



# TECHNOLOGY IN RETAIL

Using Participatory Design to Enhance Shopping Experiences for Female Consumers

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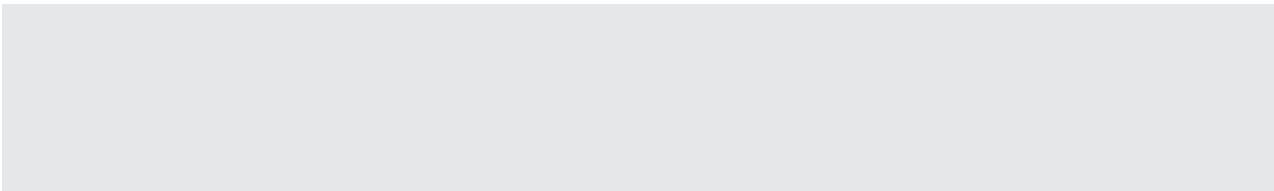
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# ABSTRACT

Today's consumers currently face an unprecedented number of seemingly homogeneous product alternatives. Because of the overwhelming number of product options, consumers are experiencing increased negative psychological consequences such as increased regret, decreased product and life satisfaction, lower self-esteem, and less self-control (e.g., Baumeister and Vohs 2003; Carmon et al. 2003; Schwartz et al. 2002).

To address these concerns, this paper will explore how a participatory design approach can be applied to understand and remedy issues within the landscape of brick-and-mortar retail. Rather than taking a traditional marketing approach to address concerns around retail experiences, this paper will investigate how design thinking can more appropriately uncover latent consumer needs and thus design a more applicable solution. This change in approach and process is due to the expectations that design thinking and participatory design is more suitably tailored to defining expectations, uncovering insights, and designing solutions that meet latent user needs. Additionally, a revolution is occurring where consumers no longer want to be passive recipients of consumer goods; they want to be directly involved in the creation of goods and services (Sanders 2006).

In order to satisfy the changing needs of individuals, both in their roles as consumers and as everyday people, this paper will explore the consequences of design research on traditional retail experiences. By including everyday people throughout the design process, this project will aim to enhance shopping experiences by making it easier to reach satisfactory decisions. Because of gender specific variables such as time and energy spent shopping, level of involvement, and enjoyment felt from shopping, this project will comprise an all-female group of participants, including both female shoppers and retailers/staff.


To answer the proposed research question, this Master's Thesis paper will begin by presenting a deep understanding of current research on consumer behavior. This knowledge will be applied throughout the design process both as a limitation when selecting design research methods and as a lens for interpreting collected data. Through both primary and secondary research, the paper will present insights into consumer behavior and retail experiences. These insights will then be used to craft ideas for an interactive consumer decision aid that will enhance retail experiences. Through iteration, this paper will then present a conceptual solution that will aid shoppers in making it easier to reach decisions and make rational product choices.

By supporting consumer's ability to make rational decisions, this paper will highlight how increased consumer satisfaction can improve both the relationship quality and the product/product choice quality, determinants of consumer satisfaction. By improving consumer satisfaction, this paper asserts that the final outcome will be able to increase a consumer's level of trust and commitment in a retailer. This will allow the solution to serve as an aid to retailers in building loyalty, boosting retention rates, differentiating services, and staying competitive, thereby driving sales and improving revenue. By increasing revenue for retailers and improving satisfaction for consumers, the outcome of this project can be a beneficial artifact for both parties of the retail experience.

**Keywords:** *Consumer Behavior, Design Thinking, Participatory Design, Technology, Female Shopping Behavior, Interactive Consumer Decision Aid, Retail Experience*







# INTRODUCTION

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# RETAIL EXPERIENCES *and the impact of emerging* TECHNOLOGY

on shaping *female consumer behavior* in the 21st century

In the United States, traditional brick-and-mortar retailers are facing some of the most difficult times in the history of their industry. Consumer behavior has been fundamentally altered by technology, with the increase in social media and e-commerce, as well as the proliferation of smartphones and handheld devices. The shopping experience now begins before consumers even reach the store; often, shoppers will “pre-shop,” consult store websites, read blogs, and check sale campaigns, before ever entering the store. Additionally, the features that traditional retailers relied on for continued differentiation from e-commerce sites—the ability to touch and try clothes on—is beginning to blur as online vendors develop new, innovative ways to engage with consumers.

Technology has also altered consumer’s understanding of a “personalized” service. The one-size-fits-all approach to retailing no longer is appropriate as consumers begin to expect customized experiences. Websites, like Amazon.com, that personalize product suggestions based on an individual’s past purchases, capitalize on the consumer’s desire for personalization. Spotify and Pandora, two music-streaming sites, also customize playlists to individual preferences, creating a dynamic listening experience. Mobile phones allow for customizable ringtones and wallpaper. With the influx of personalized technology and services, consumers are beginning to expect customized experiences.

The impact of technology on physical environments can be seen when understanding attributes that contribute to consumer’s brand choices. There are many brand attributes that people consider when making purchases: is the company socially responsible? is it a well-known brand? is the brand modern? In a study of the top five most important brand attributes by age group, people between the ages of 13-35 consistently ranked “using the latest technology” in the top three (Solomon 2010). This shows how important it is for retailers to integrate new technology into their marketing strategy.

Additionally, consumers are now faced with a massive and unparalleled number of product options, with little or no distinguishing features between merchandise (Cleempoel 2009). This wealth of options has made it difficult for consumers to make satisfactory decisions, or decisions that allow consumers to rationally evaluate and select a product.

So how can traditional retailers stay competitive in the changing marketplace? Shifting the focus away from selling to providing experiences, retailers can help to craft a new way for consumers to interact with physical stores. By adapting new technology within traditional retail settings, brick-and-mortar retailers can draw from the successes of e-commerce competitors to create an experience that better meets consumer needs. By providing new technology to help consumers make more rational decisions, retailers will not only be able to provide a more satisfactory experience but also develop long-term relationships with consumers.



## Overview

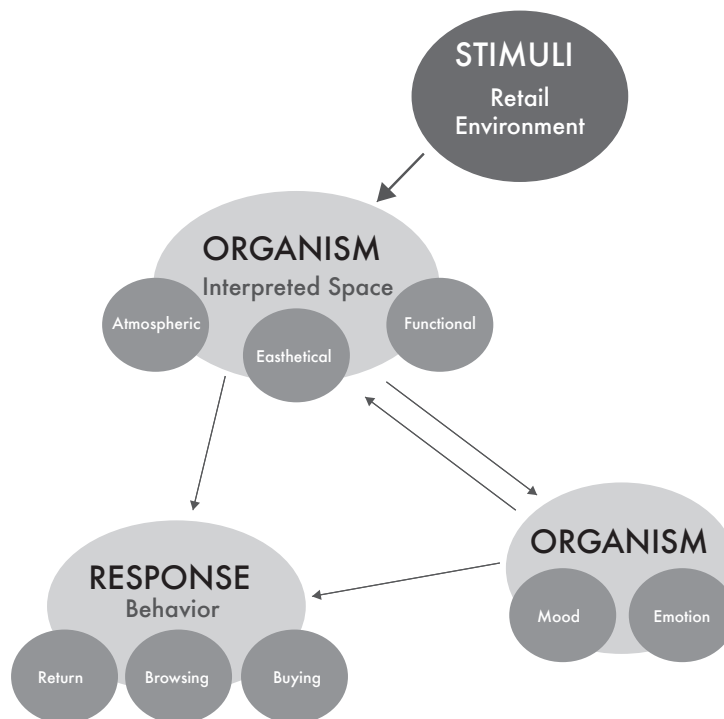
The goal of this project will be to leverage a deep understanding of consumer behavior into designing an interactive consumer decision aid (ICDA) that will enhance retail experiences. What makes this project unique in comparison to traditional market research projects on retail and consumer behavior is the focus on including the end user throughout the design process. This approach is known as participatory design, which involves recognizing that users are the experts of their own experiences. This perspective requires that the end users be active participants throughout the design process. By allowing users to provide their own expertise, this project will be able to incorporate primary and secondary research in order to design an interactive device that more effectively meets people's latent and tacit needs.

In order to ensure that all insights and ideas are well considered, this research project will be process driven, pulling from multiple thought leaders in the field of design research. Combining a number of popular design processes, research will follow a process that is most appropriate for the context, participants, and anticipated outcome of this project. This process will include extensive primary and secondary research, analysis, synthesis, external and internal ideation, prototyping, and development. By following a structured, yet flexible creative-problem solving process, the project will be able to move from an abstract understanding of consumer behavior and retail experiences to the design of a tangible artifact.

# Consumer Behavior

To accomplish the goals of this project, it is important to begin with a thorough understanding of consumer behavior. By understanding existing research within the field of consumer behavior and building an inventory of current knowledge, the design researcher will be able to develop a research plan that is appropriate to the context of this project. This awareness can then be leveraged to build a research project that supports and expands existing knowledge. Understanding how consumers interpret retail experiences will be an important component of answering this project's sub-questions as well as selecting appropriate design research methods.

Consumer buying behavior is influenced by a number of different aspects. Cleempoel offers a theoretical framework for understanding the holistic retail experience, and by integrating the theories of leading consumer behavior specialists, this model can be expanded to explain the holistic retail experience (2009). Cleempoel suggests a framework that includes space, consumer emotions, and actual behavior, aspects that serve as stimulus in the retail environment. To expand upon each of these areas and better understand each dimension, this project will pull from leading consumer behavior specialists. By understanding these three dimensions, the design researcher can design a conceptual prototype that positively influences consumers.



▲ Figure 1: Cleempoel's Theoretical Framework for Understanding Retail Experiences



▲ **Figure 2:** Davis' Framework of Retail Experience

## Actual Behavior

Actual consumer behavior is influenced by a number of elements, and the way individuals evaluate and choose products varies widely, depending on dimensions like the degree of novelty or the risk in the decision. Typically, consumer researchers apply a rational perspective to the consumer decision-making model. Rationality under the rational choice theory is subjective, where individuals weigh costs against benefits in order to maximize personal advantages.

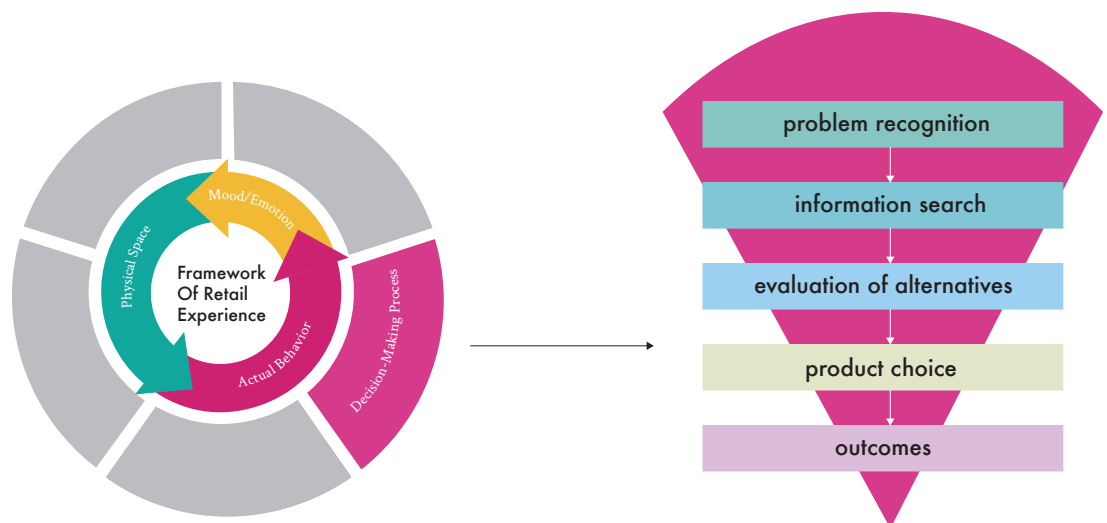
This perspective is based on the rational choice theory, which dictates that an individual seeks to maximize utility (Jacoby 2000). The rational choice theory is widely accepted as a way to understand social and economic behavior due to its predictive abilities. Examples include the financial practice of buying low priced stock and selling it at a higher price. The rational perspective assumes we “calmly and carefully integrate as much information as possible with what we already know about a product, weigh the pluses and minuses of each alternative, and make a satisfactory decision” (Solomon 2010: 307).

The decision making model begins with problem recognition. In consumers, problem recognition begins with either need recognition (such as when you run out of gas) or opportunity recognition (such as when you crave a flashier car). Utilitarian and/or hedonic motivators influence the dimensions of these consumer needs.

▼ Figure 3: Solomon's Model of Rational Choice

### Rational Choice Theory

*In consumer behavior, the rational choice theory (right) asserts that consumers calmly and rationally evaluate products and make a decision. However, this theory does not take into consideration atmospherics, mood/emotion, or other motivation that may interfere with consumers coming to a “rational” decision.*



Hedonic needs are “subjective and experiential” (Solomon 2010). According to Arnold and Reynolds (2003), who examined shopping in physical stores, there are six dimensions of hedonic shopping: (1) Adventure (shopping for stimulation, adventure, and the feeling of being in another world); (2) Social (socializing with friends and family); (3) Gratification (stress relief, alleviating negative mood, treating oneself); (4) Idea (keeping up with trends, seeing new products and innovations); (5) Role (enjoyment derived from shopping for others); and (6) Value (seeking sales, discounts, bargains). Other hedonic aspects such as pleasure, arousal, and escapism have also been identified as facets of an enjoyable shopping experience.

In addition to hedonic motivators, consumers are also influenced by utilitarian needs. These needs are concerned with objective, tangible attributes of products (Solomon 2010). This type of motivation is focused on efficiency and achieving a specific end when shopping (Babin et. al. 1994). However, hedonic and utilitarian needs are not completely detached. For example, a consumer could be motivated to purchase a coat that not only fulfills utilitarian needs (such as protection from the cold) but also realizes hedonic needs (such as projection of an “on-trend” image).

Once a consumer recognizes there is a problem, the consumer then moves into the information search stage of the decision making model. When considering the decision making process in relation to the purchase of symbolic items like clothing, consumers often do a fair amount of external searching, such as asking for peer opinions. Shopping for clothing comes with a fair amount of perceived risk, or the belief that there may be negative consequences if you use or don't use a product or service. Because clothing is seen as self-expressive, making the “wrong decision” can impact self worth.

The next stage is evaluating the alternatives. During this stage, hedonic and utilitarian values again play a role in the decision making process. Consider a consumer who is deliberating between three different sweaters. Having an interactive consumer decision aid (ICDA) that can assist consumers in the evaluation of each alternative can help the consumer make the best decision for her needs.

The fourth stage of the consumer decision-making model is product choice. By this stage a consumer has narrowed down his/her choice of products to one or two options. In order to make a final decision, the consumer will need to find attributes that differentiate among these choices. Hedonic and utilitarian values also play a role in deciding between products. For example, returning to the coat scenario, a consumer may use hedonic variables (such as best bargain) to help determine between products.

However, in the current retail market, consumers often have a hard time identifying variables to decide between products. In today's global market, many consumers perceive products as “homogeneous,” with little distinguishing factors (Petermans et al.). An ICDA could help a consumer find determinant attributes in order to better distinguish between products, for example, by offering side-by-side product comparisons or peer reviews.

In many instances, however, consumers bypass the complex decision making model by using heuristics, or “mental rules-of-thumb to make a speedy decision” (Solomon 2010: 329). Heuristics are considered by consumer researchers to be another decision-making process that is based on experience rather than rationality. Solomon outlines four common mental shortcuts that include 1) Familiarity (past behavior of buying a specific brand should be repeated); 2) Price-Quality Relationship (higher priced items are better quality items); 3) Market Beliefs (beliefs about brands, stores, prices, promotions, and product/packaging influence decisions. ex. Locally owned stores give the best service).

By better understanding the mental shortcuts consumers make when purchasing, an ICDA can be built that helps consumers make smarter decisions. Because of the profusion of product options available today, consumers are adapting to this complex situation by relying on heuristics, which can often lead to suboptimal decisions (Simon 1955). The belief that “more expensive” means “higher quality” is not always true. If, for example, an ICDA could compare product specs between high price and low price items, consumers could make smarter decisions based on features rather than preconceived heuristics.

### Physical Retail Space

The second stimulus within the retail experience framework includes the environmental attributes of the physical retail space. Marketers recognize that consumers respond to more than just the core product when making purchase decisions (Billings 1990). Social factors such as the number, type, and behavior of consumers and employees in the space, in addition to design factors such as store architecture, help project a particular store image (Lam 2001). It has long been recognized that atmospheric qualities influence the emotions or behaviors of consumers in physical retail stores.

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## Mood/Emotion

This brings up the final aspect of the three-part framework to understanding retail experiences: mood or emotions. The Mehrabian-Russell model suggests that the emotions affected by a store environment can be described in three states, pleasure, arousal, and dominance (Billings 1990). The various feelings evoked by a particular physical environment can predict the response taxonomy of a consumer. Mehrabian and Russell suggest that individuals' reactions to all environments can be described as either approach or avoidance behavior. For example, when a consumer does not return to a given store, this is considered avoidance behavior. When a consumer interacts with sales personnel, this is called approach behavior.

By using this integrative framework to understand the holistic retail experience, this project can design an interactive consumer decision aid that addresses all three levels of consumer decision-making. This framework can also serve as a way to measure the impact of the solution. A solution should enhance the overall consumer experience, and in order to design a solution that meets this requirement, one can use the framework to judge impact within a given area.

## Mehrabian-Russell Model



▲ Figure 4: Mehrabian-Russell Model



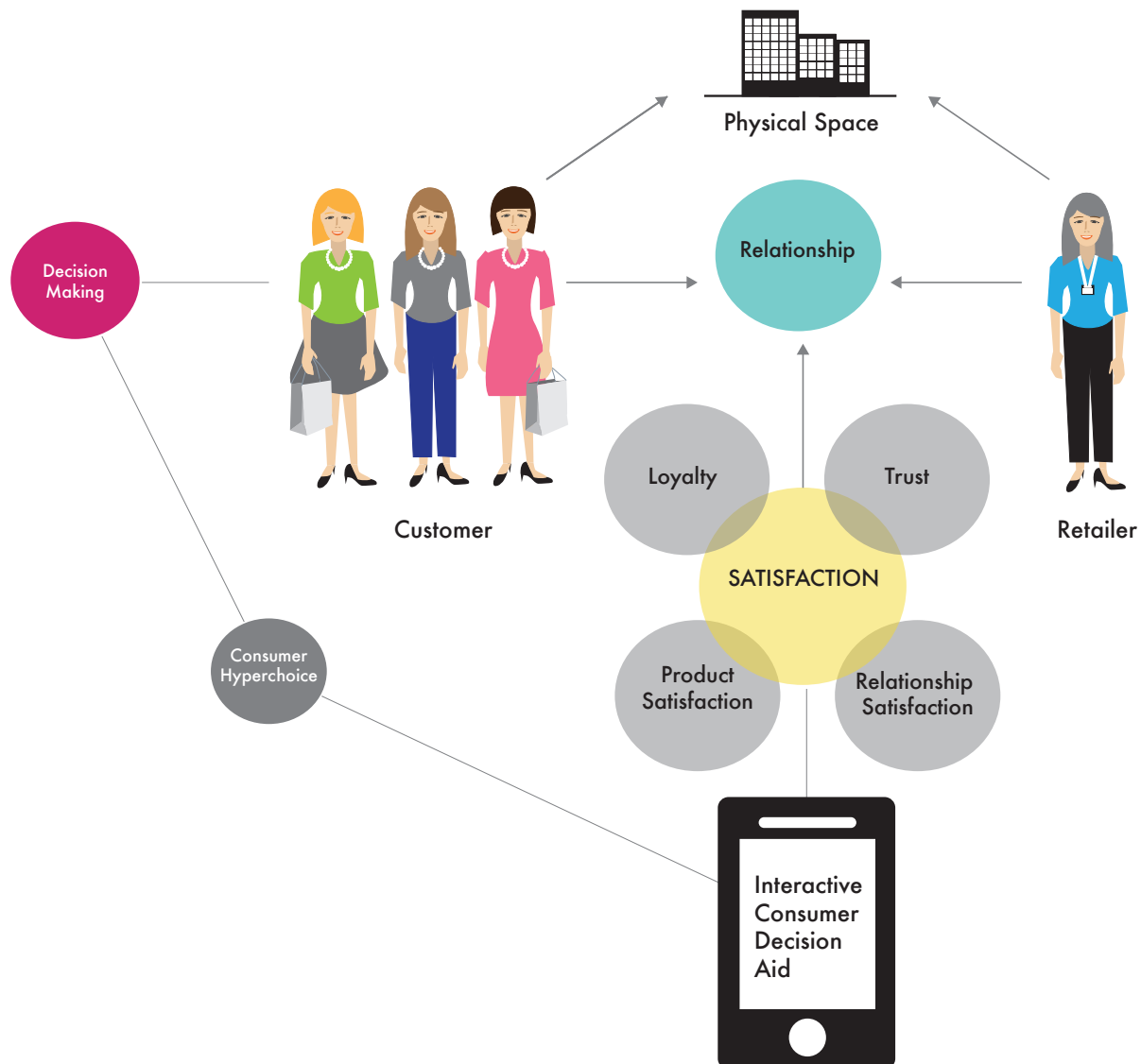


# RESEARCH QUESTION

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# Research Question

How might an **interactive consumer decision aid** (ICDA) that enhances the **consumer experience** in **soft-lines retail** be developed using a **participatory design** approach?



▲ Figure 5: Diagram of Research Question

## Key Terms

**Interactive Consumer Decision Aid (ICDA):** An interactive consumer decision aid assists consumers in their decision making by improving the quality of the choices they make while simultaneously reducing the effort required to make those decisions (Murray & Häubl 2008).

**Quality Choices:** Quality choices are those made using the rational choice model, which states that consumers “calmly and carefully integrate as much information as possible with what we already know about a product, weigh the pluses and minuses of each alternative, and make a satisfactory decision” (Solomon 2010: 307).

**Consumer:** In order to design for experience, designers need to understand that consumers are first and foremost people.

**Retailer:** For the purposes of this project, a retailer will be limited to those focused on the soft-lines retail segment. Soft-lines retail refers to stores that specifically focus on clothing, jewelry, footwear, linens, and towels. In addition, the context of this project will focus on independently owned boutiques, specifically because of issues of access.

**Participatory Design:** Participatory design recognizes that everyday people are experts of their own experience. Design thinking must evolve to recognize that individuals are not just consumers, they are everyday people with the capability and need to effect and create. Participatory design methods understand all people are creative and can bring depth of understanding to a design project.

# Sub-Questions



## 1. How might qualitative design research help to refine this project's Framework of Retail Experience?

While doing research in order to form a hypothesis about current retail experiences and consumer behavior, a Framework of Retail Experience was created. This framework, a visual synthesis of information from leading consumer behavior specialists, is the outcome of extensive secondary research. However, because this project will be taking a participatory approach to the design process and will include limitations with respect to context, gender inclusion, and other variables, it may be necessary to refine this framework. By carrying out several weeks of primary research with female shoppers and staff, this research project will result in the refinement of the already synthesized framework. After collecting and analyzing primary research, insights about the current landscape of retail experiences and consumer behavior will be used to refine and/or expand the existing framework. This will allow the framework to reflect the results of research from both primary and secondary sources and will make the framework more meaningful to the context of this project.



## 2. How might social interactions during the retail experience affect consumer-buying behavior?

After taking inventory of existing research on retail experiences, it was established that social interactions play a large part in influencing consumer's mood and emotion, behavior, and interpretation of a physical space. Social interactions were considered so influential that they were given a sub-category under Physical Space within the Framework of Retail Experience, the synthesized model of secondary information collected at the start of this project. Because this framework will be used to select and understand research methods, it will be a natural byproduct of research that information will touch on social interactions.

Additionally, it may be necessary to reanalyze social interactions from the standpoint of primary research due to this project's limitations. The information synthesized into the Framework of Retail Experience is the product of secondary research that was not gender or location specific. Because of this project's research limitations, such as the gender specific sampling strategy, primary research may serve to further existing information on the affects of social interactions.



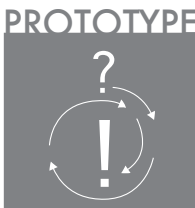
### 3. How might the use of qualitative research help uncover consumer behavior trends in actual decision-making?

The goal of this project is to design an interactive tool that helps consumers to make more rational choices, thus resulting in more satisfactory decisions. In order to accomplish this goal, it will be necessary to explore existing behaviors. It has been proven that gender specific variables affect consumer-buying behavior. Because this project has a gender bias, in addition to other limitations that will be discussed in the Limitations section of this paper, it will be beneficial to conduct primary research to better understand the specific behaviors of female shoppers.



### 4. What factors influence hedonic and utilitarian motivation in consumer buying behavior?

Using the Framework of Retail Experience as a guide with which to select and analyze design research methods, this project will attempt to understand actual consumer behavior. Within the dimension of Actual Behavior, one can find hedonic and utilitarian motivation, which serve as stimulation for shoppers to go shopping. Although secondary research already defines existing categories of hedonic and utilitarian motivation, this project may find that this list needs to be refined or expanded. This could be especially true given the research limitations of this project.



### 5. How might examining characters of online shopping help improve an interactive consumer decision aid (ICDA) made to enhance physical retail stores?

Because the anticipated outcome of this project is an interactive piece of technology, it will be advantageous to understand the benefits and drawbacks of existing popular technology. By creating an inventory of features that consumers like and dislike, this project can strive to integrate the positive qualities of popular websites and applications into the solution for this project.

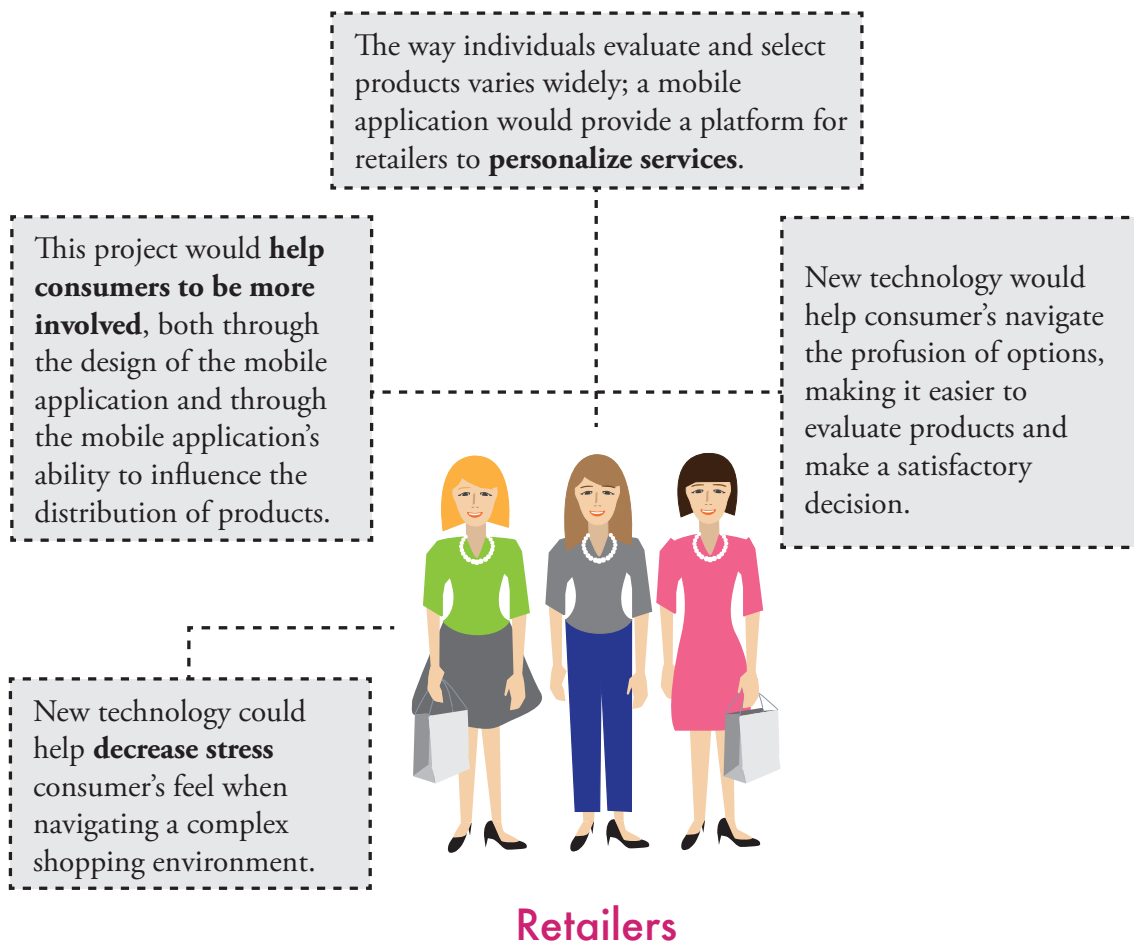
Additionally, it may be beneficial to compare the features of online retail with traditional retail. By juxtaposing the benefits and drawbacks of online and traditional retail, this project can determine which characteristics overlap. This overlap can help strengthen the final outcome of the project by creating a tool that integrates the positive qualities that consumer's associate with online shopping into physical shopping experiences.



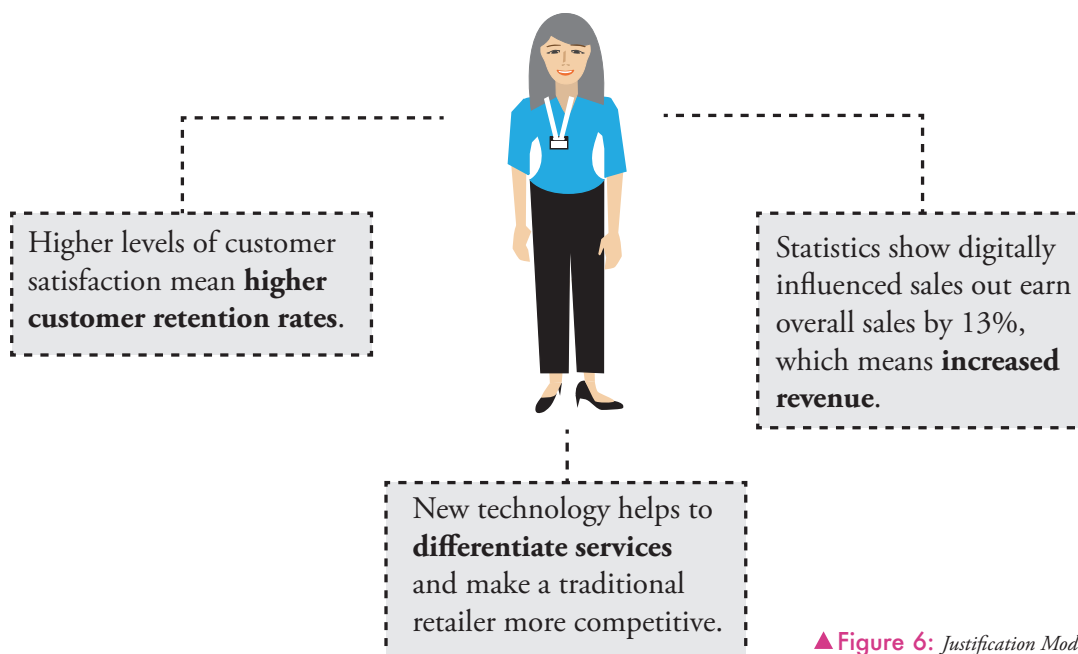


# 3 JUSTIFICATION

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**Consumers**



▲ **Figure 6:** Justification Model

# Implications for Consumers

In today's retail environment, consumers are faced with a vast and unprecedented breadth of product alternatives. This profusion of options leads to "consumer hyperchoice," the condition where a large number of options reduces the ability for people to make smart purchase decisions (Solomon 2010). In addition, actual merchandise is perceived as similar with few distinguishing factors. Interactive Consumer Decision Aids (ICDAs) can help the decision process by assisting consumers in their decision making process (Murray & Häubl 2008; Cleempoel 2009). Giving consumers a tool that will help shoppers make rational decisions can help to increase satisfaction in the final decision, which would help to build loyalty and trust in a retailer. Additionally, an ICDA has the ability to decrease the stress that comes with consumer hyperchoice by making it easier to navigate the number of products, evaluate options, and make a purchase.

In addition to helping consumers make easier, more rational decisions, an interactive consumer decision aid also has the ability to help shoppers personalize their retail experience and shape the overall experience. Through both the design of the final solution as well as the final solution's impact on shopping experiences, the outcome of this project has the ability to provide consumers with a more active voice when shopping. By including consumers in the research and development of an ICDA, consumers can influence the form and function of the final solution of this project. Furthermore, the ICDA itself will provide consumers with tools to personalize their retail experience. Rather than the "one-size-fits-all" mentality, an ICDA can help consumers to actively engage not only in the shopping experience, but also in the way that shopping experience is marketed to them.

## More Satisfactory Decisions

Today's consumers are increasingly tasked with evaluating and selecting from a growing number of product alternatives. A Wal-Mart Supercenter stocks over 100,000 items, Home Depot more than 50,000, and the typical grocery store more than 30,000 (Murray & Häubl 2008). Not only are consumers being overwhelmed by the sheer number of choices presented to them, actual merchandise of competitive retailers is often perceived as similar and is no longer the distinguishing feature between them (Cleempoel 2009).

This profusion of options has made the decision making process increasingly difficult to navigate, leading to the condition known as "consumer hyperchoice." According to Solomon, consumer hyperchoice is a condition where the large number of options drains psychological energy and reduces a consumer's ability to make smart decisions (Solomon 2010: 306). This profusion of options is making it more difficult for consumers to apply a rational decision making model. The rational perspective to consumer decision making assumes shoppers "calmly and carefully integrate as much information as possible with what we already know about a product, weigh the pluses and minuses of each alternative, and make a satisfactory decision" (Solomon 2010: 307).

In order to adapt to the complex situation, consumers are relying on heuristics, mental rules-of-thumb, or past decisions to make decisions. For example, imagine a consumer who goes to the mall to buy a new black winter coat. Upon arriving at the mall, the consumer realizes that almost a dozen stores sell women's black winter coats. The consumer relies on heuristics, or in this case familiarity with a store, to choose where to begin the shopping trip. Once the consumer has decided on the store, she finds an entire section of coats, where the majority is black. Instead of trying on multiple coats, the consumer chooses the item that is on sale, applying another heuristic. In this scenario, the consumer did not make a rational decision, but she may have been satisfied. The point, though, is that she might have found a different coat that better fit her needs had she not been overwhelmed by the number of stores and products that faced her during the decision making process. Because of the number of alternatives available, the profusion of choices can lead to suboptimal decisions (Simon 1955).

### Decreased Stress

In addition to the possibly suboptimal decisions that consumers may make when faced with vast product alternatives, there is also a psychological consequence to choice overload. While providing consumers with multiple product alternatives increases intrinsic motivation, perceived control, task performance and life satisfaction, recent research has shown too many choices can cause negative consequences. While consumers are more attracted to vendors that offer more choice through a greater variety of products, psychological research demonstrates that having too many product alternatives can have adverse consequences (Iyengar & Lepper 2000).

Research suggests that choosing from a large number of alternatives can have negative effects, including increased regret, decreased product and life satisfaction, lower self-esteem, and less self-control (e.g., Baumeister and Vohs 2003; Carmon et al. 2003; Schwartz et al. 2002). Field and laboratory experiments conducted by Iyengar and Lepper (2000) compared the effects of choosing from a small versus a large number of alternatives. When making purchases, research showed that only three percent of consumers in the extensive choice condition, where 24 products were on display, made a purchase. Alternatively, thirty percent of consumers in the limited-choice condition, where six products were on display, bought one of the products.

This research displays what psychologists refer to as the Paradox of Choice; although consumers are attracted to larger product assortments and like the ability to freely choose what they purchase, consumers are more likely to make a purchase and be satisfied when the choice is made from a small pool of alternatives. So how can retailers effectively support both sides of this paradox? By supporting an interactive consumer decision aid, retailers can provide consumers the freedom to impose individualized constraints on the product set. This means retailers can continue to provide an extensive set of alternatives, while giving consumers the freedom to make decisions without the increased anxiety that goes with figuring out what to buy when faced with product overload.

For example, a woman specifically chooses to go to a large department store to buy a new dress knowing there will be multiple product alternatives. She finds the dress section and is satisfied to be given the freedom to decide between the racks and racks of dresses. However, rather than becoming overwhelmed by the product choices, she can rely on an interactive consumer decision aid to help her make a purchase. By inputting specific constraints, like size, color, price, etc., she can rationally make a decision, resulting in a more satisfactory purchase, a less stressful interaction, and a psychologically pleasing transaction.

## Personalized Services

In addition to decreasing stress and making it easier to evaluate product choices, adopting new technology into the in-store retail experience would create more customizable, personal experiences. The one-size-fits-all approach to retailing doesn't work. As leading consumer behavior specialists would agree, the way individuals evaluate products and make decisions varies widely. What motivates one shopper to go to a retail store can be much different from the next. For example, one consumer may be solely focused on efficiency and achieving a specific end, while another shopper at the same store might be there to treat oneself and alleviate a negative mood (Solomon 2010; Arnold and Reynolds 2003; Babin et al. 1994).

Online retailers have long recognized the potential of a personalized experience. Amazon.com, for example, has been a pioneer in the field of personalized content. From the moment a shopper creates an Amazon account, the company begins to collect data, track browsing and purchasing history, and create personalized offerings based on these preferences and habits. Amazon's concentration on personalized experiences has helped the mass merchant to rank as the number one business-to-consumer digital retailer, bringing in \$48 billion in online sales, according to InternetRetailer.com.

Brick-and-mortar retailers who are taking a cue from e-commerce personalization tactics are stores like Neiman Marcus. In an attempt to enhance its in-store service, Neiman Marcus is looking to release an app that will identify when consumers enter the store and prompt staff to engage with the consumer based on purchase history and preference. The NM Service App, developed by Signature, provides sales associates with a Facebook photograph of a consumer along with access to a consumer's Neiman Marcus and Neimanmarcus.com purchase history.

Jim Gold, president of Neiman Marcus, stated that NM Service would allow the company to deliver a highly personalized shopping experience. According to Signature CEO, David Hegarty, in an interview with Accessories Magazine, "The key to a terrific retail experience is personal and differentiated service," which is exactly what Neiman Marcus is hoping to be able to provide.

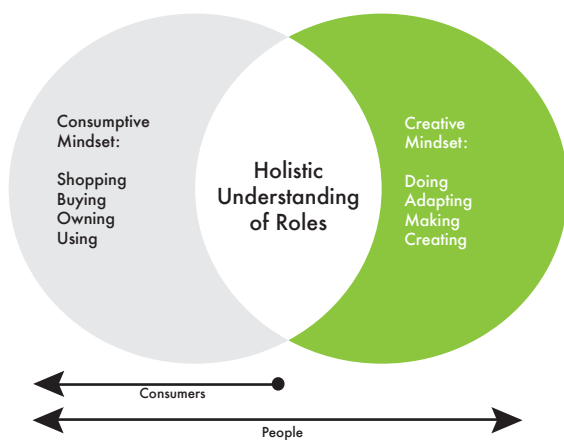
## Increased Consumer Involvement

While personalized experiences provide the first steps towards a more unique, individualized retail experience, involvement in the shopping experience does not end with sales associates being able to target consumers based on habits and purchase history. Consumers no longer want to solely influence how they are being marketed; they want to influence what they are being sold. A technological device's ability to increase consumer involvement can be explained in two parts: the ability for a consumer to shape the creation of products and the ability for a consumer to influence the distribution of products.

A revolution is taking place where consumers no longer want to be passive recipients of consumer goods; they want to be directly involved in the creation of goods and services (Sanders 2006). In order to design a technological device to enhance in-store retail experiences, it is necessary for this project to involve consumers and retailers throughout the design process, from beginning to end. Involving consumers in the front end of the design process “puts together the expertise of the [designer] and the situated expertise of the people [who will be] impacted by the change (Sanders 2008). Everyday people's participation in the design process helps to generate artifacts that are better adapted to people's requirements.

Not only does giving people a more active role in their interactions with a product generate designs that better fit people's needs, it also supports the change in thinking that is going on today. Today's individual seeks psychological self-determination rather than remaining part of a passive audience. People have learned to choose how they spend their time and their money based on their individual beliefs, their personal desires and their specific needs (Laurel 2003). The age when people acted in concert has passed, and so allowing individual's to be part of the design process is a natural evolution of the U.S. market.

Additionally, traditional retailers who invest in new in-store technology can leverage the devices' attributes to create a shopping experience that better fits needs. For example, if a particular retailer pulls data from the device that shows a large group of consumers are searching for an item the store doesn't stock or is sold-out, the retailer can order more or begin stocking the item. Rather than forcing consumers to choose between the options before them or the task of finding a different store, shoppers can be active in making sure the products they want are provided. As Harvard professor Shoshana Zuboff writes, “Today's people are pioneering a new approach to consumption that we call the individuation of consumption. They no longer want to be the objects of commerce. Instead, they want the corporations to bend to their needs” (Zuboff 2002).



▲ Figure 7: Sanders' Holistic Understanding of Roles

# Implications for Retailers

With the influx of competition from online shopping, the impact of economic hardship, and the implications of new technology, consumer behavior has evolved. To keep up with these changes in consumer behavior, retailers must also change. As discussed previously, providing consumers with a means to easily evaluate and select products has a number of implications: increased satisfaction, decreased stress, improved personalization, and better engagement. For retailers, these consumer benefits translate to two main benefits: increased loyalty and improved revenue. When consumers are more satisfied with their purchases, they are more likely to feel trust and commitment towards a brand. That loyalty leads to increased consumer retention rates, which is synonymous with improved revenue.

Traditional retailers can help improve consumer satisfaction by adapting new technology in order to build an interactive consumer decision aid. There are many brand attributes that people consider when making purchases: Is the company socially responsible? Is it a well-known brand? Is the brand modern? In a study of the top five most important brand attributes by age group, people between the ages of 13-35 consistently ranked “using the latest technology” in the top three (Solomon 2010). This shows how important it is for retailers to integrate new technology into their marketing strategy.

## Improved Revenue

With increased global competition, economic hardships, and technological advances, today's retailers are facing some of the most difficult times in the history of their industry. **Technology has fundamentally altered how people shop, with online retailers vying for the same consumers as the brick and mortar retailers.** Record-breaking unemployment rates and a lingering recession mean changes in consumer buying behavior. According to McKinsey Quarterly, consumers may still be buying, but they have moved down-market to considerably less costly items. In economic theory, the slope of the demand curve (a graph showing the relationship between supply and demand) flattens, and consumers become less willing to pay more.

In addition to consumer's unwillingness to pay more, financial uncertainty has also impacted other areas of consumer buying behavior. Enabled by new technologies, shoppers are using smartphones to comparison shop in-store, access promotions, and consult with family and friends before making purchases (Cho & Trincia 2012). According to eMarketer, fifty-six percent of mobile phone users compared prices in store, fifty-three percent took pictures of products, forty-six percent sought out coupons or discounts, and thirty-five percent received in-store alerts about deals and sales. With the rise of social media and corporate transparency, retailers must re-examine how they use their physical presence to create inspiring experiences.

In the United States, overall retail sales grew by three percent between 2006 and 2011, while digitally influenced in-store sales grew at an average of thirteen percent.

Apparel and accessories, which experts once believed wouldn't sell well online due to the inability to touch or interact with a product, are the second best selling product category in U.S. retail e-commerce sales, making up 17.6 percent of total sales, according to eMarketer. Although e-commerce accounted for only 6.6 percent of all U.S. retail sales, that figure is projected to jump to twenty percent in the next decade.

In order to address these growing concerns and develop a competitive advantage, retailers will have to adopt a new way of thinking. Retailers who stay stagnant and fail to accommodate the changing needs of shoppers will face economic hardship. According to McKinsey Quarterly, **in the United States, overall retail sales grew by three percent between 2006 and 2011, while digitally influenced in-store sales grew at an average of thirteen percent.** With shopping behavior quickly changing, one way for traditional retailers to better serve their consumers will be to adopt new technology into the in-store experience.

In the United States, Shopkick, a mobile app that tracks when consumers walk into stores and rewards them with points for visiting as well as making purchases, has partnered with stores like Old Navy, Macy's, Target, American Eagle Outfitters, and Wet Seal. Consumers can earn points for just walking into a store, yet it seems this app also has consumers coming back. According to Tech Crunch, in 2012, Shopkick revealed that its app has generated over \$200 million in revenue for its merchant and brand partners.

## Increased Loyalty

For retailers, **the benefit of higher consumer satisfaction percentages corresponds with higher consumer loyalty and retention rates.** Consumer satisfaction can be understood in two dimensions, a consumer's satisfaction in a product, product quality, and the consumer's satisfaction in a service, relationship quality. The proposed interactive decision-aid would not only improve the consumer's satisfaction in the product purchased, but also in the service that led to that decision. In the context of relationship marketing, consumer satisfaction is often seen as the central determinate for consumer retention rates (Hennig-Thurau & Klee 1997). By improving both determinants of consumer satisfaction, this project can help retailers improve consumer loyalty and retention.

One component of consumer satisfaction is the relationship quality in a particular context. Relationship quality can be broken down into two dimensions: (1) Trust in the salesperson and (2) satisfaction with the salesperson (Crosby et al. 1990: 70). Additionally, relationship quality can be seen as the degree of appropriateness of a relationship to fulfill the needs of the consumer associated with that relationship (Hennig-Thurau & Klee 1997). Because the exchange of products is a key feature of the buyer-seller relationship, the overall perception of quality should be considered as a component of relationship quality. Additionally, efficiency and effectiveness are important variables in the construct of relationship quality. This understanding of relationship quality is reflected in this project's ability to understand consumer needs and build an interactive device that virtually supports the relationship quality.



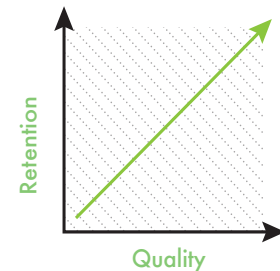
By understanding what areas of the buyer-seller relationship are impaired, this project can create a virtual response to the perceived problems in order to enhance that relationship. For example, the device could help consumers locate products in the store when a salesperson is unavailable. Rather than the consumer leaving the store unsatisfied and unable to find the product she is looking for, the device can step in and support this key interaction, leaving the consumer satisfied in the service rendered. In this scenario, the device has now become the “salesperson,” helping to improve the consumer experience and supporting consumer satisfaction in relationship quality.

In addition to relationship quality, product quality is also a key factor in contributing to a consumer’s overall level of satisfaction. As discussed previously, this project has the potential to design a device that will aid consumers in making more rational choices and thereby coming to a more satisfactory decision. By increasing a consumer’s satisfaction in her product choice, this project has the ability to support a consumer’s perception of product or product choice quality.

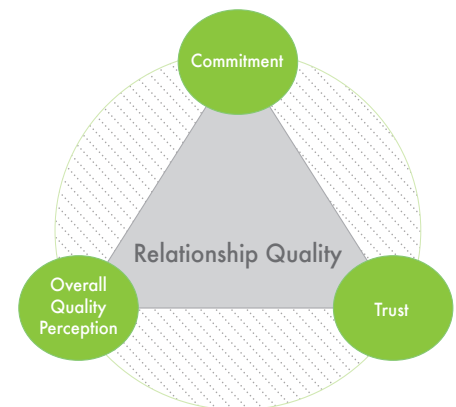
When consumers are more satisfied with the relationship quality and product/product choice quality, a higher level of commitment and trust can be found. Trust is defined as “the willingness to rely on an exchange partner in whom one confides (Moorman et al. 1992). Commitment is defined as a consumer’s long-term orientation towards a relationship grounded on both an emotional bond to the relationship and on the conviction that remaining in the relationship will yield higher net benefits than terminating it (Henning-Thurau & Klee 1997). Commitment and trust play a central role in a consumer’s repurchase decisions and thus is strongly related to consumer retention. This claim suggests a linear understanding of the quality-retention relationship

**By supporting a device that improves both relationship quality and product/product choice quality, this project can help retailers develop more long-term relationships with consumers.** Retention rate is seen as the most important component of market share, and it is driven by consumer satisfaction (Rust & Zahorik 1993). In marketing, the Pareto Principle states that 80% of overall sales come from 20% of a retailer’s consumers (Solomon 2010). This 20% is made up of loyal consumers; however, long-term loyalty is one of the hardest qualities to build in consumers—and yet is critical to the success of any business. For retailers, having a strong base of loyal consumers means increased spending, reduced price sensitivity, enhanced word-of-mouth referrals, and reduced servicing costs (Dowling & Uncles 1997).

### Linear Model of Quality-Retention Relationship



### Links Between the Three Dimensions of Relationship Quality



▲ **Figure 8:** Satisfaction, Relationship Quality, and Consumer Retention





# LIMITATIONS

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## Project Goal

**The goal of this project is to develop an interactive consumer decision aid (ICDA) that will enhance the traditional retail experience by reducing the effort needed for female consumers to make decisions.** This ICDA will integrate modern technology in order to assist consumers in their decision-making, in order to improve the quality of the choices made. Quality choices are defined as those made using the rational choice model, which states that consumers “calmly and carefully integrate as much information as possible with what we already know about a product, weigh the pluses and minuses of each alternative, and make a satisfactory decision” (Solomon 2010).

This project will utilize a synthesized Framework of Retail Experience as a guide for selecting methods and evaluating progress. This project will gather data around each specific dimension of the Framework of Retail Experience: Physical Space, Actual Behavior, and Mood/Emotion. **The context for this project will focus on soft-lines traditional retailers.** In retail, soft-lines retail refers to stores that specifically focus on clothing, jewelry, footwear, linens, and towels. The stakeholders for this project will be female shoppers and retailers. **Specific contexts will include Simon Mall as well as several small, independently owned boutiques in the Indianapolis area.** In addition to focusing on the perspective of female shoppers, this project will also include the perspective of retailers and staff/employees.

This project begins with the assumption that the current retail experience is flawed and does not allow everyday people the freedom to shape their experience. In addition, consumers are faced with consumer hyperchoice (Solomon 2010). Because of this, an ICDA will be developed that utilizes technology in a way that supports communication and co-experiences and creates sustainable change. The boundaries of this tool will be specific to the people, physical space, and stochastic variables within the chosen context.

# Female Shoppers & Staff

How and why people shop has been a topic of study for many years, and as such, extensive literature exists on consumer behavior. However, this project is not solely about understanding consumer behavior; it is about inventorying and expanding the existing knowledge to design a tool for female shoppers. It is about including female shoppers in the design process, beyond just their role as consumers and into their role as experts of their own experiences.

This research project understands that **gender is fundamental to understanding and predicting shopping behavior** (Bakewell & Mitchell 2003). Differences include the time spent browsing and researching choices, the enjoyment felt from the process, and the level of involvement when shopping (Dholakia 1999; Falk & Campbell 1997; Jansen-Verbeke 1987; Bakewell & Mitchell 2003). One gender specific study that chose to focus on female shopping behavior concluded that women enjoyed the process of browsing and researching choices, and were happy to spend considerable time and mental energy, while men sought to buy quickly and avoid shopping as much as possible (Falk & Campbell 1997). Additional studies have established that women shop for longer and are more involved than men (Dholakia 1999).

**Because of these gender specific variables that contribute to consumer behavior, this research project will employ an all-female group of participants, including both shoppers and retailers/staff.** Research will target several generations of female shoppers, including baby boomers (1946-1964), Generation X (1965-1976), and Generation Y (1977-1994) female shoppers. Due to the gender constraints and generation brackets, it will be important to incorporate not only secondary research, but also carry out primary research. This project can also distinguish itself from existing literature on consumer behavior due to the research approach that will be taken, where consumers and retailers will be active participants in the design process. By focusing on both qualitative and quantitative research, this project can differentiate itself from other consumer behavior studies.



## FEMALE SHOPPERS

- *Shoppers in Retail Context (at Simon's Circle Centre Mall in downtown Indianapolis, IN)*
- *Shoppers outside of Retail Context*



## RETAILERS/STAFF

- *Owners/Staff of multiple boutiques in Broad Ripple and downtown Indianapolis, IN*

# Retail Environments

**It has long been acknowledged that consumers respond to more than just the product or service that is being offered; they respond to the holistic retail experience** (Billings 1990). One of the most influential components of the holistic retail experience is the atmosphere where a consumer makes a purchase. In some cases, it has been concluded that the retail space is more influential than the product itself on the decision-making process (Kotler 1973). Because the affect of aesthetic factors on purchase behavior is so influential, this project will carry out design research methods within several different retail environments. Additionally, the design process that will be followed throughout this research project understands that the first steps include creating an inventory of the existing situation (Kumar 2003). In order to make a thorough inventory of the existing situation, one must first understand not only the user, but also the context.

This project will focus on exploring contexts within the soft-lines retail category. Soft-lines retail is defined as any retailer specializing in the sale of clothing, jewelry, footwear, linens, and towels. In order to establish a holistic understanding of the soft-lines retail sector, this project will engage with contexts that include both independent retailers as well as large shopping malls.

After making contact with several boutiques around Indianapolis, several locations in Broad Ripple Village, a neighborhood north of downtown Indianapolis, will be the subject of inquiry. Broad Ripple Village is a cultural district in Indianapolis, located about six miles from downtown. It is a socially, economically, and ethnically vibrant area known for its locally owned, independent boutiques and shops. Because of the number of small boutiques located within walking distance to one another, as well as the opportunity to speak directly with owners and staff, many shops were contacted in Broad Ripple Village. These contexts include: Pitaya, Lucky B Boutique, Snazzi Boutique, Niche, Utterly Pink, and one downtown location, Sage. These contexts will provide the design researcher with the opportunity to directly engage with retail staff and owners within the soft-lines context. However, because the research for this project will be conducted subsequent to the holiday season, when retail sales trend downwards, especially for independent retailers, the design researcher will focus on interacting with retail staff and owners rather than consumers (U.S. Census Bureau 2013).

Because of the downward post-holiday spending trend, the design project will also include Circle Centre Mall, a Simon Mall located in downtown Indianapolis, as a context for this project's research. It is a 4-level mall that connects via skywalks to 12 major hotels and the Indiana Convention Center (Simon Mall). With over 125 shopping, dining, and entertainment options, Circle Centre will offer the opportunity to engage with consumers within the retail context. In addition, having Circle Centre Mall as a context will uncover the perspective of shoppers within a department store retail atmosphere. This perspective, combined with the perspective of shoppers within an independently owned retail atmosphere, will help the design researcher create a holistic inventory of shopping experiences.



# Consumer Behavior

As discussed in the introduction of this paper, research for this project begins only after having established a thorough understanding of existing literature on consumer behavior. This knowledge, as well as the synthesized Framework of Retail Experience (See Page 13), will act as a lens through which to select and understand design research methods. Because it has already been established that retail experiences include three dimensions, Actual Behavior, Mood/Emotion, and Physical Space, this project will begin my attempting to establish an inventory of knowledge through primary research for each dimension. Because of gender variables and contextual limitations, it will be important to integrate this primary research with the established secondary research. This data will then be analyzed using the Framework of Retail Experience, in order to holistically interpret the data and build insights.

# Design Process

To accomplish the goal of this project, research will follow a five-step creative problem-solving process known as CASPI, which includes: 1) Collect; 2) Analyze; 3) Synthesize; 4) Prototype; 5) Implement. This process is an adaptation of Hugh Dubberly's Analysis-Synthesis Bridge Model and Vijay Kumar's Kumar Model (Dubberly 2008; Kumar 2003). The Analysis-Synthesis Bridge Model illustrates the designer's ability to move from analysis to synthesis in order to build an understanding of the current that will shape the foundation of what could be. This model begins in the lower left hand quadrant, where the designer must investigate and inventory the existing situation. Moving into the upper left hand quadrant, the designer must then use this information to interpret and build an abstract understanding of what is. The designer then moves to the upper right quadrant, using the interpreted information to synthesize a "model of what could be." The final step of the Analysis-Synthesis Bridge Model suggests that this synthesized understanding is then manifested into the future design of "what could be" (Dubberly 2008)."

The Kumar Model, proposed by Vijay Kumar, suggests a similar structure to that of Hugh Dubberly. However, the Kumar Model begins a step earlier, with the designer developing a hypothesis of the current situation. The designer must then research and understand the user and the context of the problem. From this knowledge, the designer can analyze and frame insights. These insights are then synthesized into concepts and plans for the future. The final step proposed by Kumar is the development of the final concept and the implementation of this concept (Kumar 2003).

Research will follow a five-step, iterative creative problem-solving process referred to as the CASPI Model.

As a synthesized version of the Kumar Model and the Analysis-Synthesis Bridge Model, the CASPI Model illustrates four different phases, and is organized as a two-by-two matrix. This model starts in the lower left quadrant, suggesting that the design process begins with observation and investigation (Step 1: Collect). From there, the process moves to the upper-left quadrant, where one begins to interpret and define the problem (Step 2: Analyze).

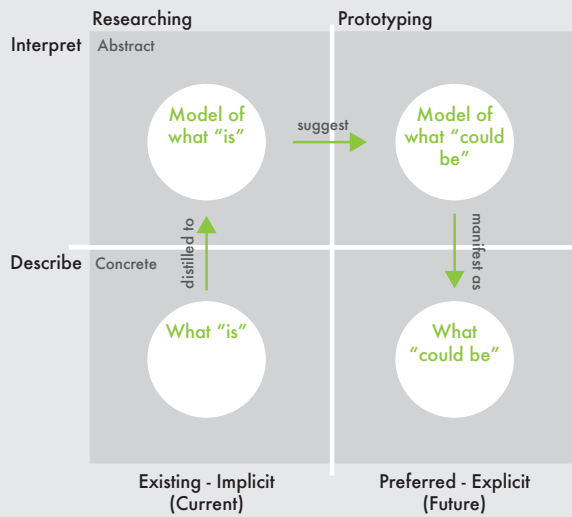
The model then moves to the upper-right quadrant, where one begins to imagine alternatives and explore the abstract (Step 3: Synthesize). The last phase of the Analysis-Synthesis Bridge Model moves to the lower-right quadrant, where the designer begins to realize concepts as prototypes (Step 4: Prototype). While the model ends with prototyping, CASPI defines the final stage of the design process as Implementation, which is the culmination of prototyping into a refined solution or solution concept.



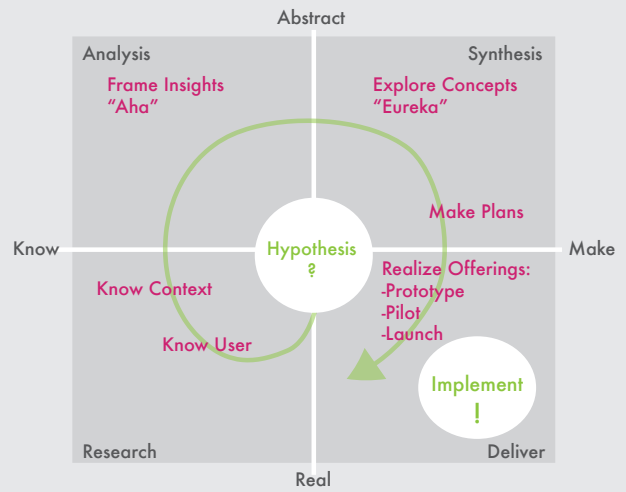
▼ Figure 9-12

The CASPI Model is an interpretation of the Analysis-Synthesis Bridge Model and the Kumar Model. However, it defines the final stage of the design process as “Implementation” of a final concept or artifact. With the implementation of this final design, the existing realm of design is altered and the cycle of design restarts. It should be noted that the design process is iterative and can move between the steps at any time during the process.

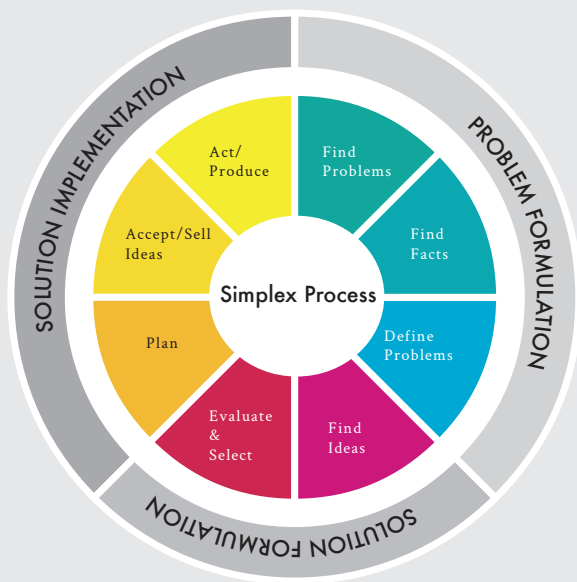
▼ Figure 9: Analysis-Synthesis Bridge Model



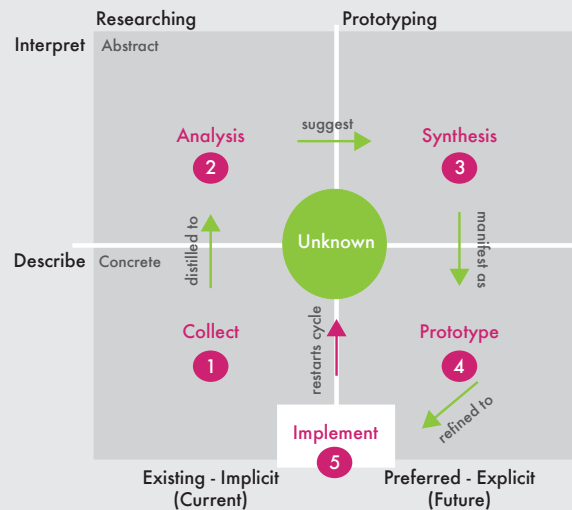
▼ Figure 10: Kumar Model



▼ Figure 11: Simplex Process



▼ Figure 12: CASPI Model

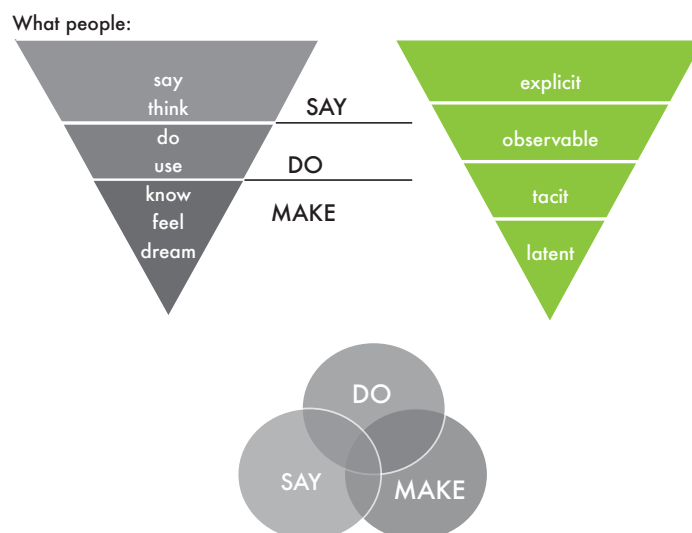


In addition to the synthesized model of the design process, the CASPI Model, this project also will reference the Simplex Process, and 8-step creative problem solving process developed by Min Basadur (Basadur 1994). These eight steps are categorized under three phases: Problem Formulation, Solution Formulation, and Solution Implementation. Problem Formulation includes Steps 1-3: Problem Finding, Fact Finding, and Problem Definition. Solution Formulation includes Steps 4-5: Idea Finding and Evaluation and Selection. Finally, Solution Implementation involves Steps 6-8: Action Planning, Gaining Acceptance, and Action Taking.

By understanding the Simplex Process, the Kumar Model, and the Analysis-Synthesis Bridge Model, one can better understand how to move from the current situation to a future state. Combining these recognized design methodologies into a single process, this project will attempt to build an understanding of the context and users and develop insights. This project will leverage these insights to shape future design concepts, which will be evaluated and tested. The final step will be to take action and implement the final solution, thereby influencing the future construct and reshaping the existing paradigm.

## Design Approach

In the current realm of human-centered design research, an evolution is taking place that is moving away from the user-centered approach towards a participatory approach. The user-centered design approach has been recognized for decades, where the designer, recognized as the expert, interviews or observes the user, the layperson, in order to define the project based on what people need (Sanders & Stappers 2007). This process of passive involvement, referred to as “user as subject” has been a long accepted approach in design and manufacturing in the United States. However, it has become increasingly more popular to include the user throughout the design process, allowing the user to provide expertise and participate in the generation of ideas. This is known as “user as partner.” This latter approach, more formally defined as participatory design, will be the approach taken for this design research project.



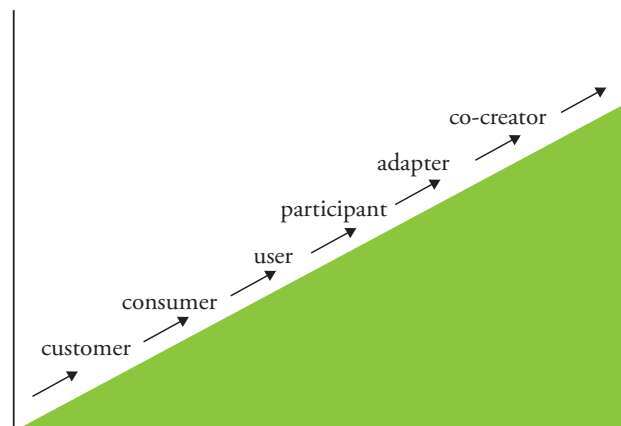
◀ Figure 13: Sanders' Model of Say, Do, Make

The participatory design approach will involve a co-design process, where the designer will be working with people to develop the final solution for this project. **The participatory design approach is an evolution within the current landscape of human-centered design, and involves a number of techniques that allow for users to be partners in the design process rather than subjects of the process.** Within the area of participatory design, one can find terms like co-design and co-creation, which are often thought of as synonymous. Co-creation, as defined by Liz Sanders and Pieter Stappers, is “creativity that is shared by two or more people” (2007). It is considered a very broad term, which falls under co-design. Co-design is defined as the collective creativity of designers and people working together during the design process (Sanders & Stappers 2007).

To better understand the project stakeholders, this project will also refer to Liz Sanders’ routes to accessing experience. In her articles, *From User-Centered to Participatory Design Approaches*, Sanders highlights three perspectives that the designer must understand in order to access experiences, establish empathy, and design products that meet unanticipated user needs (Sanders 2002). These three perspectives are integrated into the Say, Do, Make Model. Sanders asserts that **in order to design for experience, we must not only discover what people think and know, but also seek understanding of people’s dreams.**

To do so, Sanders discusses “make tools” that designers can use to gain access to people’s feelings and allow participants in the design process to express their dreams and aspirations. These “make tools” can also be referred to as generative tools, which Sanders and Stappers touch on briefly in their model of the current landscape of human-centered design research (2007). According to this model, employing generative tools allows for research to be led by design. It also allows users to be partners in the design process rather than subjects of the process.

Because this design research project is taking a participatory approach, co-design methods like generative tools will be utilized from the first steps of this project. During Collection, make tools will be used to help participants generate artifacts that “access people’s unspoken feelings and emotional states.” These tools will combine visual literacy with verbal literacy in order to stimulate expression and support the design process. During Prototyping, make tools will allow participants to design a deliverable that is more meaningful to the people who will ultimately benefit from the solution.



◀ **Figure 14:** Sanders’ Model of the Human-Centered Design Revolution

# Design Methods

After selecting an approach and process by which to follow during the course of this project's research, it will also be necessary to select a wide array of design research methods. **Each design research method selected will provide an opportunity to structure conversations that can help build understanding and empathy with people, and as a result build a more meaningful product** (Hanington & Martin 2012). Each method will play a different role and result in different information. In order to answer the proposed research question, a number of qualitative and quantitative design research methods will be selected. In order to select the most appropriate method for a given situation, it will be important to consider the context, audience, and goal for which that method will be used (Steen et al. 2011).

While a general outline of methods was selected at the start of this project, as information is gathered, it will be necessary to readjust the action plan that serves as a research outline. After building empathy with consumers and retailers and better understanding the limitations within the specific contexts, different methods will be selected to reach different goals. Because this project takes a participatory approach to the design process, it will be important to incorporate methods that involve consumers in the development of the solution of this project. **Participatory design methods are qualitative methods that are inherently flexible, taking whatever shape they need to suit the designer's needs** (Ireland 2003). Participatory design methods allow people to express themselves and participate directly and proactively in the design development process (Sanders 2002).

Design research will be particularly grounded in participatory design methodology during the initial phase of collection. Subsequent phases, such as analysis, synthesis, and prototyping will also include the input of consumers and retailers. However, this participation will be less significant than during the initial inventorying of information.

Each design research method selected will provide an opportunity to structure conversations that can help build understanding and empathy with people, and as a result build a more meaningful product.

▼ Figure 15

*Throughout each stage of research, a number of methods were selected. Some methods were used more than once but for different purposes. When selecting a specific method, it was important to reflect on what information needed to be gained, who the intended audience of the method would be, and where the method would be executed.*



Scenario Surveys



Photo Diaries



Freelisting



Card Sorting



Autoethnography



Experience Measurement



Secondary Research



Interviews



Experience Journal



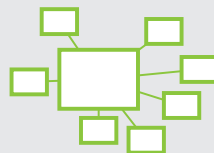
Word-Picture Association



Collaging



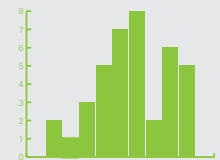
Offering Map



Mind Map



Affinity Diagram



Quantitative Analysis



Customer Journey Framework



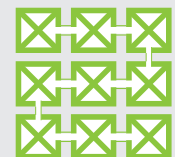
Concept Map



Scenario



Questionnaire



Storyboarding



Flowchart



Thumbnail Wireframe



Wireframe Sketch



# 5 COLLECTION

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# Overview of Collection

**As many design thought leaders would agree, the design process ideally begins with observation and investigation of the current or existing situation** (Dubberly 2008). Vijay Kumar suggests that the design process begins with a hypothesis of the situation and turns to the investigation of what is concrete (Kumar 2003). This project began with a defined problem area: the difficulty of female shoppers to make satisfactory decisions. After having formed this hypothesis of the current situation, it was necessary to research and know the user and the context through primary research. In order to develop a solution that would best meet the latent needs of female shoppers, it was necessary to start by taking inventory of the existing situation. By doing so, the designer was able to describe the present condition in order to build a concrete understanding of “what is.”

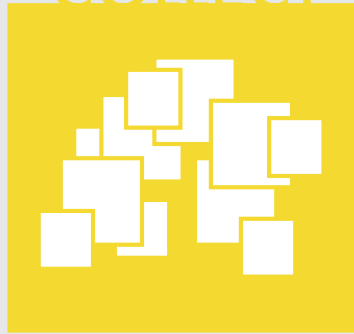
During the initial research phase of this project, it was important to form an understanding of the existing situation by beginning to build knowledge about the chosen context(s) and user(s). Using specifically chosen methods, the collection phase of this project aimed to understand female consumer decision-making processes through the synthesized Framework of Retail Experience. By understanding the habits of everyday shoppers, including the tools and methods females currently use, this project was able to find opportunity areas where an interactive consumer decision aid (ICDA) could ease or support existing habits. In addition, methods that explored the unmet needs of female shoppers helped to define problem areas that could be remedied by implementing an ICDA.

Thus, the first steps to answering the research question were to: (1) Understand existing habits of female shoppers (Users) and (2) Understand areas for improvement in the shopping experience (Context). To accomplish this goal, interacting not only with female shoppers but also retailers and sales associates was an important component which allowed the design researcher to better define the latent needs of the consumer. The first steps of this project focused on understanding what people say, think, do, and use in the retail experience.

The first steps to answering the research question were to: 1) Understand existing habits of female shoppers and 2) Understand areas for improvement in the shopping experience.



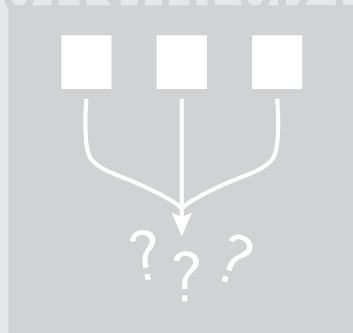
COLLECT



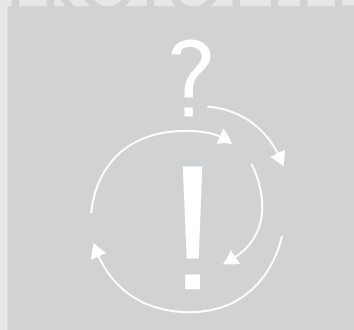
ANALYZE



SYNTHESIZE



PROTOTYPE



**Figure 16:** *Using the synthesized Framework of Retail Experience, design research methods were selected in order to build an understanding of consumer behaviors and experiences. When selecting methods, the design researcher was conscious of the limitations of this project, such as audience, context, time, and resources. With an understanding of existing research on consumer behavior, the design researcher was able to conduct primary research to support and expand current understandings of consumer behavior.*



## Building Empathy

**Research can be broken down into two phases; the first phase is about building empathy with the user and establishing a foundational knowledge of the context.** This knowledge is then used to select appropriate methods that will allow the researcher to dig deeper into the context and acquire a better understanding of the existing situation, which is done in the second phase of research. Through contextual inquiry, ethnography, and surveys, the design researcher was able to establish a high level understanding of retail experiences and female shopping behaviors. During the first phase of research, participants took a passive role in the design process, focusing on what people say and think. This explicit and observable knowledge, which was acquired during the first steps of research, helped to inform the selection of methods that would allow the design research to dig deeper into the context. This initial understanding of the context helped to segue into the second stage of research, where participants took a more active role in the design process.



**Autoethnography:** Auto-ethnography is a form of ethnographic inquiry that utilizes the autobiographic materials of the researcher as the primary data. Differing from other self-narrative writings such as autobiography and memoir, auto-ethnography emphasizes cultural analysis and interpretation of the researcher’s behaviors, thoughts, and experiences in relation to others in society. Anthropologist Heider first introduced the term “auto-ethnography” in 1975. This method involves the researcher participating in and reflecting on a given context through self-observation and participation (Chang 2008.).



During a trip to Circle Centre Mall in downtown Indianapolis, the project researcher was tasked with taking extensive notes and photographs of her shopping experience. She visited a number of stores during her shopping experience. As she was browsing merchandise, she took photographs of scenes that inspired reactions and commentary. When she was trying on merchandise, she noted her journey through the store, how she was going about making decisions, and her general feelings towards the experience.

This method allowed access to otherwise impenetrable contexts like H&M, Forever 21, Charlotte Russe, the Gap, and Victoria's Secret, to name a few. In addition, because the decision making process is very internal and subconscious, having the researcher personally act as a participant in the research helped to generate data that could possibly be missed through solely interacting with consumers.

This method had two overall goals: to better understand the shopping experience and to better empathize with consumers who would be participating in research. Through this method, the researcher was able to gather valuable insights into the overall shopping experience. For example, the difficulties of taking notes while shopping helped the design researcher to understand how future methods might encumber female shoppers during a shopping trip. It was understood that having shoppers take notes or videos during a trip to the mall might be difficult and cause negative avoidance behavior.





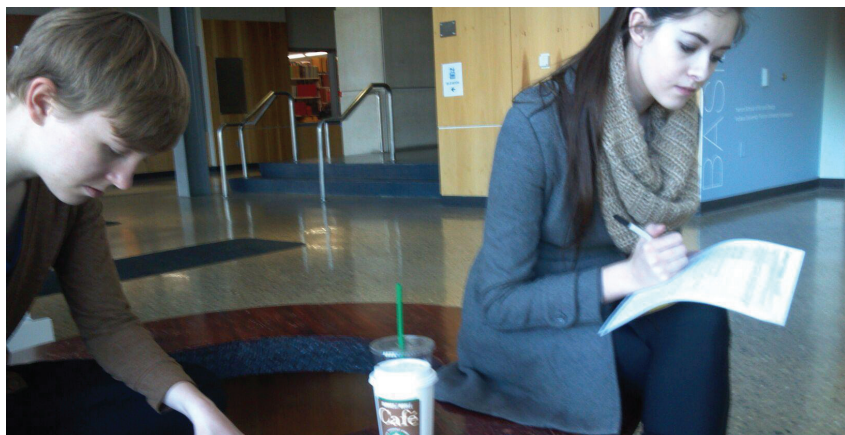
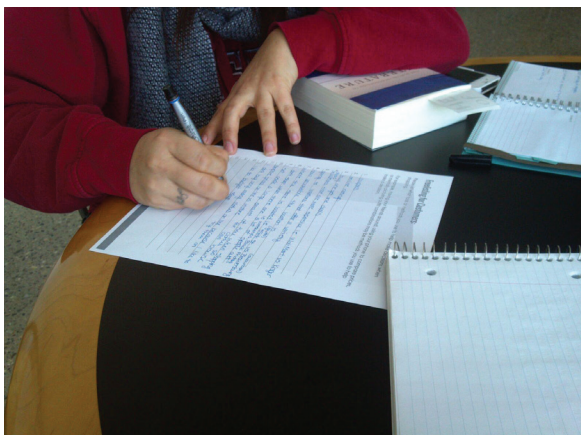
**Freelisting:** A freelisting interview simply entails listing things in a domain (e.g., “kinds of wood for building” or “ways to prepare potatoes”) in whatever order they come to mind (Quinlan 2005).

Consumers were asked to list what tools or methods they use when making decisions when shopping for clothes. To accomplish this goal, three posters were hung throughout the Herron School of Art and Design building (in the open-access stairwell, in the Junior VC Design studio, and in the Sophomore VC Design studio). In addition, individual sheets were created. Retailers were given a sheet of paper with a prompt asking them to note the tools and methods used by their consumers when making decisions in the retail environment. Retailers were given a sheet of paper with a prompt asking them to note the tools and methods used by their consumers when making decisions in the retail environment.

By designing the freelisting method in two differing formats, this method was able to collect data both remotely and actively. The posters allowed individuals to engage with the question whenever an answer came to mind. On the other hand, having individual freelisting sheets allowed the researcher to engage with participants one-on-one. This allowed the researcher to interact with participants and use examples and prompts to stimulate answers.

For consumers, this method functioned to gather data concerning actual behavior in retail environments. However, because this method was conducted with individuals outside the retail environment, participants had a difficult time recalling actual behavior. Giving the participants prompts to encourage responses resulted in what felt like coaxed answers. When participants were given time alone to accomplish the task, they were able to list around twelve items through self-reflection. These answers seemed more natural. The second format of this method, the posters, provided a remote way of gathering information. However, these answers seemed to lack substance and depth. On the other hand, because these posters were completed without interference from the design researcher, some answers appeared more natural.

For retailers, this method was designed in order to gather a large pool of data about consumer’s actual habits. However, because retailers were put on the spot, they found it difficult to answer the prompt. In order to counter the challenges presented by this method, retailer journals were created to allow for more natural responses.

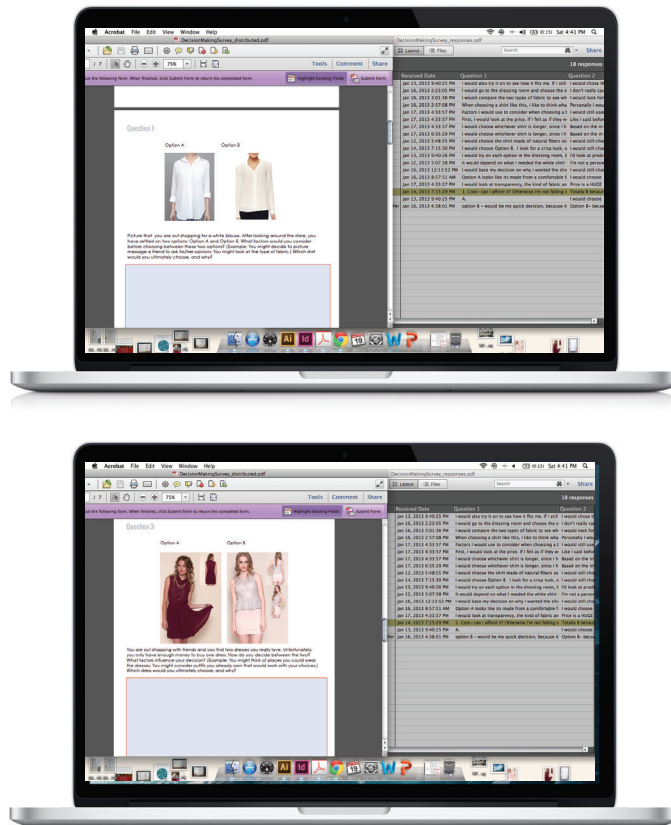




**Scenario Survey:** Task based scenarios ask user's how they go about completing a given scenario. By using scenarios, this survey provided an outlet to understand how consumers would go about accomplishing a given task. Through Adobe Acrobat Pro and Adobe Workspace, individuals were asked to download an interactive file. This file contained three short scenarios, two open-ended questions, and a short freelisting prompt. This survey took approximately 15-20 minutes to complete and collected data about multiple aspects of the retail experience. Because the link to download and participate in the survey was open access, individuals could share the survey on their Facebook page or through e-mail, which opened the network of participation.

The first three questions were based on short scenarios. For each question, participants were shown two photos. They were then given different variables (such as price, fabric content, retailer, brand, etc.) and were asked how they would go about deciding between the two choices.

The two open-ended questions focused on physical and virtual retail spaces. These two questions asked participants to describe what features they like/dislike about physical and virtual spaces. A photograph of either an online shopping site or a physical retail environment accompanied each question in order to stimulate responses. The last question was a freelisting exercise where participants were asked to list what features would make shopping in a physical retail environment easier and a better option for their lifestyle. Below the question were numbered lines in order to generate multiple responses.



▲ *The design researcher was able to export an interactive PDF to the file sharing website Acrobat Workspace. Using social media and word-of-mouth, this survey was able to reach a broad range of participants.*

For the purpose of this project, it was important to understand all three aspects of the synthesized Framework of Retail Experiences: Mood/Emotion, Actual Behavior, and Physical Space. In addition, it was important that this project allowed participants/consumers to respond without bias. By allowing participants/consumers to respond to this survey in the privacy of their own home/school/etc. the responses were free from the influence of the researcher. In addition, because of the context of this project (physical retail spaces), having consumers respond to a 15-20 minute survey within the retail store would interfere with business.

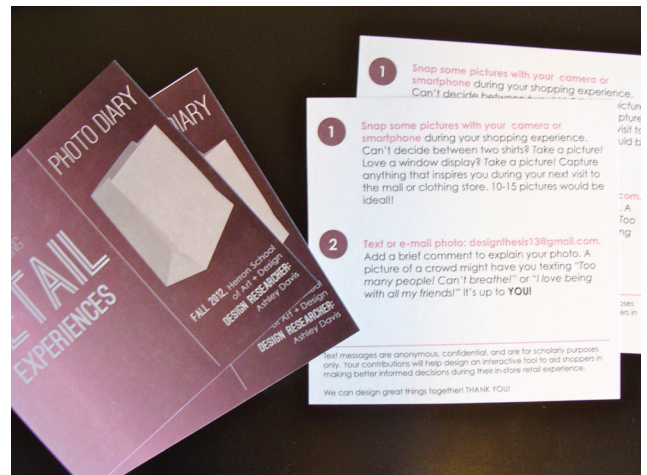
This survey helped to generate a large pool of data from a total of 19 participants. This method illustrated how important factors such as price, versatility, functionality, and appropriateness are when choosing a product. For example, many participants cited that functionality was the primary tool for evaluating and selecting a product. Functionality can be broken into two categories: primary function and secondary function. The appropriateness of a product for a specific occasion or event was the primary concern for shoppers. However, it is also important that in addition to a products primary function, a product should also be versatile for other occasions. For example, when asked to evaluate and select a dress from two options, many participants stated that they would choose the dress that would be the most appropriate as day-wear or work wear in addition to functioning during the evening or weekends.



**Photo Diaries:** Photo diaries allow participants to build and create stories from photos. Images taken by consumers help tell the story of a retail experience through the participants' eyes. Through a number of mediums (posters, flyers, social networking), individuals were asked to take pictures of their next shopping experience. The prompt asked participants to photograph "anything that inspires you during your next visit to the mall or clothing store." They were then asked to e-mail those photographs to a specially designated e-mail address. In order to get participants thinking about potential photo opportunities, the cards, flyers, and Online call-outs gave examples of desirable photographs. In addition to the photographs, participants were also asked to give brief comments for each picture.

Flyers were passed out to friends and fellow students, in addition to being placed at exit points around the school. Posters were also displayed at bulletin boards around Herron School of Art and Design. Furthermore, social media outlets, such as Twitter, LinkedIn, and Facebook were used to spread the word.

Photo diaries are often used in conjunction with experience journals as an integrated cultural probe. However, this method did not require participants to also complete an experience journal. The goal of this method was to collect data about consumer's actual experience in the retail space through the eyes of the consumer. Rather than interpreting data through observation, this method allowed consumers to tell their own story.



▲ *Flyers were used as a component of the communication strategy aimed at tasking participants to take photos with captions during their shopping experiences.*

This method proved to be rather unsuccessful. Reasons for this were discovered during the auto-ethnography method when the researcher herself went to document her experience while shopping. Because retailers typically frown on consumers photographing their space (fear of having ideas/products/placement stolen or copied by competitors), it was difficult to covertly take photographs.

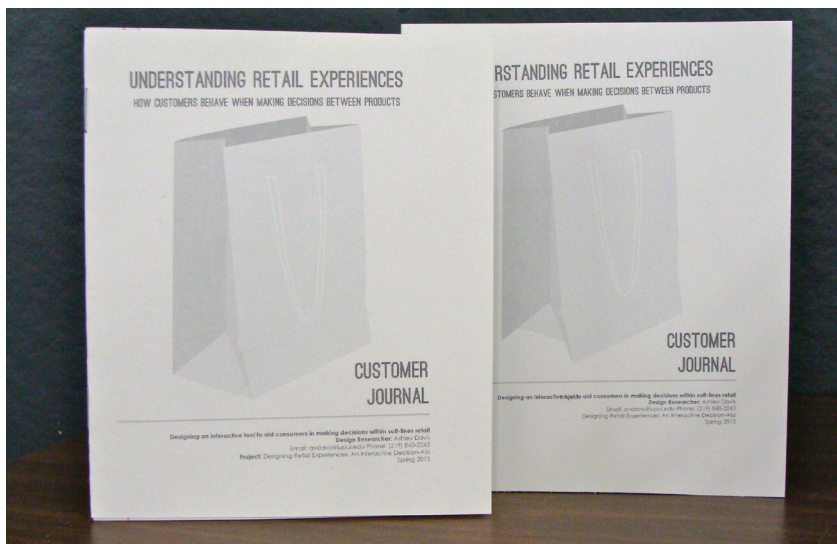


**Experience Journals:** Experience Journals are a form of cultural probe. Cultural probes are a purposefully selected set of tools that provide a remote way of gathering information about people and their activities. They allow users to participate through self-documentation, with the probes usually given to research participants for a prolonged period of time, during which they can produce richly engaging material.

Cultural probes are appropriate when you need to gather information from users with minimal influence on their actions (Glasgow School of Art Design Glossary). The journal asked consumers to describe how they shop, including preferences, methods, and tools used when preparing to shop or in the act of shopping. The journal provided examples to stimulate thinking and inspire participants to respond. The journal asked retailers to observe their consumer's habits and make note of tools or methods they used to make decisions. In addition, the journal provided examples of consumer behaviors to stimulate associates into thinking about particular habits of their consumers.

Taking into consideration the Framework of Retail Experiences, this method was able to touch on each of the three aspects of retail experiences: Actual Behavior, Mood/Emotion, and Physical Spaces. Individuals were encouraged to take the journals with them into the retail space and jot down observations about their current retail experience as it occurred. In addition, individuals were asked to reflect on future and past experiences. By allowing individuals to take the journals with them, this method provided a remote way of gathering information about a consumer's self-observation without interference or influence of the design researcher.

▼ *Experience Journals which were given to consumers and retailers to self-document their retail experiences.*





For retailers, this method served as a way to engage staff in the observation of their consumer's actual behavior. By providing retailers with a journal, they could observe behavior and make note of these occurrences as they happened. Unlike with the freelisting method, retailers were able to act in the moment, which allowed for more accurate descriptions of real-life behavior.

This method proved to be more effective with retailers than with female shoppers. Retailers had one to two weeks to participate in noting consumer behavior. One component of the journal was blurbs that were meant to inspire retailers and consumers about specific behaviors. These blurbs were inspired by previously collected data and stated things like, "Have consumers mentioned how a shirt might match something they already own?" The design researcher had intended these blurbs to encourage retailers to think about past occurrences. However, retailers and consumers interpreted these blurbs as direct questions, turning the experience journal's function into a survey booklet. This method still provided insight into female shopping motivation, including utilitarian and hedonic needs. For example, one retailer wrote that consumers call the store to ask about clothes for specific events, like a wedding or prom. This illustrates the utilitarian motivation to efficiently make a purchase, in addition to highlighting the importance of functionality on purchase decisions.

## Accessing Latent Needs

After taking an initial inventory of the context, this project then transitioned into the second stage of research, where participants were asked to more actively engage in the design process. This stage was about accessing people's feelings in order to draw out female shopper's latent and tacit needs. To accomplish this, the design researcher selected a number of generative tools to access people's feelings, dreams and imaginations. Generative tools allow the designer to access the deeper levels of user expression in order to establish resonance with people (Sanders 2002).





**Collaging:** Generative tools allow people to express themselves both visually and verbally, which can capture the “dreams” of participants. Sanders refers to these “dreams” as the latent needs of participants. Generative toolkits can take a number of forms so long as they result in a tangible artifact that allows designers to empathize with our users (Sanders 2006).

In order to provide an outlet for participants to visually and verbally express themselves, a generative toolkit was made. Participants were provided with a 11x17 piece of paper with the prompt at the top, a glue stick, and an envelope with emotion words and pre-cut photographs. Emotion words were selected from the Mehrabian-Russell Semantic Differential Measure of Emotional State as a way to guarantee emotion words were provided along with their emotional opposite. In addition, the Mehrabian-Russell Stimulus Response Model served as a major influence on the Mood/Emotion aspect of my Framework. Photographs were chosen that represented the shopping experience, emotions, and interactions.

From this method, the design researcher was able to uncover several insights. For example, participants often associated positive emotion words (Excited, Pleased, Satisfied) with the picture of a woman shopping online. Additionally, pictures of people interacting (who are not clearly identified as friends or employees) received positive emotional correlations, which supports that many shoppers are motivated to go shopping because it is seen as a positive social event. Negative emotion words were associated with pictures of checking out and standing in line. Picture of a crowded clearance section at a department store received mostly positive emotional connects such as “pleased,” “hopeful,” and “excited.”





▲ Generative toolkit included adjectives, pictures, gluestick, and 11x17 paper with prompt.





**Likert-Type Measure of Emotion:** For this method, participants were given a half page survey with adjectives and asked to score each word choice using a 9-point bipolar scaling method. For example, happy/unhappy, satisfied/unsatisfied, and free/restricted were adjective pairs on the survey. The words chosen were adapted from the Mehrabian-Russell Model, from which the Mood/Emotion aspect of my Framework is largely based upon.

Because this project aims to “enhance” the retail experience, one must first measure shopper’s current level of satisfaction in order to establish a baseline level of satisfaction. Also, this survey allowed the design researcher to quantitatively establish whether or not the current average measure of emotion had room for improvement. Taking the information collected from the Likert-Type Measure of Emotional State conducted at Circle Centre Mall, the design researcher created a spreadsheet of all the data. From this data, the average was found for each pair of words. From these averages, the overall average was calculated.



**Word-Picture Association:** Word-Picture Association is a way to investigate the feelings, beliefs, and attitudes that participants have about a chosen context. This technique combines visual, verbal, and textual prompts to illicit information that might be missed with surveys or other methods.

Using words selected from the Mehrabian-Russell Semantic Differential Measure of Emotional State and pictures of the retail space, participants were asked to select the words they felt best represented their feelings towards a picture. Because this method was designed and implemented subsequent to the Collaging method, this method drew on the insights gained previously. Because many participants kept bringing up in-store inspiration, social motivations, value motivations, and market beliefs between boutiques and department stores, pictures were chosen that represented previously uncovered insights.

▼ *Word-picture association, a method that was carried out with retailers and consumers.*



While participants described their choices, the design researcher took notes while simultaneously trying to encourage open dialogue. This technique allowed the design researcher to uncover participant's emotions about the physical space. Several insights were gained by using this method. For example, participants mostly used the words "interesting" and "inspiring" to describe the picture of mannequins in a storefront. This revelation led to conversation about the importance of in-store inspiration on the decision-making process. Additionally, participants mostly described the photo of a young woman browsing a wall display of clothes as "useful" because the store was "organized" and clothes were "placed near similar items so things were easier to find."



**Card Sorting:** Participants were asked to sort from most to least the hedonic and utilitarian motivations for shopping. These cards included: Social, Idea, Gratification, Adventure, Role, Efficiency, and Value. This method was used in order to elicit information regarding both hedonic and utilitarian motivations for shopping. By focusing on the Actual Behavior aspect of my Framework of Retail Experience, this method was able to gain insight about what directs people to shop.

This method resulted in both qualitative and quantitative data. Initial insights from this method showed that Value, Social, and Gratification were considered important motivators for shopping. This could mean that having a way to share purchases with friends or receive advice from friends on product choices could be beneficial functions of an interactive tool. Overall, it was observed that value seemed to consistently rank first among participants. This might mean that designing a way for shoppers to make sure they are getting the best deal, by providing side-by-side product comparisons with items from other stores, might be a way to show shoppers they are getting a bargain.

▼ *Card Sorting helped to support and expand existing literature on hedonic and utilitarian shopping motivation. This method was carried out with retailers in brick-and-mortar shops as well as with consumers at Simon Centre Mall.*





# ANALYSIS

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# Overview of Analysis

When we start collecting data about a wicked, undefined problem, we are working to describe the situation through concrete data. According to the Analysis-Synthesis Bridge Model, a model suggested by Hugh Dubberly and discussed during the Project Overview section of this booklet, we begin to move out of the concrete and into the abstract as we begin to interpret and analyze data. After gathering concrete knowledge about the existing situation and working to understanding the user and the context, one must then use this knowledge to distill insights. In order to do this, the designer must analyze his knowledge of the user and context in order to frame insights (Kumar 2003).

From the data acquired during the first stage of this project it was necessary to analyze and distill meaning from the information gathered. Analysis offers the opportunity to explore the information collected in order to develop insights. According to Hugh Dubberly, “We make sense of research by analysis, filtering data we collect to highlight points we decide are important or use tools we’re comfortable with to sort, prioritize, and order. We frame the current situation, but move out of the strictly concrete. We define the problem” (Dubberly 2008).

While insights were uncovered during the research phase of this project, analysis allows the opportunity to employ further sensemaking methods, such as through visualizations, maps, and diagrams. According to Jon Kolko, a thought leader in the field of design and sensemaking states that, “sensemaking as a way of understanding connections between people, places and events that are occurring now or have occurred in the past, in order to anticipate future trajectories and act accordingly” (Kolko 2010). Analysis is about understanding connections between existing information and using those connections to build insights that can define the trajectory of a project. Designers use insights to develop the most relevant solution to a problem; however, this can only be done after a designer has taken the steps to understand the touchpoints, connections, and relationships between the facts gathered during research.

Sensemaking is both an internal and external process. A designer must be able to internalize and reflect on information gathered in order to try and solve a specific problem. However, the activity of sensemaking is also an external process. In order to support decision-making and continually expand ideas, the designer is forced to make their process explicit by creating diagrams, charts, models, prototypes, and other in-process artifacts (Kolko 2010). By using sensemaking methods that externalize the design process and the relationships between ideas, the designer can create a tangible, interactive visualization that can be referred to during later stages of the design process.

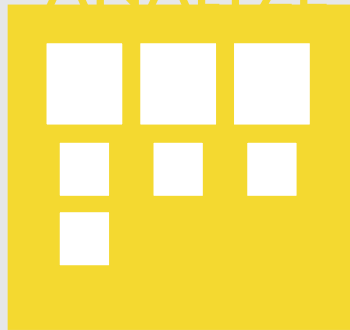
Because of the symbiotic nature of the different aspects of the retail experience (Mood/Emotion, Physical Space, and Actual Behavior), this project analyzed the qualitative data using an integrated, singular approach. For example, the method collaging, while chosen to elicit information based on Mood/Emotion, also aided in generating a better understanding of the holistic retail experience. The photographs used often-elicited participants to recall past retail experiences. The dialogue generated had elements that could be integrated into both the Actual Behavior and the Physical Space dimensions of the retail experience. A photograph of a woman trying on clothes could provoke a participant to say how much she hates dressing rooms, while at the same time recalling a story of how touching and trying on the product helped her to make a decision. This recollection of sensory inputs on decision-making has elements that bridge all three dimensions of the retail experience.



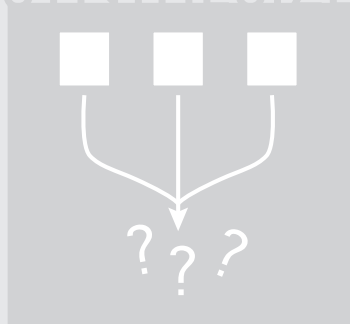
COLLECT



ANALYZE



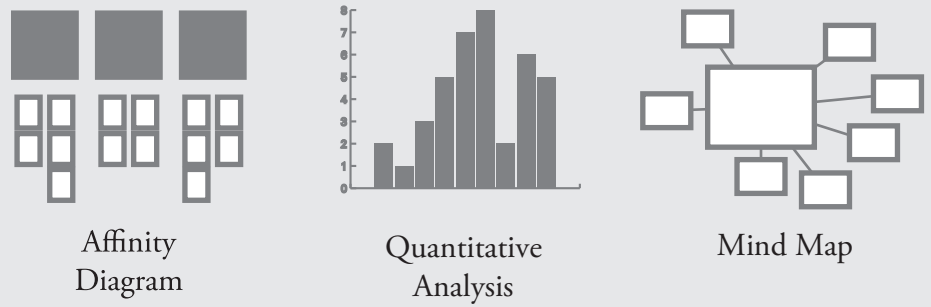
SYNTHESIZE



PROTOTYPE



**Figure 1:** *Using the synthesized Framework of Retail Experience, design research methods were selected in order to build an understanding of consumer behaviors and experiences. When selecting methods, the design researcher was conscious of the limitations of this project, such as audience, context, time, and resources. With an understanding of existing research on consumer behavior, the design researcher was able to conduct primary research to support and expand current understandings of consumer behavior.*

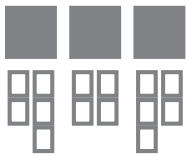


Furthermore, it is necessary to analyze all the methods holistically, rather than independently, due to the interdependence of the methods themselves. For example, in most cases, word-picture association, collaging, and card sorting were carried out consecutively. Because of this, dialogue that commenced during the first method was continued over the course of the meeting. A recollection of a past experience, for instance, might be touched on during the first method, but only after seeing a photograph during the last method would all the details of that experience come to light.

In addition to using qualitative methods of analysis, it was also necessary to utilize quantitative methods to seek understanding from previously collected data. Quantitative analysis was used to bring meaning to data collected from the Likert-Type Measure of Emotion as well as the Card Sorting of Shopping Motivation methods. However, because the card sorting method also resulted in dialogue that was captured during the researcher's interaction with the participants, qualitative data from this method was also integrated into the holistic analysis mentioned above.



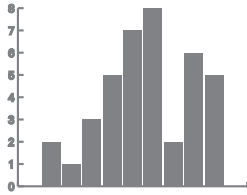
# Qualitative Analysis



**Affinity Diagram:** First introduced in the early 1950s by Japanese anthropologist Kawakito Jiro, the affinity diagram (sometimes known as the KJ Method after its creator) is used to discover meaningful groups from raw data. According to Kawakito, before the introduction of the affinity diagram, scientific methods for sorting through raw data “neglected the holistic integration of qualitative data.”

Because of the symbiotic relationship between the different aspects of retail experiences, the qualitative data collected during the research phase of this project was analyzed collectively. After transcribing all the qualitative data onto post-its, the design researcher made the decision to use the synthesized Framework of Retail Experience as a backdrop on which to analyze the data. To begin, the design researcher created a large-scale version of the researcher’s framework. The design researcher then worked to find patterns among the data points. Using color-coded post-it notes, the design researcher then grouped the ideas by similarity or relationship within the appropriate area of the Framework. Some categories were naturally the same as those from my Framework while other categories needed new headings not found in my Framework.

# Quantitative Analysis



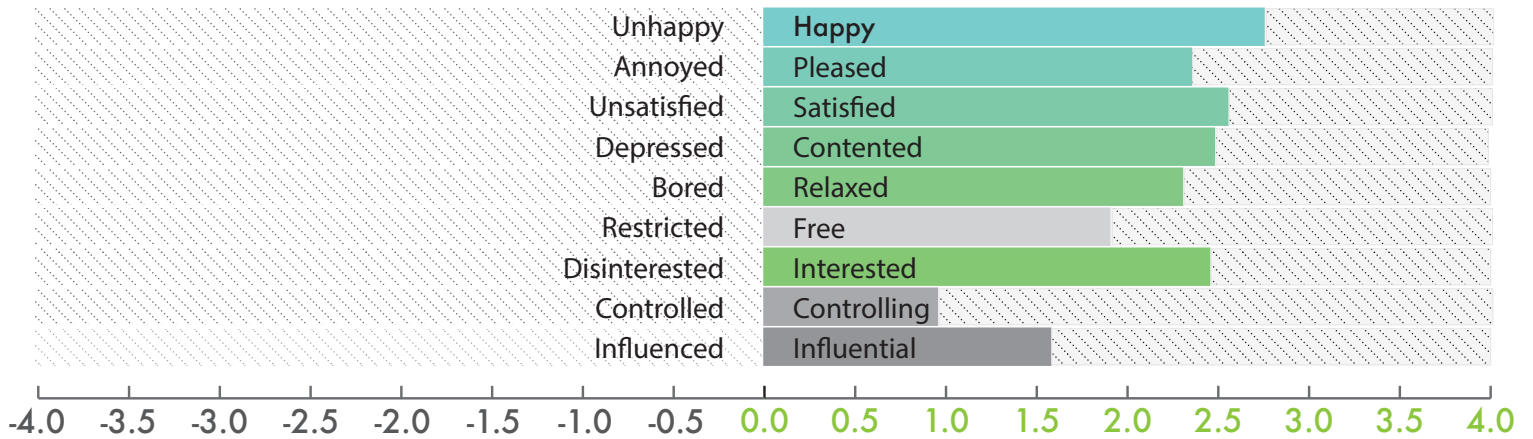
**Quantitative Analysis:** Taking the information collected from the Likert-Type Measure of Emotional State conducted at Circle Centre Mall, the design researcher created a spreadsheet of all the data. From this data, the average was found for each pair of words. From these averages, the overall average was calculated.

Methods for quantitative analysis were also employed to analyze the results of the card sorting method. While this method also generated qualitative data that was integrated into the affinity diagram mentioned previously, it was necessary to rank the results of the card sorting to better understand shopping motivation. Taking the information collected from the Card Sorting method, which asked consumers to rank the different shopping motivators from first to last, a formula known as the Borda Count was used. With the Borda Count, individuals are asked to rank “candidates” in order of preference. Votes are then counted by giving “candidates,” (n), points equal to the number of candidates lower than them so that a candidate who comes in first receives n-1 points.

The data collected was translated using the above formula and then aggregated the points for each motivation (or “candidate”). It was then possible to rank each motivation based on points in descending order. It should be noted that Value, which ranked first as a motivation for female shopping, ranked ten points higher than the second biggest motivator, Adventure. Out of the possible seven positions, those motivators that fell between 2-6 had only a one or two point difference. It is also significant that Role, which came in 7th and last, ranked ten points lower than Social, which came in 6th place.

◀ **Figure 17:** Results of Quantitative Analysis

## SEMANTIC DIFFERENTIAL MEASURE OF EMOTIONAL STATE: Results



**Average Overall Rating of Current Emotional State During Retail Experience: 2.144**

## RANKING OF SHOPPING MOTIVATIONS: Results

MOTIVATION	RANK	POINTS
Value	1	58
Adventure	2	48
Efficiency	3	47
Gratification	4	45
Idea	5	43
Social	6	42
Role	7	32

### BORDA COUNT:

n=number of candidates  
n=7

RANK	FORMULA	POINTS
1st	(n-1)	6
2nd	(n-2)	5
3rd	(n-3)	4
4th	(n-4)	3
5th	(n-5)	2
6th	(n-6)	1
7th	(n-7)	0

# Developing New Insights

Through qualitative and quantitative methods of analysis, the design researcher was able to come to several conclusions about the current landscape of brick-and-mortar retail experiences. **One insight that stood out during the sensemaking process was consumer's concern with organization.** Organization can be broken down into two areas: finding a store within a large mall or shopping complex and finding a product within a store. This, coupled with the results of quantitative research that show the importance of efficiency on female shopping motivations, helped to highlight the importance of finding a solution to remedy the organizational discrepancies that currently exist.

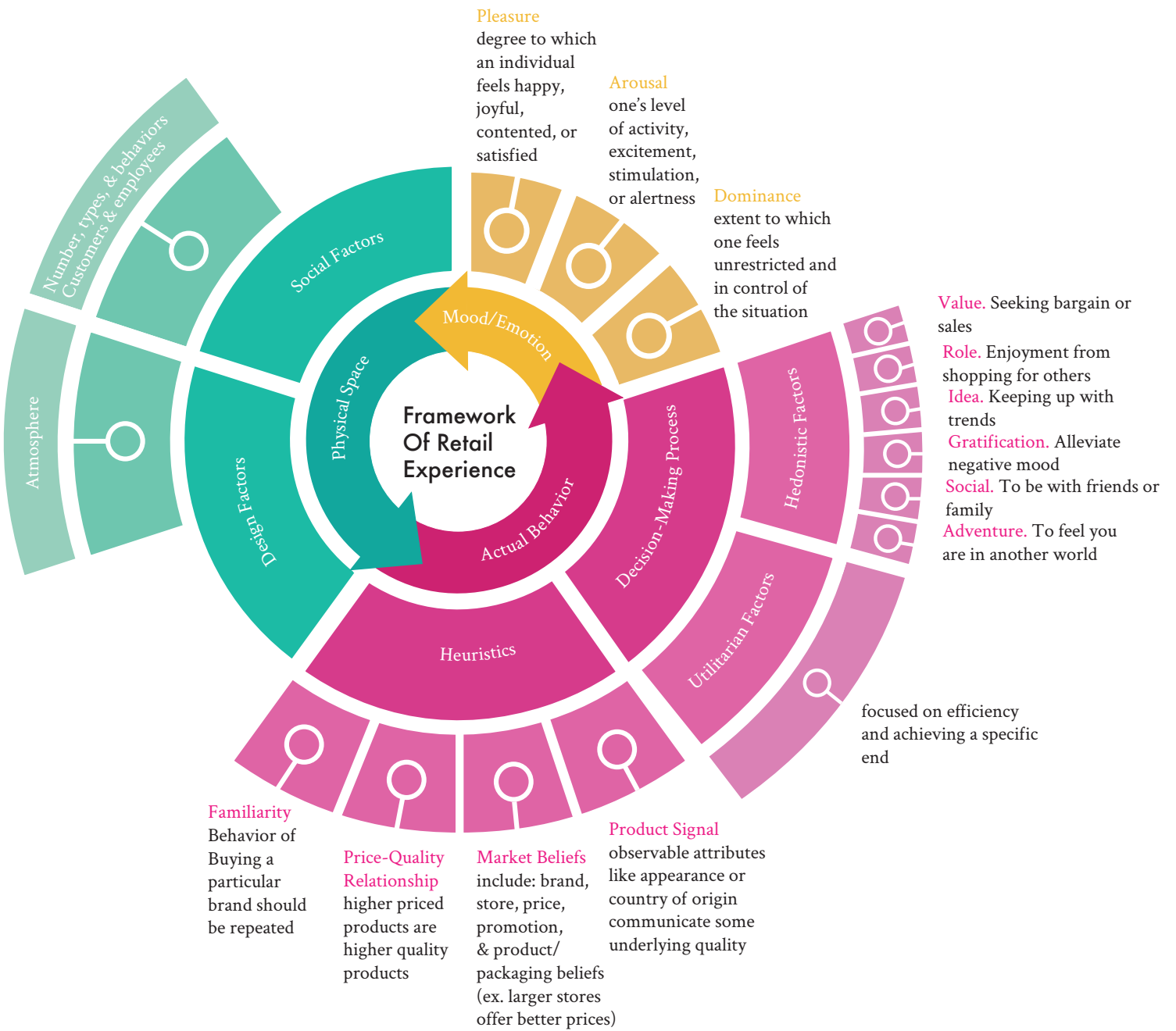
Additionally, many shoppers mentioned the importance of in-store and outside sources of inspiration on making purchases. When considering the relationship between inspiration and organization, one can see the opportunity to create a tool that would integrate these two concepts. Both areas are about finding something; inspiration is about finding something stimulating that leads to the need or desire for a product, and organization is about finding the desired or needed product. Combining these two ideas could result in a device that helps people to find inspiration and then locate the product that is the result of that inspiration.

## Answering Sub-Questions 1-4

The insights from analysis also helped to generate answers for sub-questions 1-4. Through qualitative and quantitative analysis, the design researcher was able to refine the previously synthesized Framework of Retail Experience. Previously based only on secondary research, the results of primary research aided in expanding and refining the different aspects of the Framework of Retail Experience. By working to better understand retail behavior through the lens of the Framework of Retail Experience, this project was also able to come to add to existing knowledge of consumer behavior. After conducting primary research with shoppers and retailers, this project was able to better define how female shoppers interpret and behave in retail spaces. In particular, research helped to uncover the specific nuances of female shoppers within the aspects of the Framework of Retail Experience: Physical Space, Actual Behavior, and Mood/Emotion.

### 1. How might qualitative design research help to refine my Framework of Retail Experience?

After analyzing the data from the collection period of this project, it was clear that gaps existed in the synthesized Framework of Retail Experience, particularly concentrated in the aspect of "Physical Space." By looking at the naturally occurring categories that stemmed from primary research focused on a broad range of retail environments (boutiques, department stores, independent resellers, chains, etc.), it was clear that certain areas were better defined than others. By contrasting these naturally occurring categories with the pre-existing categories of the synthesized Framework of Retail Experience, this project was able to then refine a framework that is both transferable to other aspects of this project as well as future projects.



▲ **Figure 18:** Refined version of Davis' Framework of Retail Experience

Looking at the Framework of Retail Experience, the sub-categories “Social Factors” and “Design Factors” can be further broken down within the aspect of “Physical Space.” The already existing subdivisions of these sub-categories do little to encompass the truly dynamic nature of the aspect Physical Space on the holistic retail experience. To better understand the attributes of Physical Space that play a part in the consumer’s retail experience, both sub-categories have been further refined. Additionally, the aspect of “Actual Behavior” has been refined. “Utilitarian Factors” now includes Functionality, in addition to Efficiency. “Hedonic Factors” now includes Recreation.

## Design Factors

Within the sub-sub-category of Design Factors, the characteristics of the retail atmosphere have been broken down to include the tactile, visual, olfactory, and auditory sensory elements. The ability to indulge in a multi-sensory product experience is one component that provides a competitive advantage to the physical shopping experience. From primary research, one of the main benefits uncovered regarding shopping in a physical store as opposed to online shopping was the ability to use tactile and visual inputs to make decisions. While primary research shows that online shopping is quicker and more convenient than traditional shopping, one of the downfalls of technology is the inability to participate in direct exploratory behavior regarding the senses. In addition to these primary findings, secondary research also supports the above conclusions, proposing that vision and touch...dominate product perception and experience in real life situations (Schifferstein & Cleiren 2005).

In addition to the impact of sensory elements on atmosphere and design factors within the retail space, primary research also alluded to the importance of indoor navigation, or wayfinding, on the design of physical spaces. Wayfinding is “the process of determining and following a path or route between an origin and a destination” (Golledge: 6). One complaint that was cited by multiple consumers was the difficulty in finding a specific store or locating new stores with similar merchandise within a large retail complex (i.e. a mall). Even more of a concern for consumers was the difficulty of locating products and sizes within the physical retail environment. Within the framework, these two concerns (the ability to find merchandise within a store and the ability to find a store within a building) were coupled into the sub-sub category Wayfinding.

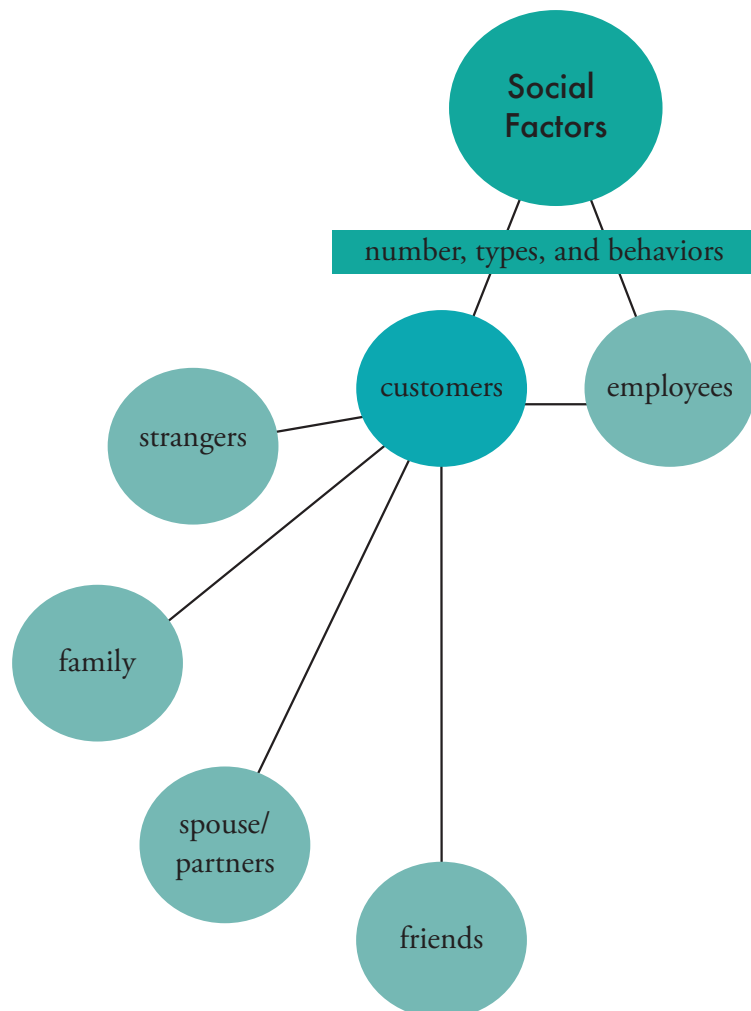
Lastly, the sub-category “Design Factors” has now been expanded to include the sub-sub-category System Elements. Within the retail experience, there are several physical elements that are crucial to the overall shopping experience. The importance of these elements on the retail experience were noted during primary research and included: the checkout experience, the fitting room experience, and visual displays (e.g. mannequins and inspiration boards).



## Social Factors

After analyzing the primary research from this project, it was also necessary to expand the sub-category “Social Factors.” Previously this category had been broken down to “number, types, and behaviors of consumers and employees.” While this sub-sub category is definitely relevant for explaining the social interactions that occur within the retail space, the relationship between consumers and staff/employees is not the only association occurring during the retail experience. Female shoppers frequently interact not only with staff, but also family, friends, spouse/partners, and strangers.

These interactions are integral in not only the social atmosphere of Physical Space, but also the Actual Behavior and Decision-Making Process. Asking and giving feedback or advice is an important decision making tool that female shoppers use, and this interaction is not always directed at staff. Thus, to expand on the social dynamics that occur in the physical retail environment, the Social Factors sub-category of Physical Space has now been expanded to include: family, friends, spouse/partners, and strangers. Because of the overwhelming importance put on the opinions of partners or spouses, the sub-sub-category “spouse/partners” was given its own heading outside of what shoppers refer to as “family” (mostly female family members like mothers, grandmothers, and sisters).



◀ **Figure 19:** Diagram of Social Factors in Retail Experiences

## Utilitarian & Hedonic Factors

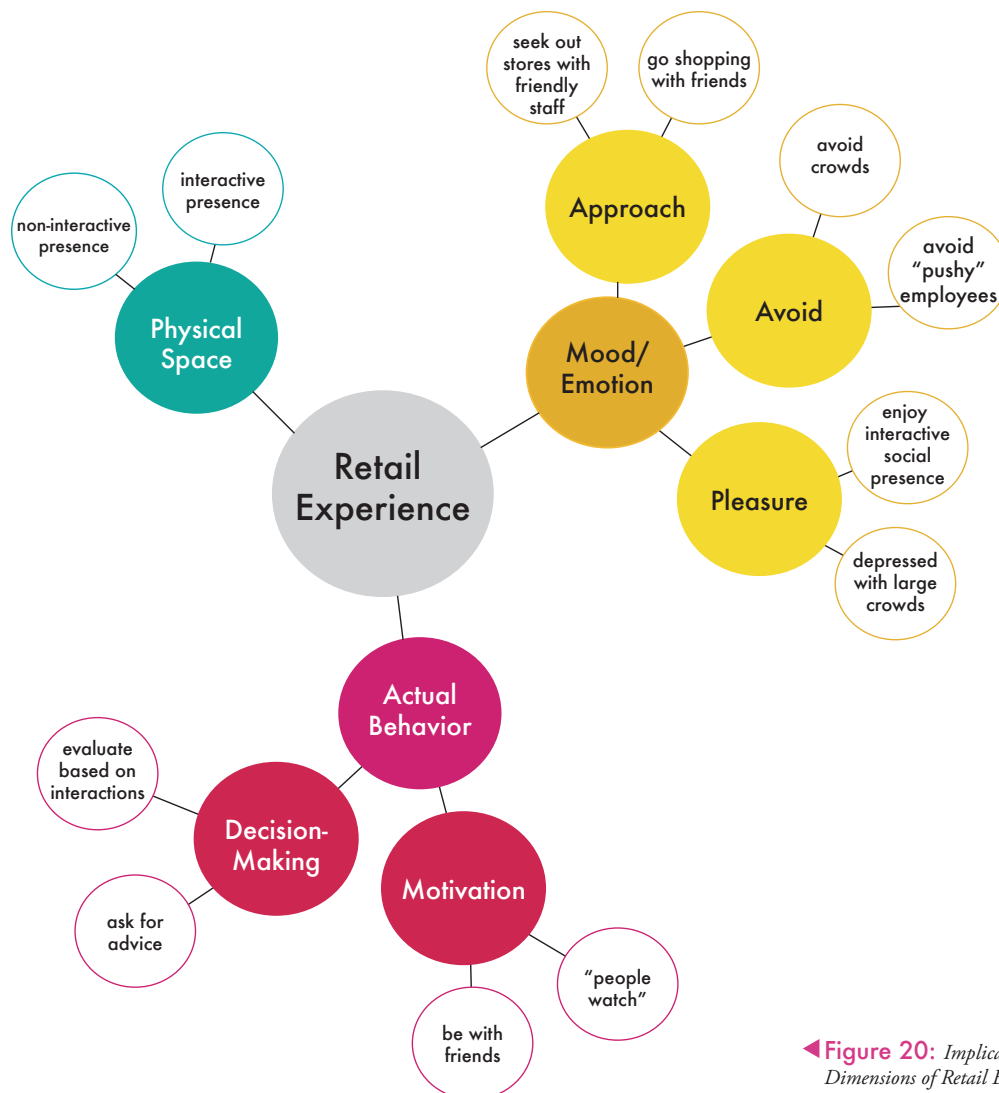
The design research method card sorting was particularly valuable in helping to refine the categories within the aspect of “Actual Behavior.” Through primary research with retailers and female shoppers, the design researcher was able to refine the existing framework in order to better define the motivating factors behind female shopping behaviors. From qualitative and quantitative research, it was determined that female shoppers agreed with existing research discussing hedonic and utilitarian motivation. However, research also pointed to the need to expand the existing categories.

In addition to the existing seven categories of hedonic and utilitarian motivation, shoppers also alluded to the motivations of functionality and recreation. While primary research uncovered that female shoppers are primarily motivated by hedonic factors, it was determined that shoppers were also influenced by what the project will define as “Functionality.” Functionality is a utilitarian motivation where female shoppers are motivated by the need to fulfill a need derived from an event or change in season. For example, in women cited the need to shop for boots or coats during the winter, a motivation that is governed by seasonal needs.

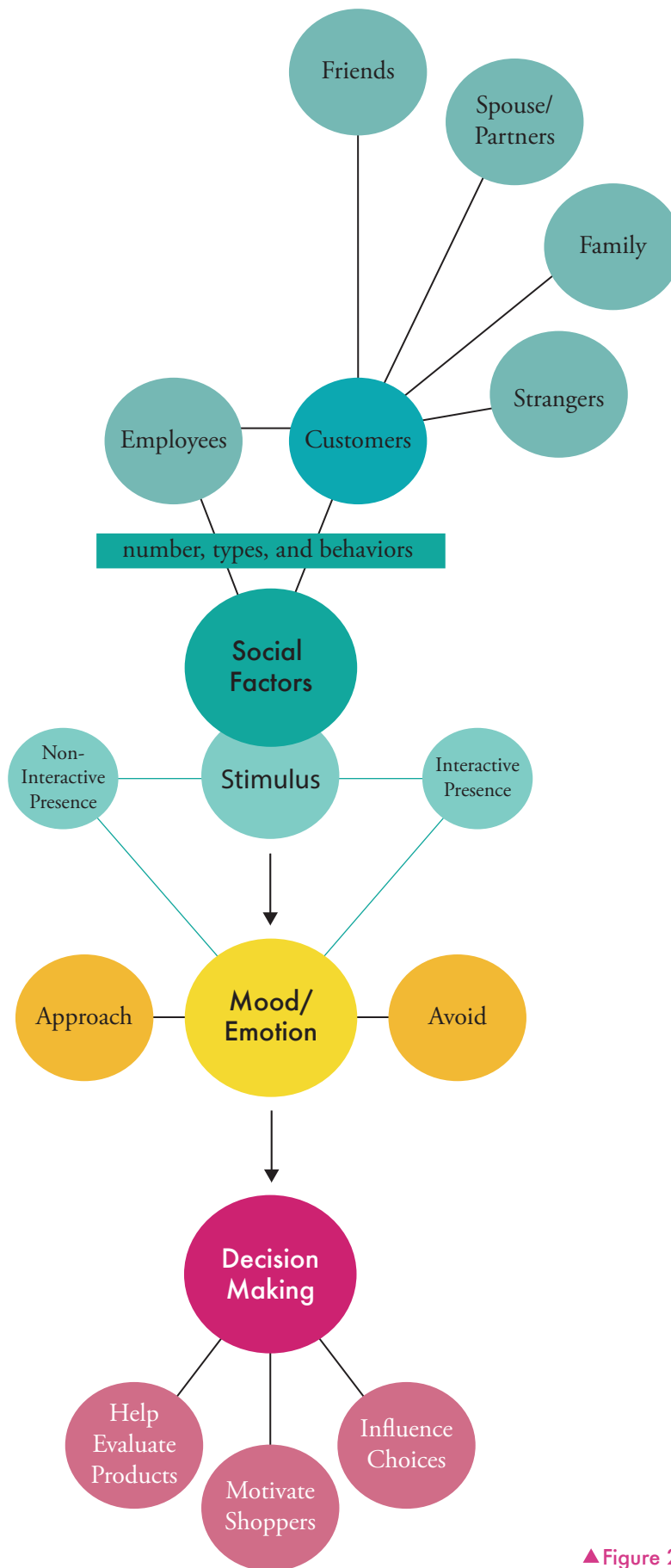
Primary research also helped to expand the existing categories of hedonic motivation. Female shoppers also mentioned the hedonic motivation to shop for “recreation.” The design researcher defines recreation as the shopper’s motivation to engage in a retail experience as a leisure activity done for enjoyment outside of normal duties. Gratification, which was defined by Arnold and Reynolds as shopping as a tool to generate a positive feeling, treat oneself, or feel better, would be the closest in comparison to “Recreation” (Arnold & Reynolds 2003). However, Recreation is not the quest for enjoyment, like Gratification. Recreation is rather the pursuit of leisure, which can result in enjoyment. Alternatively, gratification is shopping solely to arrive at a positive feeling. Although these two motivators are similar, enough evidence was generated to support the addition of a new dimension of hedonic motivation.

## 2. How might social interactions during the retail experience affect consumer-buying behavior?

Social interactions are an integral part of the retail experience, whether those interactions refer to an interactive social presence, such as when a consumer asks an employee for help, or a non-interactive social presence, such as the affect of a certain number of people in a store. Social influence plays an important part in the consumption process (Bearden and Etzel 1982; Moschis 1976). While the framework for this project does highlight the impact of social factors on the interpretation of Physical Space, research clearly shows that social implications crossover and impact both Actual Behavior and Mood/Emotion. The affect of a social presence can affect what Mehrabian and Russell refer to as the response taxonomy of an individual (Billings 1990). These individual emotional reactions to the retail environment are categorized under Mood/Emotion. In addition, the desire to interact with others also plays a key role in hedonic shopping, or fulfilling “subjective and experiential” needs (Solomon 2010: 132).



◀ **Figure 20:** Implications of Social Interactions on Dimensions of Retail Experiences



▲ **Figure 21:** Relationship between Social Factors as stimulus for mood and decision making

## Physical Space

To begin, social factors play an important role in influencing how female consumers interpret the physical retail space. Before engaging in primary research, the sub-category “Social Factors” (within the Physical Space dimension of the Framework of Retail Experience) was detailed as the “number, types, and behaviors of consumers and employees.” After engaging in participatory research, this project was able to refine this sub-sub category (as discussed in Sub-Question 1). After analyzing the data, it was clear that social interactions within the physical retail environment stemmed beyond those between consumers and employees. The interactions between consumers and friends, family, spouses/partners, employees, and strangers must all be considered when trying to understand social factors in the physical space.

By elaborating on the human factors that make up the physical retail environment, one can better understand how these factors support specific social situations. Friends, family, spouses/partners, strangers, and retail employees not only provide basic company, they also contribute to specific interactions. For example, shopping in a physical retail environment allows a person to ask the advice of people around them. While placed within the “Social Factors” sub-category of Physical Space, asking and receiving advice from people in the physical space was one of the most mentioned tools for decision-making.

## Mood/Emotion

With a more refined understanding of the interpersonal relations within the physical retail space, one can see how social interactions are interconnected with a shopper’s mood and emotions. According to the Mehrabian-Russell Model, which was synthesized into the Framework of Retail Experience under the aspect Mood/Emotion, the emotions affected by a physical store can be described in three states: pleasure, arousal, and dominance (Billings 1990). Through primary research, one can better understand the social factors that can help predict a consumer’s emotional reaction to a physical environment.

This project used “emotional collages” as a method to better understand how retailers, employees, and consumers react to the physical retail experience. By choosing specific images, like an empty store, a crowded shopping mall, a busy sale section, and friends shopping, participants were able to use photos to stimulate their memories of the shopping experience. These findings led to insights surrounding the three sub-categories of Mood/Emotion.

One sub-category of Mood/Emotion is “Dominance” which is understood as a consumer’s approach or avoidance behavior (ex. the desire to remain in or to avoid an environment). Through research, one can see the affect of social interactions, both interactive and non-interactive, role on a consumer’s approach or avoidance behaviors. As mentioned previously, non-interactive social presences, such as large crowds, are a contributing factor to a person’s avoidance behavior. Many shoppers cited the number of patrons within a store as being their chief concern when shopping in a physical space. Words used to describe the emotional reaction to crowds included “depressed, restricted, and despairing.” In order to avoid crowds, many shoppers stated they either preferred to shop online or at least valued the online retail experience’s ability to allow one to bypass crowds.

Research also points to the influence of social interactions on the degree to which an individual feels happy, joyful, contented, or satisfied; these emotions are categorized into the “Pleasure” state of Mood/Emotion. By using an affinity diagram to analyze data within my Framework of Retail Experience, specific references to key words, like happiness or satisfaction, were sorted into the Pleasure domain of Mood/Emotion. From this analysis, one can observe that many elements contribute to overall satisfaction, whether it be the feeling of empowerment from making a purchase, the happiness felt from finding what you were searching for, or the contentedness of shopping with friends. This last point specifically points to the link between the pleasure felt from shopping and an interactive social presence.

## Actual Behavior

However, pleasure is not only a result of the shopping experience but a motivator for the experience itself. Happiness, in addition to being the result of a pleasurable emotional reaction to shopping, can also be linked to hedonic factors that motivate a person to shop in the first place. Because of this distinction, one can also see the affects of social interactions on Pleasure within the “Hedonic Factors” sub-sub category of Actual Behavior. The idea that people are motivated to shop because of the desire to be with family or friends is not only a key theory in consumer research, but also an important finding from primary research. Consumers stated that “shopping is about being in the company of those you love” and that “going shopping is something to do with friends and family” (Primary Research: Scenario Surveys). According to Maslow’s Hierarchy of Needs, this motivation to use shopping as a tool to support social interactions may be related to the “belongingness need,” or the desire to build or maintain attachments and friendships as well as avoid feelings of social isolation or separateness (Rouse 2007).

Another hedonic motivator for shopping is to keep up with trends. This dimension of hedonic shopping is referred to as “Idea” (Solomon 2010: 132). In addition to staying “stylish and modern” by purchasing the latest trends, many shoppers are motivated to visit physical stores in order to engage in non-interactive social relations, or “people-watching” (Primary Research). “People-Watching” provides shoppers with a view of what other individuals are wearing and purchasing without direct interaction. In addition, because shoppers are aware of the desire to “people-watch,” visiting a physical store allows for shoppers themselves to display their knowledge of new trends and be watched by others. This latter form of discreet subjectivity can support self-esteem needs, supporting yet another of Maslow’s hierarchy of motivators (Rouse 2007).

### 3. How might the use of qualitative research help uncover consumer behavior trends in the actual decision-making process?

The way in which individuals evaluate and select a product varies widely depending on a range of elements. The behaviors that are displayed by consumers when choosing a product is represented under the aspect Actual Behavior within my Framework of Retail Experience. This behavior can be rational or irrational, based on subjective or utilitarian motivations, and can be affected by a number of mental rules-of-thumb (heuristics). Through primary research, one can better understand the trends that help guide consumers through the decision making process.

When trying to understand the decision making process that consumers take when purchasing a product, consumer researchers typically apply a rational perspective to the decision-making model. This model states that consumers recognize a problem, seek out information about that problem, evaluate alternatives, choose a product, and then reflect on the outcome of that choice.

#### Past Decisions

From primary research, one can better understand the elements that female shoppers use when moving through this decision-making process. Firstly, outcomes of past decisions weigh heavily on consumer behavior. Whether shoppers are motivated to seek out a specific purchase in order to fill gaps in their current wardrobe, evaluate alternatives based on a product's ability to match previously purchased items, or choose a product based on style decisions of the past, the impact of previous purchasing decisions on new purchases is extremely influential.

Past decisions stem beyond just clothing and can also include accessories such as shoes, jewelry and other goods. When shopping, primary research shows that many female shoppers evaluate products based on the item's ability to match the accessories they already own. For example, when deliberating over two dresses, a female shopper may choose the dress they already have matching accessories for rather than purchasing the dress that would need new accessories.

## Physical Attributes

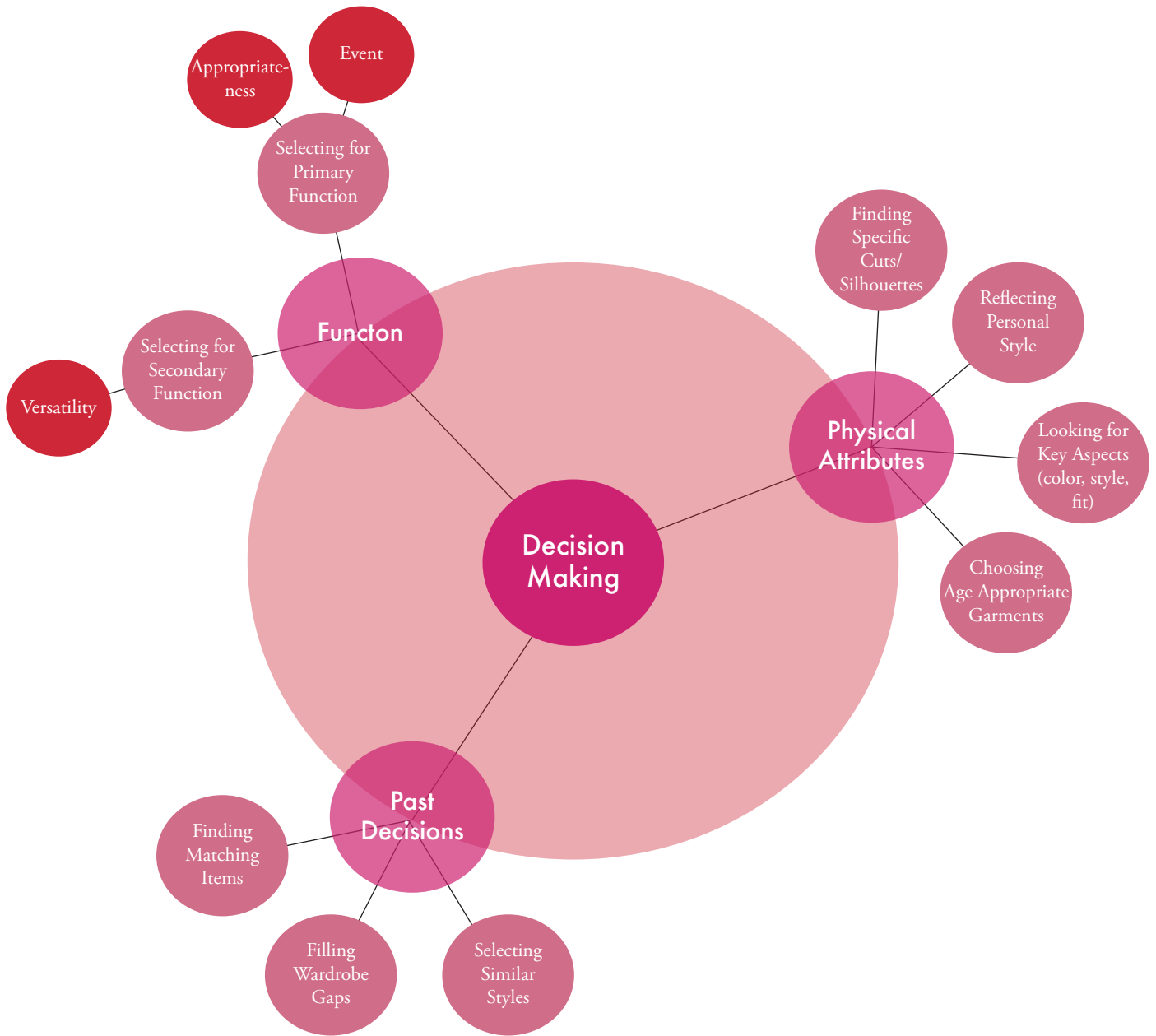
Physical attributes of a product are key to the decision making process, and can include color, cut, and style. While these physical attributes can be linked to specific seasons or trends, they can also be tied to past decisions. For example, over time, women will build up a “personal style” for themselves. When shopping for new items, female shoppers will reflect on their personal style choices in order to seek out products with similar features. In addition, as women get older, they often feel the need to seek out products that they feel are “age appropriate.” Similarly, many women base decisions around whether or not a product reflects gender specific qualities, such as having a “feminine” silhouette or color. In addition to color, cut, and style, fit is also a very important physical attribute of a garment that can influence the decision making process. Fit encompasses not only size, but also the ability of a garment to flatter a person’s unique figure while also maintaining a certain level of comfort. Because fit is such an important element in the decision making process, the physical retail experience is able to maintain a competitive edge over online sellers because of the ability for consumers to engage in a multi-sensory product experience. Being able to use tactile input to make decisions about fit is one design factor that the online retail environment cannot account for.

## Function

Function is also a very important factor for female shoppers when making a decision. Function can be divided into two categories: main function and secondary function. The main function of a product can be better understood by the event or occasion to which a product will be worn. When shopping, the need to find an outfit for a specific occasion can serve as a utilitarian motivator. In addition, the main function of a product can also affect the evaluation of a product and the final purchase. One of the most commonly cited factors when making a decision was “appropriateness” and the product’s ability to fit a specific occasion.

The secondary function of a product can be understood as the versatility of a particular good. Being able to not only serve the primary function and be appropriate for a specific goal, but also being able to transition between occasions is very important to consumers. Although clothing versatility is often broken down into five categories (Design, Color, Fabric, Function, and Care), this project defines versatility as the ability to function in multiple settings and to be paired with multiple items in a person’s wardrobe (Young 1993). A person’s general lifestyle, work environment, and wardrobe all affect the degree to which a product can be considered versatile. After reflecting on past decisions and interpreting physical attributes of a product, consumers will often think about the versatility of a product. Choosing a product that is appropriate in multiple settings, such as day-to-night or business-to-casual, is very important to consumers.





▲ **Figure 22:** Trends in Female Decision Making

## 4. What factors influence hedonic motivation in consumer buying behavior?

In order to understand the shopping experience, consumer researchers have directed attention to the emotional aspects of shopping in order to understand both utilitarian and hedonic perspectives. Traditional research defines the utilitarian aspect of consumer behavior as being directed toward satisfying a functional or economic need (Babin et al. 1994). On the other hand, hedonic aspects of shopping are “subjective and experiential” (Solomon 2010). The hedonic aspect of shopping relates to the emotional processing and evaluating of the retail environment. According to Arnold and Reynolds, there are six categories that motivate shopping: (1) adventure, (2) social (3) gratification, (4) idea, (5) role, and (6) value (2003). These categories link the shopping experience with the pleasure or enjoyment felt from shopping.

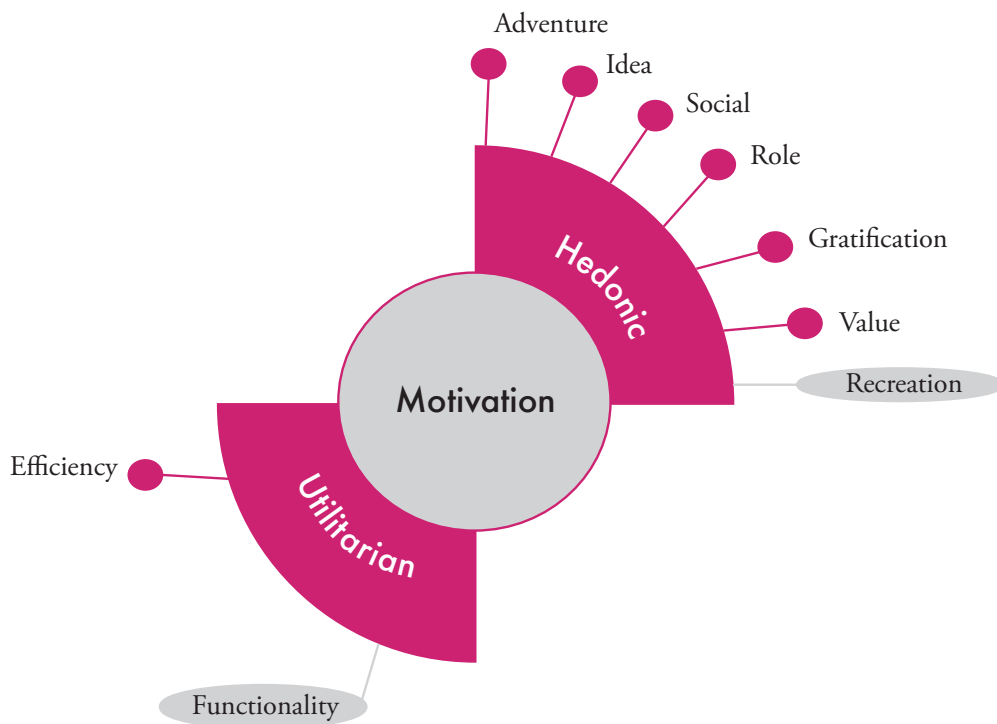
During the collection period of this project, design research methods were selected that specifically targeted the behavioral responses of female shoppers towards the retail experience. The Framework of Retail Experience, which was synthesized from leading consumer researchers at the start of this project, was referenced in order to guide the selection of methods. Card sorting was selected as a targeted method to better understand female shopping motivations. This method used qualitative research to prompt female shoppers and retailers to rank the seven shopping motivators (Adventure, Social, Gratification, Idea, Role, Value, and Efficiency) from most to least. However, because of the interdependent nature of the framework and the shopping experience, methods that were targeted towards other dimensions of the retail experience also helped influence this project’s understanding of motivation.

Using qualitative research, this project was able to better define the motivating factors behind female shopping behavior. By engaging with female shoppers and retailers, it was understood that female shoppers agreed with existing research discussing hedonic and utilitarian motivators. However, in addition to the existing seven categories of hedonic and utilitarian motivation, shoppers also alluded to the hedonic motivation to shop for “recreation.” Primary research from this project will define recreation as the shopper’s motivation to engage with the retail experience as a leisure activity done for enjoyment outside of normal duties. Gratification, which was defined by Arnold and Reynolds as shopping as a means to create a positive feeling, treat oneself, or feel better, would be the closest in comparison to “Recreation” (2003). However, Recreation is not the pursuit of enjoyment, like Gratification. Recreation is the pursuit of leisure, which leads to enjoyment, and Gratification is the pursuit of enjoyment. Although similar, enough evidence was found to support the need for an additional dimension of hedonic motivation.

In addition to hedonic variables, this project was also able to better define the utilitarian motivations of female shoppers. In addition to Efficiency, the defined aspect of utilitarian motivation found within the Framework of Retail Experience, primary research was able to expand upon existing knowledge. While primary research uncovered that female shoppers are primarily motivated by hedonic factors, it was determined that shoppers were also influenced by seasonal needs or “Functionality.” For example, in winter, motivation may vary based on the need to find options that are functional according to weather.

Additionally, this project was able to add to existing documentation of hedonic and utilitarian shopping by evaluating and ranking the dimensions of motivation. As discussed above, the method card sorting was used to rank existing aspects of shopping motivation. Each card displayed a dimension of motivation with the definition below. Consumers and retailers, within the context of the retail experience, were asked to rank the cards from most motivating to least motivating based on the collective experience of past shopping trips. It was discovered that the desire to find a sale or seek a bargain was the biggest motivator for female shoppers. Keeping up with trends, Idea, and using shopping as an event/activity to socialize with friends and family, Social, tied in second as a source of motivation for shoppers.

From this research on shopping motivation, this project was able to expand the previously synthesized Framework of Retail Experience to include new aspects of utilitarian and hedonic motivation. In addition to Arnold and Reynolds six dimensions of hedonic shopping motivation, the Framework of Retail Experience also now includes “Recreation” as a motivation. Also, the utilitarian aspect of female consumer behavior now includes Functionality, in addition to Efficiency.



▲ **Figure 23:** Refined Understanding of Utilitarian and Hedonic Shopping Motivations





# SYNTHESIS

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# Overview of Synthesis

Following Analysis, the design process begins to move away from the current situation and “what is” into Synthesis, the period of generating concepts of “what could be” (Dubberly 2008). According to Jon Kolko, “Designers make explicit the normally implicit processes of sensemaking and framing during design synthesis, as they attempt to make meaning out of data through interpretation and modeling” (Kolko 2010). During Synthesis, designers employ methods that allow them to delve deeper into the connections forged during Analysis in order to develop plans for the future. While still working in the abstract, Synthesis provides the opportunity for designers to begin to reflect on how insights from “what is” can be turned into potential solutions.

Synthesis is the period of the design process where the designer begins to generate ideas for the future. It is part of the larger design process whose goal is to develop new and better artifacts. Design synthesis is an abductive sensemaking process of manipulating, organizing, pruning and filtering data in an effort to produce information and knowledge (Kolko 2009). This information is then translated into ideas that, once evaluated and selected, move into the Prototyping phase of the design process, where the idea will continue to be refined.

Because this design research project is grounded in a participatory design approach, it was necessary to involve not only the design researcher, but also the users in order to develop a solution that best meets latent needs. The analysis phase of research culminated in the discovery of two key insights: the need to provide a means for consumers to more easily locate products and stores and the need to provide a means to discover new needs through inspiration. Drawing from these insights, methods were selected that helped to begin to formulate potential solutions for the future solution of this project. From the problem/opportunity areas uncovered during Analysis, as well as the relationships and patterns unearthed from inventorying the existing situation, models were created to make sense of all the information. By using internal ideation methods that allowed the researcher to model abstract alternatives to what could be, this project began to bring shape to the final solution. In addition, external methods of co-creation that allow consumers to contribute to the ideation process and participate in generating ideas for solutions created a shared understanding of what could be.

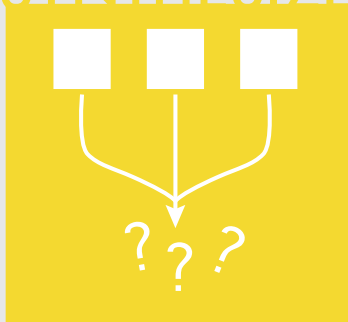
COLLECT



ANALYZE



SYNTHESIZE



PROTOTYPE



**Figure 24:** *Synthesis required the design researcher to select and employ a number of different design research methods. These methods were used for both internal ideation and ideation with external participants. When selecting methods, the design researcher had to be conscious of the audience and context where these methods would be employed.*



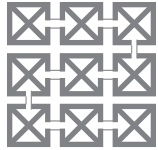
## Internalizing Ideas

To begin to translate the abstract ideas from analysis into potential solutions for this project, the design researcher began by employing design methods that would allow for internal reflection and interpretation. These methods allowed the researcher to visualize and develop a better understanding of what could be in order to transition into ideating with external participants about the form and function of the final device. According to Jon Kolko, “During synthesis, a designer simultaneously attempts to embrace their own unique experiences, emotions, and history—and to embrace someone else’s unique experiences, emotions, and history. These are the elements that are crucial to making sense of the complicated design problem” (Kolko 2010). **Because synthesis is often influenced by the designer’s unique perspective, it is crucial to the design process that ideating also includes the perspective of the end user.** Instead of just designing for the end user, this process is designing with the end user, which allows for a solution that better meets people’s needs.









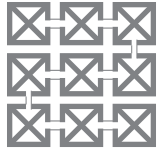
**Storyboarding:** After internally ideating about possible forms and functions of the solution artifact for this project, the design researcher selected the method storyboarding to provide a visual narrative of how the solution might work. Storyboards function by combining disparate elements, bringing together elements of story, character, problems, and solutions in a very basic, familiar format. Storyboards allow a designer to illustrate a story that can be shared with a broad audience. To accomplish this method, the design researcher created an outline of possible interactions. From this outline, the design researcher then began to sketch different visuals, and coming to a consensus about the elements of each step of the storyboard. From these sketches, a formalized storyboard was created that depicted how a female shopper might begin to use the potential device within a retail setting.



## Externalizing Ideas

After internally reflecting on the insights generated from analysis and coming to an understanding of possible forms and functions of the final device, it was necessary to ideate with external participants. Rather than relying solely on the perspective of the design researcher, it was important to understand the perspective of the end user. To do so, the design researcher scheduled another trip to Circle Centre Mall in order to engage with a wide variety of female participants within the retail context. Because prior research had been conducted at Circle Centre Mall, the design researcher was aware of the particular constraints that came with that particular context.

Because many participants were in a hurry, on a lunch break, or only mildly interested in engaging with the project, the methods selected needed to be quick, simple, and able to be completed without much instruction. Because the design researcher would be conducted research alone, the methods needed to allow the researcher to engage with multiple participants at once without being overwhelmed. Due to these constraints, card sorting, a questionnaire, and a storyboard were selected for external ideation.



**Storyboard (In Action):** In order to tell the story of how this project's solution might function, the storyboard created through internal ideation was translated into a larger scale, shareable artifact. The storyboard was commissioned to serve as both a means to invite individuals to participate in subsequent methods as well as a way to communicate the trajectory of the project. The storyboard, with its rich visuals, served as a tool to get participants to approach the table where the design researcher was conducting methods at Circle Centre Mall. Additionally, because the design researcher was alone at the mall, the storyboard served as a way to keep waiting participants occupied while the researcher communicated with those individuals participating in card sorting or a questionnaire.



**Questionnaire:** While generative methods would have been a preferred means of ideating with external participants, the context where research took place required the use of quick and simple methods. For this reason, a questionnaire was developed that required little to no instructions, allowing the researcher to engage with multiple participants simultaneously while still being present for questions or concerns. The questionnaire developed for ideating with female shoppers had several questions. The first two questions focused on presenting short scenarios where participants were asked to reflect on how they would make a decision and the features that would be useful in making that decision. These questions focused on searching and browsing for products. For example, the first question asked participants were presented with a scenario where the shopper needed to buy new jeans. The question then asked participants what features of an interactive device would help make the process easier.

In addition to the first two questions where participants were presented with short scenarios, two additional questions were provided. The third question listed several ideas that were developed during the internal ideation portion of synthesis. Participants were asked to check which features they thought would be useful in the final device. The fourth question asked participants to list any additional features they would like to see in the device that had not been listed in the three prior questions.

This method helped to uncover several key insights. First, participants regularly cited online shopping and social networking sites as examples when listing features they would like to see in the final device. For example, many participants cited a desire for the device to provide personalized recommendations, much like how sites like Amazon.com and Netflix.com provide recommendations for products or films based on previous purchases or viewings. Additionally, participants reaffirmed previously established insights about the importance of inspiration and value on purchasing decisions, stating the need for the device to provide notifications for upcoming sales and new trends.



**Card Sorting:** In addition to taking part in a questionnaire, participants were also asked to ideate on a potential form for the final device. To do so, the method card sorting was used. This method was used during a previous trip to Circle Centre Mall; because it had proven to be an effective method in that particular context, card sorting was repurposed to serve as a method for synthesis. Vector renderings of several different interactive forms were created and listed on separate cards. These forms included: a small touch screen device, a large touch screen device, a smartphone application, a tablet application, and a touch screen station. Participants were then asked to rank the pictures from most desired to least desired in terms of the form of the final device.

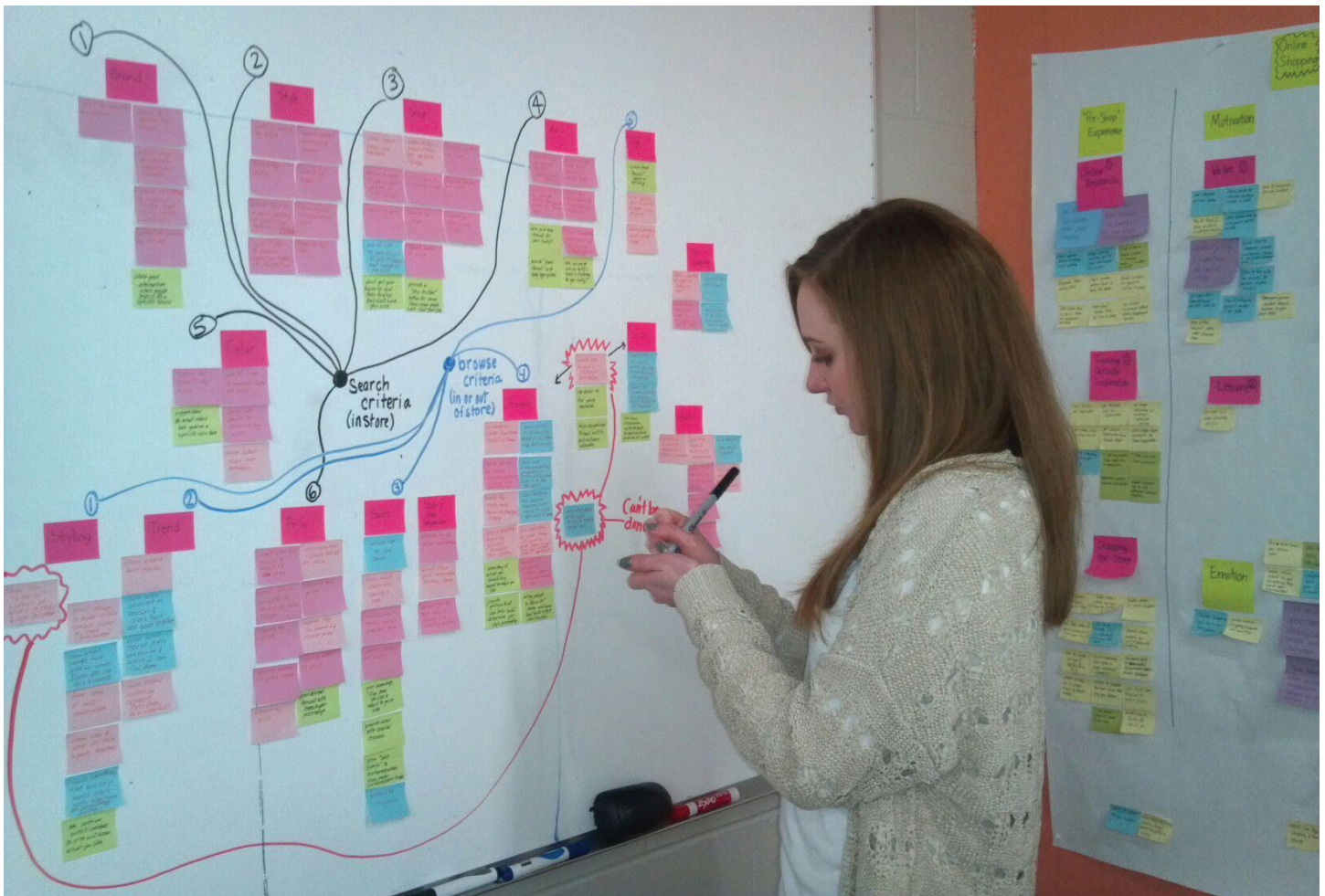
Participants were eager to engage in open dialogue about the form of the final device. Through qualitative and quantitative analysis, it was discovered that consumers were divided between wanting the device to be a small touch screen or a smartphone application. Many consumers also voiced the possibility of having an integrated suite of options, such as a smartphone application, an interactive website, and an in-store device.





**Affinity Diagram:** After conducting primary research in order to establish a better understanding of the needs and desires of consumers, it was necessary to make sense of the information gathered. Because the research at the mall resulted in a pool of qualitative research, the design researcher needed to employ a sensemaking method that would allow for a clearer understanding of the research. To accomplish this goal, the design researcher selected an affinity diagram as the mode for which to make sense of the data, find relationships, and uncover patterns. Similar to the affinity diagram used during the analysis phase of research, the affinity diagram used here required the design researcher to transcribe the data points from the questionnaire conducted at Circle Centre Mall onto separate post-its. After transcribing all the data points, the design researcher then began to sort the ideas, find the relationships, and merge or separate categories.

Once the categories were fashioned in a way acceptable to the design researcher, category names were given using different colored post-its. These categories included search criteria (such as size, color, price, fit, brand, etc.) and browse criteria (such as style, trend, color, etc.). The design researcher then connected the categories under larger headings, sorting the categories into actions that could be completed in-store and actions that could be completed outside of the store.





# Envisioning Ideas

After creating an inventory of possible functions of the final solution for this project, both from the perspective of the user and the design researcher, it was necessary to begin to synthesize these ideas in order for the project to be able to move into the prototyping phase. To accomplish this goal, the design researcher conducted further secondary research in order to support the decisions reached from primary research. In addition, methods that allowed the design researcher to test and evaluate the broad range of features generated from internal and external research were selected. Because of the range of ideas, testing and evaluating the ideas for features allowed the design researcher to select a more refined list of ideas to take into the prototyping phase of research.

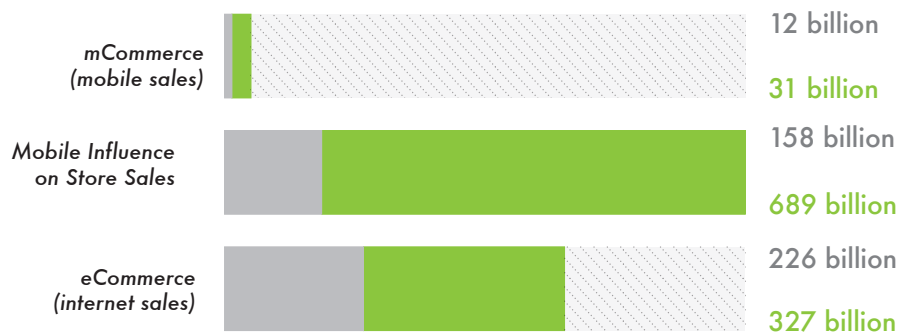


**Secondary Research:** After analyzing the ideas from the methods employed at Circle Centre Mall with consumers, the design researcher discovered that participants were split between what type of device would be the most effective at delivering the features needed to enhance the shopping experience. The two most popular options were divided between a mobile application and a small in-store touch screen device. In order to make a decision between the two devices, the design researcher carried out additional secondary research into in-store devices. The information found about smartphone technology and brick-and-mortar retail revenue growth led to the decision to select a mobile application as the format for the final artifact of this project.

According to market research conducted by Deloitte Consulting LLP, **smartphones influence 5.1 percent of all retail store sales in the United States, which translates to a projected \$159 billion in 2012** (Deloitte 2012). This doesn't include sales that occur on smartphones, known as mCommerce, which is projected to make up \$12 billion in sales in 2012. Research shows that the biggest impact of smartphones isn't direct sales generated through mobile channels, but rather the influence smartphones exert over traditional in-store sales.



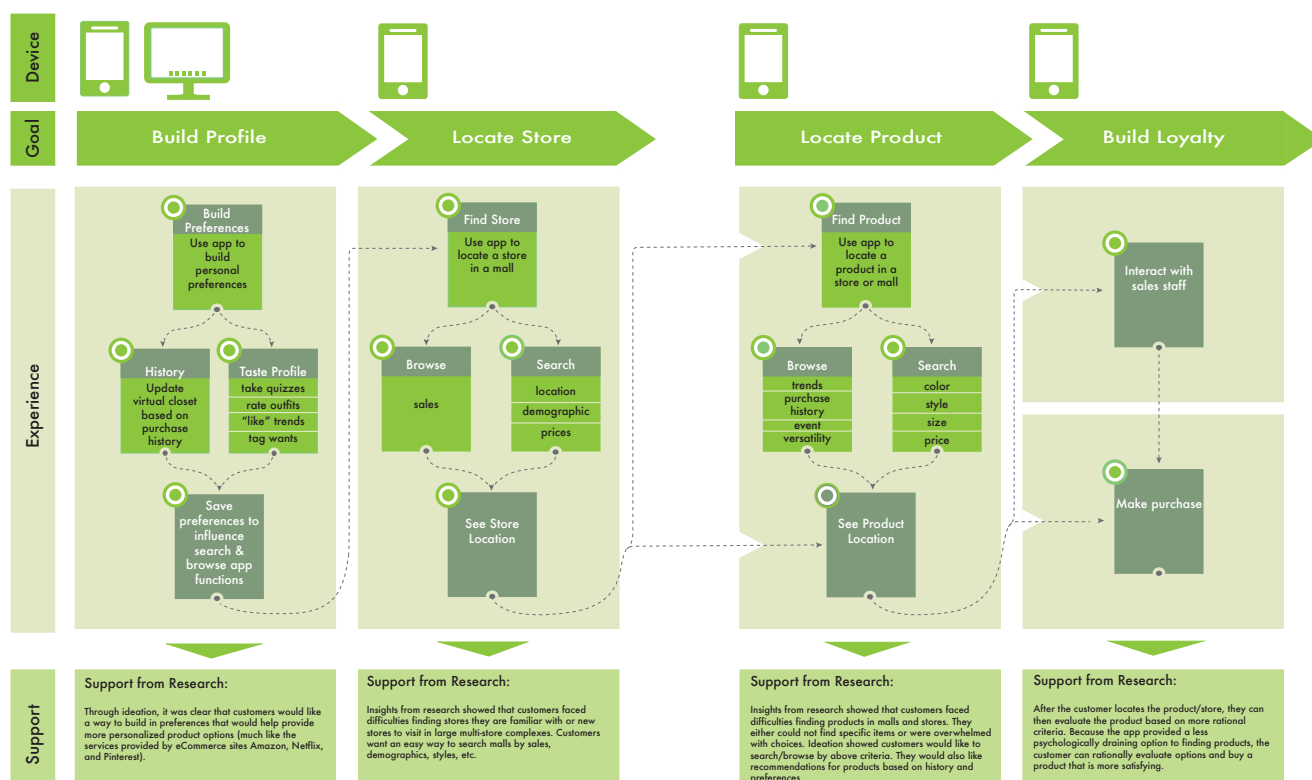
Mobile Influenced Store Sales v. eCommerce and mCommerce Sales  
Sales (\$ in Billion)



▲ Figure 25: Revenue Comparison



Currently, **48% of all people in the United States own a smartphone** (Deloitte 2012). That number increases among consumers who are 25-34 years old: 65 percent own a smartphone and 68 percent use it to help with shopping in a brick-and-mortar retailer (eMarketer.com). This research shows that **mobile devices are already impacting traditional retailers**. By combining the features desired by consumers into a mobile application, this project can take advantage of existing consumer behavior that will be financially beneficial for retailers.



**Consumer Journey Map:** A consumer journey map is a simplified type of visualization where the interactions of a user are depicted through a series of steps. According to the Service Design Tools website, a consumer journey map is an oriented graph that describes the journey of a user by representing the different touchpoints that characterize his interaction with the service. After ideating with consumers at Circle Centre Mall about the desired features of the interactive device, a consumer journey map was selected as a sensemaking method to help organize the ideas into an understandable visualization. It helped to show how features could be interconnected and incorporated to better create a device that supported the main insight from analysis: the need for a solution to organizational problems. This map helped to support that insight while showing how the additional features could be incorporated to create an interactive device that supported personalized services and provided inspirational material to stimulate new product needs. In addition, it helped the design researcher evaluate and test the ideas that were generated through external and internal ideation, in order to select the most appropriate ideas to take into prototyping.



**Persona & Scenario:** After creating the consumer journey map, it was determined that a more narrative method should be employed to refine the solution and better understand how the features would affect the key user segment. To accomplish this goal, two methods were selected: a persona and a scenario. A persona is a fictional character whose profile gathers up the features of an existing social group (ServiceDesignTools.com). A scenario is a short story about a specific user taking a specific course of action. Combining the persona, whose features are an amalgamation of the traits seen in the variety of project participants, with the interactions described through the consumer journey map resulted in a scenario that explored the features of the final solution.

The persona crafted for this project was referred to as Lindsay, a 27-year-old teacher on a budget. Her persona described her as being someone on a tight budget in addition to someone who enjoyed shopping for fun and to socialize with friends. She was characterized as being a young woman who enjoyed keeping up with trends, but because of her profession, she tried to select items that were classroom appropriate. Additionally, the items she purchased needed to be versatile for a night out with friends or a date with her fiancé in addition to being classroom friendly, since her budget was tight. While this persona was not particularly deep in character, the necessary elements, such as motivation and personal style were considered. Financial implications of shopping were considered. Additionally, her age and social behaviors were considered, which influence motivation and buying behavior. Insights from analysis, such as the importance of appropriateness and versatility when evaluating a product, were also integrated into this persona's description.

This persona was then used to play out a short scenario where the persona interacted with the device both in the retail context and outside the retail context. This method combination was useful in understanding what features should be prototyped in the next phase of the design process. Additionally, the outline of events depicted in the scenario played a role in the flowchart developed during prototyping.



## Answering Sub-Question 5

### 5. How might examining characters of online shopping help improve an interactive consumer decision aid (ICDA) made to enhance physical retail stores?

After analyzing the data from primary research, it was necessary to begin to translate the insights discovered into ideas for solutions. To do this, research was conducted at Simon Mall with female shoppers in order to develop ideas for the form and function of the final product of this project. From this research, it was discovered that many shoppers wanted to pull elements from social networking and online shopping in order to build a better physical experience.

Using card sorting and surveys, consumers were prompted with two different scenarios and then asked what functions they would like to see in the interactive device. The first question asked consumers to think about searching for jeans. They were then asked what features would make it easier to find and purchase these jeans. The second question asked consumers to think about browsing for an unknown. They were then asked what features would make it easier to find and purchase this yet to be defined item. In addition, consumers were asked to divulge any additional functions they would like to see in the device that would improve the retail experience.

After analyzing these responses, a common thread was discovered among the information gathered. Many female shoppers cited different online social networking, shopping, and media viewing sites, including sites like Pandora, Netflix, Pinterest, and Shoemint. Consumers would cite a feature they wanted to see in the device and then use an example of an online presence to support the researcher's understanding of their idea.

**One feature that consumers were interested in was the ability to build a “virtual closet”** containing not only past purchases but also future desires. In order to illustrate this feature, participants in the survey pointed to sites like Pinterest, which allows users to “pin” photographs of items they like. Participants voiced the desire to be able to “pin” images of outfits or products they would like to purchase as well as collect photographs of items already owned.

In addition, **consumers wanted the ability to build in personal preferences in order to attain recommendations.** For example, many consumers cited an interest in having the device learn personal preferences and base recommendations on these “learned” preferences. For the second question, when consumers were asked about features they would like to see to help during the browsing period of shopping, participants pointed to Netflix and Pandora as two examples. Female shoppers expressed an interest in having the device learn personal preferences and base recommendations for new products based on these preferences. To support this idea, several consumers gave the example of Netflix and its ability to give recommendations based on films and television shows that the account holder has rated. Similarly, Pandora was given as an example of an online entity with the ability to learn personal preferences. Using Pandora, a listener is able to build a personal playlist based on artists or songs that the user enjoys.





# PROTOTYPE

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# Overview of Prototyping

Prototyping is an integral part of the design process and involves the designer testing ideas quickly and gathering feedback in order to refine these ideas. **Prototyping, like the rest of the design process, is a very iterative stage.** This is the beginning of the design process where the imagined alternatives to the concrete begin to be explored and tested (Dubberly 2008). Through iteration, the designer is able to “play” with the ideas developed during Synthesis. The designer is able to improve the previously developed concepts in order to better understand “what could be.” This phase of the research project is involved with testing and refining the final solution in order to design a final artifact that best meets people’s needs.

Because this project will be working with emerging technology, it will be necessary to draw upon prototyping techniques typically used by interaction designers. The prototyping phase will draw from the methods completed during Synthesis. The Consumer Journey Framework and the Scenario will play in an integral role in influencing prototyping methods. This project will use the models of what is to refine a solution using wireframes and flowcharts. Methods like wireframing will be useful in underlying the conceptual form of the final solution, as well as in developing a more tangible grasp of the final artifact’s functions. Working with wireframes, the prototyping phase of this project will aim to engage with consumers in order to adapt and evolve the solution to better meet people’s needs.

The methods chosen during Prototyping will help to refine the final high-fidelity prototype that will serve as the solution for this project. This stage of the design process will allow the researcher to touch on information design, navigation design, and interface design. By taking an iterative approach to this project, the researcher will be able to deliver a high fidelity wireframe that matches the design of the potential solution and documents the functionality of the artifact.

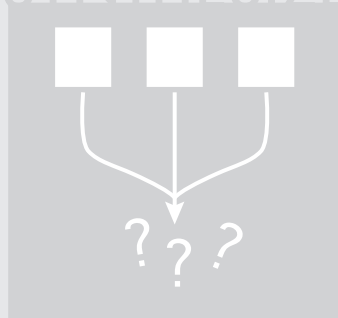
COLLECT



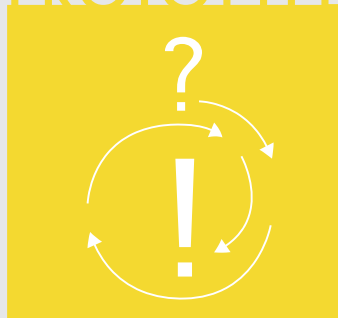
ANALYZE



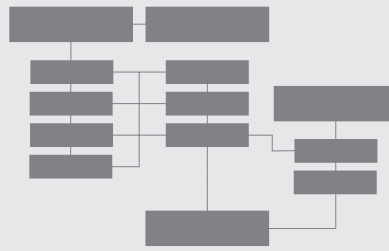
SYNTHESIZE



PROTOTYPE



**Figure 26:** *Because of time constraints and other variables, the design researcher selected two methods that would support each other in the development of the mobile application. To begin, the researcher used a flowchart to visually show the device's process. This was then translated into a more interactive medium when the design researcher began to build wireframes.*



Flowchart



Wireframe Sketch

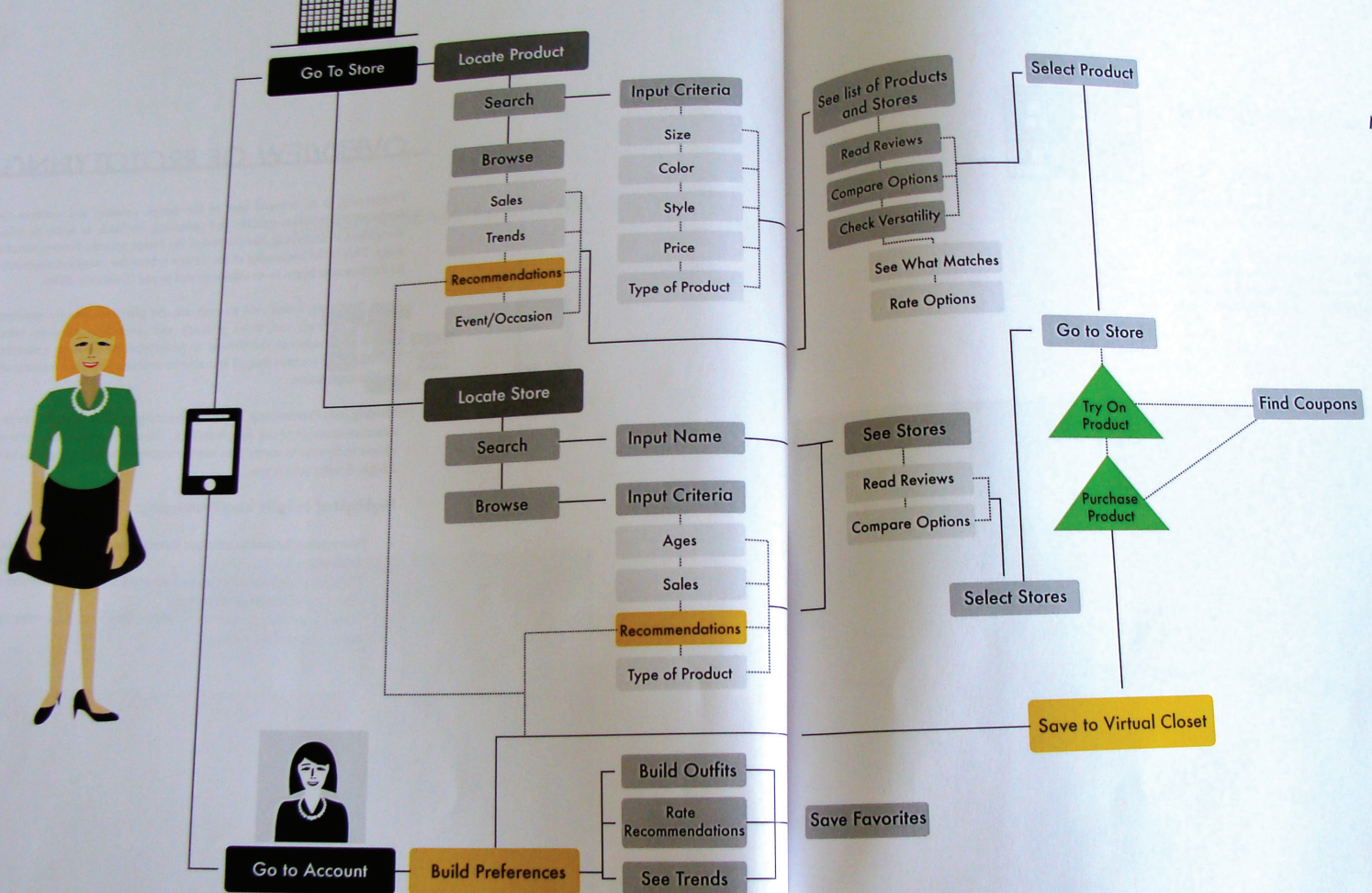
## Building Understanding

The first step of the prototyping phase of this research project required the design researcher to build a better understanding of how the device might function and to visually test the features through a sequence of events. The first stage of prototyping was about coming to a high-level understanding of how the mobile application would function. This allowed the design researcher to build a holistic perspective of the mobile application's process. By building a clearer picture of the mobile application's process, the design researcher was able to highlight flaws in order to remedy these issues before employing further prototyping methods.



**Flowchart:** According to the Usable Interface website, a flowchart is a visual way of representing a task or procedure, and it is traditionally used to visualize the flow within a program. This method helped to generate a high level explanation of the functionality of the application and how you get to each step of the application at a glance. A flowchart was chosen in order to understand the sequence of events that should be taken into consideration when starting to wireframe the potential solution. The consumer journey map and the scenario served as previous iterations of this method, and helped to inform the flow of the diagram. The insights from synthesis were used to create the flowchart, which depicted the process and touchpoints of the mobile application. The diagram showed how the device would function and illustrated how each task might be prompted, such as by entering a brick-and-mortar retailer or by launching the application during free time in any context.





The design researcher began by sketching a rough version of the flowchart. The first step was to define where the journey would begin: within a retail store or outside context. The next step was then to list the high level functions that would be required within the chosen context. For example, in a retail store, the user would be interested in finding products and/or stores. On the other hand, a user outside of the retail context would have different goals, such as building preferences. Under these high level functions, the design researcher began to list out the functions that would come next within the process. The design researcher continued in this manner, creating a linear flowchart that highlighted the holistic functionality of the mobile application.

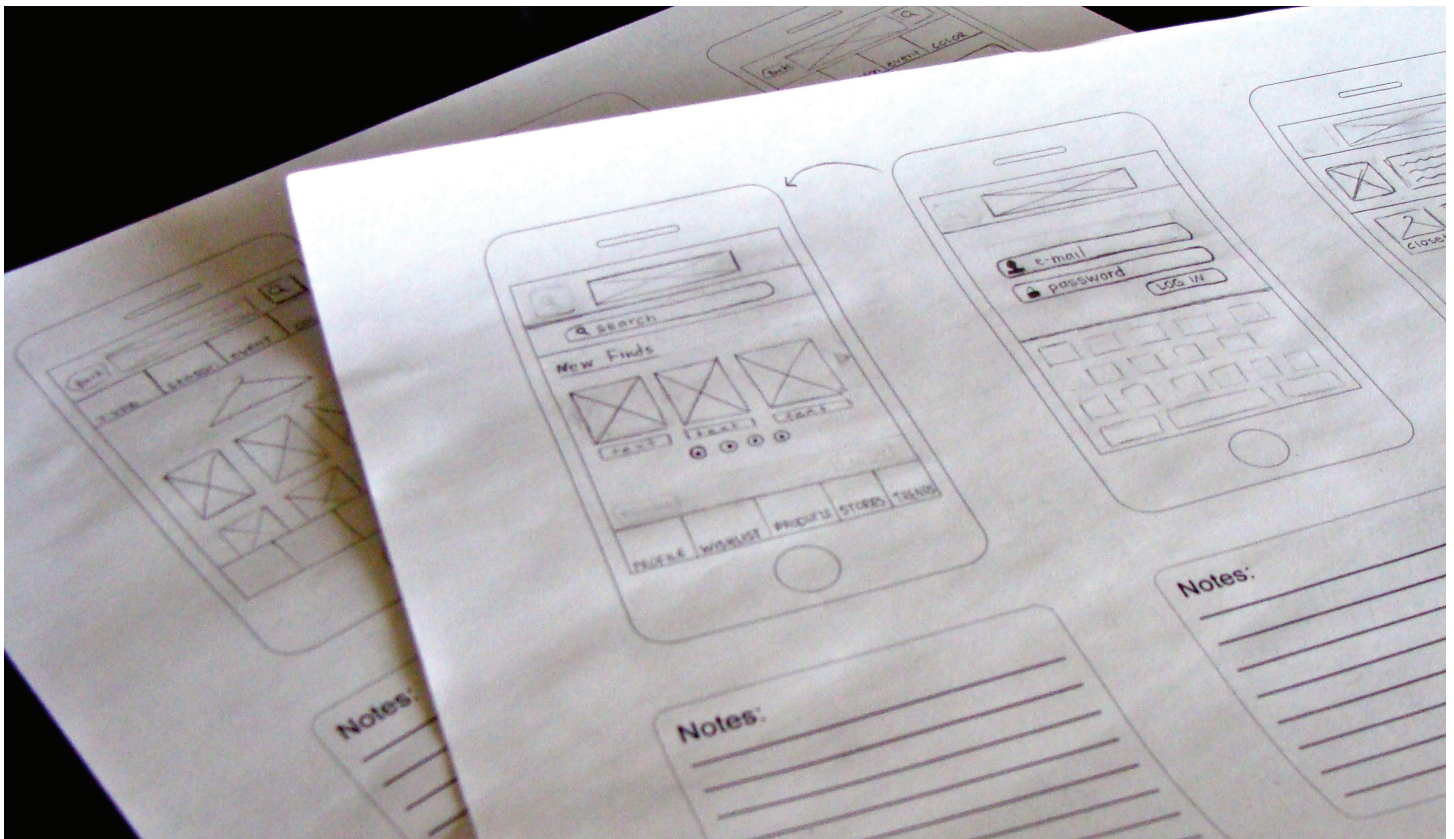
By creating a complex flowchart, the design researcher was able gain a universal understanding of how the mobile device might function. This method served as a guide as the design researcher began to create iterations of paper wireframes during the next step of the prototyping phase of this research project. By creating a visual map of the different touchpoints of the device, it was easier for the design researcher to create sketches of the screens of the mobile application.

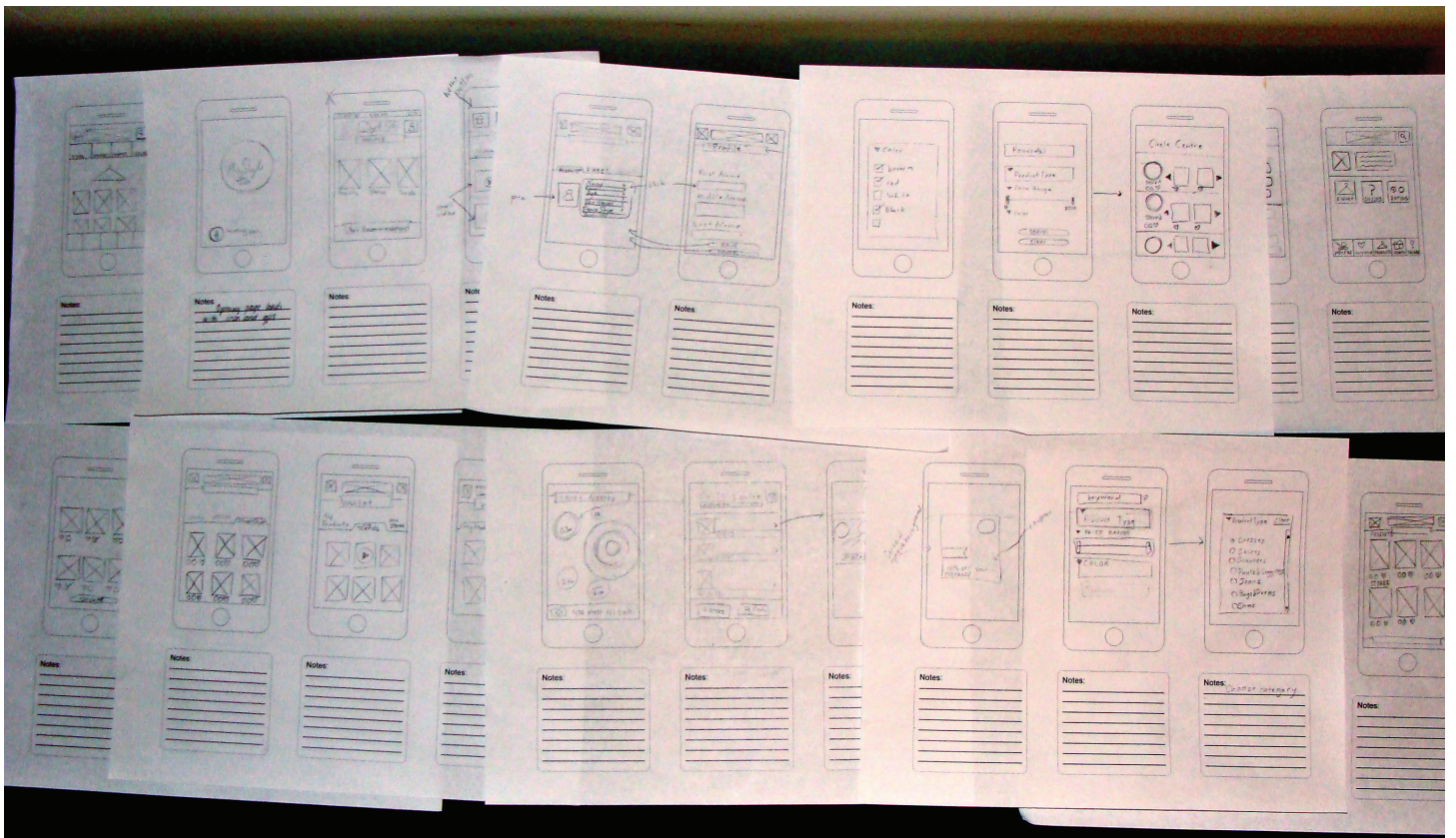
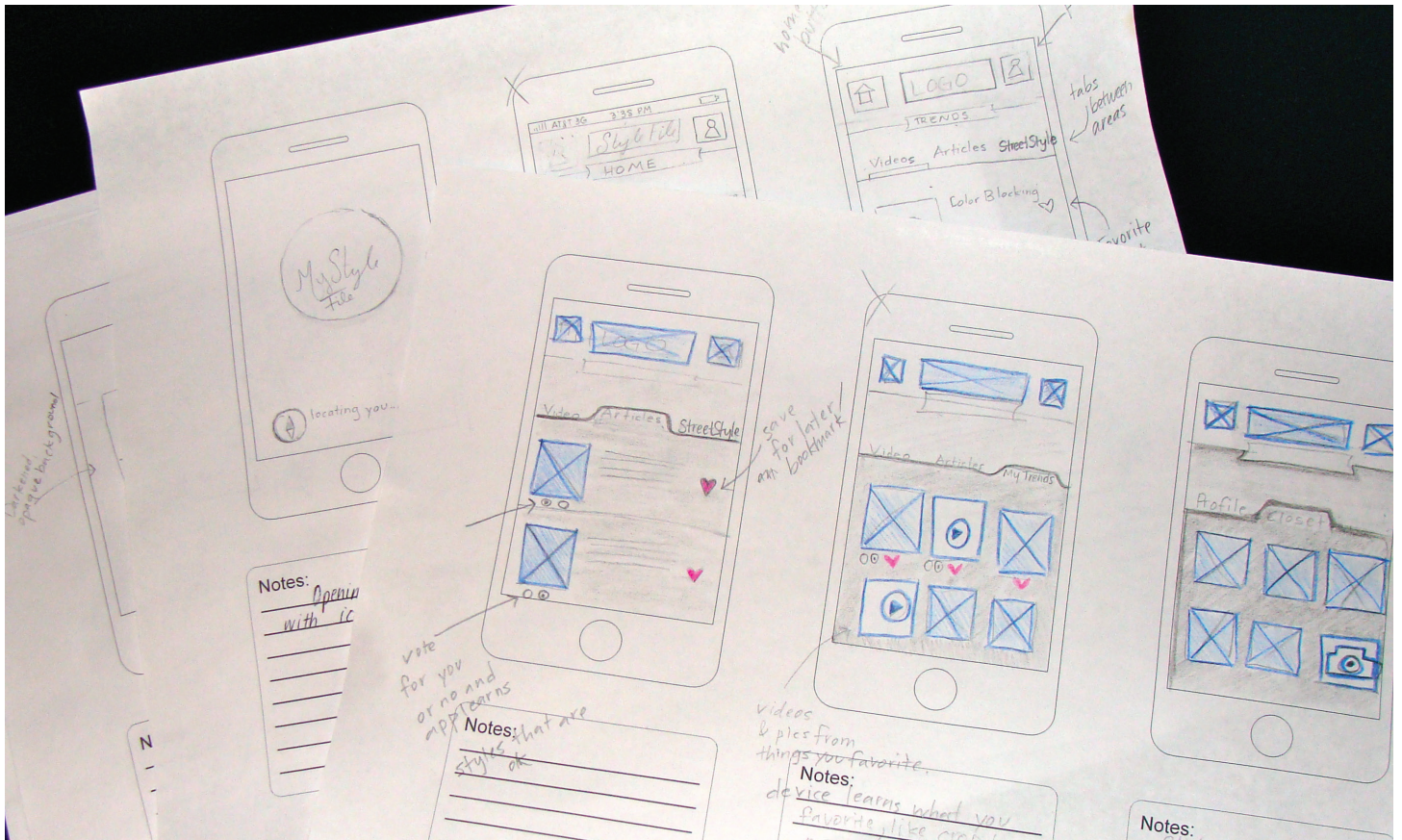
# Generating Cohesiveness

After gaining a more holistic understanding of how the mobile application would function, it was necessary to begin to visually arrange and lay out how the content, interface elements, and navigational system would work. The flowchart allowed the design researcher to develop a comprehensive overview of the mobile application's process. To move forward, a method was needed that would allow the design researcher to translate that comprehensive overview of functionality into a cohesive explanation of the user experience. A method was chosen to explore the functionality and behavior of the mobile application, focusing on what each screen would do and not on how each screen would look.



**Wireframe:** In order to translate the insights from the previous method into a more cohesive explanation of the user experience, the method known as wireframing was selected. A wireframe is a sketch of how the layout of a webpage should look and behave. This is a method used to understand the key page elements and their locations. The website Usable Interface explains that proposed behavior, structure, navigation, and content layout are all captured within the wireframe. Creating a wireframe of the future device was important in order to refine the potential solution and create a blueprint of the final device. Developing hand-drawn interfaces on paper allowed the design researcher to further refine the mobile application. Several iterations were made; each time the design researcher was able to use the previous wireframe versions to improve and advance the next version of screens. Additionally, it helped the design researcher to better understand how the device should look.









# OUTCOMES

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# Project Outcome

Taking into consideration the input of consumers, retailers, and consumer behavior specialists, the design researcher was able to create an interactive tool that answered the hypothesized research question: How might an interactive consumer design aid that enhances the consumer experience in soft-lines retail be developed using a participatory design approach? The first step to answering this question was to gather a holistic understanding of consumer experiences in soft-lines retail. With that knowledge, the design researcher could better identify areas where an interactive consumer decision aid could remedy existing problem areas or areas of difficulty. After identifying these areas, the design researcher leveraged the contextual insights into an internal inventory of possible solutions.

After working externally to ideate with consumers and retailers, that internal inventory of potential solutions was refined down to an approachable, appropriate number of potential ideas; ideas were deemed approachable and appropriate based on user criteria, such as latent and tacit needs. Again the design researcher worked to refine this inventory of potential solutions, integrating primary and secondary research with user experience tactics like wireframes and flowcharts. Through continued iteration and refinement, the project reached its goal of designing an interactive device that helped consumers make easier, smarter decisions, thus improving overall satisfaction and enhancing retail experiences.

The final outcome of this project was the development of a conceptual mobile application with the working title, StyleFile. This mobile application was the product of several months of preparation, primary and secondary research, analysis, synthesis, prototyping, and refinement. During research, it was discovered that consumers currently face difficulties in navigating the complex array of product choices. In order to make the task more manageable, one needed to identify ways to make getting to the evaluation process simpler. How might this occur? Through primary research, consumers vocalized a disdain for locating products within stores and/or locating stores within malls. How could this situation possibly be remedied? One way of remedying this situation could be to provide consumers more opportunities to shop through eCommerce, online shopping, or mCommerce, mobile shopping, solutions. However, primary research pointed to a fundamental desire to experience sensory inputs when shopping; through sensory experiences like touching, seeing, smelling, and hearing, a consumer is able to reach a product decision. Taking away from these sensory experiences by creating a solely two-dimensional shopping experiences would defeat the main reason female shoppers choose to shop at traditional retailers in the first place.

In order to support what consumers identified as the strengths of traditional retail shopping while still adapting new technology and remedying existing faults in retail experiences, the design researcher used a number of internal and external ideation methods. What was discovered was that in addition to consumers having a hard time locating stores and products efficiently, it is often the case that consumers do not even know where to begin looking. For example, going into a store knowing you want black shoes is different than going into a store knowing you want black patent leather, t-strap shoes with a three-inch heel and silver metal details. For every additional search criteria a consumer is able to add, the evaluation process becomes easier.

In addition to using the interactive consumer decision aid to help consumers navigate stores and products through wayfinding, the device also showed the potential to provide inspiration. This inspiration would give consumers the ability to read about new trends and sort through recommendations, helping the consumer to more quickly ascertain desirable product features, which could then be loaded into the wayfinding tool to easily locate the products. Bypassing the complex array of choices, the consumer would then have more energy to evaluate the product based on personal preferences such as those pointed out during primary research, like fit, versatility, fabric quality, etc. By making it less stressful to locate the product and giving the consumer more time/energy to evaluate the product would help to ensure a higher rate of personal satisfaction. This would help support the underlying goal of this project: enhancing the consumer experience.

Through the course of creating multiple iterations and refinements of the conceptual mobile application, the design researcher was able to come to an understanding of the specifications of the device. The final outcome for this project includes detailed design specifications of the user interface. The focus of these specifications is on functionality more than on visual elements, and includes a screen-by-screen description of the user interaction.

This application differs from those currently on the market due to its ability to integrate multiple stores under one umbrella, which for consumers could reflect a greater level of transparency. Additionally, the goal is not to provide consumers with rewards in order to generate profits. Consumer behavior specialists agree that in order to enhance loyalty, retailers need to build long term relationships fostered on trust and empathy, not on the promise of reward or the desire to get something out of nothing (Germain & Spears 1999). While apps like Shopkick give rewards to consumers based on making purchases or scanning items, StyleFile would focus on improving consumer experience by addressing real problem areas identified through extensive consumer research.

In order to enhance loyalty, retailers need to build long term relationships fostered on trust and empathy, not on the promise of reward or the desire to get something out of nothing. StyleFile focuses on improving consumer experience by addressing real problem areas identified through extensive consumer research.

Currently, the device serves to remedy problems with locating products and stores. It also has the ability to learn individual's unique preferences by cataloging purchase histories and analyzing personal profiles built on additional data input. These learned preferences could help the device to provide recommendations for future purchases, which can then be located using the aforementioned way finding function. For consumers, examples of functions include:

1. **Ability to search for products** based on location and search criteria like keyword(s), product type (ex. dresses, skirts, sweaters, pants & leggings, etc.), price range, and color.
2. **Ability to search for stores** based on location and search criteria like keyword(s), demographic audience, and price range.
3. **Ability to build a “mobile closet” or inventory of purchases** by creating an image heavy database of purchase history.
4. **Ability to build taste profile** based on liking, disliking, or “favoriting” videos, articles, and street styles suggested under the trends category.
5. **Ability to give inspiration and teach new trends** based on videos, articles, and street styles.
6. **Ability to give recommendations** based on purchase history and taste profile.
7. **Ability to compare products** through side-by-side comparisons.

For retailers, the device would provide the following functional benefits:

1. Provide retailers with big data on purchase history and buying trends.
2. Provide opportunity to personalize marketing tactics on an individual basis.
3. Provide opportunity to improve experiences and build consumer retention rates.
4. Provide outlet to advertise and reach out to consumers on a more frequent basis.
5. Provide opportunity for retailer to seem more transparent with sales tactics.



▲ Figure 27: StyleFile Application Design



**PROFILE**

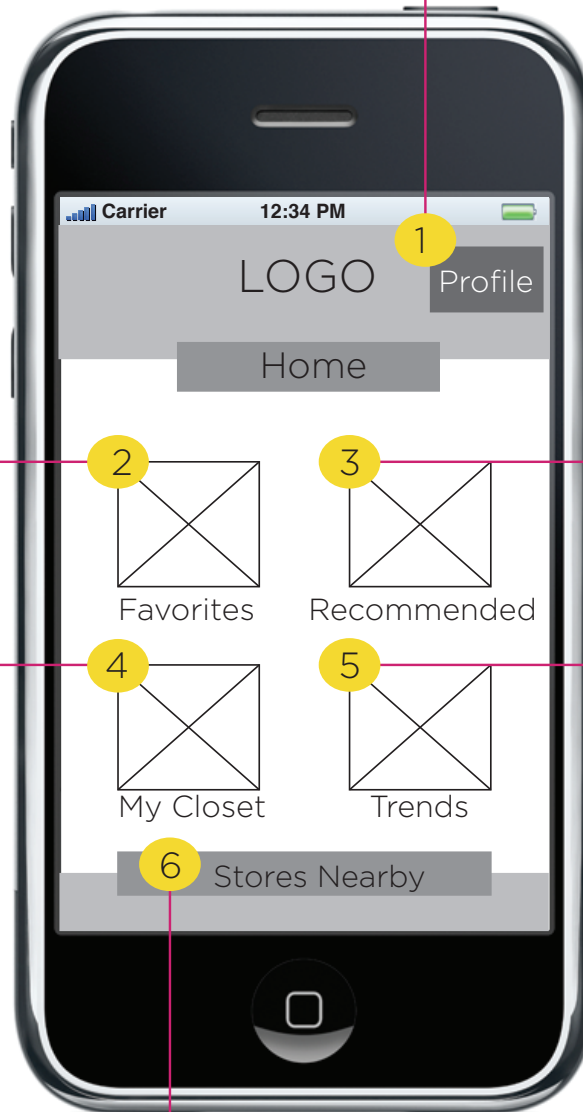
Takes you to your profile, where you can store and update personal information, such as name, age, and location, which can help the app provide you with relevant recommendations.

**FAVORITES**

An inventory of trends or products that a user favorites, which can be inform future purchases and recommendations.

**RECOMMENDED**

Provides a database of suggestions based on aggregated personal data, such as past purchases, age, location, budget, and “favorites.”



**MY CLOSET**

Image based inventory of past purchases, which the app can use to suggest additional items or users can employ to help make purchase decisions.

**TRENDS**

Showcases articles, videos, and “street style” photographs in order to provide inspiration. Users can also like, dislike, or “favorite” trends in order to build taste profile.

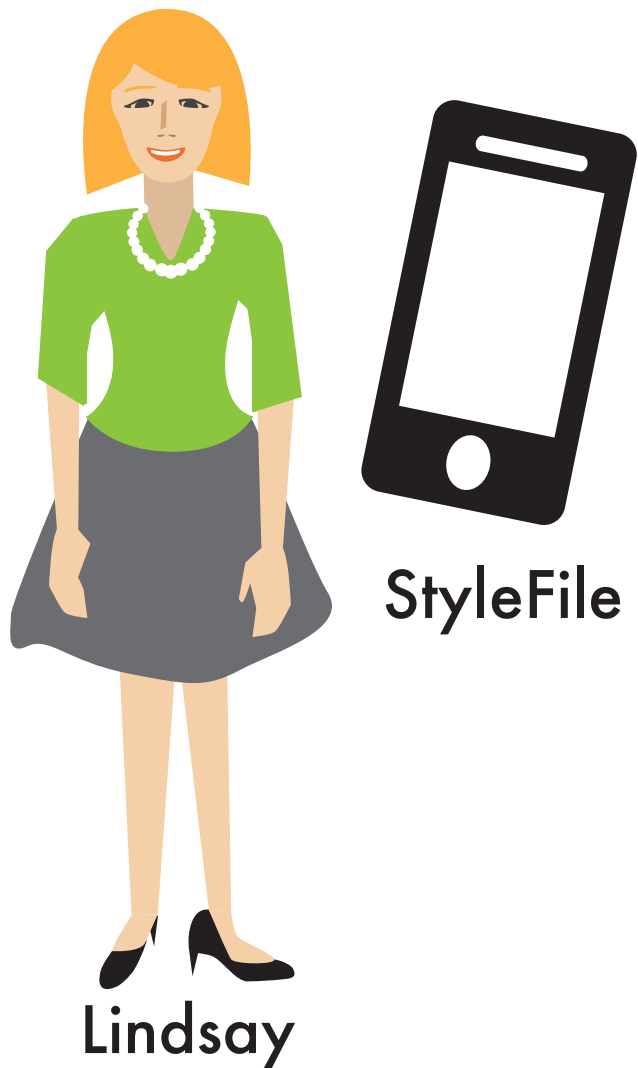
**STORES NEARBY**

A function which provides users the ability to search for nearby stores. Once the app determines your location, you can also use this function to search for products at the listed stores in your radius.

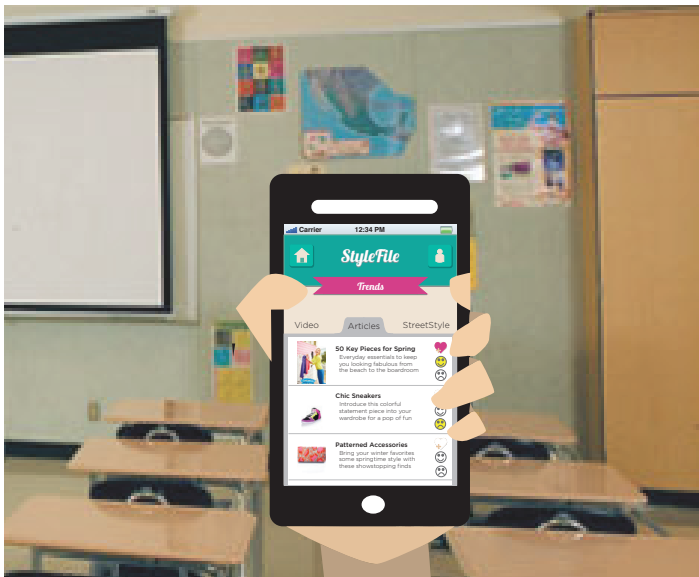
▲ Figure 28: *StyleFile Application Specifications*

▼ Figure 29

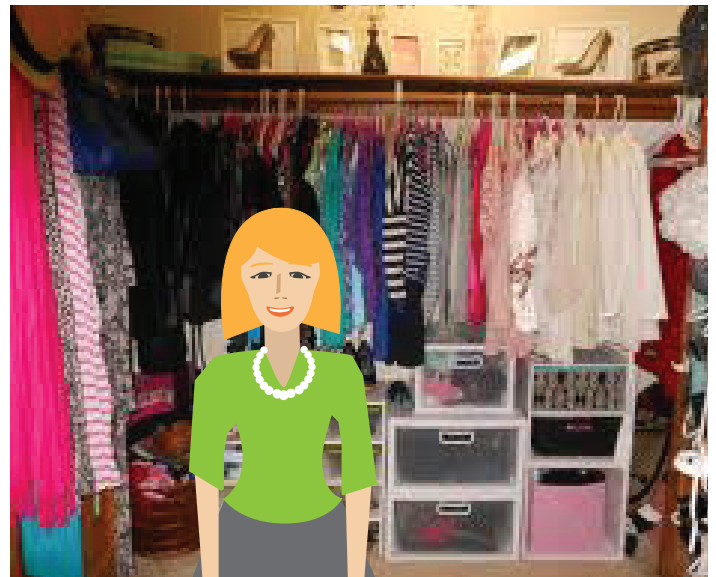
*Storyboarding provided the design researcher with the opportunity to explore how the mobile application would function in a real world situation. This is a refined version of the storyboard created during Synthesis and has been used as a tool to explain the functionality of the mobile application StyleFile. While this storyboard only shows a brief overview of the device's functionality, it helps to provide a sense of direction for individuals who are new to the project.*



Lindsay is a young teacher who likes to keep up with fashion. During her breaks she likes to browse new trends on the app Style File.



Because of her job, she likes to look at clothes that are versatile and can transition from work to other events.



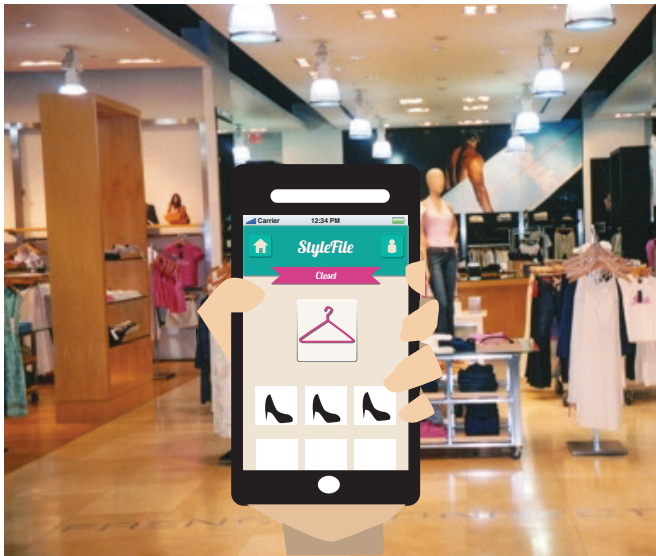
After looking up new trends, Lindsay goes to her closet and realizes she needs to buy some new pieces to round out her wardrobe.



Lindsay likes to go shopping with friends, so she calls up a couple of girls and sets up a day to go shopping.



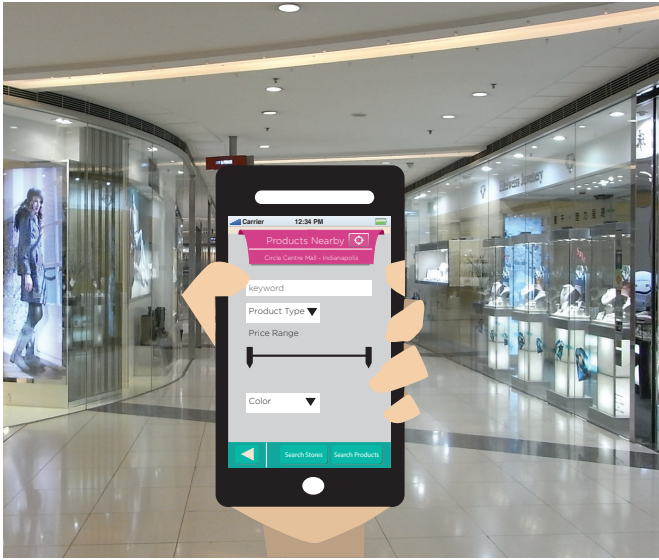
Lindsay arrives at the mall with her friends, but is unsure of where to go to find the trends she saw on her app when she was browsing earlier.



Lindsay once again gets out her phone. She uses StyleFile to see what items she already owns that will match the two options she is considering. She realizes she has several items that will match the one dress.



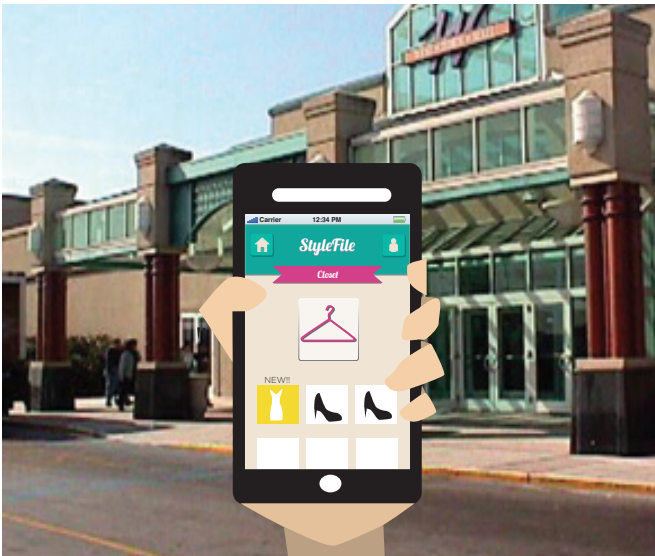
Lindsay decides to buy the white dress.



Lindsay wants to find a new summer dress, so she pulls out her phone to consult StyleFile. She puts in keywords, product type, price range, and color, and is guided to a list of shops in the mall that fit her search criteria.



Once she arrives at the store, she finds two dresses she likes. Lindsay can't decide which to buy and her friends are also unsure.



Once Lindsay has made the purchase, the retailer updates her mobile closet on StyleFile, which helps the app provide future recommendations and keeps the app up-to-date.

# Reflection

In attempting to answer the proposed research question set out at the beginning of this project, several insights were discovered apart from those used to design the final solution. Because this was the first independent design project of such a scale for the design researcher, there were of course unintended consequences, setbacks, and revelations over the course of research. Being prepared for the unknown is one thing in theory, but to encounter this idea first-hand and without additional support on the project side of research was a relatively new experience. It is, however, these setbacks that teach a designer how to overcome future obstacles. And, as a new designer, understanding how to tackle unintended consequences and overcome unforeseen events is an integral part of growing as a professional.

In particular, this project provided the opportunity to not only design a solution to improve retail experiences, but also offered the chance to learn more about participatory design, design methods, and design processes. The only way to truly understand these concepts is through practice, and only through practice can one gain a certain level of expertise. Although the design researcher for this project had experience employing design methods and processes under the umbrella of participatory design, previous projects had mostly been focused on non-profit organizations and social design. This project offered the chance to explore how participatory design can impact billion dollar corporations.

During previous projects, participants had been pre-determined and/or contacted through outside organizations. For this project, the design researcher had to recruit and coordinate with a number of retailers and corporations in order to begin the design process. Additionally, design research methods had mostly been employed in a one-on-one fashion. This project required the design researcher to be flexible in terms of time spent with participants. Also, this project required the design researcher to reassess what is appropriate due to the lack of manpower and the context where the design methods were carried out. In future projects, having more than one researcher would have provided a way to engage with more participants and explore more complicated methodology.

Despite this, working with retailers and consumers to build the device allowed the design researcher to understand and interpret how others view shopping experiences. Gaining an understanding of a range of perspectives proved only to support secondary research. However, as discussed at the beginning of this project, conducting primary research was valuable particularly because of the gender bias of this project. Additionally, without primary research, the mobile device would have been biased towards the design researcher's personal desires rather than the true needs of the majority of consumers. It is, however, debatable whether including consumers and retailers in ideation actually proved to be more influential than internal ideation and secondary research. Because the ideas generated by the researcher were based so heavily on insights from primary research conducted when developing an inventory of existing attitudes/behaviors, it is unclear whether consumers added richer ideas to the mix.

This project suggests, then, that the most valuable input that participants can contribute will come during the initial inventory of an existing situation. Once the design researcher can establish a thorough, holistic understanding of the context and users, building ideas that meet the latent needs of users should be a natural byproduct of one's deep understanding. However, ideation with external participants can still be useful to reaffirm assumptions/ideas of the design researcher(s).

## Next Steps

In order to successfully take StyleFile to market, additional work would need to be done. In particular, usability testing with actual consumers would help to provide the input necessary to build a device that is user friendly and best meets the needs of consumers. This could be accomplished by handing research over to information architects or user experience designers. Their expertise in programming and interaction design would serve to enhance the overall design of the mobile application. After additional testing was concluded, pitching the device to investors or directly to retailers would be the logical progression in taking this device to market.





# BIBLIOGRAPHY

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# Literature Review

**Sanders, E., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, 4(1), 5-18.**

Within relationship marketing, many tools and devices for enhancing consumer loyalty are developed through secondary research and quantitative study. However, as the current state of design research evolves, this “expert perspective,” where trained researchers question relatively passive users, is increasingly becoming irrelevant. As illustrated through countless case studies and scholarly articles on relationship marketing, there needs to be a new focus on consumers if changes in relationships are really going to occur.

It is evident, then, that the tools and methods needed to improve relationships and develop an interactive tool need to shift from the “experts only” mindset. In order to redefine the boundaries of the current retail industry, one must recognize that consumers are the experts of their experience.

In order for everyday people to take the role of co-designers, the designer must identify the scale of an individual’s involvement and align this with specific tools and methods that will allow an individual to express himself/herself. This can best be accomplished by first identifying the goals of the design project, and then aligning the tools and methods, as well as the associated benefits, with these goals (De Koning 2011).

It is also important when co-designing a project with users as experts to adopt the mindset that all individuals have the potential for creativity. While this concept threatens the existing power structure within organizations, this change in attitude is necessary when sharing design control with everyday people.

**Steen, M., Manschot, M., & De Koning, N. (2011). Benefits of co-design in service design projects. *International Journal of Design*, 5(2), 53-60.**

In “The Benefits of Co-Design in Service Design Projects,” the authors point out the benefits that can arise from involving people in defining the goals of a design project and carrying out these goals. The benefits that are uncovered as a result of the three case studies explored in this article are not only realized by people involved in the design project but also the organization and the design project itself.

Because consumers are the experts of their experience, employing users in the design of a convivial tool to improve the retail experience and consumer-retailer relationships would allow for a final product that better meets the needs of the individual. Additional implications for the consumer would be a higher quality and more differentiated tool.

For the organization, involving consumers in the design project would promote communication and cooperation between users and personnel, improve the organization’s consumer service focus, and deepen relationships between the organization and the consumer. In addition, co-design would foster empathy and build long-term loyalty predicated on trust rather than greed.

**Sanders, E. B. N., & Dandavate, U. (1999, November). Design for experiencing: New tools. In Proceedings of the First International Conference on Design and Emotion, Overbeeke, CJ, Hekkert, P.(Eds.), Delft University of Technology, Delft, The Netherlands (pp. 87-91).**

In this article, Sanders explored the tools necessary for designing for experience. Because of the multiple components that influence user experience, it is important to understand several levels of user motivation in order to design a holistic experience. Sanders argues that there are several routes to understanding experience, and that having access to a person's experience will allow the designer to develop empathy.

To access the deeper levels of user experience, a designer must adopt specialized tools that establish empathy and create understanding. According to Sanders, the methods for accessing experiences have evolved over time to include three perspectives: say, do, and make. One must explore these areas simultaneously in order to develop a holistic understanding of the elements which affect an individual's experience.

It is the job of the designer to not only observe first-hand the experiences that these tools uncover, but also to analyze and interpret this data. By learning from people about experiences and accessing explicit, observable, tacit, and latent knowledge of these individuals, designers can then design for experiencing.

**Sanders, E. B. N. (2002). From user-centered to participatory design approaches. Design and the social sciences: Making connections, 1-8.**

In this article, Sanders speaks about the "shift in perspective occurring today at the collaborative edge of design and social science." According to Sanders, it is impossible to design experiences; rather, one designs for experiences. In order to do this, one must understand what people, say, do, and make. When we gain access to people's experiences, we can better understand latent wants and needs and design better solutions.

The model for understanding people's experiences requires that designers investigate three different areas: what people say, what people do, and what people make. Understanding what people say will require designers to listen and understand what people say and think. The next stage will be to understand what people do and use, which provides a designer with observable information. The final stage is to allow people to "make" things. Allowing everyday people to participate in the generation of ideas that are "quite relevant and powerful."

The specific tools for engaging individuals in the "make" phase of the design process are known as "generative tools." Generative tools "enable all the stakeholders to contribute directly to the development of products, goods and services." For this project, the "say, do, make" model will help to inform which methods are chosen. In order to satisfy each of the three areas, methods were chosen throughout the design process to ensure an understanding of explicit, observable, tacit, and latent needs.

## **Sanders, Elizabeth. (2006) Scaffolds for building everyday creativity. Designing Effective Communications: Creating Contexts for Clarity and Meaning. New York: Allworth**

In design thinking, a revolution is taking place with how everyday people are being engaged in the design process. Everyday people no longer want to be seen as passive consumers, they want to be seen as active participants in the creation and development of goods and products. Because of changes in how people interact with artifacts, individuals feel increasingly less effective on their environment.

Technological advances have taken away some of the creative benefits previous generations have enjoyed. People are developing ways in which they can be more creative and involved in the design of the world around them. This is where designers can look to employing participatory design methods. Because everyday people want to be involved in the design process and because creativity is not an innate characteristic, using participatory design methods allows people to be creative.

While everyday activities are currently characterized by the consumptive mindset (buying, shopping, using, owning), we are moving towards a more balanced creative mindset. By designing a convivial tool that gives everyday people within the context of a retail space the ability to shape and create within the consumptive framework, this project can blur the edges of creative and consumptive mindsets.

## **Basadur, Min. (1994). Simplex a Flight to Creativity. [s.l.]: Creative Education Foundation**

Min Basadur's book, Simplex: A Flight to Creativity, outlines the creative problem solving process known as the Simplex Process. The research of this project will incorporate the Simplex Process with the CASPI (Collect, Analyze, Synthesize, Prototype, Implement) Process. The Simplex Process is a step-by-step, cyclical process provides a guideline for approaching complex problems. It can also be divided into three phases: problem formulation, solution formulation, and solution implementation.

This process combines analytical and imaginative skills to go from defining the problem to implementing a solution. During the Simplex Process, specific design methods will be chosen that compliment the goals of the project, the specific stakeholders, and the chosen context. These methods will engage consumers and employees in the design process. The eight-step process will serve to add depth and dimension to the five step CASPI model.

In addition to the Simplex Process, Basadur also outlines fundamental process skills that should be used when interacting with stakeholders, coming up with ideas, and moving through the creative process. Basadur stresses the importance of active divergence and active convergence, which are important skills to keep in mind as a designer.

**Murray, Kyle B., and Gerald Häubl. (2008). Interactive consumer decision aids. *Handbook of Marketing Decision Models*, 55-77.**

In today's marketplace, differentiation is increasingly important as competition grows between retailers. With a "vast and unprecedented breadth and depth of product alternatives," the ability to process information and decide between products is becoming more complex (p2). In order to assist consumers in their decision making, Interactive consumer decision aids (ICDAs) can help improve the quality of the choices consumers make while simultaneously reducing the effort required to make those decisions. By building ICDAs, retailers can help address the paradox of choice.

This article points out the four potential roles for ICDAs: clerking, advising, banking, and tutoring. Clerking refers to the ability of the tool to assist consumers in their search for product information and alternatives. Advising refers to the ability of the tool to provide expert personalized opinions based on the decision aid's knowledge of the consumer's preferences. Banking refers to the ability of the tool to negotiate on the consumers behalf, such as with eBay's proxy bidding system. Lastly, ICDAs have the ability to tutor consumers. An example can be seen with Pandora's ability to recommend music based on a listener's music choice.

By using ICDAs, retailers can provide a number of benefits to their consumers. Increased consumer satisfaction, improved trust, and improved decision quality are all results of Interactive consumer decision aids. In addition, ICDAs can provide information on consumer decision making processes and help retailers improve relationships with consumers.

**Soloman, Michael R. *Consumer Behavior: Buying, Having and Being*. [S.l.]: Pearson Education, 2010. Print.**

Solomon is a professor of marketing whose primary research interests include consumer behavior and lifestyle issues, branding strategy, the symbolic aspects of products, the psychology of fashion, decoration, and image, services marketing and the development of visually-oriented Online research methodologies. He is one of the fifteen most cited scholars in the academic behavioral sciences and one of the top ten most productive scholars in the field of marketing communications. His book, *Consumer Behavior*, is used as an instructional guide by the Kelley School of Business MBA program.

This book goes beyond addressing why individuals buy what they buy, it also addresses "how having things affects our lives and how our possessions influence the way we feel about ourselves and each other" (xvii). This project focuses mainly on "Section 3: Consumers as Decision Makers", which addresses decision making, buying and disposing, group influence and opinion leadership, and organizational and household decision making.

The process by which individuals make decisions, as well as the factors that might permeate this decision making model can be found in "Chapter 8: Decision Making." This chapter also helps to illustrate brand attributes that influence consumer buying behavior. In addition, the concept of mental heuristics is discussed in this book. This information was used in crafting the justification section as well as informing the project itself.

**Katelijan, Quartier, Vanrie Jan, and Koenraad Van Cleempoel. (2009) The interaction between interpreted space, mood, and behavior in retail environments: A conceptual research model. IASDR 2009.**

Katelijan, Jan, and Van Cleempoel are specialists in retail design at the University Hasselt in Belgium. Their work focuses on the interdisciplinary activity related to the development of retail spaces and the understanding of consumer behavior. Their discipline focuses on the applied research methods needed to understand and frame problems in retail. This interdisciplinary, human-centered way of thinking aligns with the work of this project. In addition, the theoretical framework proposed in this article can serve as valuable reference point throughout the project.

This article offers a theoretical framework through which one can gain a holistic understanding of the retail environment. This environment consists of space-related, product-related, and people-related aspects. This article states that atmospheric aspects are often considered stable, and how we interpret a retailer depends largely on emotions. Emotions “form a background to which cognitive judgments, preferences or attitudes operate” (p5).

The framework also provides a guide by which to evaluate potential ideas and abstract concepts. Using this framework, one can judge the impact of ideas by seeing which aspects of the retail experience are touched upon by a particular idea. This can help to eliminate ideas that only touch upon one area of the retail experience while ignoring others, since the retail experience is a holistic, interconnected experience.

**Petermans, Ann, et al. (2009). Measuring emotions in consumer experiences in retail store environments. Testing the applicability of three emotion measurement instruments.**

This article is written by Anne Petermans, Koenraad Van Cleempoel, Erik Nuyts, and Jan Vanrie, specialists in retail design and consumer relationships. These authors are instructors at PHL University College and Hassalt University in the Department of Arts and Architecture. Van Cleempoel and Vanrie were also contributing authors to the journal article on space, mood, and behavior in retail environments.

This article compares three types of consumer satisfaction measurement instruments. While other articles address specific types of measurement instruments, this article is unique in comparing side-by-side the applicability of different forms of satisfaction measurement. Because this project aims to enhance the consumer experience, a tool to measure experience must be used during the project. This article offers real-world examples that illustrate the strengths and weaknesses of three highly referenced measurement tools.

These measurement tools include the Mehrabian-Russell model, the Product Emotion Measurement Instrument, and Open Ended Questionnaires. While each instrument offers certain strengths, this article reasserts the value of using open-ended questionnaires like those proposed and outlined by Hayes in his book, *Measuring Consumer Satisfaction and Loyalty*. The value of using open-ended questionnaires is that a researcher can gather information that may be left out from the other measurement instruments due to their strict boundaries of quantifying data.

**Hayes, Bob E. (2008). *Measuring consumer satisfaction and loyalty: survey design, use, and statistical analysis methods*. Asq Press,**

Bob E. Hayes received his PhD in industrial-organizational psychology from Bowling Green State University, specializing in survey research and quantitative methods. He has over 20 years of consulting and research experience in enterprise and mid-size companies, including Oracle, Agilent Technologies, and Netsmart Technologies. He has managed consumer satisfaction research as an employee to Fortune 500 firms, and as an independent consultant (TCELab.com).

Because Hayes is considered a leader in his field of consumer experience management, his book, *Measuring Consumer Satisfaction and Loyalty*, was used as a reference to construct the methods for understanding consumer satisfaction. In order to measure the affect of this project on consumer satisfaction, a baseline understanding of satisfaction needs to be developed at the start of the project. Then, once the project can be prototyped and interacted with by stakeholders in the retail environment, quantitative data can be collected once more to measure satisfaction. At the end, these measurements can be compared to see whether the final produce “enhanced the consumer experience” or not.

While other measurement systems exist, such as the Mehrabian-Russell model, interviews and surveys can provide more depth to understanding the consumer experience. This book helps to explain how one can develop a survey in order to measure consumer satisfaction.

**Bakewell, Cathy, and Vincent-Wayne Mitchell. (2003). *Generation Y female consumer decision-making styles*. *International Journal of Retail & Distribution Management*, 31(2), 95-106.**

Vincent-Wayne Mitchell is Professor of Consumer Marketing CASS Business School, City University London. He has done extensive research into marketing and consumer behavior, with particular focus on consumer decision making, complaining behavior and risk taking. He is on the Editorial Board of six international journals and has worked for companies such as Coca-Cola and Safeway (NYU.edu). Cathy Bakewell is a lecturer at Manchester Metropolitan University.

This article seeks to understand the decision making processes of generation Y females, or women born after 1977). Because this thesis project aims to enhance the consumer experience for women in soft-lines retail, this article offers insight into the specific buying behavior of this projects target demographic.

Unlike previous generations, this generation of women have been “socialized into consuming earlier than previous generations and have greater disposable income” (p95). Because of this, generation-Y females have unique consumer attitudes, behaviors, and skills which, through research, can be understood and used to develop a more meaningful retail experience.

This article supports specific heuristic behaviors, such as the price-quality relationship. In addition, the utilitarian vs. recreational nature of shopping among women in this demographic skewed more towards the recreational quality segment. This information can be used when understanding the buying behavior of women for this project.

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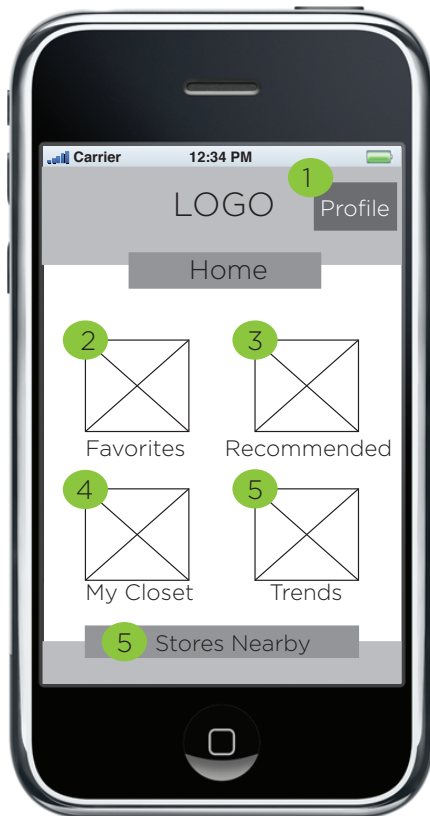
# APPENDIX

11.1 Device Specifications.....	136
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# Device Specifications

The following pages provide an overview of the technical functions of the mobile device currently referred to as Style File. Additional prototyping and usability testing would help to refine these screens. However, these screens serve as the final outcome of this project.

## 1. Home



Links to Other Pages:

- 1 on click goes to Favorites Page
- 2 on click goes to Recommended Page
- 3 on click goes to My Closet Page
- 4 on click goes to Trends Page
- 5 on click goes to Profile Page

## 2. Trend (Article)



Links to Other Pages:

- 1 on click goes to Home Page
- 2 on click goes to Profile Page
- 3 on click goes to Videos Page
- 4 on click goes to Street Style Page
- 5 on click goes to related Article Sub Page
- 6 on click adds article to Favorites page
- 7 on click teaches app dislikes to influence future suggestions

## 3. Trend (Video)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click goes to Articles Page
- 4 on click goes to Street Style Page
- 5 on click goes to related Video Sub Page
- 6 on click adds Video to Favorite Page
- 7 on click teaches app dislikes to influence future suggestions



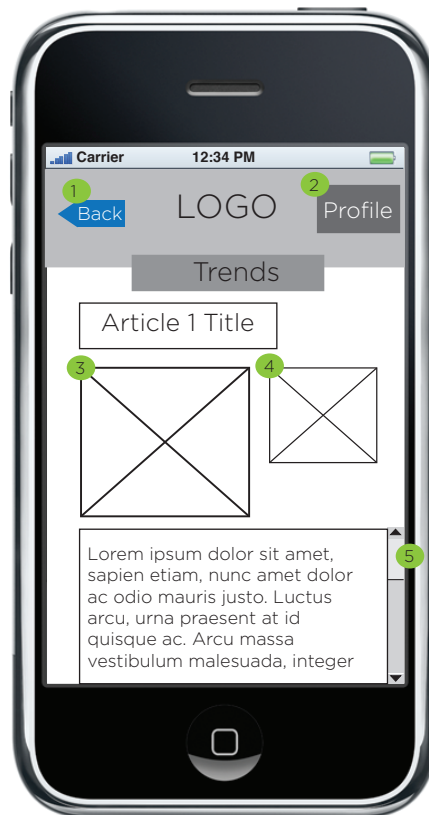
#### 4. Trend (Street Style)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click goes to Videos Page
- 4 on click goes to Articles Page
- 5 on click goes to related Street Style Sub Page
- 6 on click adds Street Style to Favorite Page
- 7 on click teaches app dislikes to influence future suggestions

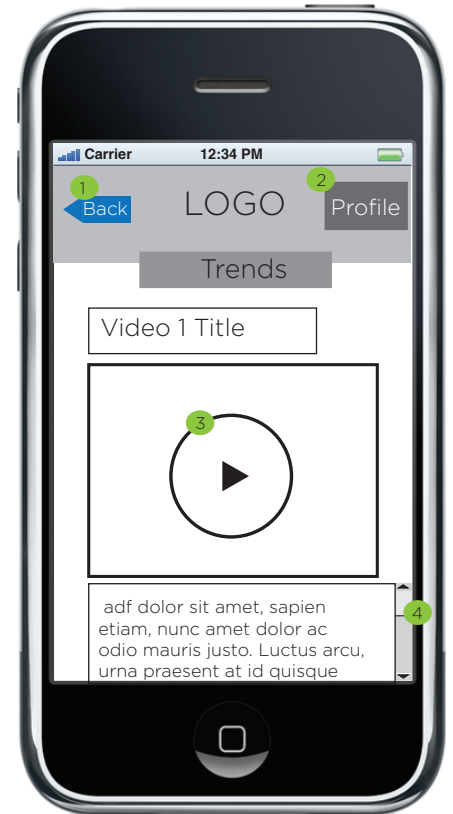
#### 5. Trend (Article Sub)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click opens Picture in full screen
- 4 on click replaces Main picture with sub picture
- 5 scrolls to reveal more text

#### 6. Trend (Trend Sub)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click plays Video
- 4 scrolls to reveal more text

## 7. Trend (Street Style Sub)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click opens Picture in full screen
- 4 on click replaces Main picture with sub picture
- 5 scrolls to reveal more text

## 8. My Closet



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click pulls up keyboard
- 4 on click goes to Product Sub Page with additional information and larger product photo(s)

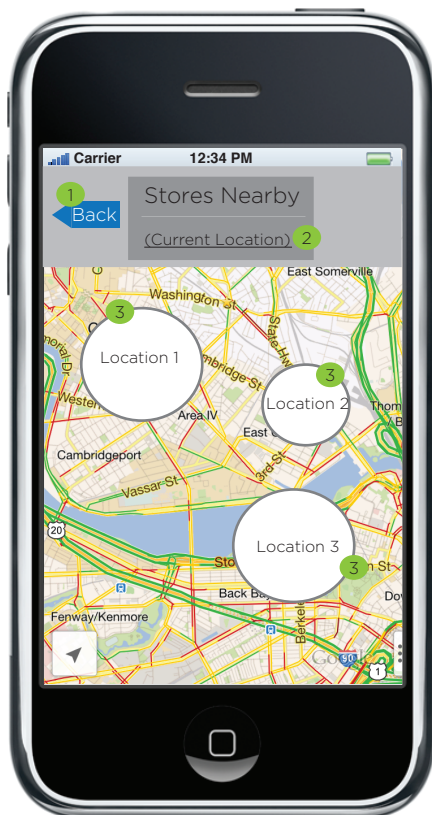
## 9. My Closet (Product Sub)



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click goes to Profile Page
- 3 on click pulls up full screen photo of product

## 10. Stores Nearby



Links to Other Pages:

- 1 on click returns to Home Page
- 2 on click refreshes Current Location
- 3 on click opens Location Store List Page

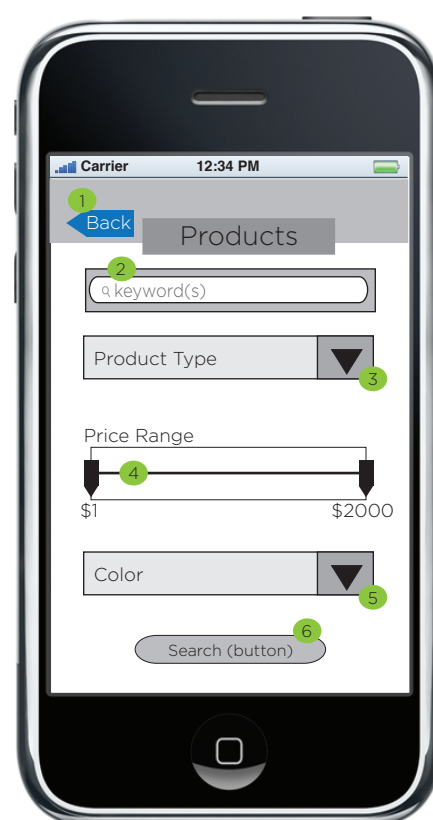
## 11. Store List



Links to Other Pages:

- 1 on click goes to Previous Page (Stores Nearby Page)
- 2 on click goes to Store Information Page
- 3 on click opens Search Function Page

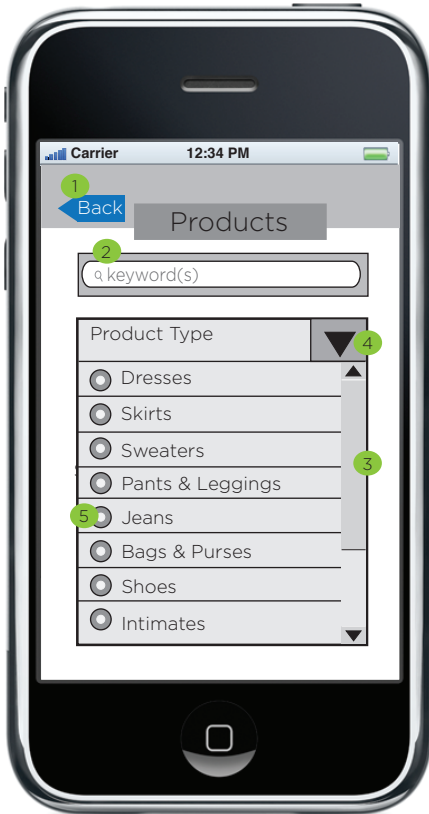
## 12. Search Function



Links to Other Pages:

- 1 on click goes to Previous Page (Store List Page)
- 2 on click opens keyboard to type in search keywords
- 3 on click opens drop down menu
- 4 slides to set price range
- 5 on click opens drop down menu
- 6 on click searches by above criteria

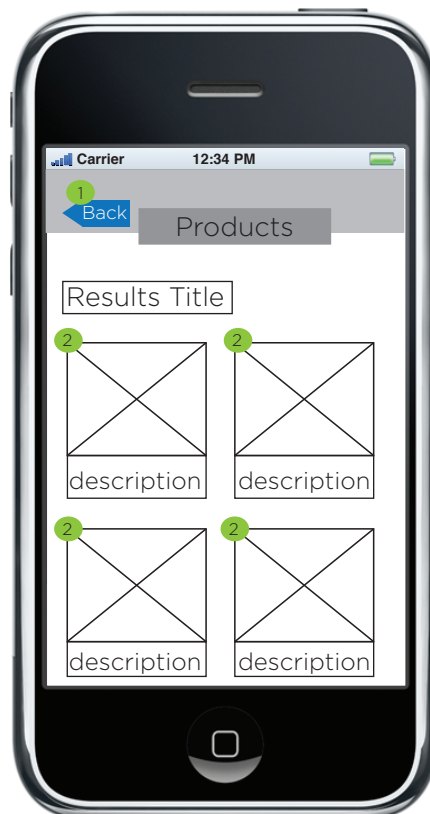
### 13. Product Drop down



Links to Other Pages:

- 1 on click goes to previous page (Store List Page)
- 2 on click opens keyboard to type in search keywords
- 3 slides options for product types
- 4 on click opens/closes drop-down menu
- 5 on click selects radius

### 14. Store List



Links to Other Pages:

- 1 on click goes to Previous Page (Search Function page)
- 2 on click opens option in new screen with further information/images

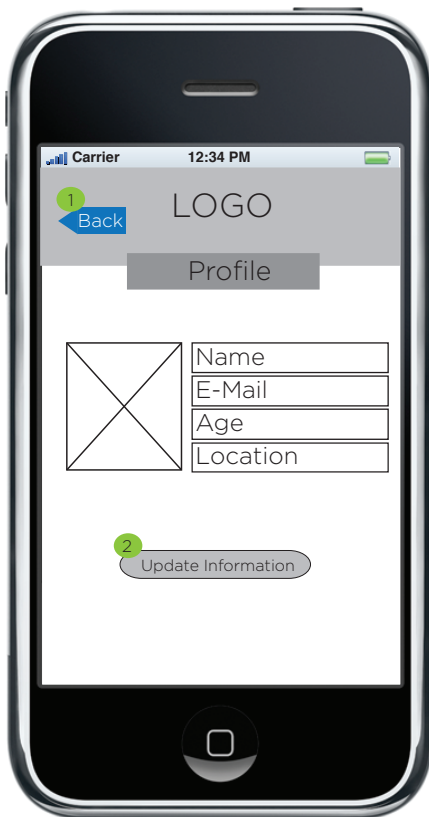
### 15. Product Description



Links to Other Pages:

- 1 on click goes to Previous Page (Product Results List)
- 2 on click opens image in full screen mode
- 3 on click replaces main image with sub image
- 4 slides through similar results
- 5 on click opens product image in new Product Description Page

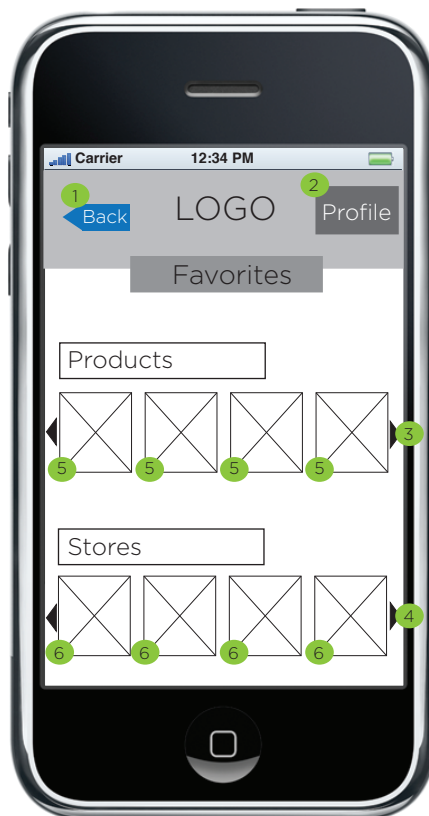
## 16. Profile



Links to Other Pages:

- 1 on click goes to Previous Page
- 2 on click opens Information Update Page

## 17. Favorites



Links to Other Pages:

- 1 on click goes to Home Page
- 2 on click goes to Profile Page
- 3 slides to show more favorited products
- 4 slides to show more favorited stores
- 5 on click goes to Product Description Page
- 6 on click goes to new Store Information Page

## 18. Recommended



Links to Other Pages:

- 1 on click goes to Home Page
- 2 on click goes to Profile Page
- 3 slides to show more recommended products
- 4 slides to show more recommended stores
- 5 on click goes to Product Description Page
- 6 on click goes to new Store Information Page

