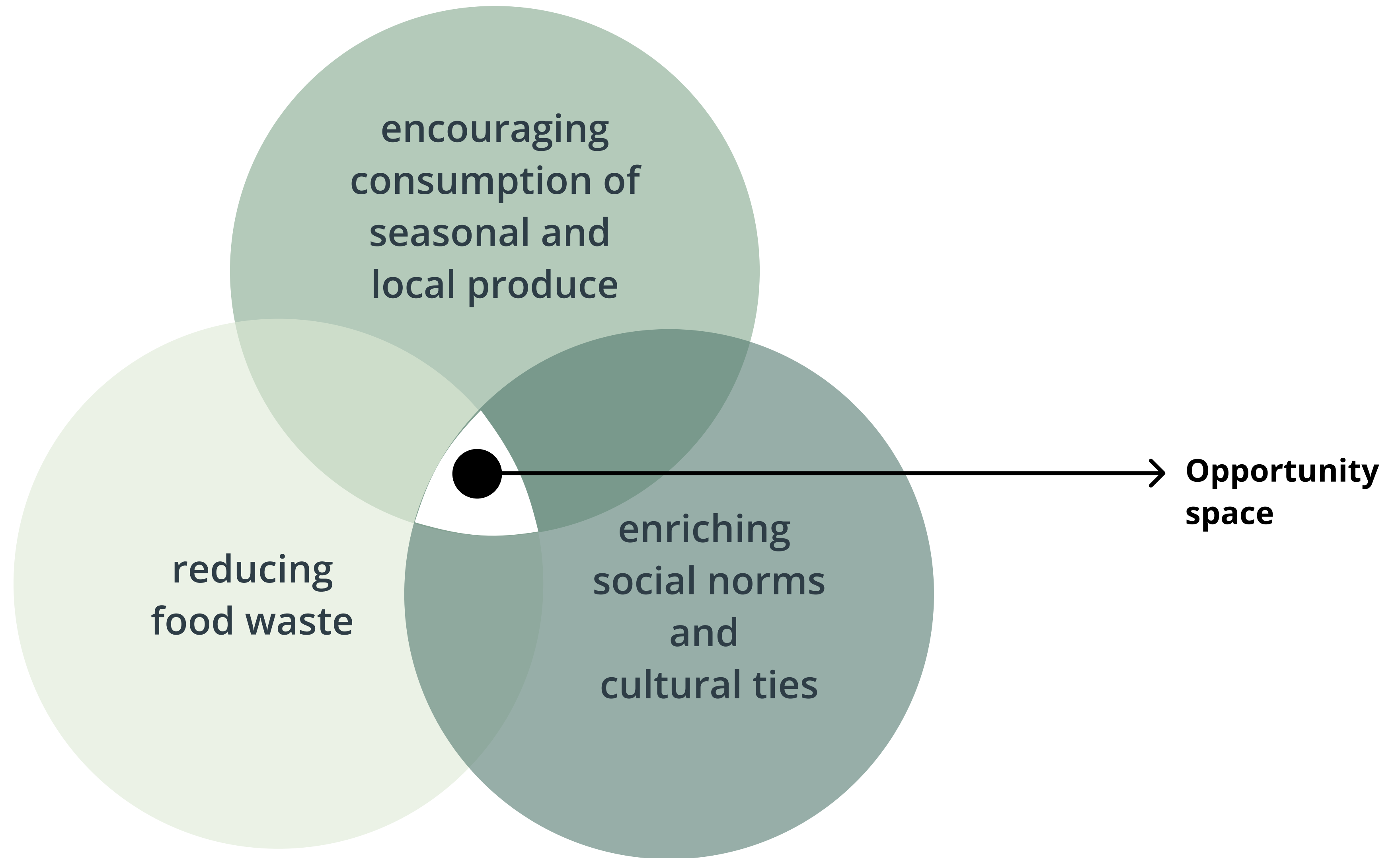
Often purchase and **consume what is familiar**

Familiar **produce is likely not sustainably sourced***

Be geographically **distant from traditional cultural** and social norms associated with food

Are gradually trying and **getting used to new foods and rituals**

*For this study, our team is assuming that there is a correlation between the sustainability (carbon footprint) of produce purchased, and whether it is in-season and "locally" sourced or not

A time of transition in food, ritual and identity.

encouraging consumption of seasonal and local produce

reducing food waste

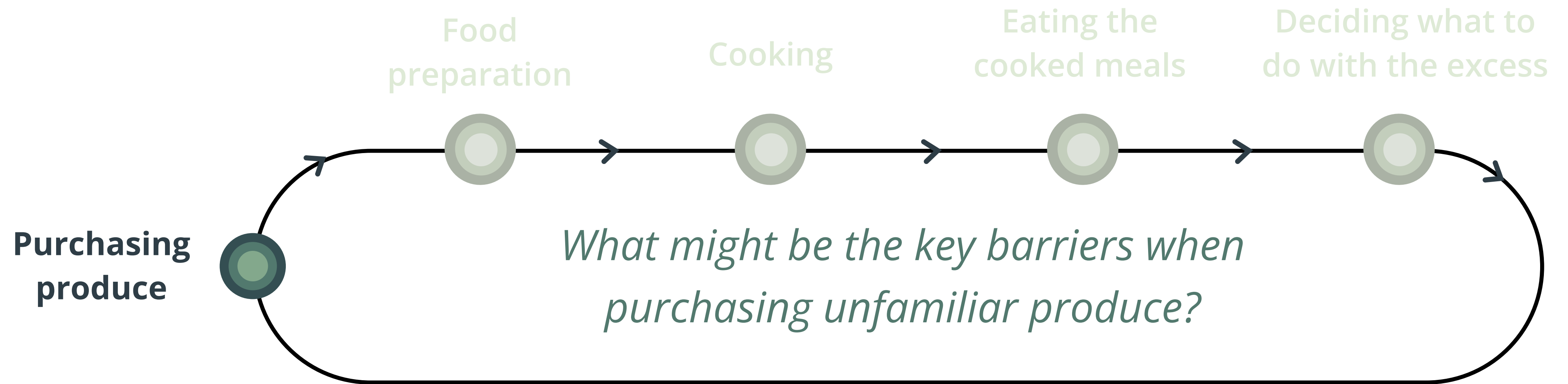enriching social norms and cultural ties

Opportunity space

How might we...

encourage people who are unfamiliar with local, seasonal food ecosystems increase their consumption of sustainably sourced produce without increasing food waste?

Mapping out daily rituals associated with food

Food preparation

Cooking

Eating the cooked meals

Deciding what to do with the excess

Purchasing produce

common daily rituals associated with food
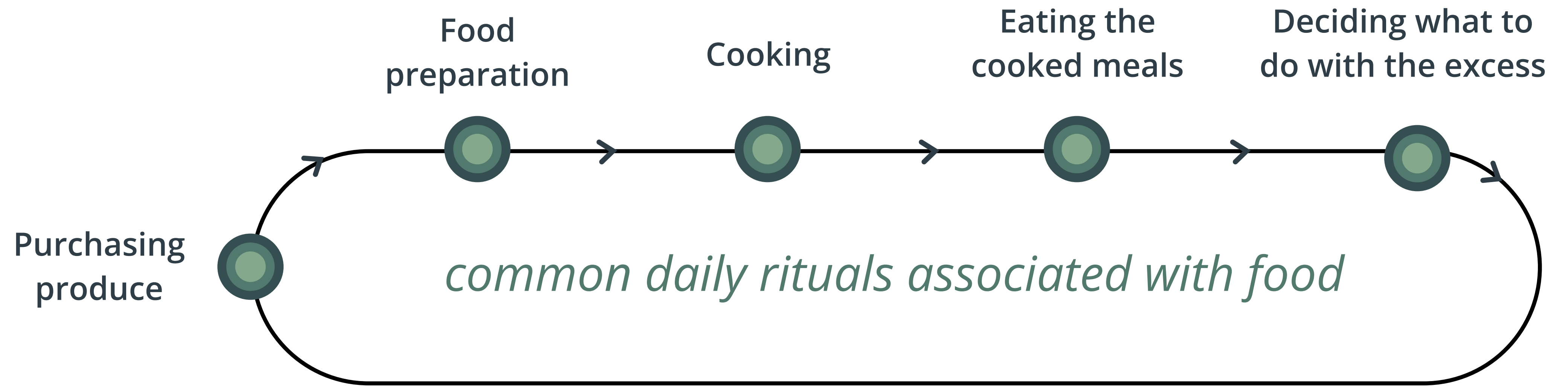
Zooming in on the moment of purchasing fresh produce to address barriers that precede all other actions

Food preparation

Cooking

Eating the cooked meals

Deciding what to do with the excess

Purchasing produce

What might be the key barriers when purchasing unfamiliar produce?

Using a four-part decision-making model that provides a context for **key Behavioral Factors** to learn where our potential causes might reside

This helps us maintain a behavioral lens when developing strategies (Deloitte, 2017).

Behavioral analysis
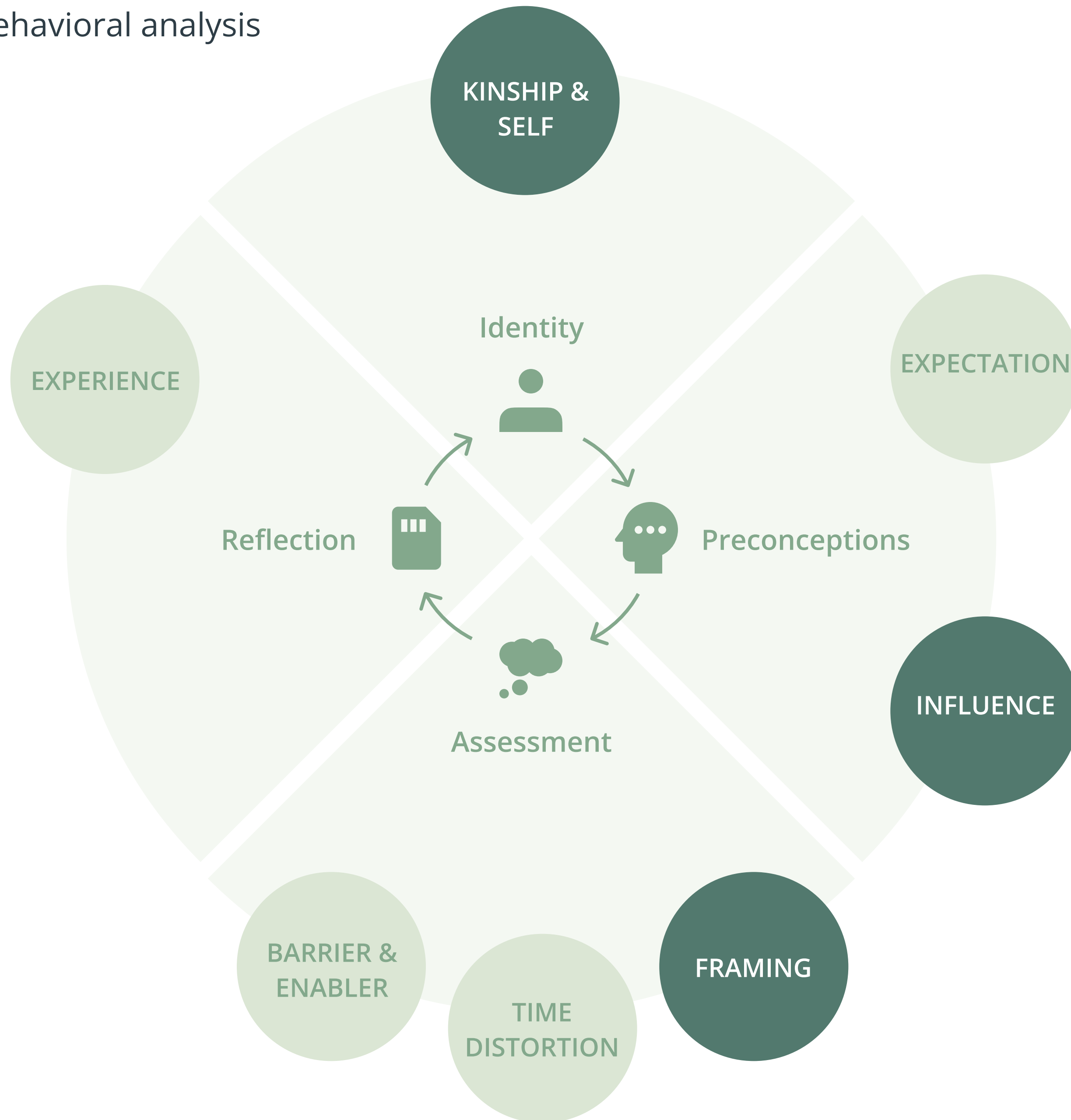
Potential key challenges

Lack of connection with ingredients
Lack of motivation to try new ingredients
Unfamiliarity with local ingredients

Current state & Desired state

"It doesn't make sense for someone like me to buy and cook this."

↓

"This is for me."

Collect and analyze existing choice architecture

In-store obversation

Trader Joe's | Jewel-Osco | Park-to-Shop | 88 Marketplace | Guero Market
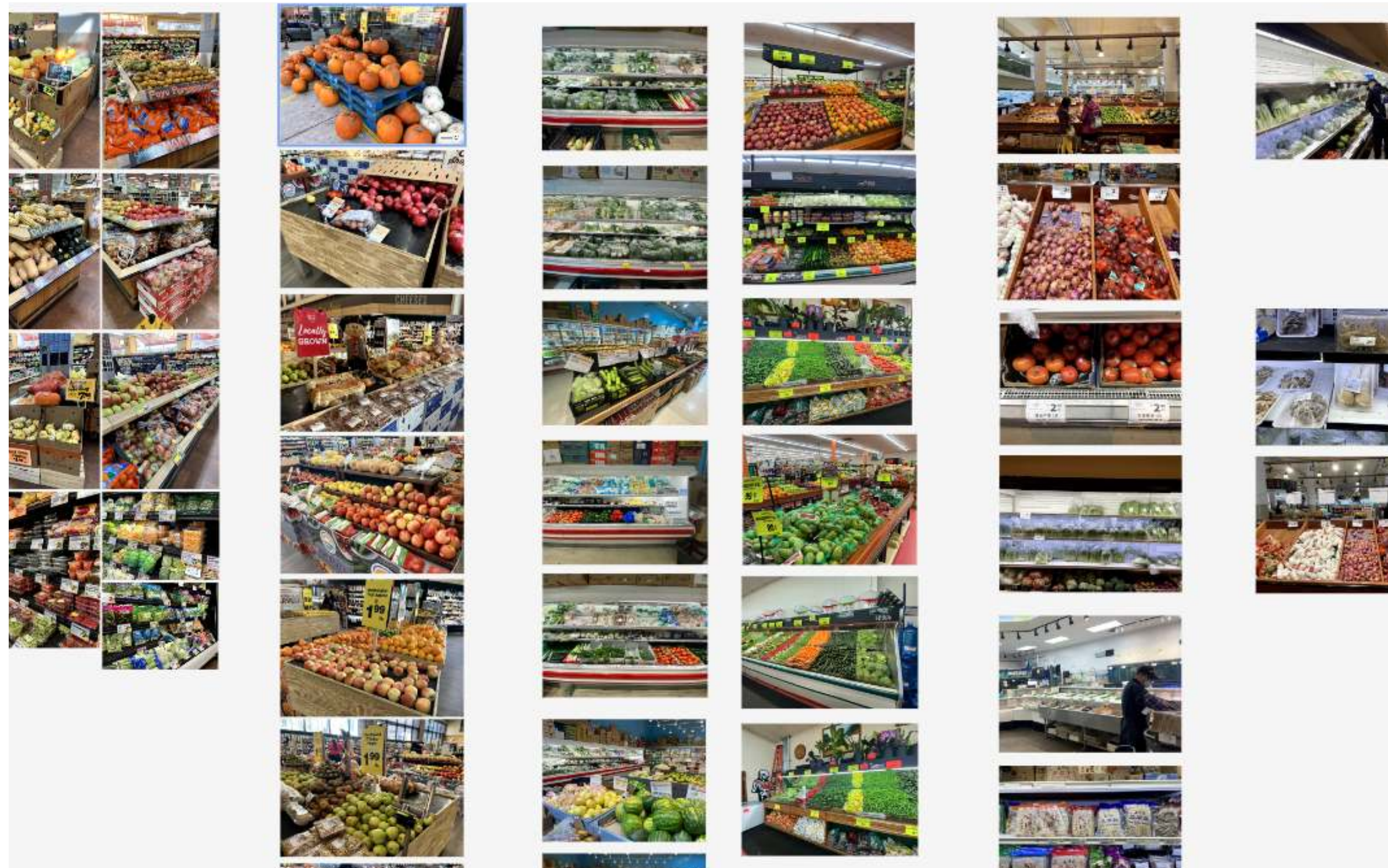
Grocery delivery service audit

Instacart | Shipt | Weee | Getir | GoPuff
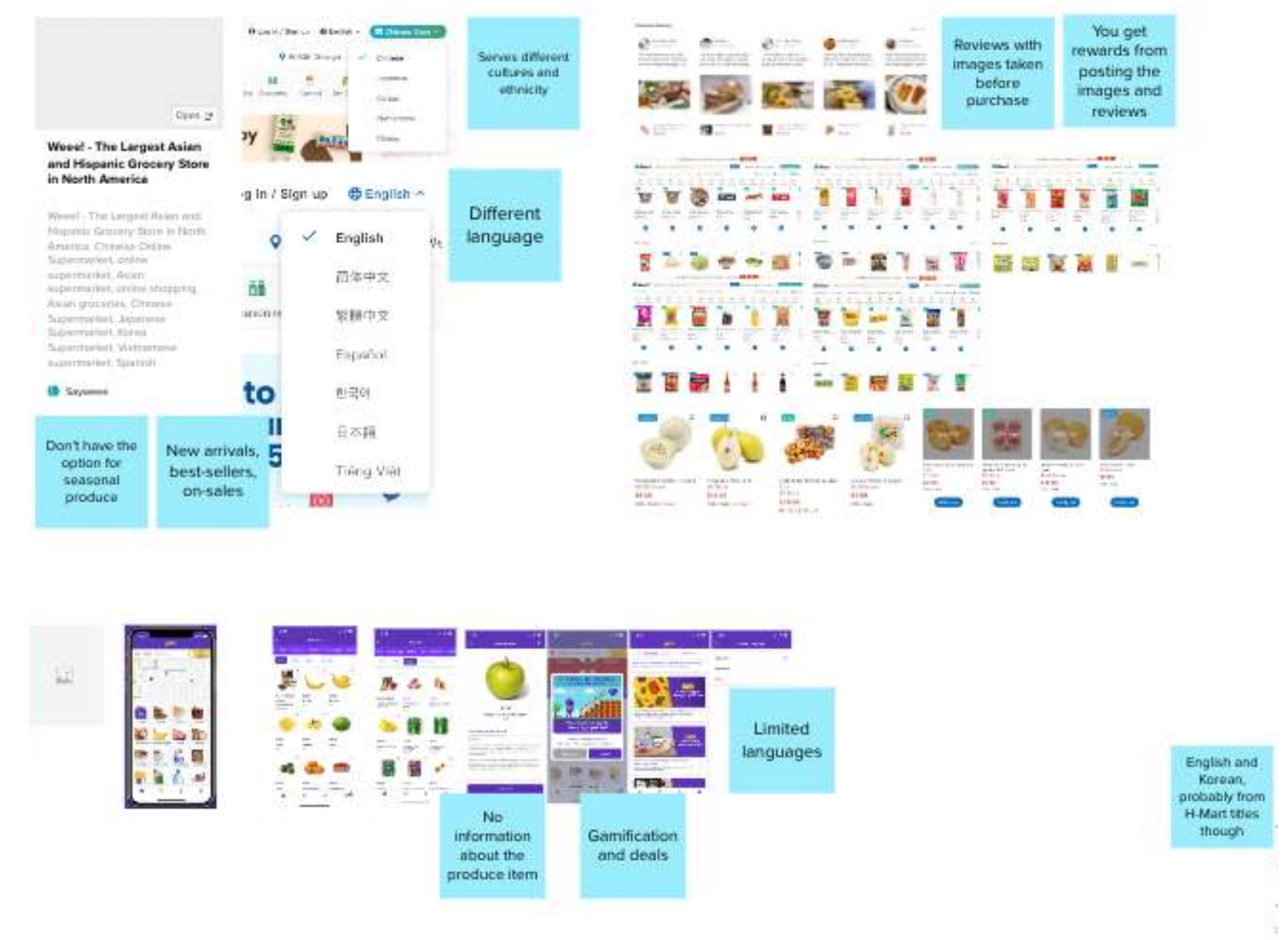
Begin to understand existing choice infrastructure and choice posture

Screening for

- International participants
- Do grocery shopping and cook regularly

Total responses: n=15

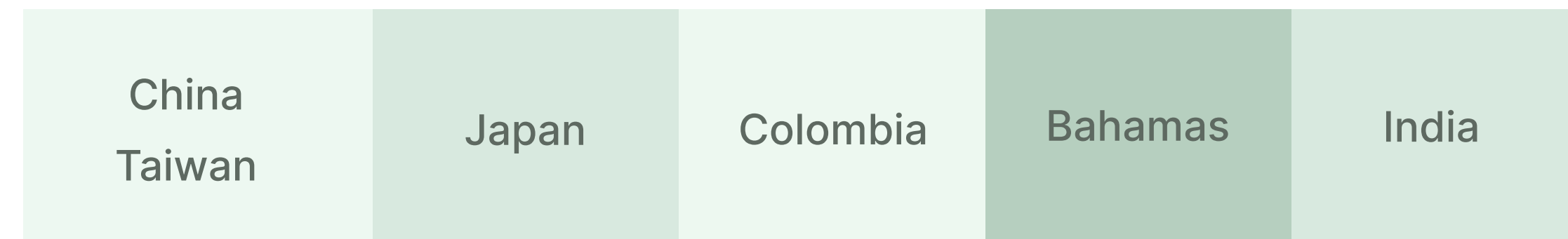**Selected for interview: n=7**

Google survey

Identify factors that prevent or encourage our intended user group to purchase unfamiliar ingredients

Key topics:

- grocery and cooking habits and preference
- roles of culture in produce consumption
- understanding of regional produce seasonality

Participants:

Different country / region of cultural influence

China Taiwan	Japan	Colombia	Bahamas	India

Measure people's familiarity with local seasonal produce and select the most suitable one as the design object

The suitable design object should be:

People have limited familiarity with it, and they never bought it or thought they would use it in their daily recipes.

Online card sorting activity using Miro

Lack of tangibility

COGNITION

Insufficient information on site to correctly predict the taste and texture by looking at the appearance.

"They look the same outside. But the sweet potatoes here is orange inside. The Japanese ones are yellow inside."

"I thought Brussels sprouts taste like cabbage, so I bought it and cook it as it's cabbage. And it was a disaster."

"I probably won't eat a red and leafy vegetable. That's suspicious to me."

Photo showing ingredients cut in half

Lack of tangibility

COGNITION

Insufficient information on site to correctly predict the taste and texture by looking at the appearance.

FAMILIARITY

Lack of a sense of connection with the ingredients to make the users interested.

"I walked away because I never used it before."

"For the most part when I'm looking for substitutions I won't look for that info in stores. I'll have to google it in Bengali."

Lack of tangibility

local in my culture & local in the US

*"What should I pair with it?
What spices should I go with it?"*

*"I tried to bake it, just like how
Americans cook it. But honestly,
it tasted like nothing to me. It is
lack of flavors."*

CULTURE

Lack of confidence and
knowledge about how it
can be cooked in a way
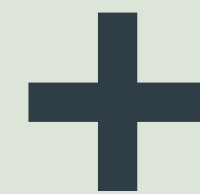that matches their
personal and cultural
taste preferences

Lack of tangibility

CULTURE

FAMILIARITY

COGNITION

Insufficient information on site to correctly predict the taste and texture by looking at the appearance.

Lack of a sense of connection with the ingredients to make the users interested.

Lack of confidence and knowledge about how it can be cooked in a way that matches their personal and cultural taste preferences

Two main sources of motivation

Low cost of trial

- Be able to test before buying.
- "A harmless replacement": if the new ingredient doesn't have a significant impact on the flavor of the dish, which is their main indicator of recipe authenticity.

+

Social proofing

Recommended by people within their cultural group. Or even just by hearing ot noticing that others around them were trying and liking a new ingredient to them.

"I need to know the taste to decide whether I can use it in my recipes"

"I guess replacing the main ingredient is not an option for me"

"I tried it when my Japanese friend made it."

"I saw my dad experimenting cooking with different cultural dishes. Part of that exploration is with me now and now that I'm in a new place I try new ingredients that are only from here."

Tangibility
+
Relevant identity

Help users imagine how substituting ingredients with local options can be **easy, harmless, and valuable.**

Show how they can adapt to using local ingredients while **retaining the authenticity** of the recipes in their culture.
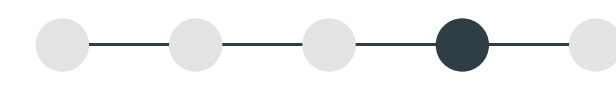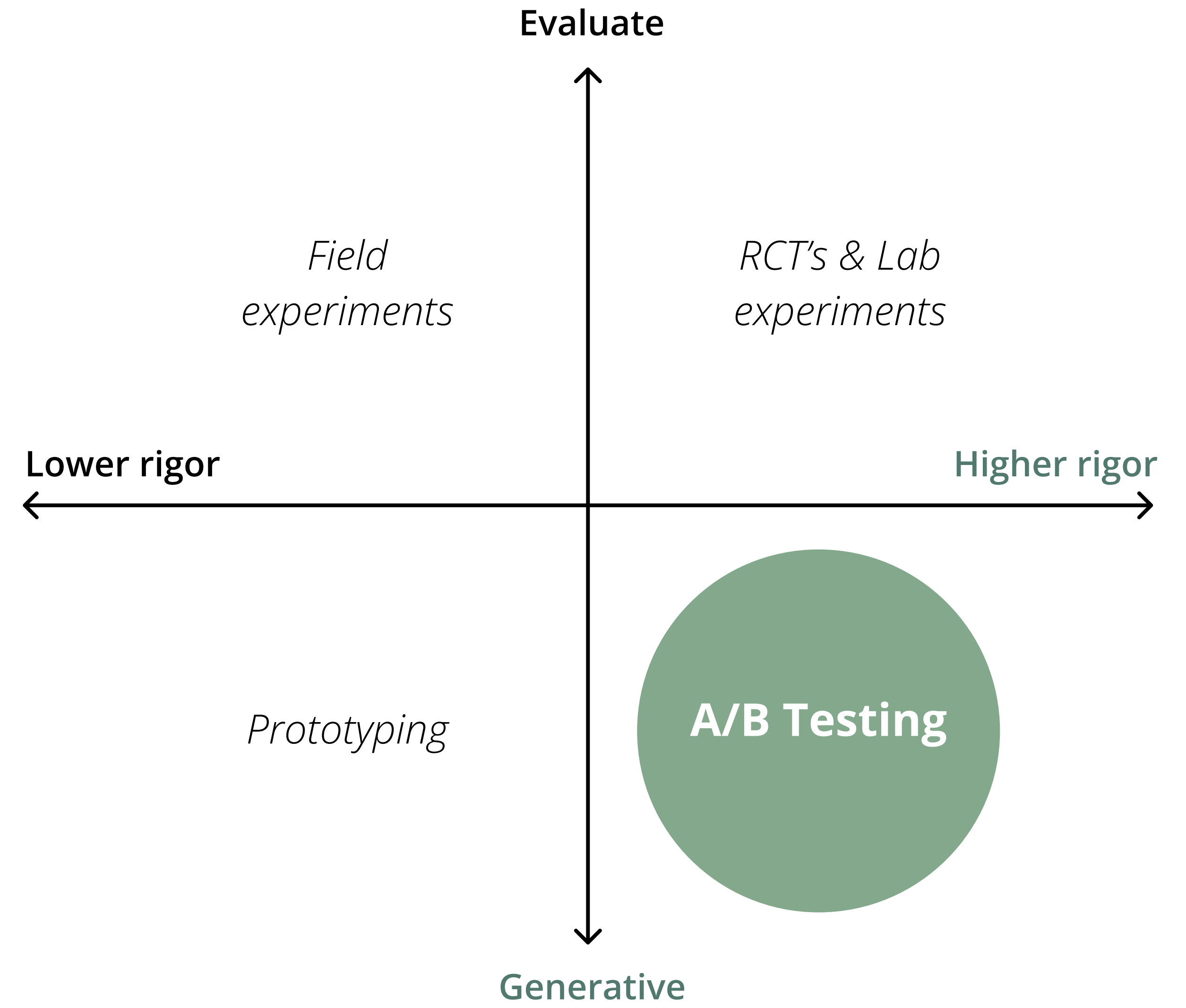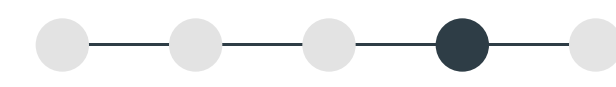
Plan for testing

Objective

To determine the effectiveness of tangibility and relevant identity behavioral dimensions.

To explore what categories of behavioral interventions most impacted the point of purchase.

Expected Outcome

Evidence for iterating prototypes and recommendations for developing future solutions to increase our intended group's likelihood to purchase unfamiliar produce.

Evaluate

Field experiments

RCT's & Lab experiments

Lower rigor

Higher rigor

Prototyping

A/B Testing

Generative

Test prototype matrix

We developed **9 prototypes over 3 categories** for each behavioral dimension to compare with each other and the **control prototype**.

Relevant Identity

Fitting Us
Produce connects to my community's values

Prototype C	Prototype G	Prototype J
Multilingual How to Pick/Pair	*Culture-specific Recipes*	*Cultural Group Cooking Class*

Fitting my Life
Produce shows value for future needs, events, or desires of individual

Prototype C	Prototype F	Prototype I
Multilingual How to Pick	*Similar-to Recommendation*	*All-in-One AR Experience*

Fitting me Now
Produce meets current need, habit, or task

Prototype B	Prototype E	Prototype H
How to Pick	*What it's like*	*Try-before-buy*

Tangibility

**Control
Prototype A**

Minimum Info

Object
Immediate information about the produce itself

Context
Where this produce fits within broader understanding

Experience
Conveying the experience of the produce after purchase

Test Setup

During test

- Screen displaying image of Brussels Sprouts
- Scenario of purchase described to test participants (n=5)
- Physical signs and digital interactions via smartphone used to simulate visual communication interventions
- Participant answers questions about comparison with control, within column of 3, and for all

After Test

- Follow-up questions about their overall feedback and suggestions

Test scene

Prototype testing protocol for researchers

Control group - Minimum Info

To minimize information, the control prototype was simply the image of the brussels sprouts in a grocery produce section and a sign stating *Brussels Sprouts* in English only.

Brussels Sprouts

Visually explain how to pick

From the interviews, participants suggested a key barrier was uncertainty based on the way produce looks.

With focus on the *Object* and how it fits the user *Now*, this prototype uses visual information and minimal language to express what the produce looks like when cut and when it looks ideal for selection.
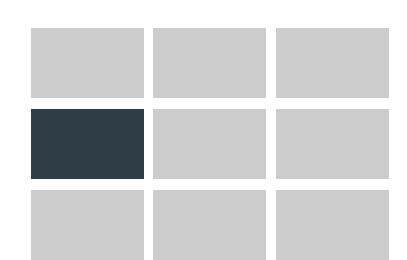

Brussels Sprouts

Use multi-languages to explain how to pick

Many participants expressed confusion due to the name of produce being different in their native language.

This prototype builds on the prior with the addition of various translations in words and audio.

Multilingual pick and pair guidance

With only Objects to communicate the consumption experience, pairing the produce with culturally-specific seasoning, sauces, and spices intended to associate the produce with familiar cuisines.

Brussels Sprouts
Coles de Bruselas
Choux de Bruxelles

Bắp cải Brucxen
球芽甘蓝
芽キャベツ

ব্রাসেলস স্প্রাউট
ब्रसल स्प्राउ
كرة قدم

Try them with . . .

Vinegar

Seasoning
Sauce

Hot
Sauce

Cured Meat

Spices
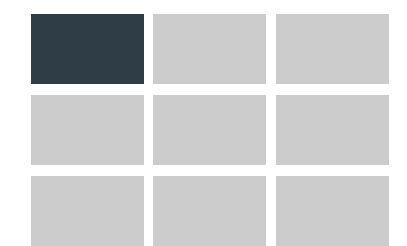
What it's like

This prototype aims to contextualize the consumption experience based on immediate information at the point of purchase, such as choosing one vegetable over another. The sign compares similar produce items bassed on texture and flavor both before and after cooking.
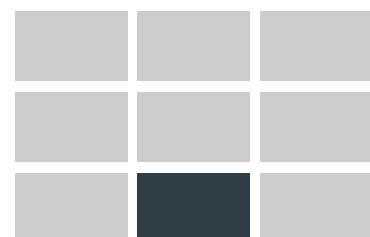
Similar-to Recommendation

To maintain the context of the prior prototype but equip the participant in future shopping experiences, this prototyped uses a grocery list app as a means of preserving recommendations for a future need or occasion.
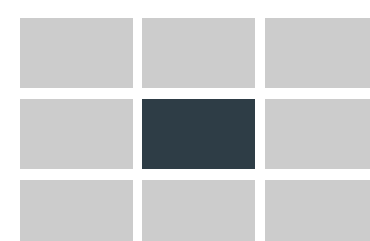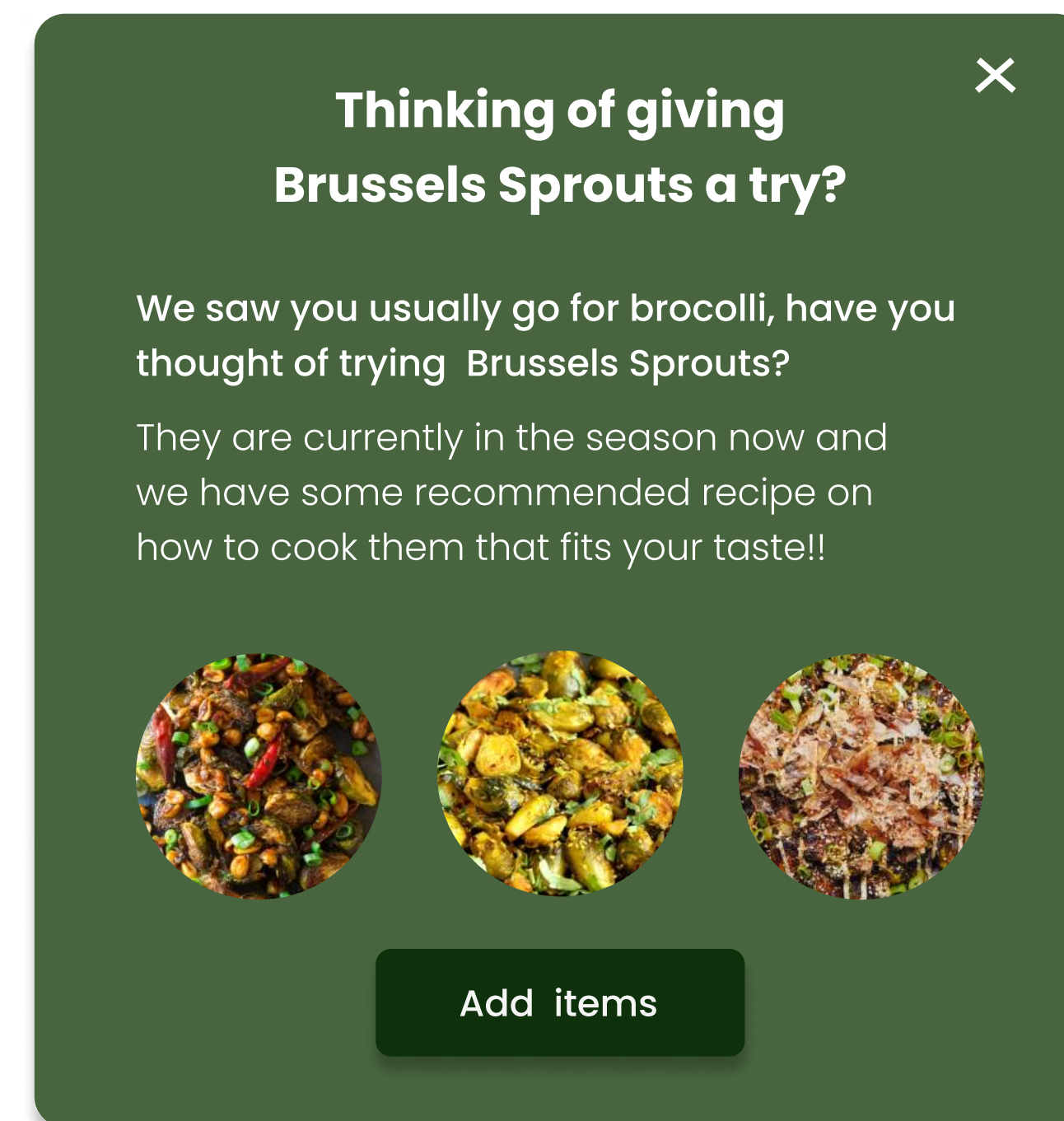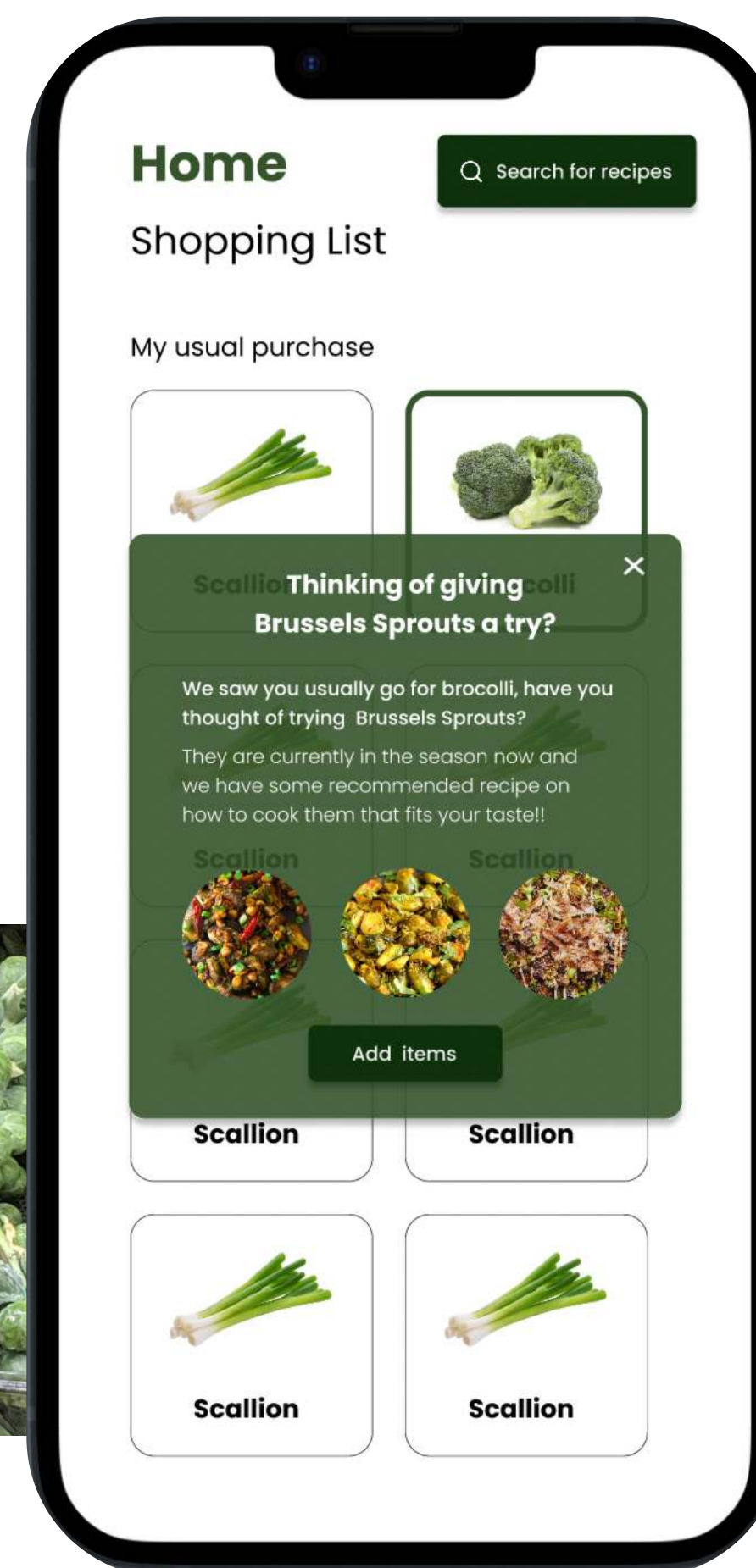
Prototype G

Culture-specific Recipes

This prototype approaches cultural connection by creating culturally-specific recipes that don't disrupt eating habits.

By knowing a recipe beforehand, the participant has a better understanding of the context without having substituted it.
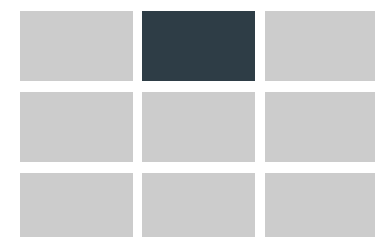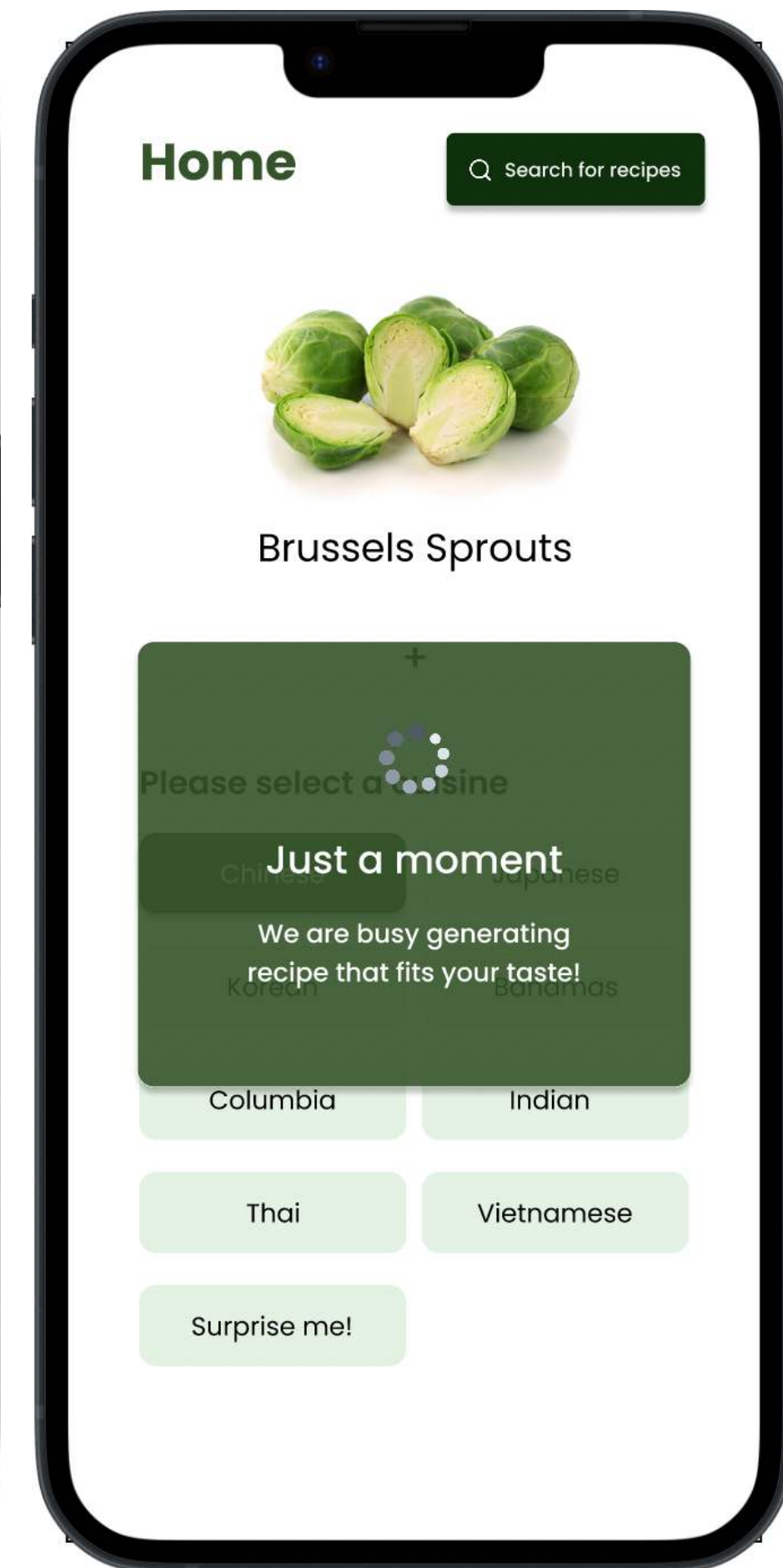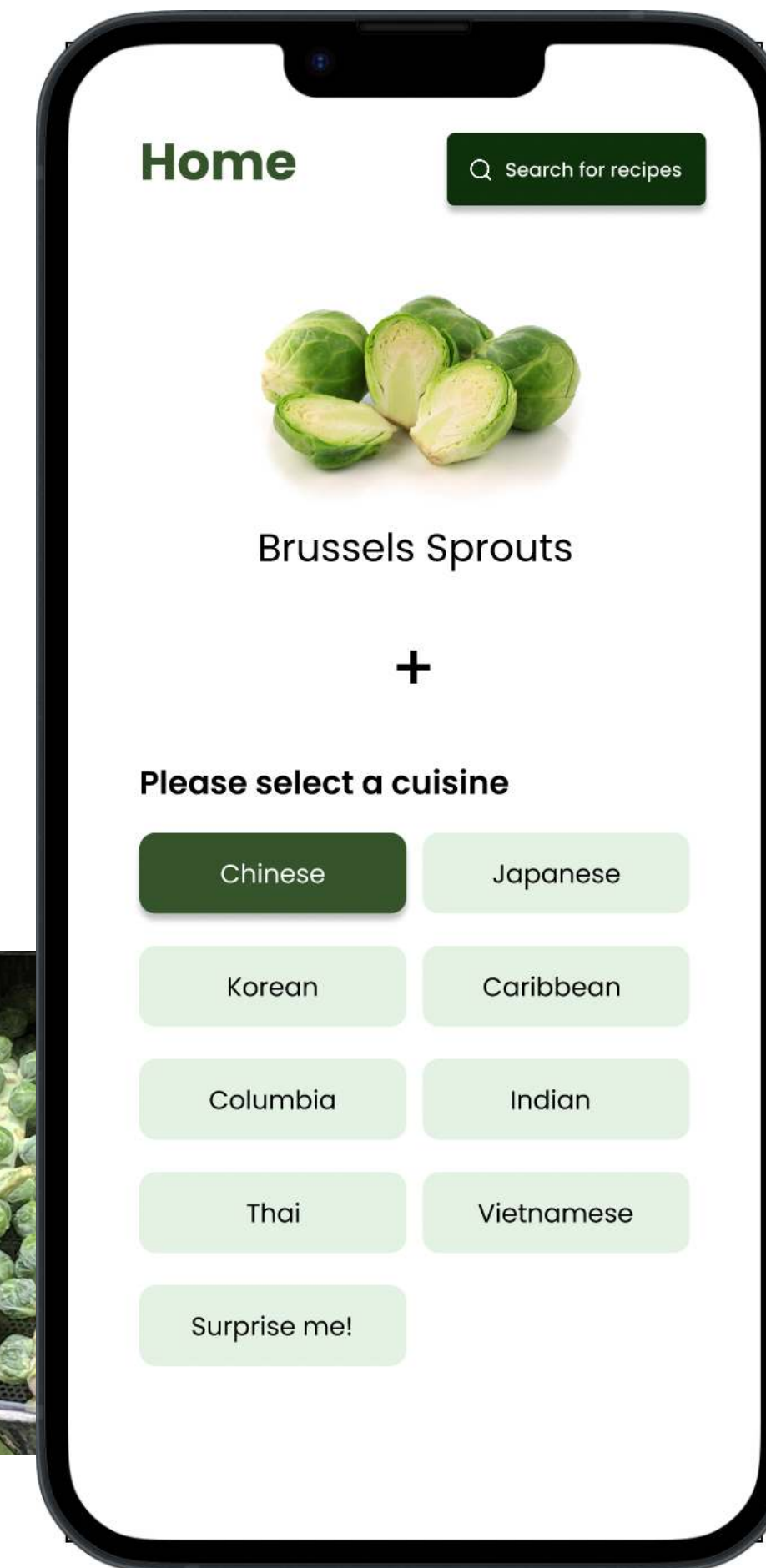
Try-Before-Buy

The most experiential method to knowing produce is to just eat it. While we did not prepare actual Brussels Sprouts, we created signs for samples, identified flavor notes, and added a QR code for the recipe.

Do you know now it's the best time to buy Brussels Sprouts?

Brussels Sprouts are currently in their peak season!
Come and try this Crispy Roasted Brussels Sprouts.
I promised you will come back for more.

Creamy

Nutty

Sweet

Scan here to get the recipe!

Smoky

Take one before they are gone!

Crunchy
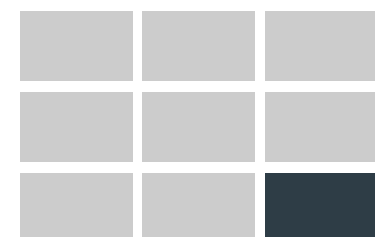
All-in-One AR Experience

The prior prototype assumed the user had the time to eat a sample and sufficient acquisition of the English language.

This prototype allows the participant to use an AR application to identify the produce in their native language, learn more, and save a recipe for later on.
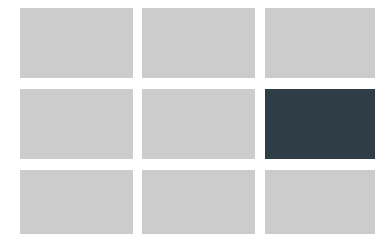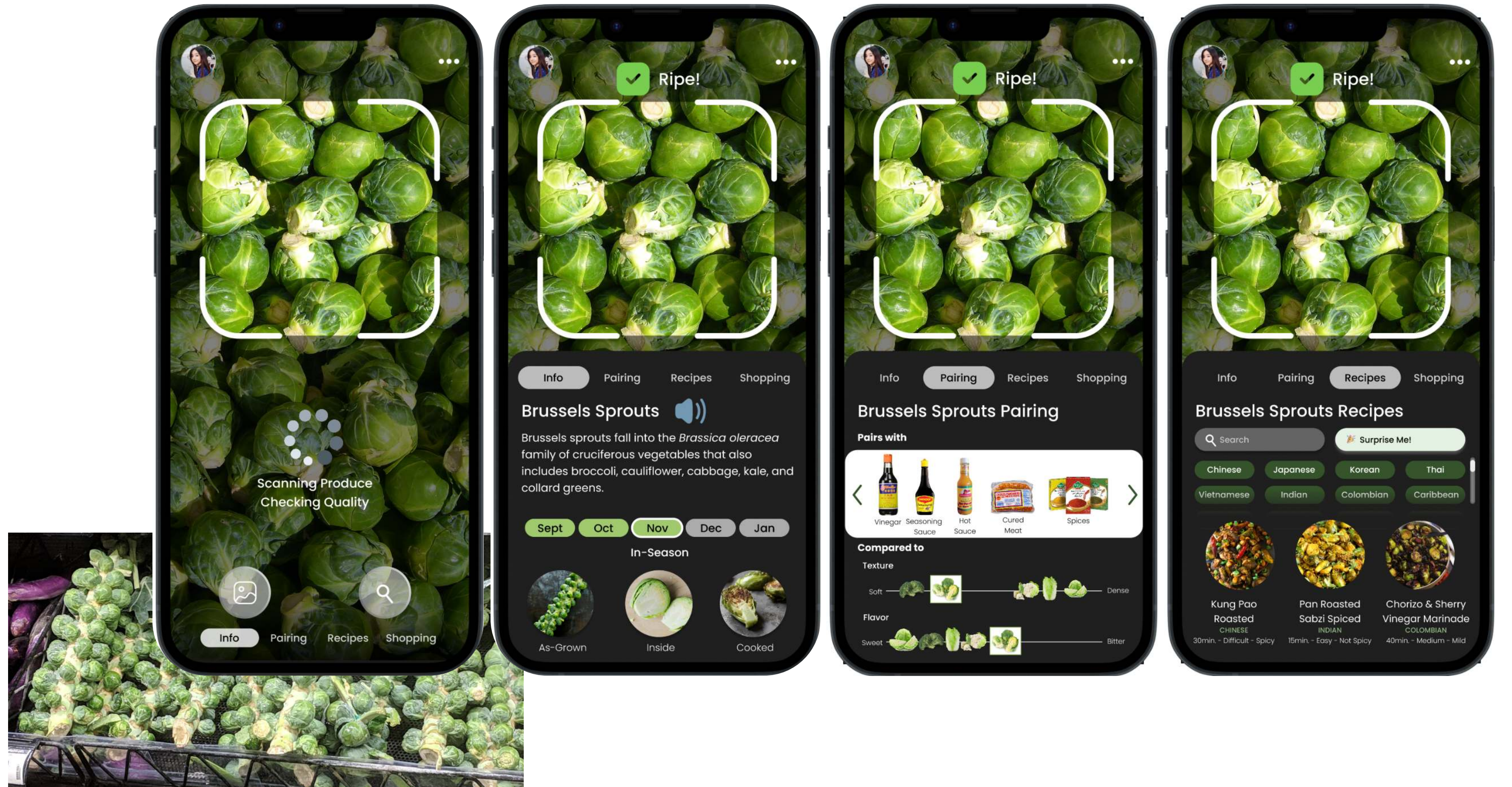
Cultural Group Cooking Class

The final prototype attempts to engage the *experiential* aspect of knowing produce with an identity fit for their *community*.

The prototype includes a QR code that allows the participant to sign up for culturally-specific community cooking class in which they would try all steps of the consumption process (prep, cooking, eating) in a pro-social and risk-free environment.

Scan the QR code below to learn more about FREE Brussels Sprous cooking class!

Brussels Sprouts Cooking Class Registration Form

Join hands-on cooking classes with chefs who are experts in their cuisine! Our classes are open to all skill levels and each cooking class lasts around 60 - 90 minutes. Order and reserve your spot by registering for the desired class below. Roll up your sleeves and be ready to have fun!

Participant Name

First Name | Last Name

Email | **Phone Number**

example@example.com | (000) 000-0000
Please enter a valid phone number.

Available Cooking Classes


Brussels Sprouts Bhajis with Raita
Coated lightly in spices and served with a fresh minty dip, these crispy sprout clusters make a great starter at a winter dinner party!

Smashed Brussels Sprouts
Crispy, creamy, sweet, savory, with a hint of chili and lime - if you like Tostones, you'll love these smashed Brussels Sprouts!

Please pick an available time for Smashed Brussels Sprouts:

12/07/2022

December | 2022

SUN | MON | TUE | WED | THU | FRI | SAT
| | | | 1 | 2 | 3
4 | 5 | 6 | **7** | 8 | 9 | 10
11 | 12 | 13 | 14 | 15 | 16 | 17
18 | 19 | 20 | 21 | 22 | 23 | 24
25 | 26 | 27 | 28 | 29 | 30 | 31

America/Chicago (09:08 PM) ▾

Wednesday, December 07

12:00 AM | 2:00 AM
4:00 AM | 6:00 AM

Other registered participants

Aman | Bhardwaj
First Name | Last Name

Jiafeng | Zhu
First Name | Last Name

Kazu | Mizunuma
First Name | Last Name

Meghna | Prakash
First Name | Last Name

What we learned about
Relevant Identity

Cultural Identity vs. Chef Identity

Some of the prototypes surfaced the nuance between cultural identity and chef identity where participants expressed that where they are from can be different from what they like to cook and eat.

Available Time x Curiosity Level

The level of anticipated engagement with a prototype was dependent on the combination of participant's available time (e.g. running errands versus browsing) and their curiosity to try new things.

Customization In-Store vs Out-of-Store

Based on different shopping environment interpretations, the prototypes that use technology suggested certain customization features were more impactful out-of-store versus in-store due to perceived frictions, such as QR codes.

What we learned about
Tangibility

Show Not Tell

By including visual cues and language about the produce context, users were encouraged to engage with the information. Adding specific and concrete images prompted users to want to take action.

Less is More

In-store shopping experience should require only the right amount of mental effort. Information that was relatively straight-forward was preferred over excess information provided through context. Extra steps, such as scanning QR codes, were barriers for the participants.

Learn by Tasting

Tasting the unknown provides the fullest experience, which allow users to answer questions and uncertainties about unfamiliar ingredients. Smell and taste guide people to find out what produce looks like and tastes like once cooked.
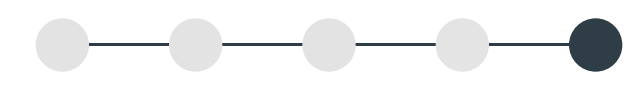
Group heat map from test

Prototypes B-C-D

Multilingual How to Pick/Pair rated most motivating as it included the most information of the three. However, the multilingual aspect was not as critical as visual cues from pick and pair

Prototypes E-F-G

What it's like conveyed the consumption experience simply and directly, while the technology created friction for the other two prototypes

Prototypes H-I-J

Try-before-buy was the most direct experience of the product while the all-in-one or cooking class prototypes felt more removed and time-intensive

Least Motivating   Most Motivating

Prototype D *Multilingual How to Pick/Pair*	**Prototype G** *Culture-specific Recipes*	**Prototype J** *Cultural Group Cooking Class*
Prototype C *Multilingual How to Pick*	**Prototype F** *Similar-to Recommendation*	**Prototype I** *All-in-One AR Experience*
Prototype B *How to Pick*	**Prototype E** *What it's like*	**Prototype H** *Try-before-buy*

Fitting *Us*

Fitting my *Life*

Fitting me *Now*

Relevant Identity

Tangibility

Object   Context   Experience

Control Prototype A *Minimum Info*

Overall heat map
from test

All prototypes were more motivating than the control prototype

Most Motivating

Overall, *Try-before-buy* proved to be the top motivator for participants to engage new produce. Unlike the other prototypes which indirectly conveyed the consumption experience.

Somewhat Motivating

Conveying taste, texture, and well-paired flavors helped connect participants to familiar foods when direct information was not present.

Least Motivating

The least motivating prototypes often combined excess or unnecessary information and barriers due to technology.

Least Motivating   Most Motivating

Relevant Identity

Fitting Us

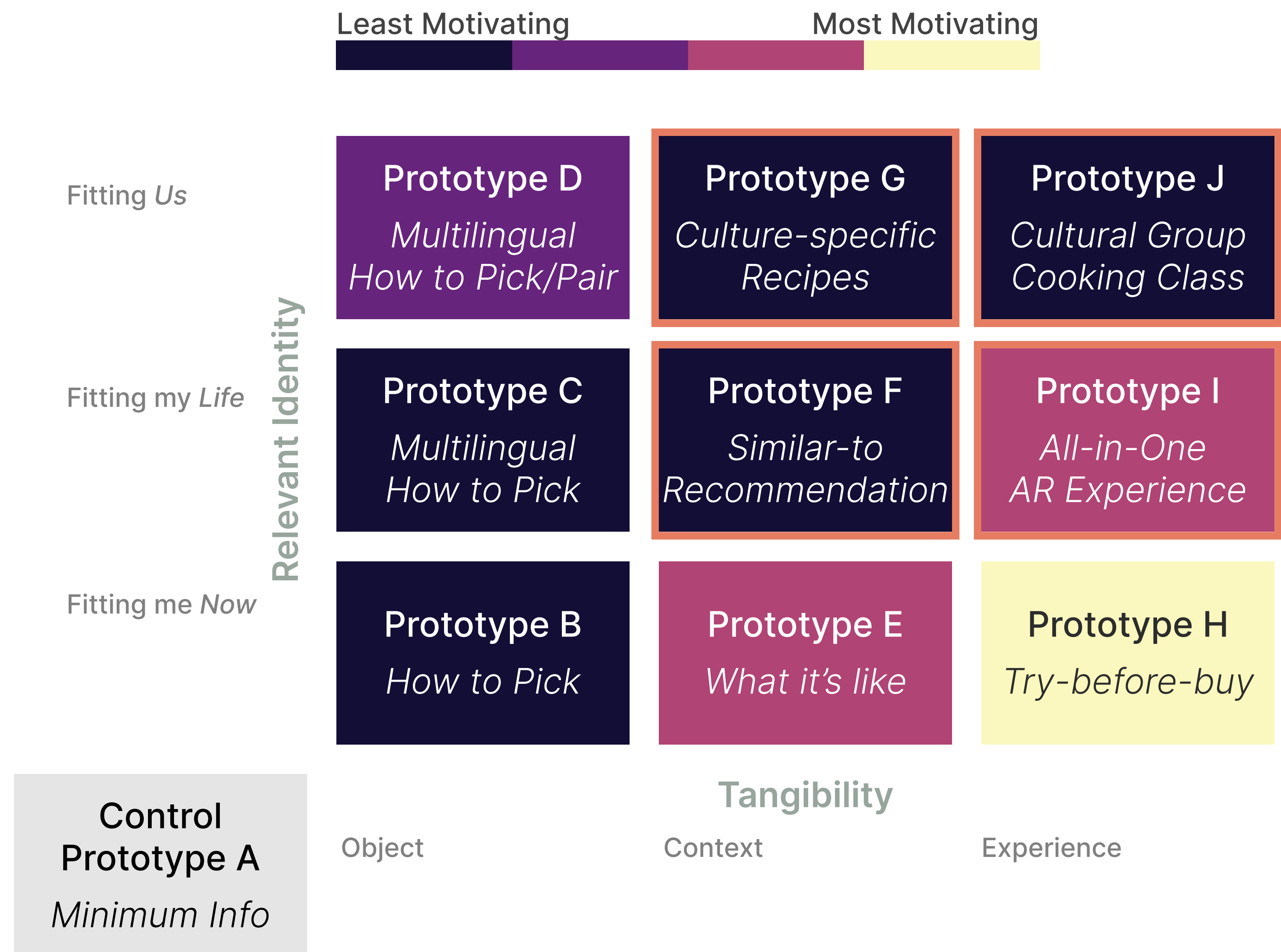| Prototype D	Prototype G	Prototype J
Multilingual How to Pick/Pair	*Culture-specific Recipes*	*Cultural Group Cooking Class*

Fitting my Life

Prototype C	Prototype F	Prototype I
Multilingual How to Pick	*Similar-to Recommendation*	*All-in-One AR Experience*

Fitting me Now

Prototype B	Prototype E	Prototype H
How to Pick	*What it's like*	*Try-before-buy*

Control Prototype A
Minimum Info

Tangibility

Object   Context   Experience

Test limitations

Due to aspects of the test design and setup, as well as test participants, the insights are limited in the following ways:

Prototype Consistency

- Prototypes were not mutually exclusive, some built on each other
- Mix of physical and digital solutions

Test Environment

- Testing was conducted in an educational environment rather than grocery store produce section
- Visual communication does not replace sensory experience
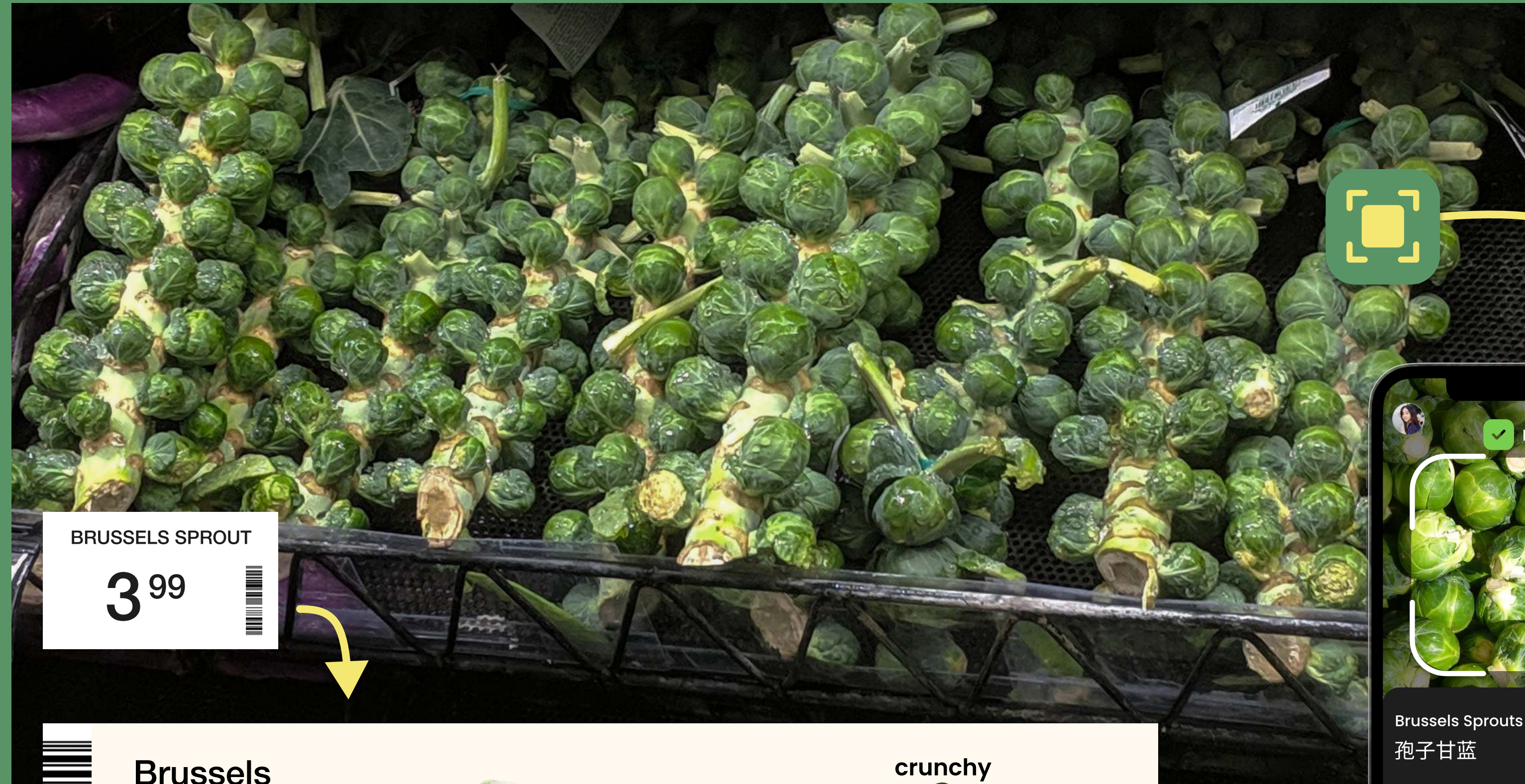- Prototypes were introduced in the same order for each participant

Participant Prior Knowledge

- Participants were international Institute of Design students who were: fluent in English, familiar with Brussels Sprouts and American grocery stores, experienced in user testing procedures and prototyping

Barriers Beyond Food

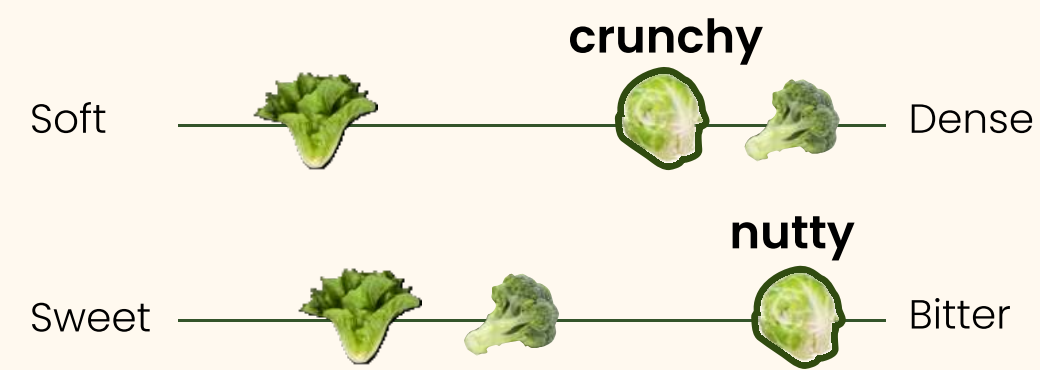- Our prototypes ignored the influence of price and access to foods

In-Store Experience

BRUSSELS SPROUT
3 99

Brussels Sprouts
3 99

Soft — crunchy — Dense
Sweet — nutty — Bitter

Food label redesign

Ripe!

Brussels Sprouts 🔊
孢子甘蓝

Brussels sprouts fall into the *Brassica oleracea* family of cruciferous vegetables that also includes broccoli, cauliflower, cabbage, kale, and collard greens.

Sept Oct Nov Dec Jan
In-Season

Scan for basic info
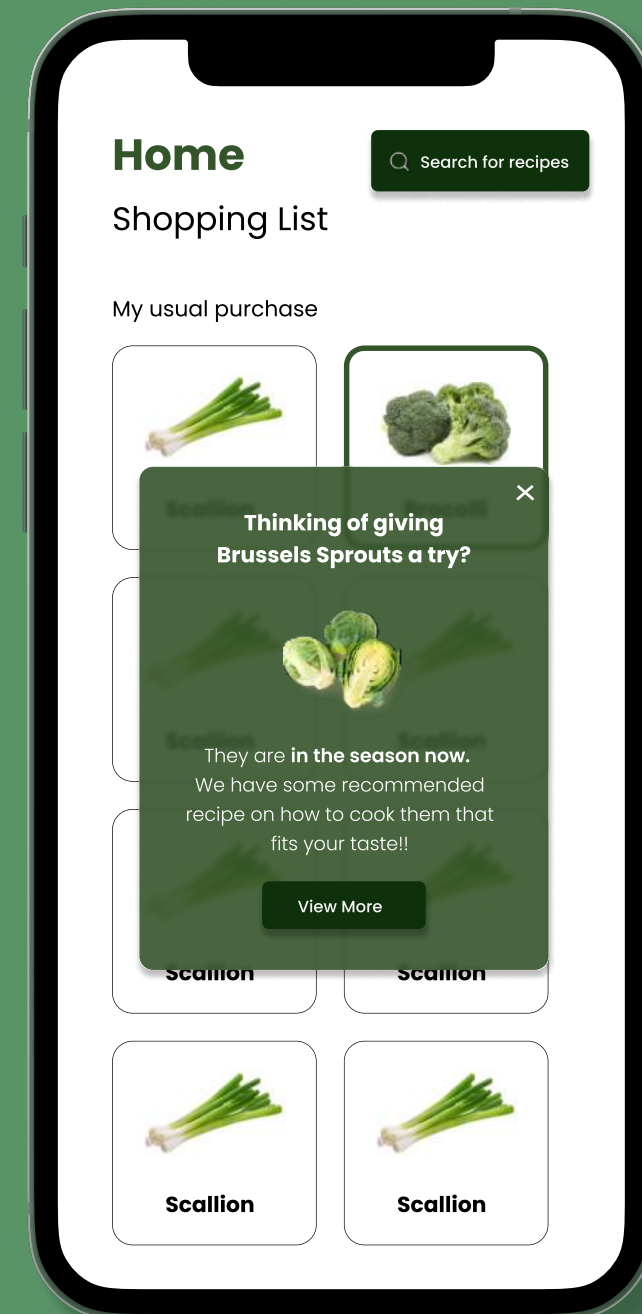
Personalized prompts

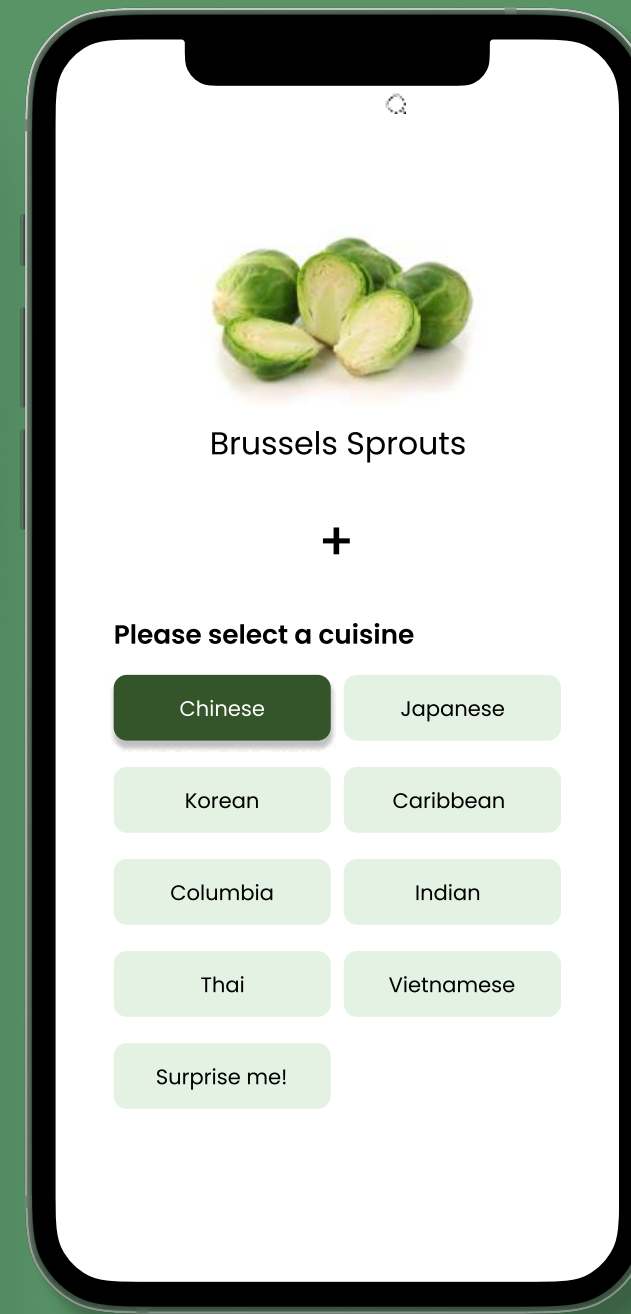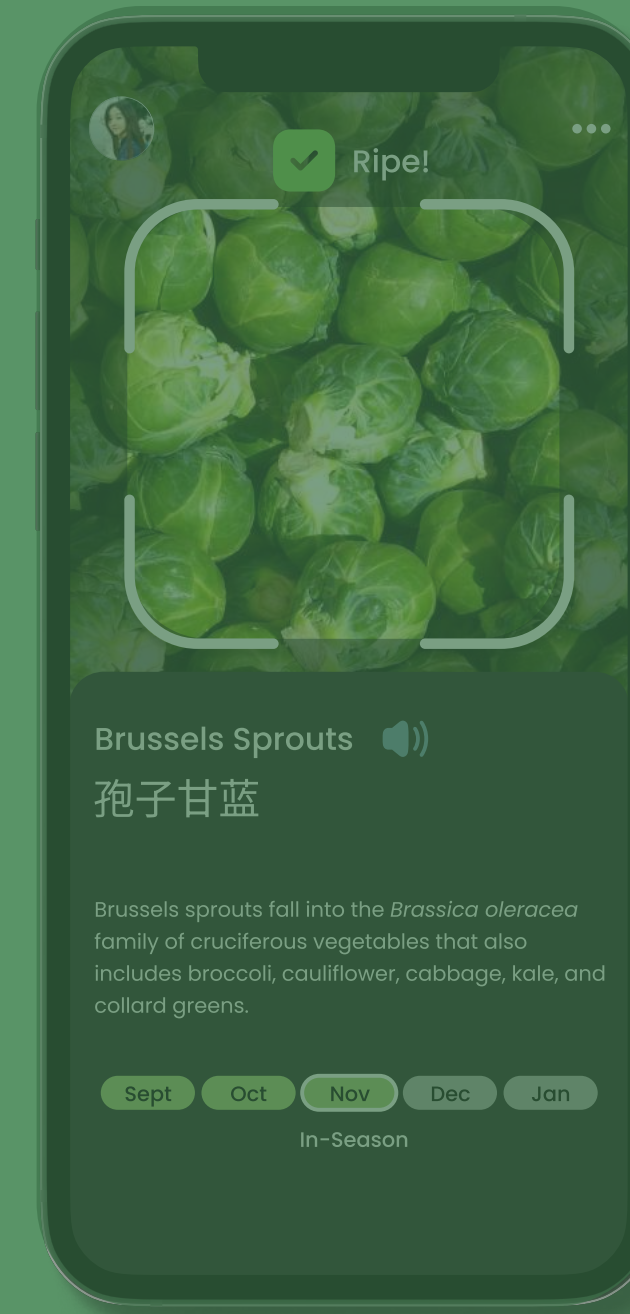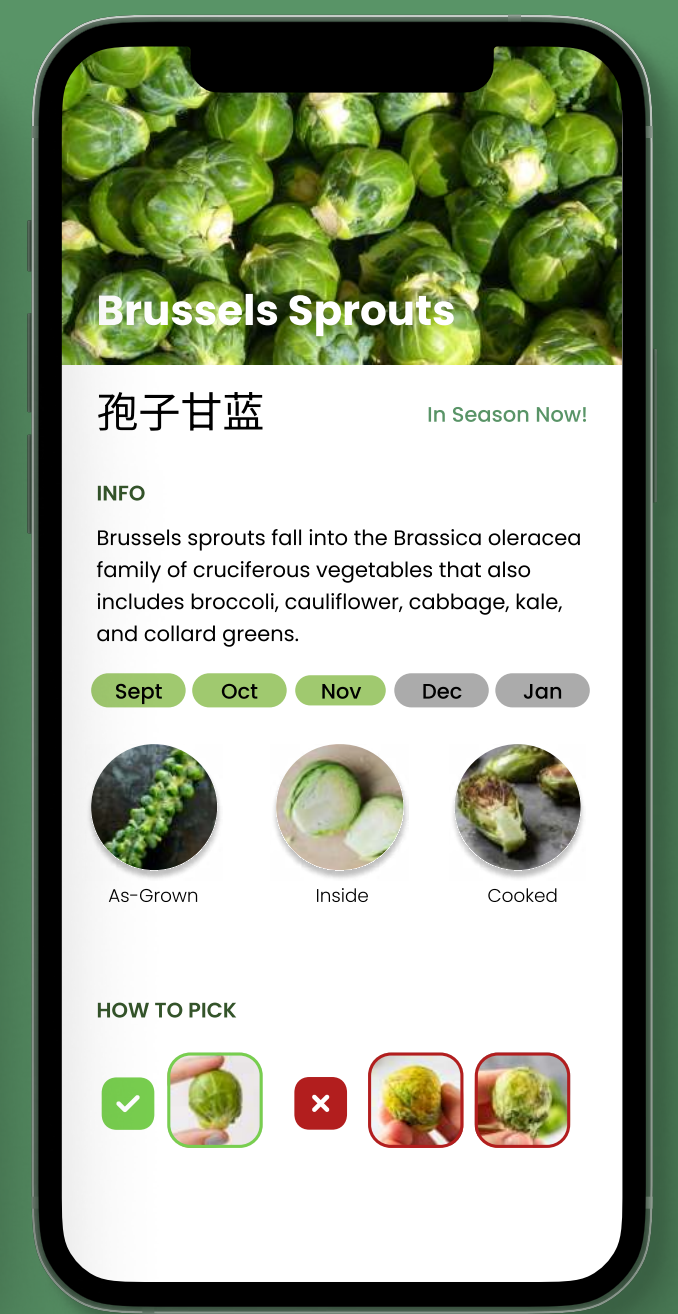Recipes from different cultures

Quick scan in store

Browse details at home

Outside-Store Experience

Key Learnings

Our team aimed to understand the sustainable impact of increased purchase of seasonal produce to reduce food waste.

By narrowing in on the **moment of purchase** of **unfamiliar seasonal produce** among **migrant shoppers**, we learned . . .

Tangibility and Relevant Identity behavioral dimensions which connect to taste, familiarity, and culture were critical to motivate participants to take action

Design can enhance motivation by addressing the diversity of identity, dependence of time, curiosity, and context, and leveraging direct and sensorial information

Future testing would employ greater prototype consistency, inhabit a more realistic environment, and engage a less familiar audience

Recommendations for future investigation

Our course was focused on understanding the impact of behavioral design on sustainable food systems. Due to the constraints of the project we were not able to evaluate each moment of the consumption process and food system.

Our recommendations for **future investigation** would be to . . .

Quantify **carbon footprint reduction** of swapping imported foods for seasonal foods and **define seasonality and locality** with respect to sustainable alternatives

Test **educational components** of food waste reduction after the moment of purchase and at the end of the consumption cycle

Connect with **seasonal produce farmers** to evaluate the impact and implications of our design interventions on **food production** and **supply chain stakeholders**

Thank you

Behavioral Design Workshop | Fall 2022

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