RIT | College of Art and Design
Interior Design

The Virtual Sneaker Shopping Experience: An exploration in alternative solutions to an in-store shopping experience

By

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Abstract

This undergraduate capstone thesis investigation explores an alternative solution to an in-store sneaker shopping experience using online resources and technology, intended for use from the comfort of the customer's home in a post-pandemic society. The prototyping of a mobile, virtual shopping application, intends to replicate the in-store shopping experience through a virtual store with technological assets provided smartphones.

The research agenda of the capstone thesis analyzes a series of literature reviews regarding the decrease in traffic due to the effects of the COVID-19 pandemic in brick and mortar stores. The literature review details the current spike in usage of online sneaker retail environments, consisting of the growth in both primary and, especially secondary sneaker markets. The literature review further examines currently developed virtual spaces and an analysis of how user mechanics are used in mobile gaming applications, to further understand how users would navigate themselves through a virtual store.

Through capstone surveys and interviews, online shopping users reported it challenging to gain information needed from a few photos and descriptions of specific products, and there is no platform that creates an in-store experience that allows for products to be felt, if the product's uses heavily rely on materiality and texture. Additionally, 58% of secondary sneaker businesses have gone fully online, and have closed multiple brick and mortar locations. The interviews validate that more sneaker products and businesses are going online than ever before, however there are no direct solutions to close the gap between preferred in-store experiences (such as fitting shoes) with online shopping.

The proposed solution is explored through the creative agenda. The concept for MOVE is a mobile software application for sneaker retail businesses, to create engagement with online consumers through a virtual store. The application allows users to explore for sneaker products

through a mobile screen or a VR headset, and allows for perfect fit measurement through the LiDar anthropometric measuring asset. The virtual store allows users to stroll and move around the space, very similar to the likes of a brick-and-mortar store. This mobile application strives to create an in-store shopping experience through a virtual store to browse sneaker products from using technology available on smartphones we use daily.

Keywords: Mobile Application, Post-Pandemic Society, Virtual Reality, Sneakers, In-Store Shopping Experience, Retail, Online

Introduction

Research Question

What is an alternative solution to an in-store sneaker shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society?

(see Appendix A: Capstone Prospectus)

Thesis Justification

The aim of this undergraduate interior design capstone investigation is to explore an alternative solution to an in-store sneaker shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society. The COVID-19 pandemic created an environment for people to stay inside, and to access many tasks and entertainment from the comfort of their homes. The pandemic created an environment for many pseudo-interior environments to arise, allowing for in-person experiences to transform into online experiences in areas of education, entertainment, workplace and etc. Accessing online classes or meetings, or enjoying an online social experience with someone are few examples that have evolved from an in-person to online experience during the time of the pandemic. However, one significant experience that has not made a complete transition from an in-person to an online experience is ***shopping***.

There are largely two forms of shopping experiences, ***online*** or ***in-store***. The online experience for shopping has been largely accessible for many consumers for roughly the past decade. Currently, online shopping occurs through a website or application on a computer or mobile device. Online shopping heavily relies on photos and descriptions from the supplier of the product, where consumers select a product that they think is best suited for their needs.

This statement alone underlines a huge limitation for the current online shopping experience. First, it is challenging to gain information needed from a few photos and descriptions of specific products, especially if the product has multiple functions. Second, the in-store experience allows for products to be touched, especially important if the product's uses heavily rely on materiality and texture. The current online shopping structure does not allow the consumer to physically touch or feel texture prior to purchasing the product. Third, opposite to an in-store shopping experience, it is difficult to reach out to shop managers or staff with expertise on a product to further ask questions about the product online. The only solution for a customer is a chat bar or a phone number to reach out to the seller.

Due to the impact of the COVID-19 pandemic, it is a pressing matter to solve the massive decrease of customer traffic into stores. By exploring a ***hybrid form of an online/virtual in-store shopping experience***, shop owners will still be able to interact with customers virtually. This will elevate the shopping experience for consumers by creating a pseudo-interior space from the liberty of their homes. Furthermore, by changing the customer flow from physical to virtual, this investigation seeks to manipulate the current exhibition and retail environment to be tailored to a virtual audience. Developing a proposed structure for a virtual shopping experience both for the consumer and store will be determined in this investigation. In order to narrow the scope of the capstone project, this investigation will focus on the sneaker shopping environment. This new virtual shopping structure will aim to be a model for business to thrive during and after the pandemic.

Methodology

This capstone research explores an alternative solution to an in-store sneaker shopping experience using online resources and technology, from the comfort of the customer's home in

a post-pandemic society. Explorations of these two issues aims to result and proceed a solution that substantiates a design strategy for two issues:

I. ***Research Methodology:*** *Understand the current sneaker retail environment, creating a basis to tailor a virtual in-store experience for consumers.*
II. ***Design Methodology:*** *Develop, determine, and design a system for a virtual in-store sneaker shopping experience for both the consumer and store through a mobile smartphone application.*

To investigate these problems, research methods of this capstone include:

I. Literature reviews substantiate the effects the COVID-19 pandemic had on consumers and stores, specifically in the sneaker market to provide a further understanding of components that are necessary to create a virtual in-store shopping experience.
    A. Qualitative methods provide evidence to develop an exhibition and retail environment tailoring a virtual audience.
    B. Quantitative methods identify consumer groups and products that need alternatives to in-store shopping.
II. Surveys collected the necessary data to outline the issues consumers have with the current online shopping environment.
III. Statistical analysis from findings of the research agenda, to develop an understanding of impact that the pandemic had towards physical traffic in-store, and provide analytical data to support the need of a new shopping platform and system for stores post-pandemic.

The research methods such as literature reviews, interviews, surveys, qualitative and quantitative research, and statistical analysis identify the problems in the current online shopping environment and create evidence of the necessity of alternative shopping structures for both stores and consumers. Findings serve to develop substantive design strategies for manipulating the current exhibition and retail environment to be tailored to a virtual audience, and develop a structure for a virtual sneaker shopping experience for both the consumer and store.

Literature Review

Research Methodology: *Understand the current sneaker retail environment, creating a basis to tailor a virtual in-store experience for consumers.*

Acceleration of Online Shopping due to the COVID-19 Pandemic

The COVID-19 pandemic accelerated many consumers to shift from brick-and-mortar shopping to online shopping. According to a survey conducted by UNTCD (United Nations Conference on Trade and Development), in November 2020, 3,700 consumers from nine countries (Brazil, China, Germany, Italy, the Republic of Korea, Russian Federation, South Africa, Switzerland and Turkey) were examined to see the change of consumer behavior in e-commerce and digital solutions (UNCTAD 1).

Figure 1.1. Percentage of online shoppers making at least one online purchase every two months

Figure 1.1 shows the percentage of online shoppers making at least one online purchase every two months. According to Figure 1.1, “more than half of the survey’s respondents now shop online more frequently and rely on the internet more for news, health-related information and digital entertainment....” (UNCTAD 1). The biggest gains in online shopping are categories in the following: cosmetics & personal care, pharmaceuticals/health, ICT/electronics goods, home furniture/products, education and online resources, and tools gardening and do-it-yourself (UNCTAD 2). There has been more of a trend of spending expenditures on essential products rather than larger expenditures, especially in the sector of tourism/travel with no growth in this category according to Figure 1.1.

Looking at a more domestic scale in the United States, Figure 1.2 demonstrates comparisons in online consumer shopping behavior divided by age groups, pre-pandemic vs. post-pandemic. The data shows online shopping habits of more than 2,000 Americans, gathered by a recent RAND American Life Panel (ALP) survey (Liisa et al. 1)

Figure 1.2. Changes in Online Shopping Before and During the COVID-19 Pandemic

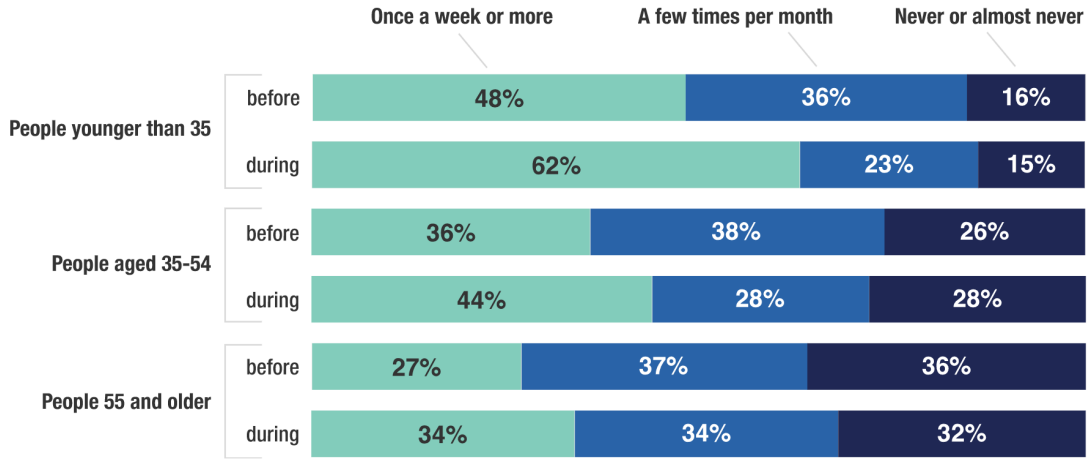


Figure 1.2 shows younger people (those under 35) were most likely to shop online before the COVID-19 pandemic (Liisa et al. 2). Through the data collected from Liisa, Lu, and

Rohr, “almost half of the participants were shopping online once per week or more already, and that rose to more than 60% after the COVID-19 pandemic began. Only 15% never shop online.” (3). Looking at the data set given, older people have less of a tendency to shop online, hence, their patterns for online shopping has not changed much compared to the younger consumers during the pandemic (Liisa et al. 3). Age and income are two factors that change online shopping behaviors. According to the survey, 20% of the participants have never or almost never shop online fit in these two categories.

Another, significant point made in this article was that there has already been an increase in online shopping in 2019 before the COVID-19 pandemic began (Liisa et al. 3). According to the RAND American Life Panel (ALP), over two-thirds of the consumers stated that they have not changed their online shopping habits compared prior to the pandemic (Carman and Nataraj, 2). About one-quarter of the respondents are shopping online more, mostly due to the pandemic, and 3 percent of the consumers have shopped less since the pandemic began (Carman and Nataraj, 2).

Introduction to the Sneaker Shopping Retail Environment (Pre-Pandemic)

Within the sneaker retail environment there are two main markets, the **primary sneaker market** and the **secondary sneaker market.** The primary sneaker market is a market for new sneakers (sneakers that are sold from the original brand/manufacturer). Sneakers that are directly sold from brands such as Nike, Adidas, Under Armour, Converse, and etc, would fall under the primary sneaker market. The secondary sneaker market is a resale market in which sneakers that are not sold from the original brand/manufacturer. Most sneaker sellers buy sneakers from the original brands, and resell it to consumers. In 2019, the global primary sneaker market stood at $94 Billion, while the secondary sneaker market stood at $2 Billion a

year (Wade 1). Every year the secondary sneaker market expands in size and in price every year, and it is projected to increase $30 Billion by 2030 (Wade 4).

Online sneaker marketplaces started with limited sneakers and streetwear posted on forums and sold on online auctions through sites such as eBay (Morency 1). Initially, the secondary sneaker market consisted mostly of peer-to-peer transactions through under-developed social media services, often leaving shoppers unsatisfied with the user experience and small inventory from their buyers (Morency 2).

> "If you go back five or 10 years, people didn't really trust what they were buying from an aftermarket. Transactions were messy and there wasn't a clean experience," says John McPheters, co-CEO of Stadium Goods, the New York City-based sneaker resale marketplace founded in 2015 (Morency 2).

However, that all changed due to two things. First, the introduction of the iPhone in 2006, allowed consumers to have access to the internet in the palm of their hands (Dormehl 1). Secondly, and more importantly, third party application services released in the next generation of iPhones in 2007, revolutionized the online marketplace forever. The emergence of a social media driven society, especially for the younger generation, created the social media-driven sneaker climate that exists today (Morency 2). Within the last ten years, the secondary sneaker market has now evolved into professionalized online marketplaces. Now, online sneaker retail sites such as StockX, GOAT, Grailed, Stadium Goods, and KLEKT define a majority of the secondary sneaker market (Wade 3). The secondary sneaker market now has more of a digitally native audience, a structured purchasing process, and a wide variety of choice (Morency 2).

The secondary sneaker market has a large selection of sneakers over the primary market; there are the plethora of shoes that are not currently available to sneaker manufacturers

in the primary market (Wade 5). Many sneaker consumers look for specific shoes sold in the past and many secondary markets have inventory of shoes released by shoe manufacturers in previous years (Wade 6). This allows for sneaker junkies to access shoes manufactured from a range of a couple years to decades in the past. Along with the accessibility to products due to online shopping, this is a large component of why the secondary sneaker market has flourished over the past decade.

The growth of secondary sneaker market companies has been exponential even before the global pandemic. Out of many companies that have had similar growth, StockX, an online secondary sneaker company (founded in 2015), the company passed a net-worth of $1 Billion in 2018, and currently has more than 100,000 products listed on it's website (Morency 3). Just in a year span of 2017 to 2018 alone, the company was able to increase the company's value by seven times (Morency 3).

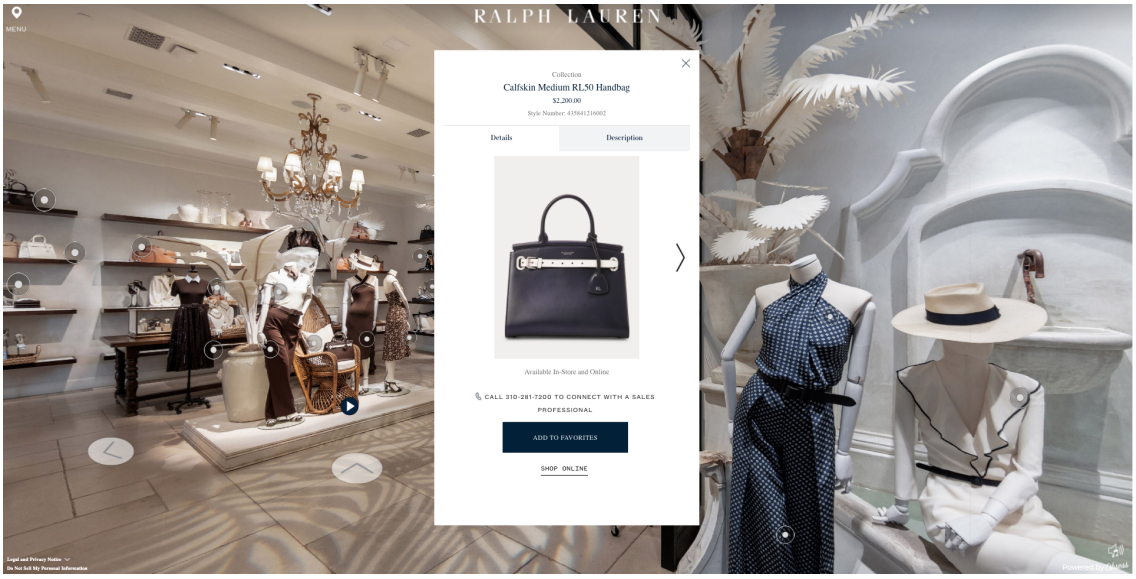
Analysis of Existing Virtual Stores

During late 2020, online virtual stores have emerged to replicate an in-store shopping experience. Rather than resembling an online catalog like most e-commerce websites, newly established virtual stores use either a 3D rendering of an interior environment or combined images to create a digital walkthrough of an actual physical location, for users to navigate through the store. Major brands that have implemented virtual stores as a response to the pandemic were Ralph Lauren, Tommy Hilfiger, and Charlotte Tilbury (McCracken, 5). These brands partnered with Obsess, a virtual store platform for experiential e-commerce stores.

Figure 1.3. Ralph Lauren Digital Walkthrough Beverly Hills Store

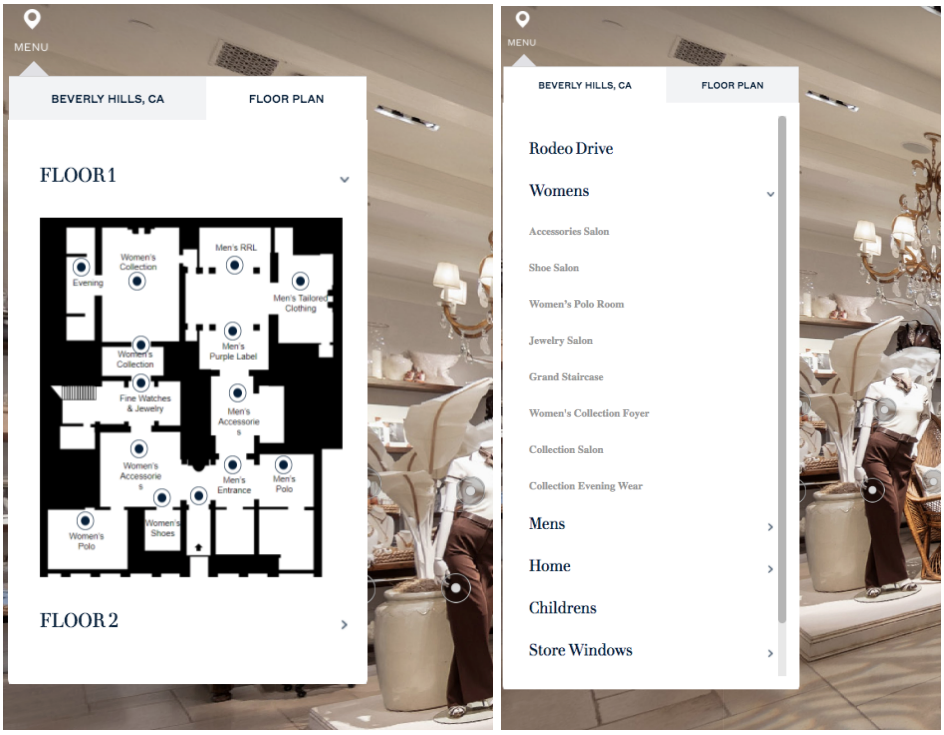
Figure 1.3 shows a digital walkthrough of the Ralph Lauren Beverly Hills store, where users can move through the virtual store by clicking on white nodes to navigate through the space (McCracken, 5). Users can also orbit 360 degrees around the store to look at all areas of the store.

Figure 1.4. Ralph Lauren Digital Walkthrough Beverly Hills Store - Product Description



Smaller white nodes are also placed on products, where upon clicking items, an item image, description, and price pops-up for the user to look at, shown in Figure 1.4. On top of these assets, the menu button located on the top left of the screen allows for a floor plan to pop out, labeling where certain items are located. When clicking on an area of the floorplan, the user is moved to the selected area on the floor plan (shown in Figure 1.5). Similarly, the menu has a list of products, and when selected, it will also move the user to the specific location of the item in the store (shown in Figure 1.5).

Figure 1.5. Ralph Lauren Digital Walkthrough Beverly Hills Store - Floor Plan/Product Category



Experiencing the online store, it replaces the typical online shopping experience of browsing a catalog on a website, and closely replicates an in-store experience where the user is looking through items in a virtual store. It significantly engages the user a lot more than a list of images on an online catalog. However, there are some elements that are lost through this

virtual store that users experience in a brick and mortar store. McCracken sums this up beautifully,

> "...while it isn't boring, it's kind of lonely. What's missing in all of the virtual shopping environments I explored were other people walking by, talking, offering to help, looking at and touching things." (5).

A large part of the customer experience is to touch the materiality of the product, especially for apparel, and this is lost through the digital walkthrough. Additionally, the human interaction with other customers and staff within the store are completely diminished (McCracken, 6). The social interaction heavily lacks within stores in virtual stores that exist now. Currently, there are no virtual stores that allow customers to interact with each other, let alone with the staff.

Research Agenda

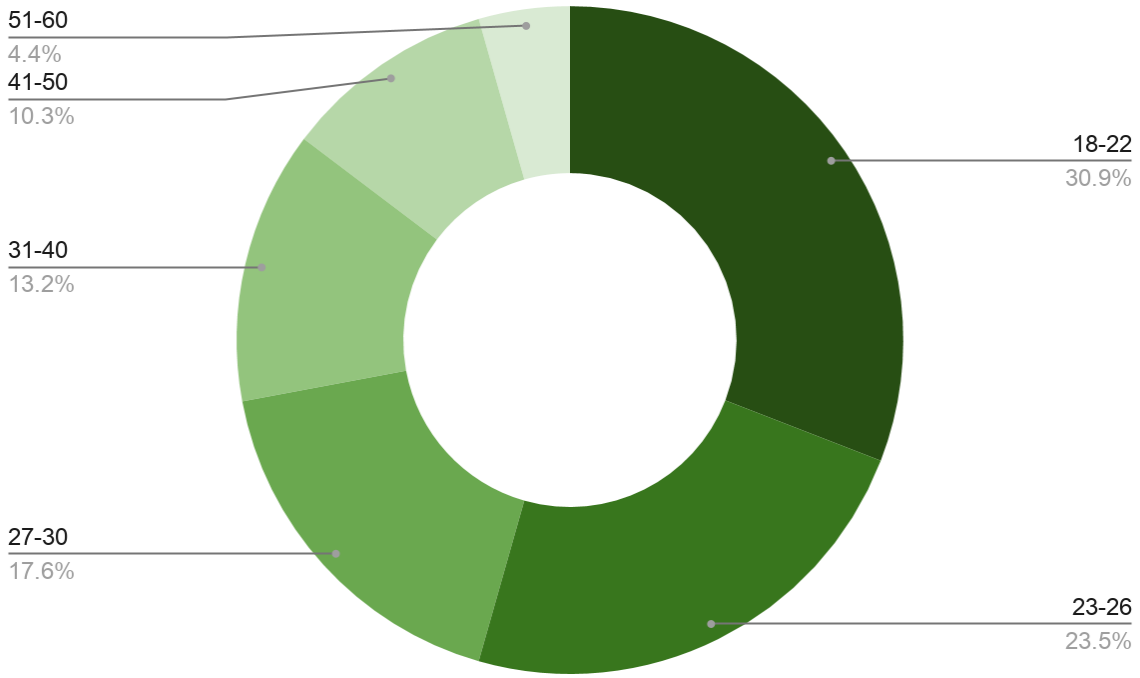
Research Methodology: *Understand the current sneaker retail environment, and create a basis of how to tailor a virtual in-store experience for consumers.*

Survey Data Analysis

(see Appendix B: Capstone Survey)

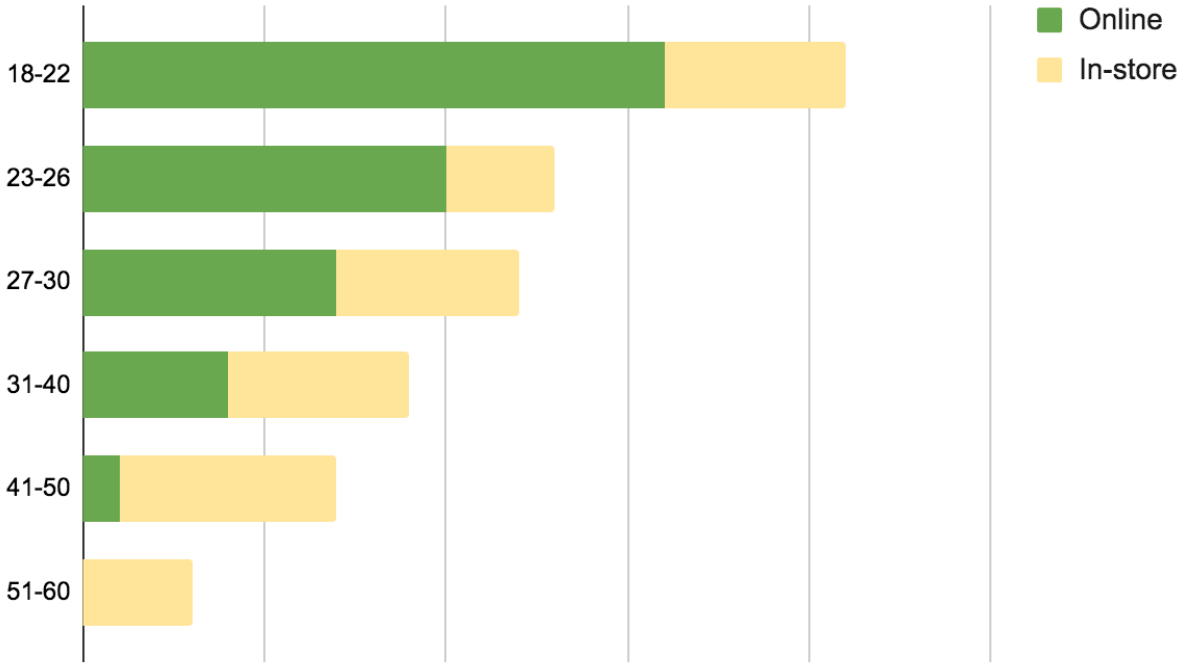
The goal of the survey section of the research agenda was used to examine issues consumers had with the current online sneaker shopping environment inclusive of different demographics and age groups. Additionally, the survey seeked to ask if a virtual in-store shopping experience would be beneficial and wanted by online users. The survey consisted of a total of 17 questions. The survey gathered information from consumers of sneakers from ages 18 to 60 shown in Figure 2.1. The survey was completed with data from 162 respondents, 97 male and 65 female.

Figure 2.1. Respondent Age Breakdown



One of the most important questions asked in the survey was if consumers shopped for sneakers online or in brick-and-mortar locations after the outbreak of the pandemic. Figure 2.2. divides users by age group. Each sneaker consumer was asked if they currently shop for sneakers online or at brick-and-mortar locations.

Figure 2.2. Respondent Shopping Preference, **Online or In-store** by Age Group



From Figure 2.2. there was a large contrast of shopping preference between younger and older shoppers. In total there were a total of 112 online shoppers versus 51 brick-and-mortar shoppers, with a large majority of sneakers consumers shopping online. There was a high correlation with the age and the shopping media, in which consumers preferred to shop for sneakers. Younger respondents had more of a tendency to shop online versus older respondents, and vice-versa older respondents had more of a tendency to shop at brick-and-mortar locations versus younger respondents.

In the next section of the survey respondents were asked why they prefer their option of online or in-store shopping. For respondents that preferred online shopping, here are the main points:

1. **24/7 shopping availability.** Consumers have the ability to shop online anytime of the day or night from the comfort of their home.
2. **Accessibility to a variety of brands and designers.** Consumers don't have to search out a physical store that carries that designer's shoes.
3. **Wider selection of sizes, styles, and colors.** Online stores carry more size, styles and color options than brick-and-mortar stores.
4. **COVID-19 Pandemic.** Some consumers don't want to go to brick-and-mortar stores to avoid interaction with others due to the pandemic.

On the other hand, for respondents that preferred brick-and-mortar stores, here are the main points:

1. **Fitting sneakers before purchasing the product.** Styles of sneakers tend to fit a particular based on the consumers foot shape.
2. **Opportunity to feel the materiality of the sneaker.**
3. **Being able to talk to store staff to assist you with your specific choice and use for sneakers.**
4. **Need to purchase sneakers in a hurry.**

This section of the survey highlighted why some consumers preferred online versus in-store shopping. Both spectrum of shoppers have good arguments on why they prefer one media of shopping over the other. There were also many respondents that preferred shopping at brick-and-mortar stores, prior to the pandemic. However, many respondents now prefer shopping online due to human contact and safety, which was an underlying issue at

brick-and-mortar locations due to the pandemic. The survey asked if the COVID-19 pandemic influenced the respondent to become an online shopper. Out of 162 respondents that preferred to shop online, 67 respondents (41.36%) answered that the COVID-19 pandemic influenced respondents to shop for sneakers online. The data claims that the pandemic has greatly impacted more shoppers to shop online, prior to the pandemic.

The next section of the survey collected the preferences of brands and sneaker type respondents typically purchased. Many respondents tended to buy sneakers from major brands such as Nike, Adidas, New Balance, Under Armor, and etc (Figure 2.3). Many respondents tended to buy basketball sneakers and athletic shoes, (74%) of respondents tended to buy sneakers from these categories (Figure 2.4.).

Figure 2.3. Brand Preference for Online Shoppers

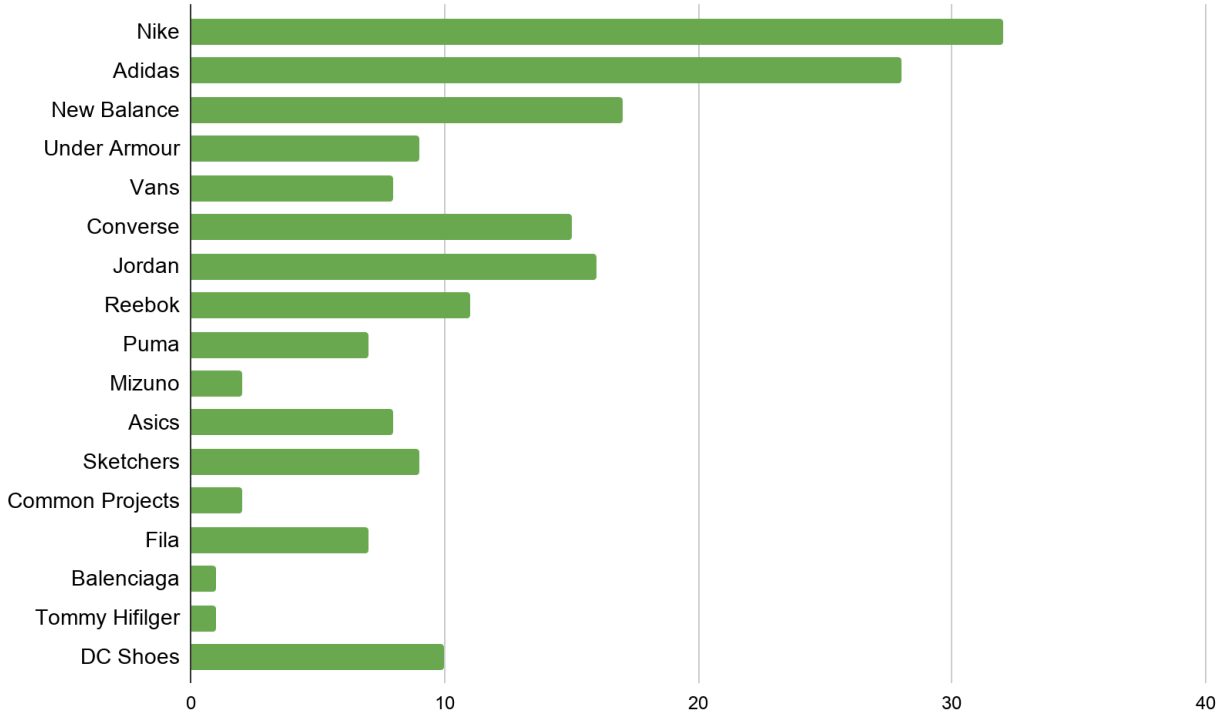


Figure 2.4. Types of Sneakers Online Shoppers Prefer

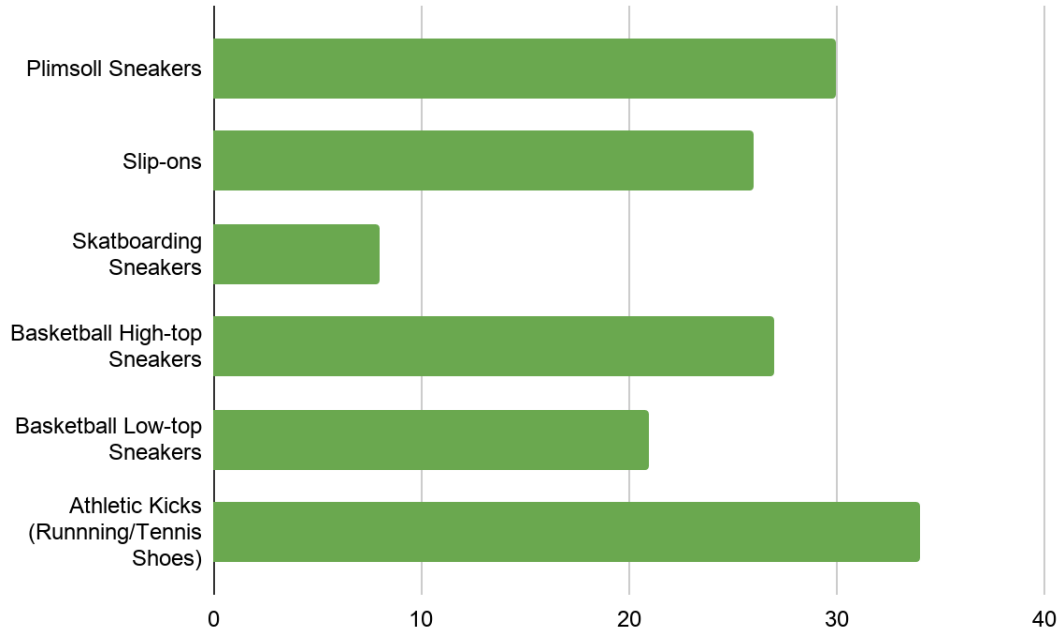
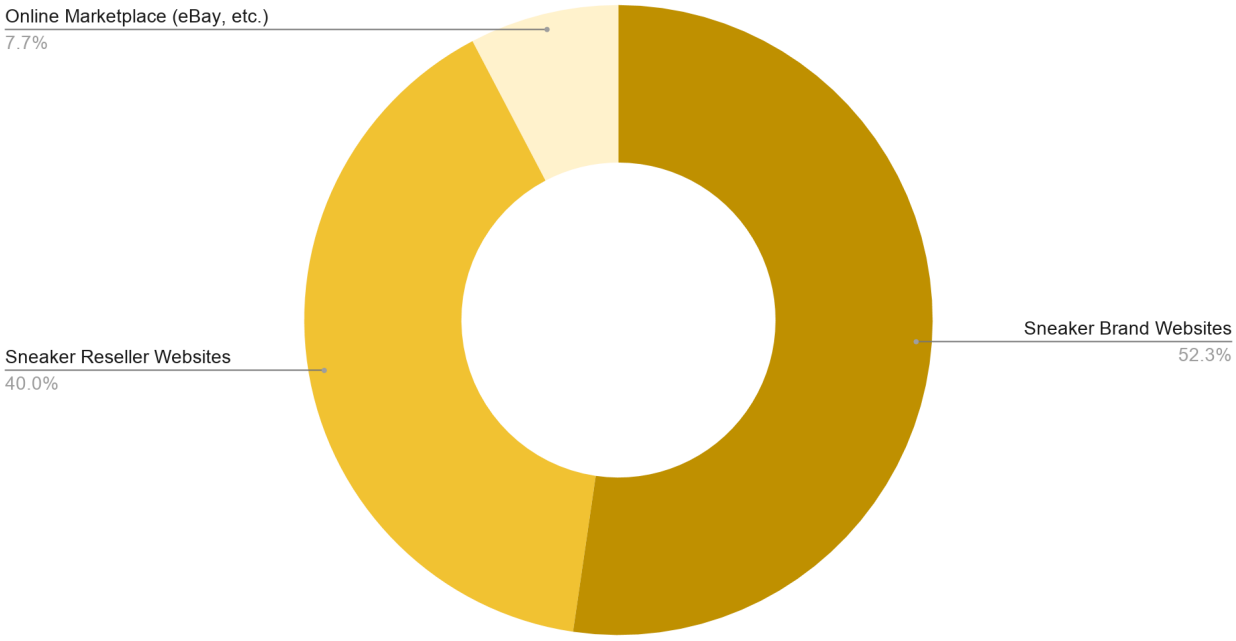


Figure 2.5. Respondents Preference for Online Shopping Sites



Out of the 112 online sneaker consumers that buy sneaker products online, many consumers buy sneakers from either primary sneaker retailers or secondary sneaker retailers (Figure 2.5.) Although the primary sneaker retail market ($94 Billion) is significantly bigger than the secondary retail market ($2 Billion), close to 40% of respondents tended to buy from secondary sneaker retailers, although the market is so much smaller (Wade 1).

There is also a large underlying issue with sneaker shoppers that were not able to fit into shoes purchased online. Looking at Figure 2.6, there are many times where users had to return shoes to online stores due to not properly fitting the user's foot. There are no proper sneaker fitting solutions unlike physical stores, therefore this is one issue to be addressed and solved in the creative agenda.

Figure 2.6. Amount of times online consumers had to return sneakers for fitting issues

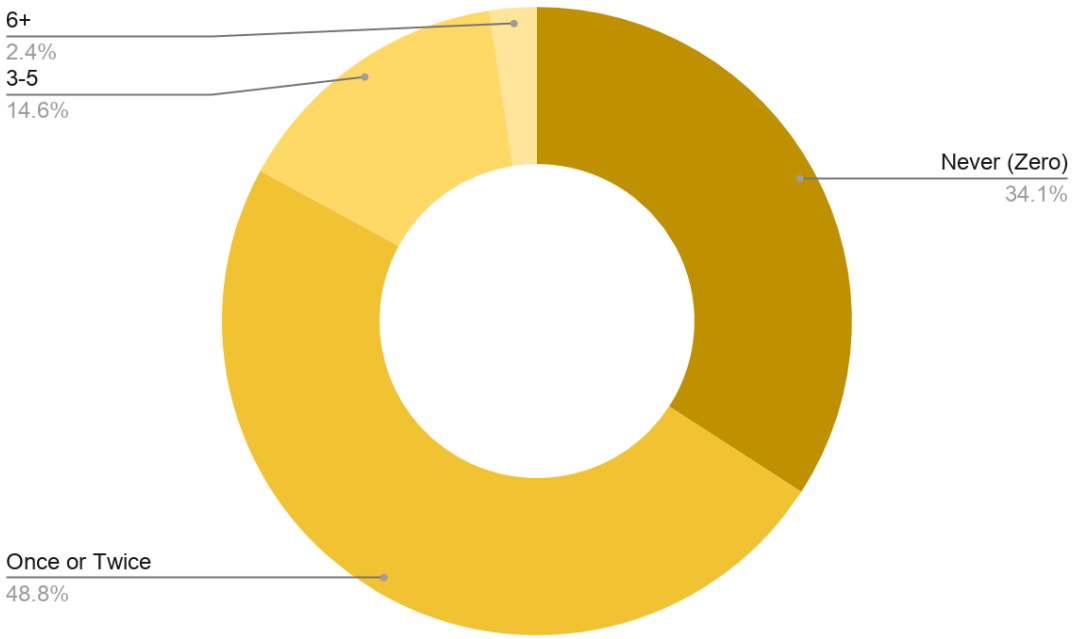
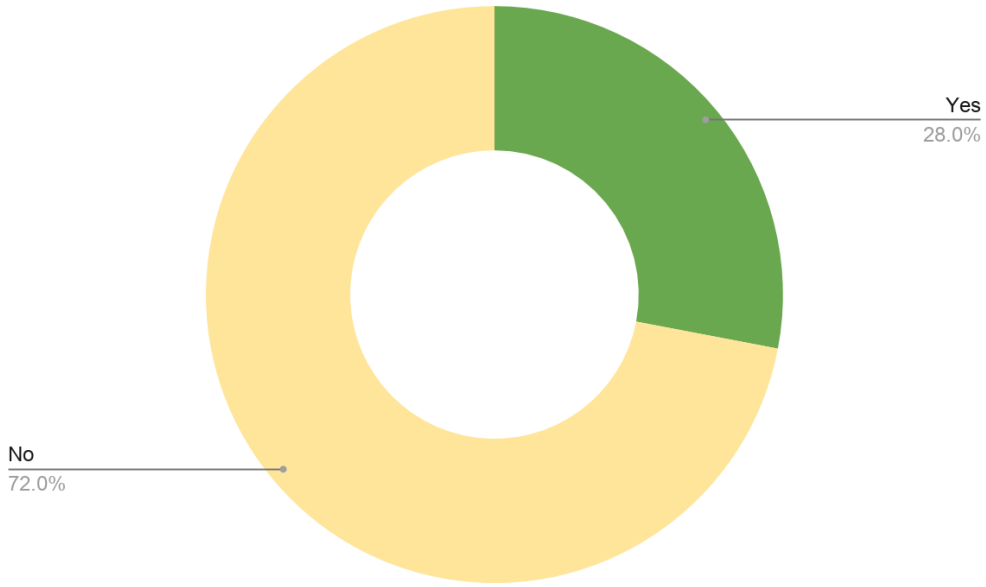


Figure 2.7. Have you experienced shopping in virtual online stores?



Lastly, survey respondents were asked if they have tried virtual online stores. Out of the 112 online shoppers, 33 respondents answered that they have tried a virtual shopping experience. However, most users had a couple underlying reasons why they did not enjoy the virtual sneaker shopping stores:

1. Most users did not have a VR headset ready with them, to fully experience virtual shopping
2. User-interface for VR stores were hard to navigate, when freely moving around the virtual interior
3. It was hassle to look and locate certain products in the store

These are points that will be revised and solved to be incorporated for the creative agenda.

Summary

Here the main underlying issues online shoppers face when buying sneakers online:

1. **The lack of an ability to try on sneakers before purchasing the product.**
2. **Difficult to get a hold of and talk to someone to assist you with your issues.**
3. **Having to return the pair of sneakers to a storefront.**

Online stores have flourished during the pandemic due to the emergence of more online users, while physical stores have decreased in engagement. However, many users enjoy components of an in-store shopping experience (fitting and engaging with other consumers) , but are limited in going to brick-and-mortar stores due to the pandemic. Additionally, through the data gathered from the survey it is apparent that the younger age demographic, would be the audience for the online/virtual sneaker shopping experience. The mean age of the respondents that were online sneaker shoppers was 25.3 years old, therefore for virtual sneaker stores would be tailored for a younger user audience (Figure 2.2).

Re-defining the User Experience in Online/Virtual Shopping

Currently, there are no virtual stores that allow customers/staff to interact with each other. This has been an overlying problem with the introduction of virtual shopping in late 2020, however, there are online/virtual platforms that have already solved this problem. This solution can be specifically found in ***mobile gaming platforms***. Not only are there solutions that can be utilized for user interaction in mobile gaming, but there are certain gaming mechanics that can be adopted to create a better engaging consumer experience for a virtual in-store shopping experience.

Easy to Use/Understand User Interface

The best part about mobile gaming platforms is that the main controls are easy to use and understand (Luban 3). The player should be able to glance at the screen and understand 75-80% of the game controls without any explanation (Luban 3). Game tutorials help the player understand the controls if explanations are necessary. Moreover, most controls should be straightforward and easy to grasp for the user (Luban 3). Roll-over labels for controls should be readily available to users, if they need to be reminded of certain features in the game (Luban 4).

This core value must be followed in order for a virtual in-store shopping experience to be successful. If users have a hard time navigating or understanding motion controls it will deter users from wanting to use the mobile application. Therefore, interfaces should be easy to understand and easy to use for any user.

Gaming Lobbies

A gaming lobby in multiplayer games allows players to interact and chat with each other before they go to a specific room/dungeon in game (Packt 1). Depending on the game, the room may show a lot of different information ranging from avatar name, level, party, and etc (Packt 1). The core concept of gaming lobbies can be translated into virtual shopping experience. In most mobile games, users can talk to each other through a ‘friend system’ (Packt 1).This is where users can chat to each other after they mutually agree to become ‘friends’ with each other in game, which allows access for both users to get in contact with each other (Packt 4). This is very similar to social media applications where users can ‘friend you on Facebook’ or ‘follow you on Instagram’. Very similarly, in a gaming lobby, a shopping lobby can be populated with other users and avatars, where they can converse about different products in the application. A similar ‘friend system’ can be used for consumers, when both

parties ‘friend each other’. Users can be in contact with each other to converse about certain products in store. This will greatly elevate the interaction between consumers.

Node-Based Movement vs Free-Movement

Many mobile gaming applications use node-based movement, where in a virtual interior or space the user can click an avatar to relocate and rotate the user to a different point in the space (Graham 2). Free-movement is where users make their avatar, walk or run through a space to get to a destination (SCHOOL OF GAME DESIGN 5). A node-based movement mechanic is more beneficial, when constructing a virtual in-store shopping application. Free-movement for an application for the user would be an issue because it will be a hassle for users to navigate through the space, orbit the camera angle to get a good view of the product shelf. Node-based movement will remove this issue because the application will set the view angle for the user, and allow for easier navigation around the virtual interior.

Log-In Bonus/Special Events

In F2P (free to play) mobile games, whenever a user logs-in to the application they are rewarded with some sort of gift to reward the player (Luban 4). This can range anywhere from in-game items, currencies, coupons, or anything beneficial for the player (Luban 4). The goal of a log-in bonus is so that users stay hooked and engaged to continue playing the game. A similar feature can be used for a virtual sneaker shopping store, where users can be rewarded with discount coupons, access to early product release or waitlist for user engagement (Luban 4).

An additional feature that mobile F2P games have are special events (Luban 3). Special events are usually only offered only during a specific duration of time, which benefits the player

to unlock items or characters that are rare to find in-game (Luban 3). These events usually run during globally celebrated holidays, for example Christmas, New Years, Valentines Day, and etc. This feature can be modified and included in virtual shopping stores in the form of discounts or sales to get user attraction. This will directly lead to increased sales during the peak of the holiday season.

Summary

Mobile gaming mechanisms are highly beneficial resources to reform and create a virtual in-store sneaker shopping experience. Adapting mechanisms, such as gaming lobbies, node-based movement, log-in bonuses, and special events are highly beneficial when designing mechanisms for the virtual store. The core components of mobile gaming are utilized in the designing of the virtual store, where controls and features are easy to understand and use. This mobile application will strive to create an engaging virtual environment for users to interact with others, and enjoy the shopping experience.

Creative Agenda

Design Methodology: *Develop, determine, and design a system for a virtual in-store sneaker shopping experience for both the consumer and store through a mobile smartphone application.*

The solution proposed to address the undergraduate capstone research question is to create a virtual store that creates a simulation of an in-store shopping experience for sneaker retail businesses, accessible on mobile devices. The store will strive to create an in-store shopping experience to browse sneaker products from using technology available on mobile devices we use daily.

To illustrate this concept, a hypothetical secondary sneaker retail company MOVE was created to demonstrate the solution for the research question. MOVE is an online secondary sneaker retail business that mainly sells athletic sneakers for various sports and from numerous brands. The MOVE company follows a sleek and minimalist design within its virtual interior and through its user interface of the mobile application. MOVE strives to expand its global presence in the secondary sneaker retail market with it's virtual store and create an in-store experience for users through a virtual interior environment.

The creative agenda is broken down into three sections:

MOVE: Mobile Application Consumer Interface - User Flow

Functionality of the virtual store from a consumer perspective

a) Virtual Store Interior Layout/Customization Option

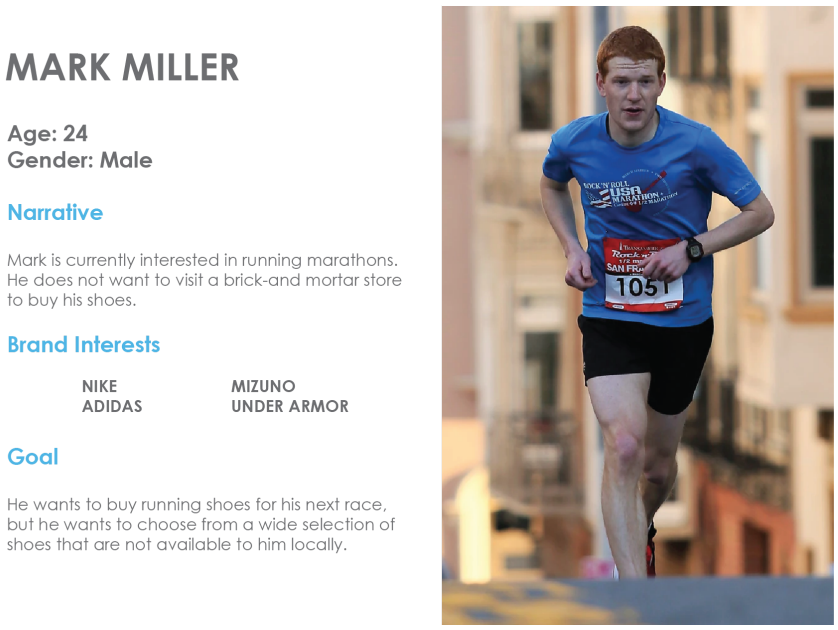
b) VR Option and Consumer Interface

c) Shipping Options and Product Texture

MOVE: Mobile Application Consumer Interface - User Flow

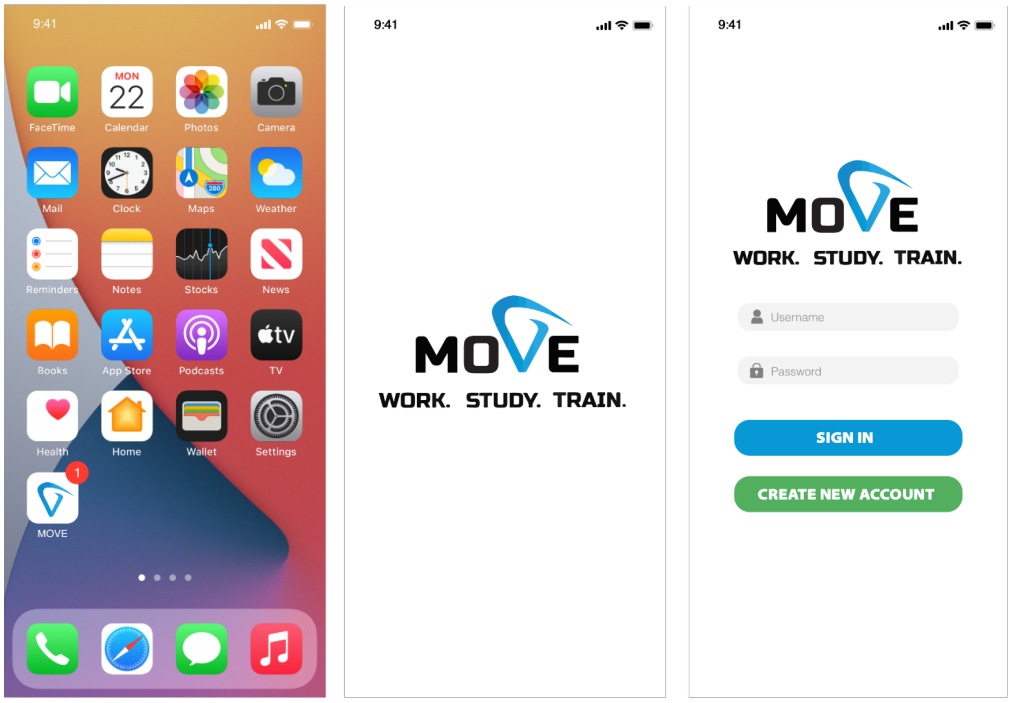
To display the entire consumer experience of the MOVE virtual store, a persona was created to fully capture all the features of the experience. The persona developed is shown in Figure 3.1, Mark Miller (age 24) is a long distance recreational runner who loves running marathons. Mark visits the MOVE virtual store to find a sneaker that he will use to run his next marathon event.

Figure 3.1. Mark Miller Persona



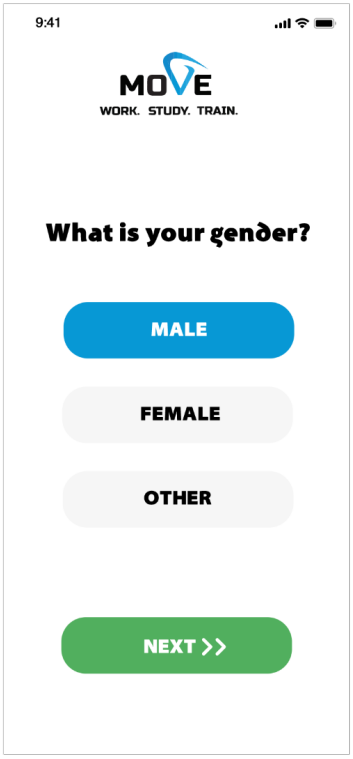
The MOVE virtual store is accessible through a smartphone application that can be downloaded from the App Store or Google Play. Once downloaded, open the application to move forward to the login screen of the application shown in Figure 3.2. The application will bring the user to the sign in/create account page, where the user can create an account or sign in. In this case the user, Mark Miller, creates an account and shortly later signs in to his account.

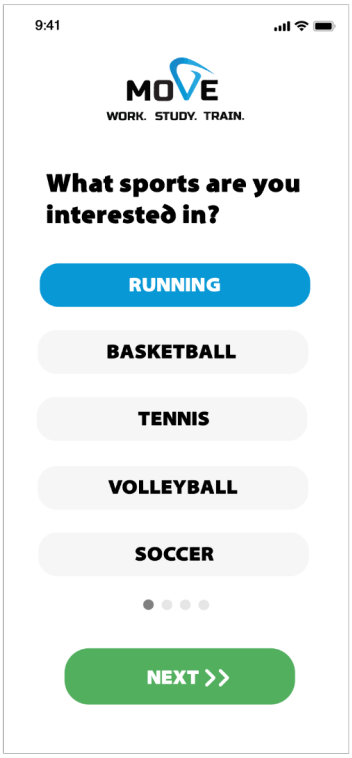
Figure 3.2. Home Screen with Application (Left)/Launch Screen (Center)/Sign in Screen (Right)

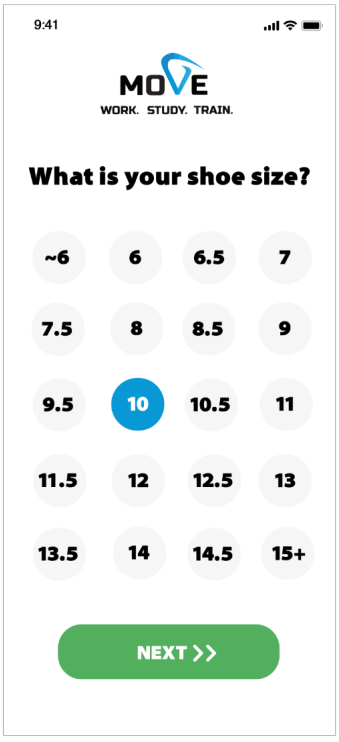


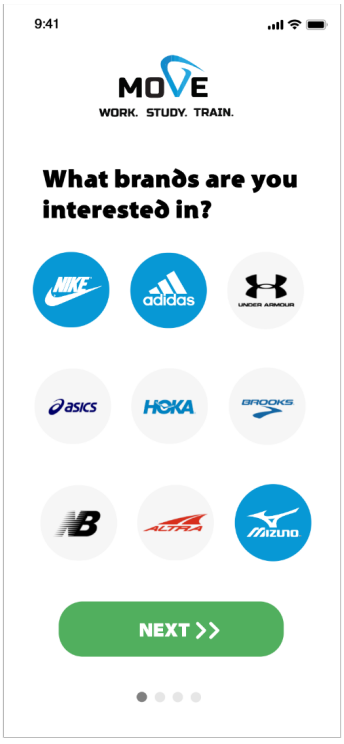
After signing into the account, the user is asked a series of questions (Figure 3.3). These series of questions are used to profile the user to create an optimal layout of the store for the user that identifies the user's gender, shoe size, interested sport and brand. By going through this filtration selection the app generates the brands and products that would be recommended for the user. The user can select multiple brands and sports that interest them during the user profiling process. In this case, the selected options were based on the persona of Mark Miller.

Figure 3.3. User Profiling Process - Mark Miller


9:41
MOVE
WORK. STUDY. TRAIN.
What is your gender?
MALE
FEMALE
OTHER
NEXT >>


9:41
MOVE
WORK. STUDY. TRAIN.
What sports are you interested in?
RUNNING
BASKETBALL
TENNIS
VOLLEYBALL
SOCCER
NEXT >>

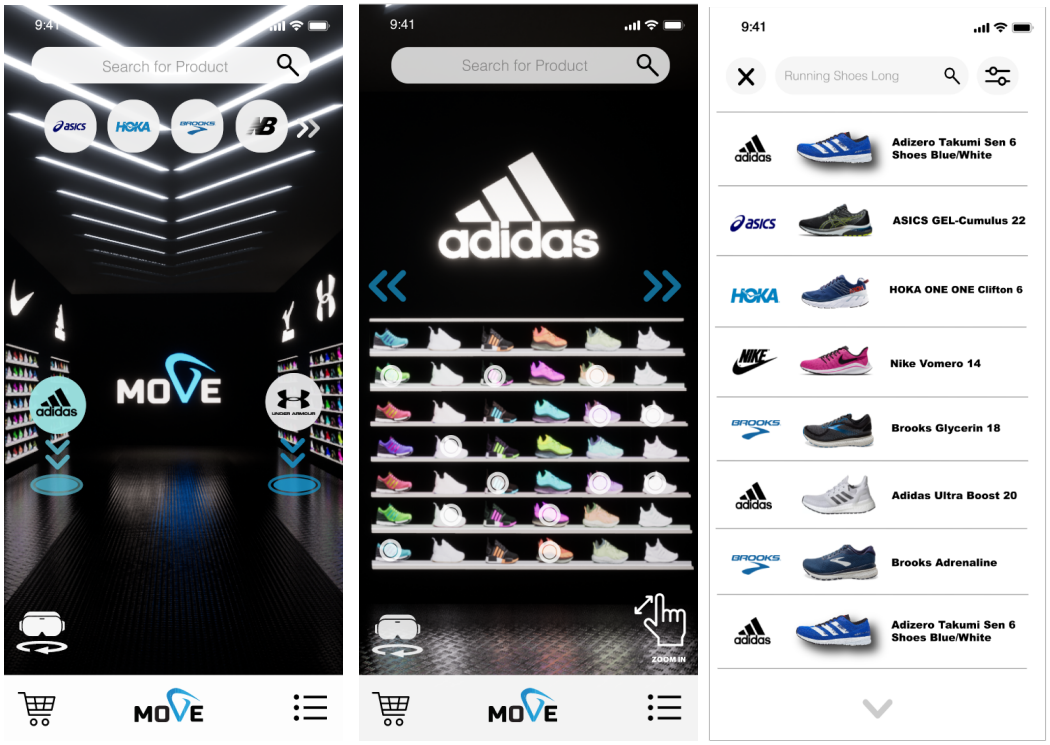

9:41
MOVE
WORK. STUDY. TRAIN.
What is your shoe size?
~6
6
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15+
NEXT >>


9:41
MOVE
WORK. STUDY. TRAIN.
What brands are you interested in?
NIKE
adidas
UNDER ARMOUR
asics
HOKA
BROOKS
ALTRA
Mizuno
NEXT >>

Following this process the user is brought to the home screen of the application (Figure 3.4). Here the layout of the store is customized based on the user profiling process, where brands and sports of the shoes interested by the user are brought in front of the virtual interior. In this scenario, Mark Miller selected running and selected brands such as Nike, Adidas, Mizuno, and Under Armor hence, these products are now brought to the front of the store.

Figure 3.4. Home Screen (Left)/Adidas Shoe Shelf (Center)/Product & Brand Search

(Renderings done in Twinmotion)



Virtual Store Interior Layout

The layout of the store is very minimalistic in nature, where it will consist of 4 different brand shelves based on user preference, where the user can select up to four brands of their preference and customize the location of the sneaker brand (see Figure 3.7.). In this scenario, the consumer Mark chose 4 brands during the initial user profiling setting of the application (refer to Figure 3.2.). Mark in this case chose Nike, Adidas, Mizuno, and Under Armor as brands

he was interested in, therefore the application system brand shelves were automatically populated with sneaker products from these four brands.

There are several ways that the user can navigate the overall virtual store to search for products (Figure 3.4):

1. The user can navigate the store by pressing nodes (node-based movement) located on the floor of the space to move to the brand shelf.
2. The user can search for products and brands on the search bar located on the top of the mobile screen.
3. The user can toggle and swipe to select brands, located below the search bar.

In this scenario, Mark Miller ends up selecting the Adidas shelf node, which moves him to the brand shelf for Adidas. The user can navigate around the shelf by pinching the screen or swiping left or right along the shelf to see all the products for the brand. Mark selects a shoe on the shelf, which leads him to Figure 3.5.

The item description/purchasing page has couple of assets and features (Figure 3.5.):

1. *Product Image (360 Degree View)*

   The product can be rotated 360 degrees so that all angles of the sneaker are visible for the user.

2. *Item Description*

   The item description will be information that is provided by the manufacturer of the sneaker. Information can range from performance information, material specifications, color variance, intended use, and etc.

3. *Foot Measuring Tool*

By pressing the foot measuring icon on the top right, this activates the ‘foot measuring tool’. For the AppStore (iPhone) version of the application, the LiDar scanner will be incorporated to measure the show width and height of the user’s foot. The application will then automatically select the best shoe size for the user (Lovejoy 2). The LiDar scanner automatically measures anthropometric measurements of the varying body parts of the human body (Lovejoy 3). For this instance, it will be programmed to measure the users feet through the mobile device’s camera.

Figure 3.5. Item Description/Purchasing Screen

4. *AR Fitting Feature*

   The AR fitting feature is located below the 'foot measuring tool', with a camera icon labeled "**AR**". This feature allows users to test fit the sneaker through the camera lens by using augmented reality. When the screen is directed at the user's foot, it will automatically snap on a pair of the selected sneaker onto the user's foot. This asset will allow users to test on different shoes to see if the sneaker will look good on them.

5. *Quantity Selection/Color & Material Selection*

   The quantity of the shoe can be changed by clicking the + or - buttons for purchase. The exact quantity of the shoe can be typed in by pressing the value. To the right of the quantity selection is the color selection option. Here if there are more than two colors/materials available for the sneaker, the user may select the preferred color for the sneaker they would like to purchase.

6. *Size Selection*

   Size selection for the sneaker is located on the bottom of the screen above the 'place in cart' button. The shoe size of the user should be automatically selected after the user profiling in the initial set-up of the application or after utilizing the 'foot measuring tool'. Size can also be manually selected by scrolling right and left to find the preferred size. Available sizes are colored in **blue**, selected sizes are highlighted in **green**, and unavailable sizes are crossed out and colored in **gray**.

The user can proceed to 'place in cart' to later purchase the product after all the settings are adjusted to the user's preference. In this scenario, Mark Miller selects one, size 10, Race Blue, AdiZero Takumi Sen 6 Men's Shoe and places it into his cart.

In addition to his new shoes Mark placed into his cart, he wants to search for more long distance running shoes. Mark selects the search bar and types out, "running shoes long

distance” . The keywords filter shoes that are used for long distance running, and is displayed under the search bar (see Figure 3.6.). Each sneaker is provided with the brand, image of the sneaker, and name. The list of sneakers is formulated by the keywords and the user can scroll down through the list provided. In addition to this key term search, Mark wants to filter his search based on price and sport. Furthermore, Mark wants to gift his friend a pair of basketball shoes in the price range of $200 to $300, under the Jordan brand. He selects the price filter between the price of 200 and 300 dollars, and filters the sport to basketball, and chooses the Jordan brand (shown in Figure 3.6.). He looks for the appropriate shoe for his friend and moves to check out and purchase.

Figure 3.6. Search Bar & Search Filter

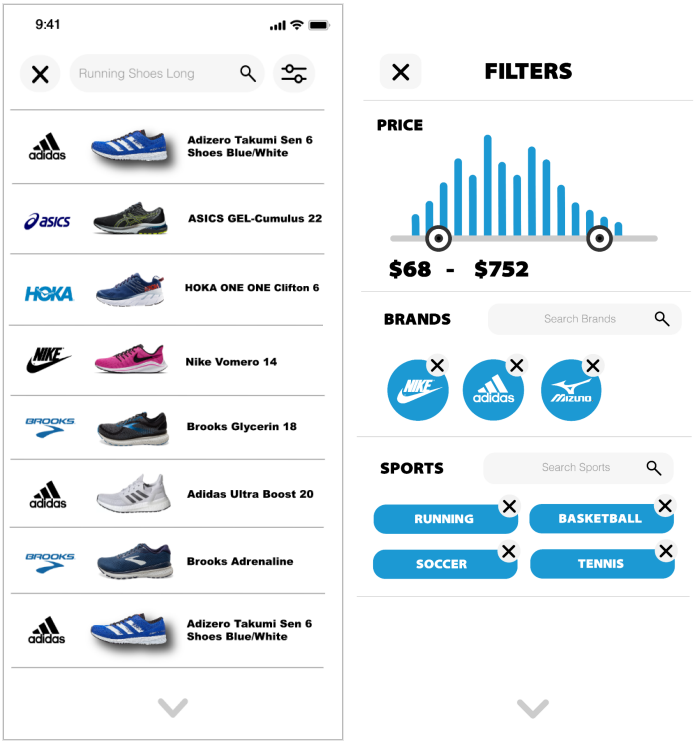


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Figure 3.7. Virtual Interior Customization

The store interior can be personalized to the preference of the user. The store customization option consists of the following assets:

1. Brand Shelf Customization - the user can choose up to four different brands to populate the store shelves. Brands can be deleted and replaced, and changes will occur after the customization is saved by the application.
2. Color and Material Customization - Users can personalize their store by changing the color and materiality of the store walls, floors, and ceiling.
3. User Interaction Setting - Users can set the store, so that they can visibly see other friend avatars to populate the virtual store. With this setting turned on the user would be able to see other users populate the space, creating a more interactive store experience. This can be turned off or on based on the user's preference.
4. User Chat Setting - The application allows for the users to talk with friend users through a chat option, to create a more engaging consumer experience and to converse with other sneakerheads in the community.

VR Mode and User Interface

In addition to the application interface for mobile screens, the virtual in-store sneaker shopping experience also comes with a VR mode, where users can order a Cardboard VR Headset and insert their smartphones into the headset. The VR Headset and Controller can be ordered from the MOVE application for a set price. The VR mode version application switches the movement of the avatar from node-based movement controls to free-movement controls (shown in Figure 3.98 The user will be able to roam around the space freely, and have a more realistic and immersive in-store experience (The video for this asset can be seen using this link).

Figure 3.8. VR Mode - Free-Movement Controls

Shipping and Product Fitting

One overlying issue mentioned in the research agenda and the literature review is the lack of the user able to feel the texture of products and fit the product. Although it will be very difficult for secondary stores to send shoes for users to test, it is possible for stores to have a three day return policy for sneakers. The regulation for the a one week return policy will be the following:

1. No visible damage and stains can be sustained on the sneaker, for the product to be eligible for returns. There will be no refunds if the product is returned with any form of damage.
2. All components of the shoe must be restored into the packaging and mailed back to the store with this mailing address (*right address here*).

3. An online form must be completed in the MOVE application for product returns within one week of the product being purchased.

By following this return policy agreement users can test and fit shoes indoors without damaging the shoe and will be eligible to test shoes if need be. The only caveat for these rules being that if the user damages the shoes during testing, the user will have to compensate for the entire price of the product. However, this would have to be enforced so that no damaged products are being returned to the store.

Summary & Conclusion

The MOVE virtual in-store sneaker shopping experience is a design alternative for users to enjoy, and further entertain and elevate the shopping experience for users through a mobile device.

The goal of this undergraduate capstone was to create an alternative solution to an in-store sneaker shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society. The proposed solution created a virtual in-store sneaker shopping experience, easily accessible through a mobile application. The creative agenda was executed to create a design proposal for this mobile application for a virtual interior environment and user interface for sneaker consumers.

Overall, the application allows users to explore sneaker products through a mobile screen or a VR headset, and allows for perfect fit measurement through the LiDar anthropometric measuring asset. Additionally, users can fit sneakers with the AR features of the app to fashionably coordinate sneakers with the user's clothes. Furthermore, mobile gaming mechanisms are highly beneficial resources to reform and create a virtual in-store sneaker shopping experience. Adapting mechanisms, such as gaming lobbies, node-based movement, log-in bonuses, and special events are highly beneficial when designing mechanisms for the virtual sneaker store. The core components of mobile gaming are utilized in the designing of the virtual store, where controls and features are easy to understand and use.

In conclusion, this virtual store allows users to stroll and move freely around a space, to experience sneaker products. This curated virtual/online shopping experience closely replicates the traditional brick-and-mortar shopping experience with a kick of technological flare. With knowledge of online and virtual systems from other industries, the MOVE mobile application is

a concept that is to greatly elevate and expand an online shopping experience. Through knowledge of virtual rendering software of interiors that exists today, the possibilities of online shopping are limitless. Shopping experiences are able to be creatively curated with the help of technological assets we hold in the palm of our hands.

Annotated Bibliography

Luban, Pascal. “The Key Design Differences between Traditional and Free-to-Play Games.” *Gamasutra*, 2021, www.gamasutra.com/view/feature/6552/the_design_of_freetoplay_games_.php?print=1.

Pascal talks about the pros and cons of free to play game design. He dives into features about the key differences between free to play games and traditional games. These range from easy to use interfaces for the user. This article was used to take in parallels on how game user interface and design can benefit for a virtual shopping store application.

McCracken, Harry. “These Virtual Stores Are a Joyful Twist on E-Commerce.” Fast Company, 18 Dec. 2020, www.fastcompany.com/90586505/virtual-stores-cost-plus-world-market-ralph-lauren-matterport-obsess.

McCracken’s article mainly focuses on Ralph Lauren’s VR store and talks about the good and bad points of virtual reality stores. The article goes in depth of what is lacking in VR stores currently, and compares and contrasts VR stores with each other. This article was used to understand the current state of VR in-store shopping experience.

Morency, Christopher. “This Is What the Future of Sneaker Reselling Looks Like.” *Highsnobiety*, 24 Jan. 2019, www.highsnobiety.com/p/sneaker-reselling-future/.

This article converse’s on different sneaker retail market’s from primary to secondary sneaker markets. It gives a general overview of these markets, and goes into talking about the projected sales these two markets will make in the near future. This article was beneficial to understand the difference between primary and secondary retail markets.

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Wade, Reggie. “The Global Sneaker Resale Market Could Reach $30 Billion by 2030.” Yahoo! Sports, Yahoo!, 21 July 2020, sports.yahoo.com/global-sneaker-resale-market-could-reach-30-billion-by-2030-cowen-191003371.html

Appendix A | Signed Capstone Prospectus

Last Name: Richter **First Name:** Thomas

School: College of Art and Design, School of Design, Rochester Institute of Technology

Program: Interior Design

Capstone Title

The Virtual Shopping Experience: An exploration in alternative solutions to an in-store shopping experience

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Thesis Proposal

Research Question

What is an alternative solution to an in-store shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society?

Thesis Justification

The aim of this investigation is to explore an alternative solution to an in-store shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society. The COVID-19 pandemic has created an environment for people to stay inside at home, and to access many tasks and entertainment from the comfort of their homes. The pandemic has allowed many pseudo-interior environments to arise, allowing for many in-person experiences to transform into online experiences in areas of education, entertainment, workplace and etc. Accessing classes or meetings through *Zoom* or enjoying an online experience with someone through an *Airbnb* online experience would be few examples that have evolved from an in-person to online experience during the time of the pandemic.

However, one large experience that has not made a complete transition from an in-person to an online experience is ***shopping***.

There are largely two forms of shopping experiences, **online** or **in-store**. The online experience for shopping has been largely accessible for many consumers for roughly the past decade. Currently, online shopping through a website or application on a computer or mobile device. Online shopping heavily relies on photos and descriptions from the supplier of the product, which consumers select a product that they think is suited for their needs in their daily tasks. This statement alone underlines a huge limitation for the current online shopping experience. Firstly, it is challenging to gain information needed from a few photos and descriptions of specific products, especially if the product has multiple functions. Secondly, the in-store experience allows for products to be felt, if the product's uses heavily rely on materiality and texture. The current online shopping structure does not allow the consumer to physically touch or feel texture prior to purchasing the product. Thirdly, opposite to an in-store shopping experience, it is difficult to reach out to shop managers or staff with expertise on a product to further ask questions about the product online. The only solution for a customer being a chat bar or a phone number to reach out to the seller for online shopping.

Due to the COVID-19 pandemic, it is a pressing matter to solve the massive decrease of customer traffic into stores. There are many stores that are going under-business. By exploring a ***hybrid form of an online/virtual in-store shopping experience***, shop owners would still be able to interact with customers virtually. This would elevate the shopping experience for consumers by creating a pseudo-interior space from the liberty of their homes. Furthermore, by changing the customer flow from physical to virtual, this investigation will need to manipulate

the current exhibition and retail environment to be tailored to a virtual audience. Additionally, developing a proposed structure for a virtual shopping experience both for the consumer and store will be determined in this investigation. This new virtual shopping structure will aim to be a solution for business to thrive during and after the pandemic.

Methodology

The aim of this capstone research is to explore an alternative solution to an in-store shopping experience using online resources and technology, from the comfort of the customer's home in a post-pandemic society. By exploring these issues it will offer a solution to substantiate a design strategy for two issues:

I. How to manipulate the current exhibition and retail environment to be tailored to a virtual audience.

II. How to develop and determine a structure for a virtual shopping experience for both the consumer and store.

To investigate these problems, research methods to be conducted include:

I. Literature reviews will substantiate the effects of the COVID-19 pandemic had towards unemployment for people in the retail and exhibition sector to a further understanding of the necessity of developing a new and viable shopping environment.

II. Qualitative methods will provide evidence as resources to develop ideas to create an exhibition and retail environment tailoring a virtual audience.

III. Quantitative methods will identify consumer groups and products that need alternatives to in-store shopping.

IV. Surveys will be used to collect the necessary data to outline the issues consumers have with the current online shopping environment.

V. Interviews will be conducted to outline issues that stores are having during the pandemic, to generate a solution towards bringing traffic back into stores.

VI. Using statistical analysis from findings from past research, to measure the impact that the pandemic had towards physical traffic in-store, to claim as analytical data to support the need of a new shopping platform and system for stores.

The research methods such as literature reviews, interviews, surveys, qualitative and quantitative research, and statistical analysis will identify the problems in the current online shopping environment, to create evidence of the necessity of alternative shopping structures for both stores and consumers. This will serve to develop substantive design strategies for manipulating the current exhibition and retail environment to be tailored to a virtual audience, and developing and determining a structure for a virtual shopping experience for both the consumer and store.

Appendix B | Capstone Survey

Sneaker Shopping Online Survey

This is a survey for an Undergraduate Senior Level Interior Design Capstone at Rochester Institute of Technology. You are invited to join a research study to look at The Virtual Sneaker Shopping Experience: An Exploration in Alternative Solutions to an In-store Shopping Experience. Please take whatever time you need to discuss the study with your family and friends, or anyone else you wish to. The decision to join, or not to join, is up to you. In this research study, we are gathering information to inform a capstone design proposal for a pseudo-interior sneaker shopping environment from the comfort of the customers home. If you decide to participate this is a basic outline of what will happen over the course of your participation: we are collecting the respondents demographic (age and gender), preference for type of sneakers worn, preferences for online shopping stores, shoe size, and shopping tendencies for the respondent. We think this will take you 5-10 minutes to complete. The survey is anonymous, and you can stop participating at any time.

CONFIDENTIALITY

We will take the following steps to keep information about you confidential, and to protect it from unauthorized disclosure, tampering, or damage. When designing and executing our research, it is our policy to take all necessary steps to ensure that personal information you provide is processed fairly and lawfully. We do not sell, rent or exchange any personal information supplied by you to any third party. Nor do we use any of the information you provide for direct marketing or other non-research activities. It is our policy to monitor our internal procedures regularly to ensure compliance with the relevant statutory requirements in all that we do, including the Data Protection Act 1998, and the University's codes of practice. In some cases it may be necessary, for your safety or for the integrity of the study, for individuals from the HSRO or appointed by the HSRO, institution staff, IRB or sponsor to access your data.

YOUR RIGHTS AS A RESEARCH PARTICIPANT

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time.

CONTACTS FOR QUESTIONS OR PROBLEMS?

Call Thomas Richer at (+1) 585-296-4554 or email at tyr2160@rit.edu. If you have questions about the study, any problems, unexpected physical or psychological discomforts, or think that something unusual or unexpected is happening.

Contact Mary Golden, Interior Design Program Chair at megfaa@rit.edu, if you have any additional questions about this project or the Senior Level Interior Design Capstone Project in general.

Contact Heather Foti, Associate Director of the HSRO at (585) 475-7673 or hmfsrs@rit.edu, if you have any questions or concerns about your rights as a research participant.

* Required

1. BY COMPLETING THE ONLINE SURVEY, YOU ACCEPT AND AGREE TO ALL OF THE TERMS AND CONDITIONS SET FORTH IN THIS AGREEMENT. *

Mark only one oval.

- ◯ Accept
- ◯ Do not Accept

Sneaker Shopping Online Survey

In this section of the survey we are collecting the respondents demographic (age and gender), as well as shopping tendencies for the respondent.

2. What is your gender? *

Mark only one oval.

- ◯ Male
- ◯ Female
- ◯ Other: _____

3. How old are you? *

Mark only one oval.

- ◯ 18-22
- ◯ 23-26
- ◯ 27-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 61-70
- ◯ 71+

4. Do you shop for sneakers mostly online or in-store? *

Mark only one oval.

- ◯ Online
- ◯ In-Store

5. Why do you prefer to purchase sneakers in-store or online? *

Sneaker Shopping Online Survey

In this section of the survey we are collecting the preferences of type of sneakers, online shopping stores, shoe size, and shopping tendencies for the respondent.

6. Did the COVID-19 pandemic influence you to become an online shopper? *

Mark only one oval.

- ◯ Yes
- ◯ No

7. What brands of sneakers do you usually wear/buy?(Select any option that applies) *

Check all that apply.

- ☐ Nike
- ☐ Adidas
- ☐ New Balance
- ☐ Under Armour
- ☐ Vans
- ☐ Converse
- ☐ Jordan
- ☐ Reebok
- ☐ Puma
- ☐ Mizuno
- ☐ Asics
- ☐ Puma
- ☐ Sketchers
- ☐ Common Projects
- ☐ Balenciaga
- ☐ Gucci
- ☐ Fila
- ☐ DC Shoes
- ☐ Taft Shoes
- ☐ The Timberland Company
- ☐ Tommy Hilfiger
- ☐ Taryn Rose

Other: ☐ _____

8. What category of sneakers do you usually shop for? (Select any option that applies) *

Check all that apply.

☐ Plimsoll Sneaker

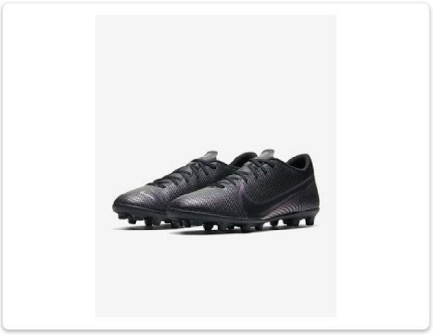
☐ Slip-ons

☐ Skateboarding Sneakers

☐ Basketball High-top Sneakers

☐ Basketball Low-top Sneakers

☐ Athletic Kicks (Running and Tennis



Other: _____

Cleats

9. How do you usually shop for online sneakers? (Select any option that applies) *

Check all that apply.

- Online shopping store website provided by sneaker brand
- Online Marketplace (Amazon, Rakuten, E-Bay, Craigslist, etc.)
- Sneaker Reseller Sites (StockX, Goat, Foot Action, Nice Kicks, etc.)

10. What is your shoe size? (Insert US size) *

_____

11. Is your shoe size typically typically sold in brick-and-mortar stores?

Mark only one oval.

- Yes
- No

12. Do you ever have issues with online sellers not indicating the width of shoes? *

Mark only one oval.

- ◯ Yes
- ◯ No

13. How often do you have to return the pair of sneakers to a storefront because they do not fit? *

Mark only one oval.

- ◯ Never (Zero)
- ◯ Sometimes (Once or twice)
- ◯ Often (3+)
- ◯ Always

14. What are some issues you have when shopping for sneakers online? (Select any option that applies) *

Check all that apply.

- ☐ The lack of an ability to try on sneakers before purchasing the product
- ☐ Difficult to get a hold and talk to someone to assist you with your issues
- ☐ Having to return the pair of sneakers to a storefront if they do not fit for a refund

Other: ☐ _____

15. How does the review of sneakers influence your decision to purchase sneakers? *

_____

_____

_____

_____

_____

16. Would you find it beneficial to be able to talk to a store employee for assistance or more information when purchasing a sneaker? *

Mark only one oval.

- ◯ Yes
- ◯ No

17. Are there ways to optimize the online sneaker shopping experience? (For example: measure your shoe size via mobile application before purchase, having a sample for textiles and fabrics, etc.) *

Appendix C | Capstone Interview

This is an interview for an Undergraduate Senior Level Interior Design Capstone at Rochester Institute of Technology. You are invited to join a research study to look at **The Virtual Sneaker Shopping Experience: An Exploration in Alternative Solutions to an In-store Shopping Experience**. Please take whatever time you need to discuss the study with your family and friends, or anyone else you wish to. The decision to join, or not to join, is up to you. In this research study, we are evaluating how to create a pseudo-interior sneaker shopping environment from the comfort of the customers home. If you decide to participate this is a basic outline of what will happen over the course of your participation: collecting the location of the store, mode of store (online, brick-and-mortar, or both), types of sneakers sold at store, customer demographic, and effects and changes of the store due to the COVID-19 pandemic. We think this will take you 15-20 minutes to complete. You can stop participating at any time.

CONFIDENTIALITY

We will take the following steps to keep information about you confidential, and to protect it from unauthorized disclosure, tampering, or damage. When designing and executing our research, it is our policy to take all necessary steps to ensure that personal information you provide is processed fairly and lawfully. We do not sell, rent or exchange any personal information supplied by you to any third party. Nor do we use any of the information you provide for direct marketing or other non-research activities. It is our policy to monitor our internal procedures regularly to ensure compliance with the relevant statutory requirements in all that we do, including the Data Protection Act 1998, and the University's codes of practice. In some cases it may be necessary, for your safety or for the integrity of the study, for individuals from the HSRO or appointed by the HSRO, institution staff, IRB or sponsor to access your data.

YOUR RIGHTS AS A RESEARCH PARTICIPANT

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with the Rochester Institute of Technology and anyone affiliated with the university.

CONTACTS FOR QUESTIONS OR PROBLEMS?

Call Thomas Richer at (+1) 585-296-4554 or email at tyr2160@rit.edu. If you have questions about the study, any problems, unexpected physical or psychological discomforts, or think that something unusual or unexpected is happening.

Contact Mary Golden, Interior Design Program Chair at megfaa@rit.edu, if you have any additional questions about this project or the Senior Level Interior Design Capstone Project in general.

Contact Heather Foti, Associate Director of the HSRO at (585) 475-7673 or hmfsrs@rit.edu, if you have any questions or concerns about your rights as a research participant.

CONSENT OF SUBJECT (OR LEGALLY AUTHORIZED REPRESENTATIVE)

Signature of Subject or Representative **Date**

_____ _____