



# Revisiting and expanding the “Food Agency” framework: A mixed-methods study to better measure how Virginians accomplish food provisioning and cooking

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# What is food agency?



The capacity to act **throughout the course of planning and preparing a meal** and feeling “empowered” to cook.



## Individual

- Skills and knowledge
- Self confidence
- Experience
- Attitudes



## Personal Food Environment

- Kitchen space
- Dietary preferences
- Cultural, ethnic, and traditional food practices
- Purchase power
- Time
- Informational (media)



## Physical Food Environment

- Food availability
- Food quality
- Food away from home
- Location



## Macrosystem

- Food security
- Sustainability
- Local agricultural and food systems
- Health disparities
- Policies

# Measuring food agency: The Cooking and Food Provisioning Actions Scale (CAFPAS) ...

Skills & Self-Efficacy

- I know how to use the **kitchen equipment** I have.
- I feel limited by my lack of **cooking knowledge**
- I know **where to find the ingredients** I need to prepare a meal.

Individual

Attitudes

- **I prefer to** spend my time on more important things than food
- For me, cooking is just something to **get through as quickly as possible**

Personal Food Environment  
(Time limits, equipment)

Structure

- I have a hard time **finding enough time** to prepare the food I'd like to eat.

Physical Food Environment  
(Purchasing considerations)

Scale domains

Example scale items

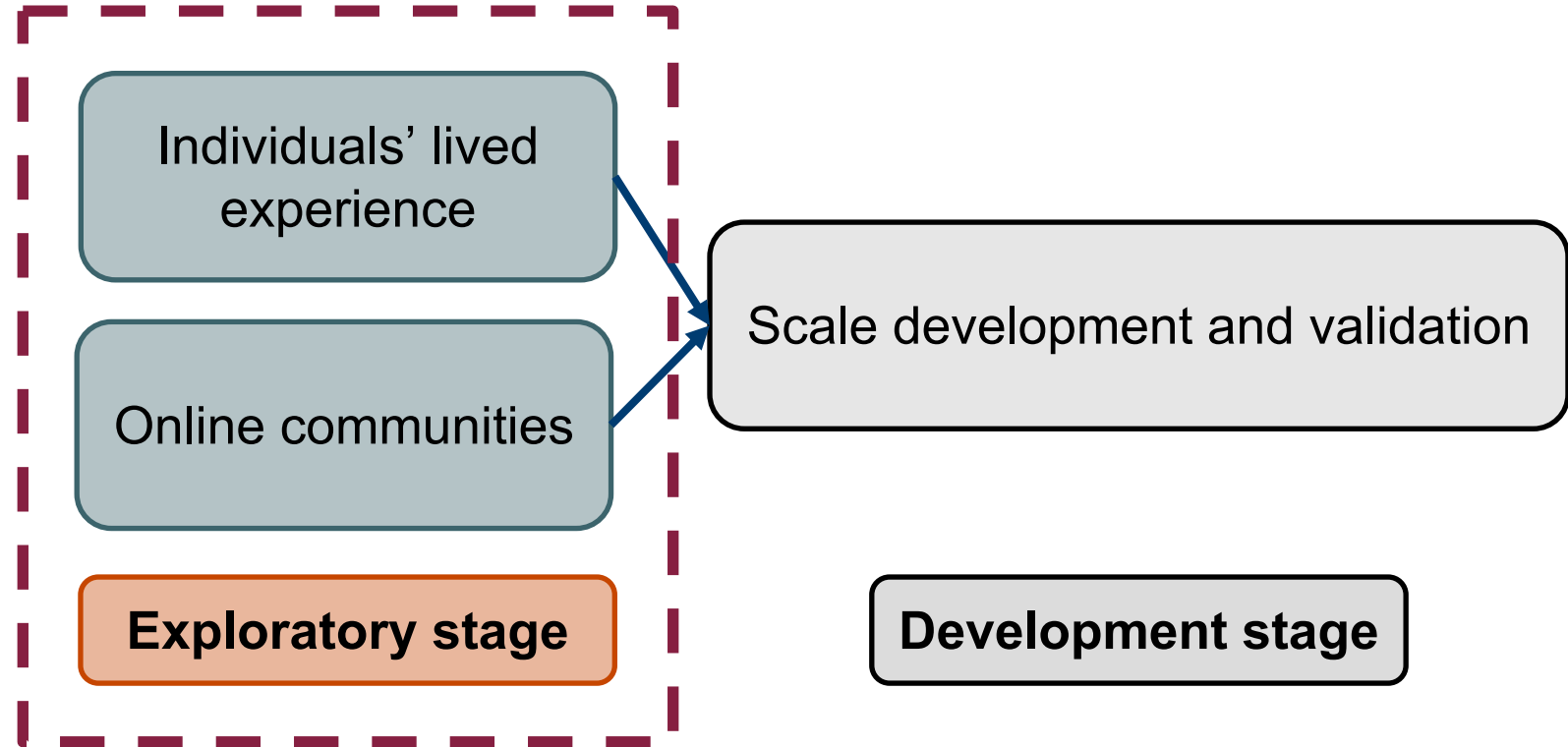
**Food agency factors  
(missing pieces??)**

# Project outline



## Overall project goal:

To improve and validate an existing measurement tool for cooking and food provisioning behaviors



Supported by the  
University Libraries  
Collaborative  
Research Grant

# Grant-specific goals for the exploratory stage



1

What are some factors influencing individual's ability for home meal preparation in **urban/suburban and rural/remote population**?

2

How do these factors **affect people's ability to enact food agency**?

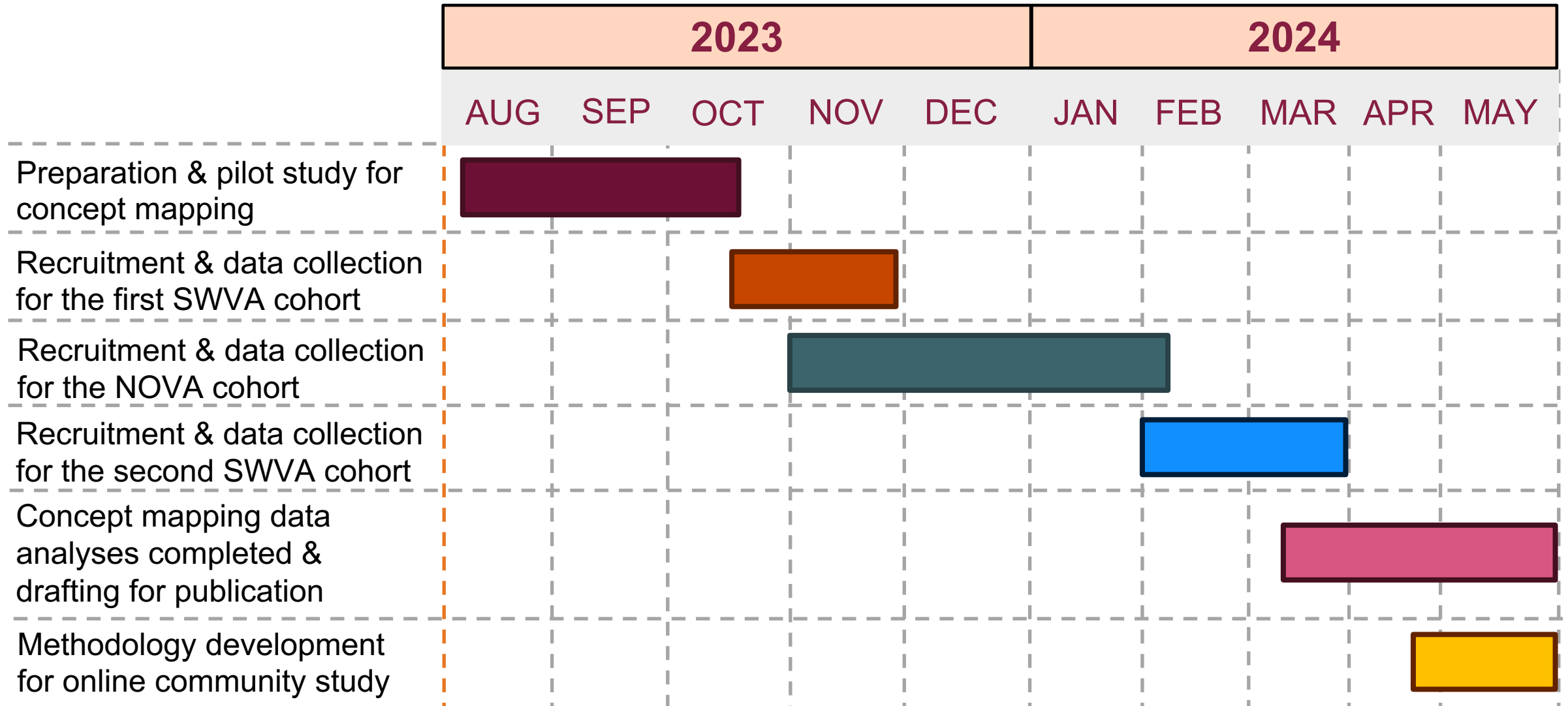
3

To what extent do population in different food environments vary in their **perceptions for the importance of the factors** affecting food agency?

4


What are some factors influencing home meal preparation behavior **discussed on online communities**?

# Research activities during grant award period




# Sampling strategies & recruitment



 COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
FOOD SCIENCE  
AND TECHNOLOGY  
VIRGINIA TECH.

**Seeking Participants!  
Let Your Voice Be Heard  
About Home Cooking!**

Scan this QR code to complete the screening questionnaire






**WHAT:** The Sensory Evaluation Laboratory at Virginia Tech seeks participants to a concept mapping study to discuss the factors affecting their abilities on home meal preparation (IRB #23-861). **Participants must be at least 18 years of age. The study is going to be conducted in English.**

**You would have the chance to get \$90 cash by participating in the study**

*This concept mapping study involves three sessions:*  
**Session 1:** Brainstorming statements (in-person, 90-120 mins)  
**Session 2:** Sorting & Rating statements (online, 60-75 mins)  
**Session 3:** Discussion & Interpretation of the results (in-person, 90-120 mins)  
**Participation is limited to ONE INDIVIDUAL PER HOUSEHOLD**

**IN-PERSON STUDY SITE:** Virginia Tech Northern Virginia Center  
7054 Haycock Road, Falls Church, VA 22043



**PURPOSE:** This study aims to explore the factors that influence individual's ability of home meal preparation.

**DISCLAIMER:** Results from this research may be published. Photos and audio recordings of the study sessions will be taken, with participants' permission. Participation is voluntary and will not affect your relationship with Virginia Tech.

**CONTACT:** For more information, contact Jiakun Yi ([jiakunyi@vt.edu](mailto:jiakunyi@vt.edu)).  
This study is supervised by Dr. Jacob Lahne ([foodsensory@vt.edu](mailto:foodsensory@vt.edu)).



THE CAMPUS KITCHEN<sup>SM</sup>  
at VIRGINIA TECH<sup>®</sup>



## Southwest VA Cohort 1

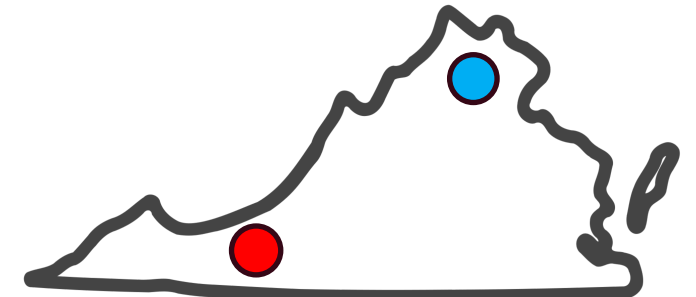
- N = 20 adults
- Initial idea conceptualization
- Local residents, college students

## Southwest VA Cohort 2

- N = 14 adults
- Triangulation on the results from SWVA cohort 1
- Local residents, college students

## Northern VA cohort

- N = 5 adults
- Interpretation-oriented cohort
- Fresh graduate from college in early career, food and nutrition professional, working class with family, retired individual



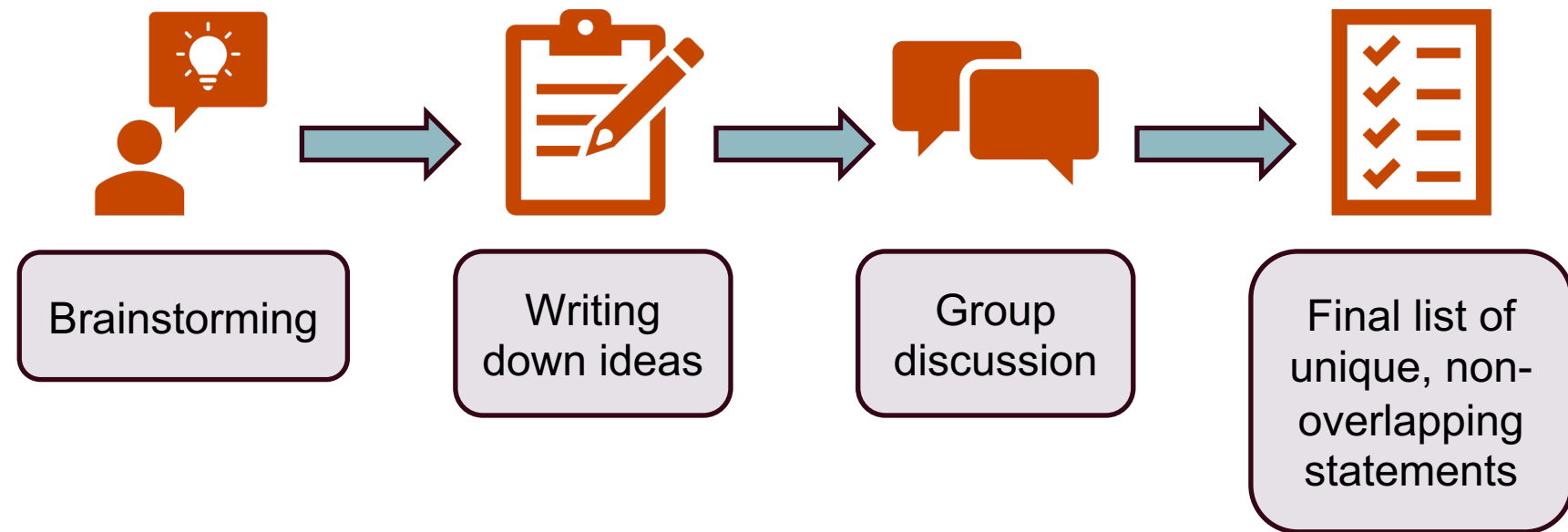
# Mixed methods concept mapping approach

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## Session 1: Idea generation (qualitative)

**Focus statement:** What things, good or bad, affect your ability to plan and prepare a meal at home?



# Mixed methods concept mapping approach



## Session 2: Sorting & rating (mixed)

Statement ID	Statement
1	Online grocery shopping
2	Cooking for only myself
3	Confidence in executing my cooking skills
4	Cold storage/Freezing of leftover or unused ingredients
5	Different food preferences in my household
6	Available ingredients in my home pantry
7	Willingness to try new food/recipe
8	Dietary restrictions
9	Appliances to make meal preparation easier (e.g. air fryer, rice cooker, blender, mixer, dishwasher, toaster, crockpot)
10	Exploring new ways to prepare a same dish
11	Ease of transportation from where I live to where I get food (e.g. walking, public transport, car, biking)

Final list of statements from session 1



Sorting

Rating

Please review Session 2 Checklist and sort the statements into groups based on similarities and how you feel the groups make most sense to you. **Please make sure to match the statement ID with the corresponding statements.**

- You can add statements into groups by dragging the statement ID into the groups above with your finger/mouse.
- You can remove statements from the group by dragging the statement ID in the groups back to the box of codes below with your finger/mouse.
- You can use any criteria you want to sort these statements.
- You can make as many groups as you like. However, each group MUST HAVE at least 1 statement in it.**
- Each statement can only be sorted into one group.**
- You will need to indicate a unique name for each group.**

Sample: BC111

### Importance

The "Sample Number" shown above is the "Statement ID" on your Session 2 Checklist.

Please find the corresponding statement on your checklist and use the scale below to indicate:

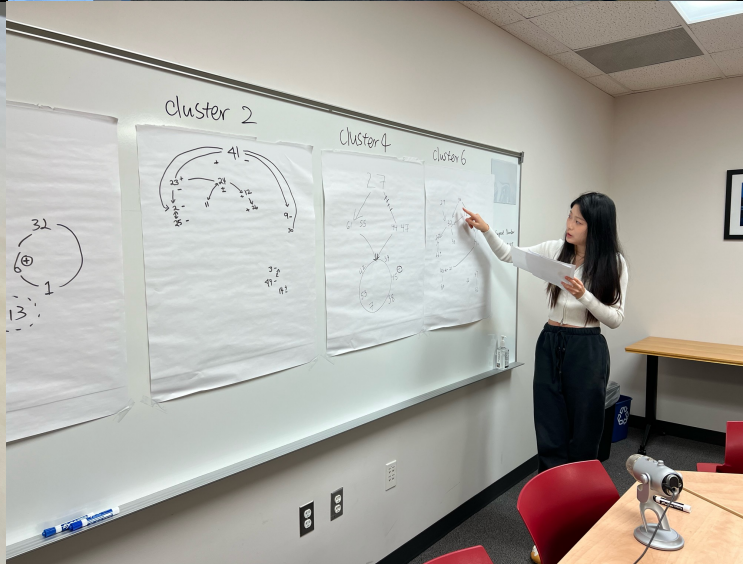
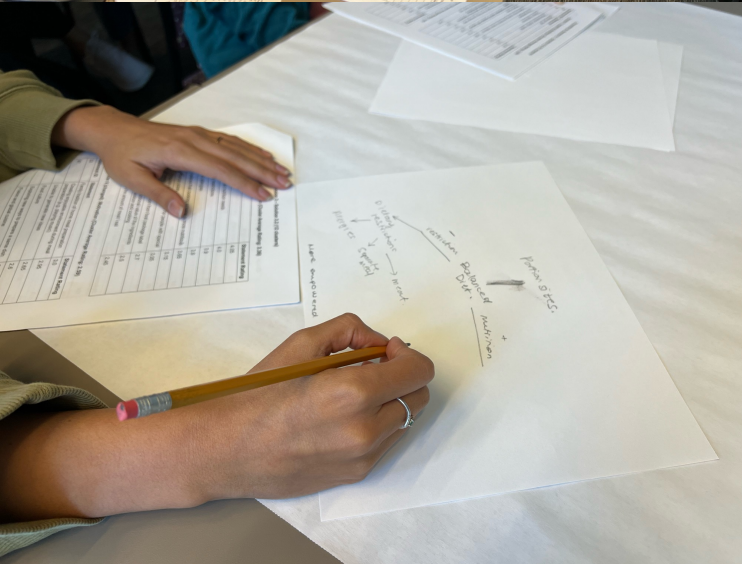
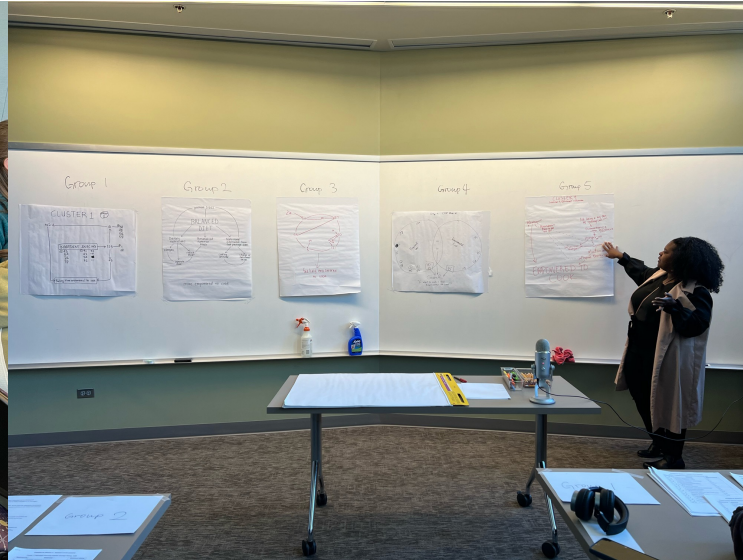
**How important do you think this statement affects an individual's home meal preparation behavior?**

Relatively not important	Slightly important	Moderately important	Important	Very important
1	2	3	4	5

# Mixed methods concept mapping approach



## Session 3: Interpretation (qualitative)



Group discussion

Reach a **group consensus** on:

- The number of clusters
- Names of the clusters



Sharing experience

Share **individual perception** on how:

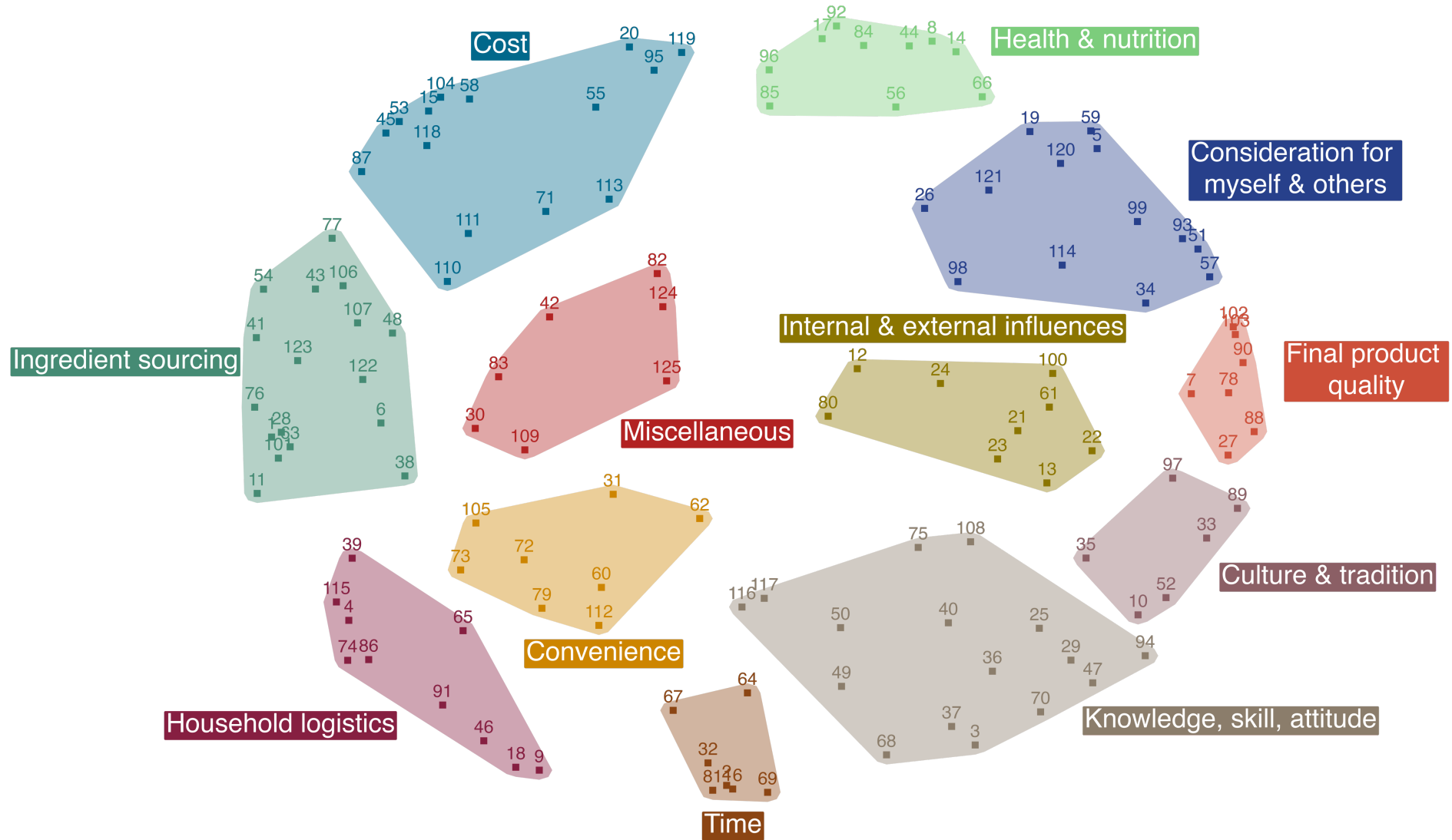
- Clusters with high importance ratings
- The region(s) they lived in affect their ability of home meal preparation



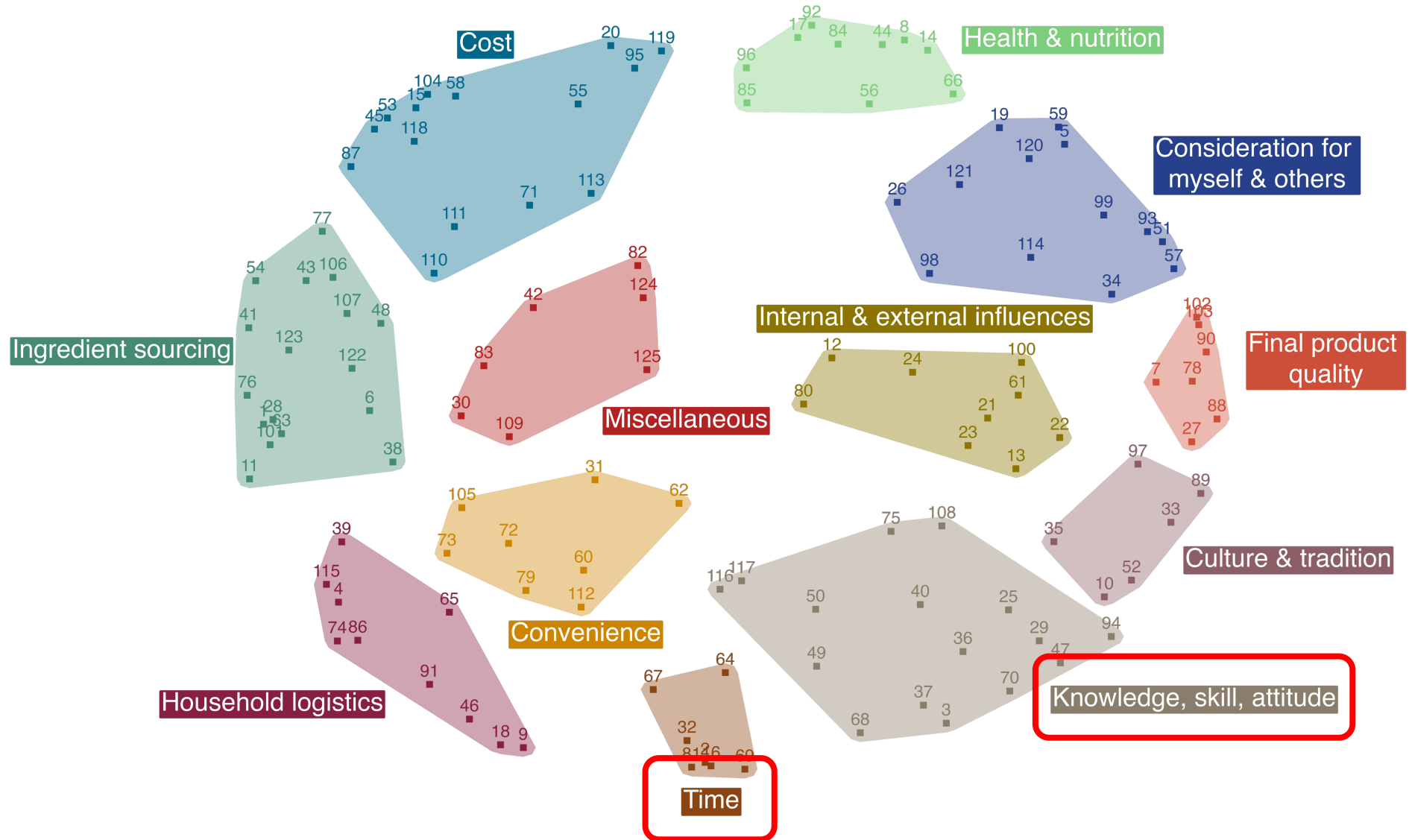
Small group activity

**Path diagram interpretation** to depict the internal relationship of the statements within a specific cluster

# Mixed methods study deliverables – concept map



# Mixed methods study deliverables – concept map





## Mixed methods study deliverables – highly rated clusters

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Rank	SWVA 1	SWVA 2	NOVA
1	Time	Consideration for myself & others	Health & nutrition
2	Consideration for myself & others	Ingredient management strategies	Household logistics
3	Household logistics	Internal influences	Experience & skills
4	Health & nutrition	Time & effort	Ingredient availability
5	Internal & external influences	Health & nutrition	Motivation

# Findings from lived experience



## Time limits

Key determining factor for home meal preparation over all other factors across different populations



## Household logistics

Affects efficiency, determines what specific tasks one is capable to conduct in the kitchen



## Health & nutrition

Driving force for food-related decisions. Interacts with other factors such as satisfaction, knowledge, transparency, and aspiration for health



## Internal & external influences

Affects not only home meal preparation, but in fact every daily life decisions, associated with motivation and the sense of control

# Regional differences observed on getting food, making plans, and food cultures

...

Less options & varieties outside of university localities

More options in grocery stores

Longer distance & commute time

Less frequent restock

Easier transportation

Lack of options of food away from home

Restaurants

Online shopping

Long-term planning is common

More frequent grocery store visits

Hard to execute last-minute decision

Greater flexibility to change plans

Home-grown or locally sourced products

International ingredients

Support local businesses and farmer's market

Sustainability

Health effects

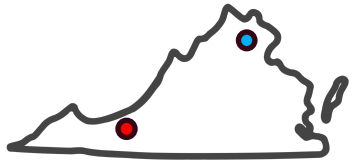
Gendered expectations

Larger household size

Traditional Southern cooking

Cooking for smaller household or self

More resources to improve cooking skills



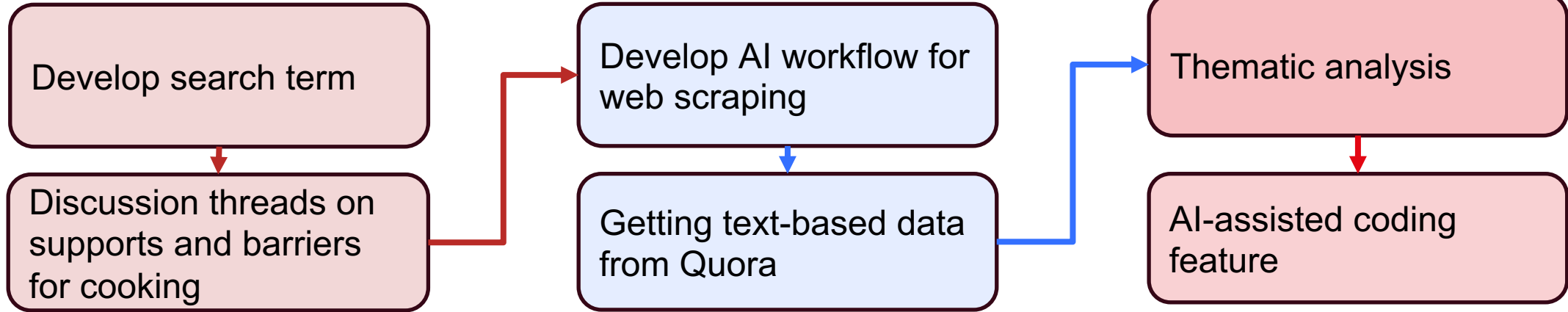
# Next step: An AI-assisted qualitative study



# Quora

# Octoparse

# ATLAS.ti



## What makes cooking difficult?

Answer Follow · 11 Request

**I believe the main reason people fail while cooking is not having a sense of proportion.** Nobody needs to have an encyclopedia inside their brains and memorize recipes, that's what recipe books are for. However, sense of proportion can save your meals. If you know basic preparation (rice, pasta, bechamel sauce, fry a beef, etc), basic cuts (cubes, strings, chopped) and have a sense of proportion, you are able to make lots of variations with good results. If you know how to make a simple bechamel and add cheeses, you have a cheese sauce. If you prepare a simple rice and add vegetables, you already have another meal. And don't be afraid to have good quality industrialized products to make life easier, I love fresh beans just cooked, but canned beans can make a good food.



The screenshot shows the ATLAS.ti interface. The task is paused, with 160 data items extracted. The data list is as follows:

#	question_url	question
10	https://www.quora.com/Which-is-healthier-cooked-broccoli-or-raw	Which is healthier, cooked broccoli or raw?
11	https://www.quora.com/How-can-I-lose-weight-if-I-really-love-food	How can I lose weight if I really love food?
12	https://www.quora.com/How-do-restaurants-cook-pasta-so-fast	How do restaurants cook pasta so fast?
13	https://www.quora.com/Is-it-harmful-to-cook-or-eat-with-aluminium-utensils	Is it harmful to cook or eat with aluminium utensils?
14	https://www.quora.com/What-are-the-skill-differences-between-an-amazing-home-cook-and-a-professional-chef	What are the skill differences between an amazing home cook and a professional ...
15	https://www.quora.com/When-and-why-did-people-start-to-cook-food	When and why did people start to cook food?
16	https://www.quora.com/What-do-I-do-about-my-daughter-who-has-my-sister-cooking-cleaning-taking-care-of-the-house	What do I do about my daughter-in-law who has my s ... cooking, cleaning, taking...
17	https://www.quora.com/At-what-age-do-you-start-teaching-your-kids-how-to-cook	At what age do you start teaching your kids how to cook?
18	https://www.quora.com/Who-taught-you-how-to-cook	Who taught you how to cook?
19	https://www.quora.com/To-people-who-can-cook-what-is-the-most-frustrating-thing-about-not-being-able-to-cook	To people who can cook, what is the most infuriating ... cannot cook do when attem...
20	https://www.quora.com/Do-guys-like-girls-who-can-cook-its-not-a-problem-Should-I-be-jealous	Do guys like girls who can cook? My boyfriend some ... 's not a problem. Should I ...

THANK YOU