SCC-IRG Track 1: Food Information Networks (FINs):Building data-driven supports for increasing access and healthy food choices in low-income neighborhoods

Insights from the FINs Ethnographic Study

PI: Ron Metoyer Co-PIs: Nitesh Chawla, Ann-Marie Conrado, Tawanna Dillahunt, Danielle Wood

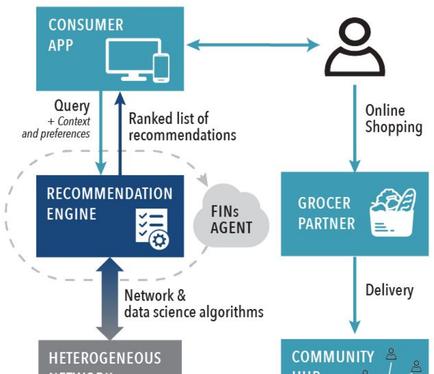
Presenter: *Michelle Sawwan*

Motivation

Healthy eating is a critical problem in numerous communities across the country, where low-income neighborhoods are often described as food deserts. There, the combination of economic constraints, distance to full-service supermarkets, and unreliable access to transportation make it difficult to acquire healthy, affordable foods. Research has dispelled the myth that education is the primary barrier to healthy eating in food-insecure areas. However, the limitations introduced by poverty and lack of access make it difficult to prioritize nutrition within purchase optimization. Individuals in these food environments must not only consider dietary quality when making food choices, but also overcome a combination of other compounding factors. These factors include: fewer retailers where low-cost foods can be purchased; access to consistent and reliable transportation; transportation time; and other contextual constraints, such as available food preparation appliances.

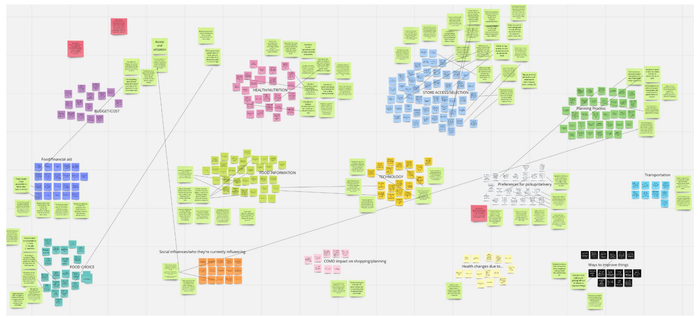
Vision

We will leverage and innovate on existing recommendation engine technologies in direct support of healthy food access, accounting for both the information necessary to make informed decisions as well as physical access to healthy food options. This integration of social science, computer science, nutrition science, and industrial design will result in a smart, cyber-physical system for Food Information Networks (FINs) designed to improve food access and health in low-SES communities in South Bend, Indiana, and Detroit, Michigan, with the potential to be applied in many similar communities.



Ethnographic Study

The FINs research team focused on census tract 27 in South Bend, IN. 59.5% of its 284 households are living in poverty, 52% of the population receives SNAP benefits, and few grocer options are available. Participants were recruited by leveraging community partner networks, including 11 local agencies and 15 local businesses serving census tract 27, yielding 115 applications to participate in the study. Applicants were then screened to ensure they were on at least one form of food assistance, met low-income criteria, and lived within the geography of the study, resulting in a pool of 33 participants. The first stage of ethnographic research included 45-60 minute semi-structured interviews and participant observation to gather information about the participants' shopping behaviors and contextual factors informing dietary habits, meal preparation, and health priorities.



Mitigating Strategies

- **Institutional**
- **Social network**
- Food **provisioning**
- Food **consumption**

Modern-Day Foragers & the Moving Aid Puzzle

- **Piece together** aid sources
- **Fill gaps** with own income
- **Plan around** benefits & pantries
- **Visit** multiple stores
- **Optimize** sales
- **Balance** cost, time, quality, miles

Distribution of Shopper Archetypes (n=33)

Type	n	(%)
Inventory shoppers	17	(52%)
Menu planners	13	(39%)
Adaptive shoppers	3	(9%)

Saving through Substitutions

- **Within-category** swaps (e.g. pork on sale, vs. chicken)
- **Brand** substitutions (e.g. store brand vs. generic)
- **Recipe adjustments** for sale items

Technology Used for Planning

- **27/33 participants** used technology for planning
- **Usage varied** by age and household type
- **App users** primarily under 35
- **Recipe search** most common reason for technology usage

Implications and Next Steps

- Need for **flexible, robust technologies**
- Permit optimization across **multiple criteria**
- Does app use improve subjective **sense of agency?**
- **Systematic differences** in app use across shopper types?
- **Factors affecting** app adoption for improved food access

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