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Project Proposal

Motivation

This is a project about the daily experience of grocery shopping from the shopper's perspective. We would see how things such as the layout of the store, the placement of products, pricing, and signage impact the choices people make as they shop. We are curious to know how the types of shoppers - be it parents with kids, budget-conscious, or casual browsers-move through the store and how these factors shape their experience.

Another key focus will be on technology: how self-scanning checkouts or the price displays on screens or in stores affect the shopping process. We are interested in observing how these tools help or sometimes frustrate people during their shopping trips.

By closely observing daily events and experiences, we aim to highlight how grocery stores can implement small improvements, such as better signage, enhanced accessibility for various shoppers (including those with disabilities, the visually impaired, parents with children, and casual browsers), and technology that can enhance the shopping experience for all customers.

Key Research Questions

1. How do factors such as store layout, product placement, and signage impact the decision-making process of shoppers in a grocery store?
2. How do different types of shoppers (e.g., families with children, budget-conscious shoppers, casual browsers) experience the grocery store environment differently?

Literature Review

The following are the scholarly references relevant to our grocery shopping research along:

1. Otterbring, T., Wästlund, E., Gustafsson, A., & Shams, P. (2016). "Vision (im)possible? The effects of in-store signage on customers' visual attention." *Journal of Retailing and Consumer Services*, 31, 105-113. https://doi.org/10.1016/j.jretconser.2016.05.005

   Otterbring et al., in this paper, illustrate the impact of in-store signage on shoppers' visual attention in grocery stores. The authors conducted experiments with the view to ascertain how different types of signage, such as promotional displays and directional signs, affect where shoppers direct their attention in navigation within the store. Their findings indeed showed that effective signage could strongly enhance shopper engagement with products and, hence, increase sales.

However, this study is based on visual attention in isolation and not other sensory experiences or emotional factors that may be influencing shoppers. Further, although it talks about the effectiveness of signage, it does not detail how signage interacts with other elements in the store environment, like layout, product placement, and customer demographics. Another role that technology could play in enhancing or changing signage effectiveness-through digital display or mobile notification, for example-is not considered.

2. Jensen, B. B., & Grunert, K. G. (2014). *"Price Knowledge During Grocery Shopping: What We Learn and What We Forget."* Journal of Retailing and Consumer Services, 21(1), 66-73. https://doi.org/10.1016/j.jretconser.2013.06.002

In this article, Jensen and Grunert elaborate on consumers' grocery shopping price knowledge. The authors investigate how buyers acquire, recall, and forget the prices of goods and how price knowledge influences the buyer's purchase decisions. The findings indicate that while shoppers remember some prices well enough, many others are forgotten, which actually impairs a shopper's ability to choose and make comparisons on the shelf. The research below is important in understanding the role of price perception in consumer behavior and, in general, shopping satisfaction.

The current study predominantly focuses on price knowledge at the individual level. It does not involve the interaction of factors like product placement and marketing strategies regarding price awareness in influencing shopping behavior. It also did not consider how technology, such as mobile apps or price-checking tools, could enhance or alter the price knowledge one has while shopping. In this context, the present project will help push the boundaries of knowledge about the interaction of price knowledge with various elements in the grocery shopping environment.

3. Davydenko, Mariya, and Johanna Peetz. 2019. "*Shopping Less with Shopping Lists: Planning Individual Expenses Ahead of Time Affects Purchasing Behavior When Online Grocery Shopping.*" Journal of Consumer Behavior 18(6): 458-467.

This study looks at how using shopping lists while shopping online influences what people buy, particularly focusing on whether shoppers stick to their planned purchases. The authors discovered that those who made lists and planned their costs beforehand were more likely to stick to their budget and were less likely to make impulsive purchases. The paper emphasizes the role of planning in controlling spending, which is directly relevant to understanding shopping behavior in both online and physical environments.

This is useful for our project because it highlights how pre-planned lists can affect buying habits, which can help us explore how in-store features like signage or product placement might push people away from their planned purchases.

The study focuses on online shopping and doesn't examine how people behave in physical stores. Our research builds on this by examining how store layout, signage, and in-store tech influence in-person shopping behavior, something this study doesn't cover.

Description of Field Sites

For this project, we'll conduct fieldwork at three grocery stores in Ames, Iowa: Hy-Vee, Walmart Supercenter, and Fareway. Each of these stores offers a different kind of shopping experience in terms of layout, signage, product variety, and the use of technology. By observing these differences, we'll be able to see how these factors influence shopper behavior.

1. **Walmart Supercenter**

   We will conduct fieldwork at both Walmart locations in Ames, Iowa: the North Walmart at 3105 Grand Avenue and the South Walmart at 534 S Duff Avenue. These Supercenters are frequented by a broad spectrum of shoppers, including families, students, and budget-conscious individuals looking for groceries, household goods, clothing, and electronics. Walmart's straightforward layout, combined with competitive pricing and frequent promotions, makes it a key site for understanding how these factors impact shopper behavior. We will visit both locations during busy times, including weekday evenings (6 PM to 8 PM) and weekends (12 PM to 3 PM), to observe peak shopper interactions.

   At Walmart, we'll focus on how customers respond to sales signs, promotional displays, and technology such as self-checkout stations and the Walmart app, which allows for mobile price-checking and deal tracking. We'll track individual shopper journeys from entrance to checkout, noting which sections attract the most attention and how customers navigate sales and promotions. Key observations will include how they interact with self-checkout technology, whether they require assistance, and how they make decisions about products. The team will split between the North and South locations, providing a comparative study of how the layout and shopper demographics might vary between these two stores.

2. **Hy-Vee**

Our group will conduct fieldwork at HY-Vee at 640 Lincoln Way, Ames, IA, a well-known grocery store located at 640 Lincoln Way in Ames, Iowa. This store attracts a diverse range of customers, including families, casual shoppers, and those looking for specialty or dietary-specific items. Hy-Vee is characterized by its wide aisles, expansive product selection, and various in-store services like a pharmacy, bakery, and health foods section. We plan to visit Hy-Vee during peak shopping times, such as weekday evenings from 5 PM to 7 PM and weekends between 11 AM and 2 PM, when the store experiences high foot traffic.

At this location, we aim to observe how shoppers navigate the store's spacious layout, interact with promotional displays, and make use of technology such as self-checkouts and digital price displays. Hy-Vee also offers an app that allows customers to search for products and create shopping lists, which we will explore to see if it affects the shopping experience. Additionally, we will track shopper movement, noting which aisles they prioritize and where they may pause to evaluate items or seek assistance. Our focus will be on understanding how layout, signage, and in-store technology influence the shopper's journey. All group members will participate in this fieldwork to capture a variety of shopper behaviors, from casual browsers to budget-conscious families.

3. **Fareway**

Our group will also conduct fieldwork at Fareway, a smaller grocery store located at 619 Burnett Avenue in Ames, Iowa. Fareway is known for its emphasis on fresh produce, quality meats, and a straightforward, no-frills shopping experience. This store tends to attract local families and older shoppers who prefer a simpler, more community-focused shopping environment. Compared to larger stores like Hy-Vee or Walmart, Fareway has a much simpler layout with narrower aisles and minimal promotional signage or technology. We plan to visit Fareway during weekday late afternoons (4 PM to 6 PM) and on weekend mornings (9 AM to 11 AM) to observe shopper behavior during busier hours.

At Fareway, our main objective is to observe how shoppers navigate the smaller, more condensed layout and whether they rely more on staff assistance due to the absence of digital signage or extensive technology. Unlike larger stores, Fareway relies heavily on personal customer service, and we aim to capture how this affects the shopping experience. We'll pay close attention to shopper movement, noting whether certain areas become congested and how easily customers find what they need. This fieldwork will provide insights into how a more traditional grocery store layout influences shopping behaviors compared to tech-heavy environments like Hy-Vee or Walmart.

Deeksha will head to North Walmart, while Sarika and Uma will both go to South Walmart. Surya will conduct fieldwork at Fareway, and Harsh will be at Hy-Vee.

Key Field Techniques

To understand how store layout, product placement, signage, and technology affect the shopping experience, we'll conduct fieldwork at three grocery stores in Ames, Iowa: Hy-Vee, Walmart Supercenter, and Fareway. Our methods include observing shopper behavior, tracking their journey through the store, conducting short interviews, and watching how they interact with in-store technology. Here's our plan for each technique and how it'll be used at these specific stores:

1. Observation (All Stores)

Goal: We'll watch how people move around each store, paying attention to which aisles they go to first, where they stop, and how they react to signs or displays. We'll also observe their interactions with self-checkouts or other technology to see if they have trouble or seem comfortable using them.

Locations:

1. Hy-Vee (640 Lincoln Way): This store has wide aisles and many product choices, so we'll observe how families, casual browsers, and budget-conscious shoppers navigate the space.
2. Walmart Supercenter (534 S Duff Ave): Known for its straightforward layout with a focus on low prices, we'll observe how budget-conscious shoppers interact with sales signs and use self-checkouts.
3. Fareway (619 Burnett Ave): As a smaller, community-centered store with a simple layout, we'll see how shoppers manage without a lot of signage or digital displays.

How We'll Record: During each visit, we'll take notes on shopper actions, like stopping to look at a product, asking staff for help, using their phone to find the product's aisle number or getting lost. We'll also sketch simple maps of their routes, adding more details immediately after each visit to ensure we don't miss anything.

2. Shopper Journey Tracking (Hy-Vee and Walmart)

Goal: We'll follow individual shoppers from entry to checkout. This will help us see their entire journey, such as where they stop, what items they pick up, and how they make decisions. We'll also note if they compare prices or skip certain aisles.

Where:

1. Hy-Vee: We'll observe how families or casual shoppers move through the various sections, such as specialty aisles or fresh produce.
2. Walmart: We'll focus on budget-conscious shoppers to see if they stick to sections with deals or choose items based on promotional signage.

How We'll Record: We'll map their paths through the store, noting down stops, choices, or price comparisons. Quick voice notes (with permission) will help us capture their actions or comments accurately.

3. Quick Interviews (All Stores)

Goal: After observing, we'll ask shoppers short questions to get feedback on their experience, such as whether they found everything they needed, if they noticed helpful signs, or if they liked using self-checkouts.

Where:

1. Fareway: We'll ask shoppers if they like the small, simple layout or if they wish for more signs or tech.
2. Hy-Vee and Walmart: We'll focus on how shoppers feel about navigating larger stores with more products and technology options.

How We'll Record: We'll take notes or use short voice recordings (with permission) to capture their feedback. This will help us understand how shoppers feel about specific aspects, like layout, signage, or technology.

4. Technology Usability Testing (Hy-Vee and Walmart)

Goal: We'll observe shoppers as they use technology like self-checkouts, price scanners, and digital price screens. We'll see if they have trouble with these tools or need assistance, helping us understand if the technology improves or complicates the shopping experience.

Where:

1. Hy-Vee: This store has multiple self-checkouts and digital displays, making it ideal for observing how technology impacts the shopping experience.
2. Walmart: We'll focus on shoppers using self-checkouts and mobile price-checking tools, noting any issues they encounter.

How We'll Record: Notes will detail each interaction with the technology, capturing any struggles or repeated actions. If allowed, we'll take photos of the technology interfaces to help us refer back to specific design elements that might be causing issues.

5. Shopper Movement Mapping (Fareway)

What We'll Do: In Fareway's smaller, simpler layout, we'll focus on how people, especially parents and casual browsers, move through the store. We'll observe if certain aisles are hard to navigate, if shoppers need help finding items, or if certain areas get crowded.

Where:

1. Fareway: With its cozy, basic setup, we'll pay attention to how shoppers navigate a simpler space and if they feel the need for more signage or staff assistance.

How We'll Record: We'll draw maps of shopper movement, noting any stops, turns, or areas of crowding. After each visit, we'll review our notes to find common patterns, like frequently visited sections or spots that might need more signage.

Method Sequence

We'll begin each visit with general observations to understand how people shop in each store. Then we'll do shopper journey tracking, shadowing individual shoppers through the store. Afterward, we'll conduct quick interviews to gather feedback. Technology testing will happen throughout, focusing on self-checkouts and digital screens as shoppers encounter them.

Data Collection & Documentation

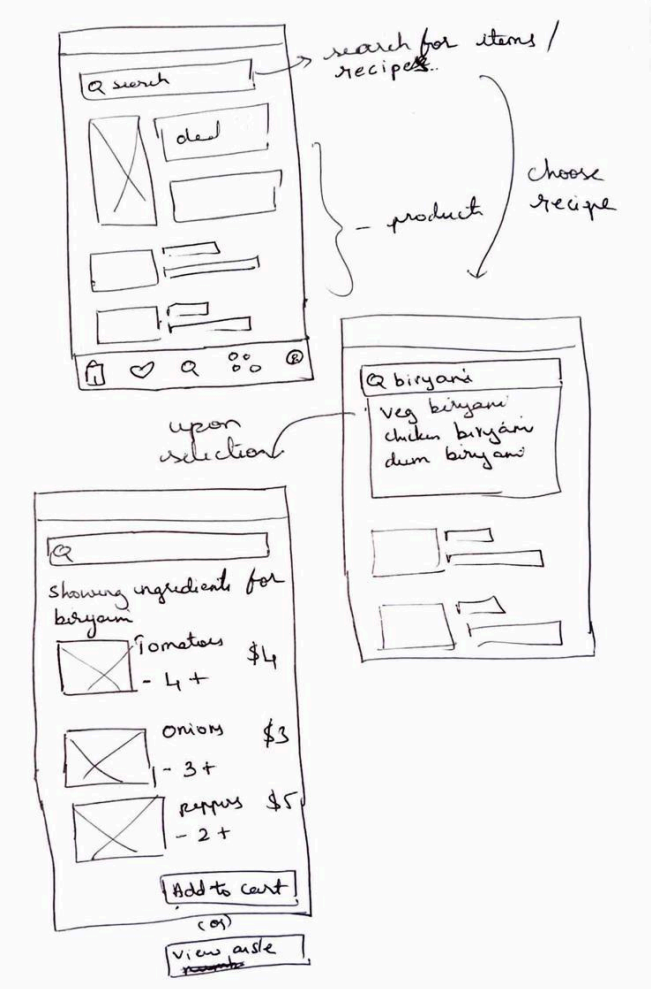
- Field Notes: We'll take notes during each visit, adding more details afterward to ensure they're complete. These notes will capture actions, routes, and key observations.
- Recordings: With permission, we'll record short interviews or use voice notes for key observations during each visit.
- Maps and Diagrams: We'll create simple maps of shopper paths, noting areas where people stop, get confused, or interact with signs and displays.

By applying these methods across Hy-Vee, Walmart, and Fareway, we'll get a full picture of how store layout, signage, product placement, and technology impact different types of shoppers in Ames. This approach will allow us to capture both general shopping trends and unique behaviors in each store.

Potential Design Interventions/Plans

1. **Recipe ingredients maker:**

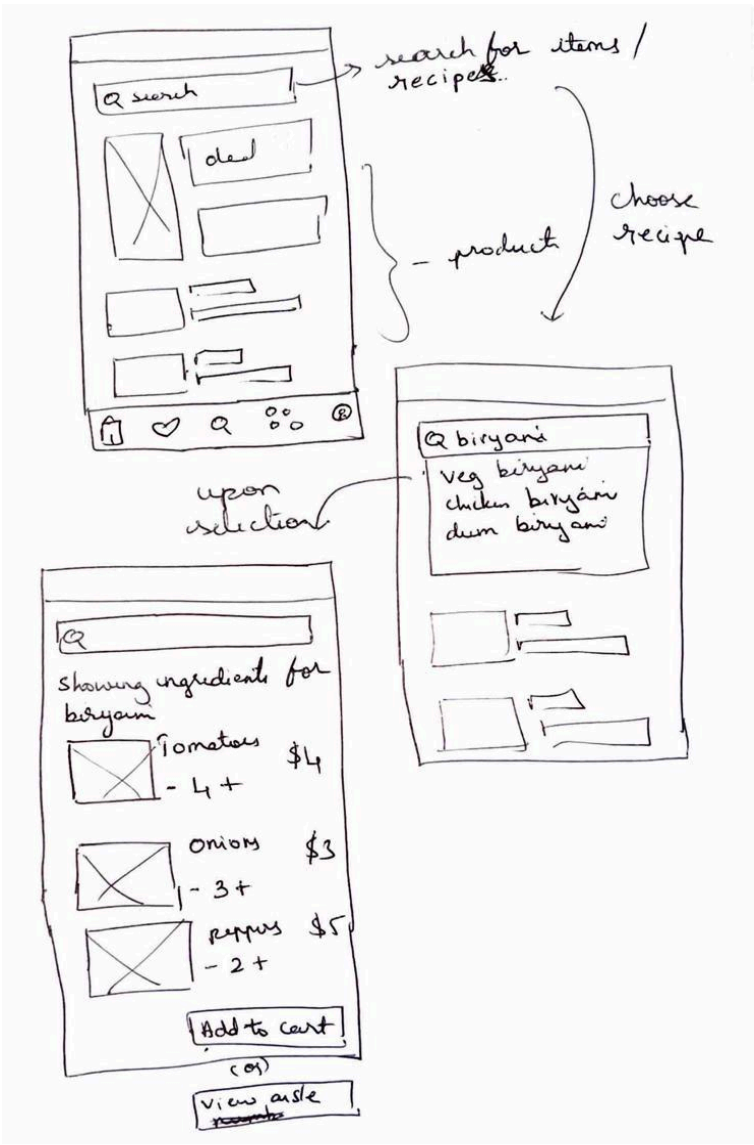
   Integrate a feature in the application that lets users/shoppers choose a recipe, and the list of items needed for the recipe will be shown on the screen. Users can add all the items to the cart or view the aisle numbers from there and get their items which saves them time.



2. **Personalized Shopping Routes in the application**

   A feature in the application that guides through the store based on their cart items. This feature can be based on store layout, current promotions and past purchases to guide the shopper.

   Many shoppers get lost or overlook the products. By personalizing routes, we can make the experience faster and more user-friendly.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