

The Hidden Capsule Wardrobe: a Wardrobe Within a Wardrobe

Taylor Boothe

Submitted under the supervision of Dr. Lucy Dunne to the University Honors Program at the University of Minnesota-Twin Cities in partial fulfillment of the requirements for the degree of Bachelor of Science, *summa cum laude*, in Apparel Design.

May 9, 2024

Abstract

This study examines whether the characteristics of frequently worn garments in a wardrobe mirror the characteristics recommended for a capsule wardrobe. Previous studies have explored participants wearing a capsule wardrobe and the effect it has on them. It is known that people do not wear each item in their wardrobe at a high frequency. This study's goal is to examine frequently worn garments in participants' wardrobes to see if the attributes of their frequently worn garments are similar to the attributes recommended for capsule wardrobes. Twenty-three volunteers ages 18–42 who predominantly have a women's wear wardrobe were surveyed. They submitted photographs of 50 of their favorite garments from their closets and were asked how often each garment was worn. Color and garment type attributes were compared between participant wardrobes and capsule wardrobe guidelines. The findings of this study do support that the participants' most worn garments were similar to the recommended capsule wardrobe characteristics. Furthermore, the results from this study help to illustrate that behavioral differences between typical wardrobes and capsule wardrobes may not be as significant as previously thought, which can result in a decrease in the overconsumption of fashion.

Contents

1. Introduction.....	4
2. Literature Review.....	5
2.1 Clothing Consumption.....	5
2.2 Capsule Wardrobe.....	6
2.3 Sustainability.....	10
2.4 Personal Experiences Wearing a Capsule Wardrobe.....	11
2.5 Technology Within Capsule Wardrobes.....	15
3. Method.....	16
3.1 Study Sample and Data Collection Procedure.....	16
3.2 Data Analysis Procedure.....	17
4. Results.....	18
4.1 Participant Attributes.....	18
4.2 Wardrobe Attributes.....	19
5. Discussion.....	21
5.1 Participant Attributes.....	21
5.2 Wardrobe Attributes.....	22
6. Conclusion.....	24
7. Limitations and Further Research.....	25
References.....	27
Appendix.....	31

1. Introduction

With the growing concern for sustainability in the fashion industry, people have turned towards changing their consumption and fashion habits. Younger generations want more sustainable options when purchasing clothing and it is estimated that one-third of Millennials and Gen Z wardrobes are made up of second-hand clothing (ThredUp, 2019). Even though second-hand clothing is on the rise, more garments are entering consumers' wardrobes faster than they exit (Maldini et al., 2019). This means that more is being consumed and more waste is created in the fashion industry.

A sustainable approach to overconsumption is to create a small curated wardrobe that suits the consumer's lifestyle. These capsule wardrobes are usually between 30–50 garments, have a garment distribution of 60% tops, 30% bottoms, and 10% dresses, and usually follow a 4–6 color palette with roughly 3–5 neutral colors combined with 1–3 accent colors (“How to Build”, 2021; “How To Build a Sustainable”, 2022; Kellogg, 2023; Renee, 2024). After people participated in capsule wardrobe studies, they began to value longevity and have said that it will affect their future purchases by being more conscious of the effects of their consumption (Bardey et al., 2022). Garments that can be worn many times allow consumers to contribute to having a more sustainable fashion industry because garments are being worn longer meaning less is being disposed of in landfills (Heinze, 2021; Rhee & Johnson, 2019).

Previous studies have looked at participants volunteering to wear a capsule wardrobe to see how wearing a limited wardrobe affects them or how they are perceived by others. This study will look at participants' most frequently worn garments in their closets to see if their attributes mimic those of a capsule wardrobe. Attributes of frequently worn garments in participants' wardrobes were compared to recommended capsule wardrobes. This study primarily focused on

participants' frequently worn garments and whether these garments followed the recommended clothing type distribution and color palette of a traditional capsule wardrobe. This would help to determine if participants gravitate towards a more curated wardrobe without even realizing it.

2. Literature Review

2.1 Clothing Consumption

A study done by Rhee and Johnson (2019) surveyed 42 college students at a Midwestern U.S. university ranging in age from 18 to 29 and found that the majority owned more than 188 garments with a range of 38 to over 500 pieces. A different study of 5200 U.S. participants found that people own approximately 164 garments (Tighe, 2017). Consumers in the U.S. own an extensive wardrobe but 25% of garments in them are never even worn (Tighe, 2017). Possible explanations include consumers buying and keeping clothes that do not fit their body or lifestyle. They buy and save clothes they are never going to wear in hopes of a change that may never happen (Pettersson, 2021).

As younger generations see the negative effect of the rapid consumption of fast fashion, many of them attempt to turn to more sustainable options such as environmentally friendly brands and secondhand clothing. However, there is still an excess of consumption. Between 2013 and 2018 consumers who preferred to buy from environmentally friendly brands rose from 57% to 72% (ThredUp, 2019). Young consumers are also turning to secondhand clothing through the growing thrifting trend. It is estimated that in 2023, one-third of Millennials and Gen Z wardrobes were made up of secondhand clothing (ThredUp, 2019). Though young consumers want to be more environmentally friendly with their fashion consumption, the rate clothing enters their closets is higher than the rate garments exit (Maldini et al., 2019). The average

American consumer spent between \$400–499 annually on apparel and purchased 20–24 items. They kept between 20% to 29% of clothing they did not wear and disposed of 10–14 items a year (Joung, 2013). This means that people are continuing to consume apparel and grow their wardrobes, even as mindfulness of consumption habits rises.

People have varying experiences in regard to their consumption of fashion ranging from overconsumption to wanting to be removed from it completely. A study done by Petersson (2022) looked at people's experiences with fashion and their consumption habits. Some consumers use the act of consuming and participating in fashion as a way to relax or as a recreational activity (Petersson, 2021). It was found that people enjoy shopping for clothing because clothing is seen as a “happy object” and the act of purchasing often results in a positive emotion (Petersson, 2021). However, others found participation in fashion to be a chore and wished they had a uniform to wear (Petersson, 2021). This can be attributed to their self-perception of not meeting the fashion industry's “perfect” ideals; these participants voiced wanting a wardrobe that worked for them and their lifestyle (Petersson, 2021). Both phenomena correlate to people's interaction with clothes and their body and their desire for “the perfect wardrobe” (Petersson, 2021). These demographics showed evidence of overconsumption due to their constant need to keep up with fashion trends and beauty standards to try and curate a “perfect wardrobe” while ignoring their own lifestyle needs (Petersson, 2021).

2.2 Capsule Wardrobe

In recent years, capsule wardrobes have been introduced as a more sustainable approach to combat excessive consumerism within the fashion industry. A capsule wardrobe is a small wardrobe that usually consists of 30–50 garments (Bardey et al., 2022). Kellogg (2023) and

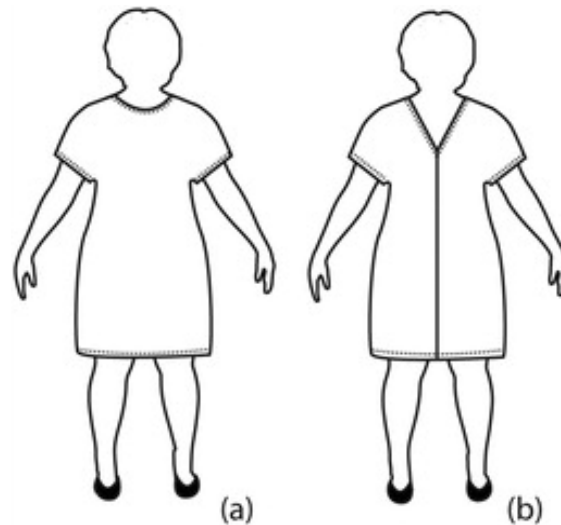
Renee (2024) describe the ideal capsule wardrobe as one with an item distribution of 12–17 tops, 7–9 bottoms, 2–3 dresses, 2–6 coats/jackets, and 7-9 shoes. Garments in a capsule wardrobe usually follow a 4–6 color palette with roughly 3–5 neutral colors combined with 1–3 accent colors (“How to Build”, 2021). These wardrobes are a pared-down collection that focuses on having a closet that is completely utilized, meaning that a higher percentage of clothes in the wardrobe are frequently worn (Rhee & Johnson, 2019). Most garments in this type of wardrobe can be easily mixed and matched with each other, worn multiple ways, and are closet staples that never go out of style (“How To Build”, 2022). Usually, garment silhouettes are simple and classic, but to make a capsule wardrobe feel exciting, people often incorporate varying colors, different cut necklines, and various styles of basic garments (Molseed, 2021). The main essence of this practice is to dress for yourself, your everyday life and needs, and to break away from the fashion industry’s influence (Heinze, 2021). The capsule wardrobe is beneficial for individualized dressing because it celebrates one’s self-identity with fashion and leads to the reduced disposal of clothing by ignoring fashion trends (Heinze, 2021).

There are also other variations of a 30–50 garment capsule wardrobe, such as transformable garments and wardrobe challenges like Six Items or Less. The first variation of a capsule wardrobe is transformable garments, which are garments that can be worn and styled in multiple ways (Martindale & Lee, 2019). One example is a study conducted by a professor to see if her students would notice her wearing a minimal transformable wardrobe for the semester (Martindale & Lee, 2019). For this study, the garment of focus was a reversible kimono sleeve dress with no darts that could be worn front-to-back; one side of the dress had a scoop neck and the other side had a V-neck and center seam (see Figure 1) (Martindale & Lee, 2019). The results of this study concluded that 69% of students did notice their professor wearing a minimal

transformable wardrobe, and their opinions of this type of wardrobe were generally positive (Martindale & Lee, 2019). Another example of this can be seen in a study conducted by Gong (2014) who looked at transformable garments for versatility and longevity. They created a garment made up of 24 zippers and 12 reversible modular pieces. This garment can be worn in many different ways by changing the color that is shown and the length of various parts of the garment (see Figure 2) (Gong, 2014). These garments often promote wearing a capsule wardrobe due to its versatility because wearers feel that they have more clothes than they do (Koo et al., 2014).

Figure 1

Professor's Transformable Dress



Note. (a) scoop neck dress variation, (b) V-neck dress variation

(Martindale & Lee, 2019)

Figure 2*Modular Transformable Garment*

(Gong, 2014)

The other variation of a capsule wardrobe is the Six Items or Less challenge, which is an internet challenge designed to promote consuming less apparel. The premise of this challenge is to wear only six articles of clothing (undergarments, outerwear, and accessories were excluded from the six items) from your existing wardrobe for a month (Wilson, 2010). The goal of this challenge was to show people that they may not need all the clothes in their wardrobe. College students were asked to participate in this challenge, they all chose one pair of jeans and most chose a t-shirt and a shirt (Rhee & Johnson, 2019). Wearing these staple base garments that can easily be mixed and matched with each other and accessories promotes the ease of paring down one's wardrobe (Rhee & Johnson, 2019). In the summer of 2010, about 150 people participated in this challenge and approximately half gave up at some point in the month. Of the half that completed the challenge, most were happy when the 30 days were over, and they were able to

wear different clothes (Wilson, 2010). Regardless of whether the participant completed the challenge, most found that they did not need an extensive wardrobe and saw an area of opportunity to limit their closet and cut back on their consumption of fashion (Wilson, 2010).

2.3 Sustainability

Wearing a capsule wardrobe provides an opportunity for consumers to become more sustainable with their fashion habits. Most of the time when consumers think of sustainability in fashion they think about eco-friendly materials and production practices. However, a consumer can have a significant influence on the fashion industry's environmental impact by dictating what they want from their clothing. The wearability of a garment in a wardrobe and the longevity of a garment are the consumer's main contributions to sustainability in the fashion industry (Heinze, 2021). A study done by Bardey et al. (2022) looked at 10 participants' experience wearing a 30-50 piece capsule wardrobe for 3 weeks. It found that they began to value a garment's longevity and cared more about a garment's quality instead of the quantity of clothes in their closet (Bardey et al., 2022).

A capsule wardrobe and valuing a garment's longevity can decrease waste in the fashion industry. When a consumer has a small, curated wardrobe that they feel comfortable with, the amount of garments entering the closet decreases (Maldini et al., 2019). Currently, consumers are purchasing apparel at a rate higher than garments leaving their wardrobe which creates excessive consumption (Maldini et al., 2019). Wearing a capsule wardrobe helps to close the gap between clothing entering and exiting the wardrobe (Maldini et al., 2019). Having a smaller wardrobe is more eco-friendly because garments are being worn longer meaning less is being disposed of in landfills (Rhee & Johnson, 2019). This also leads to fewer garments being purchased, but when

new clothing is needed consumers can afford high-quality garments that are produced responsibly (Rhee & Johnson, 2019).

2.4 Personal Experiences Wearing a Capsule Wardrobe

Wearing a capsule wardrobe can have multiple psychological effects on the wearer including expanded everyday creativity and the evocation of positive and negative feelings. A capsule wardrobe can also affect how others perceive them.

Dressing yourself can be a creative outlet because it is a way for someone to express themselves to others. One of the main effects of wearing a smaller wardrobe is that it forces the wearer to expand their creativity because they are given fewer materials to create outfits that feel unique and different from each other. Wearing a smaller wardrobe pushes the wearer to think about their wardrobe in a variety of ways and encourages people to wear one garment in multiple outfits (Choo et al., 2014). A study conducted by Bang and Delong (2022) aimed to see if people could practice everyday creativity through a 33-item or less capsule wardrobe. During the eight-week study, the average number of unique outfits was 40. This means that participants did not frequently repeat an outfit (Bang & Delong, 2022). Participants of this survey were also asked to take the Epstein Creativity Competencies Inventory for Individuals test, which measures one's creativity, before and after the study, and participants scored higher the second time (Bang & Delong, 2022). When a participant in the capsule wardrobe trend was asked why they own a capsule wardrobe, one of their reasons was because they “like to try to combine things in interesting ways that [they] wouldn’t have thought of previously.” (Jandrisevits, 2022)

There are many perceived mental benefits associated with wearing a capsule wardrobe, some being that it is less stressful and easy to get ready, and consumers have found a sense of

freedom departing from current fashion trends. Lauren Lagasse, who is a student from Marist College, was interviewed for her school paper to explain why she chooses to wear a monochromatic capsule wardrobe. She has found it easier and more sustainable to go shopping because she's only purchasing clothing that works with her wardrobe and not just buying any clothing she likes (Jandrisevits, 2022). She only needs to think about a smaller number of garments that are in her closet and how they could pair with a potential new item and since her wardrobe is mostly all one color (black) she does not need to guess if different colors will match (Jandrisevits, 2022). After wearing that wardrobe for multiple years, she found that it is much easier to go shopping, she spends less on clothing, and she has become more mindful of the environment concerning fashion consumption (Jandrisevits, 2022). Another study that supports the perceived mental benefits of a capsule wardrobe examined 10 participants' lived experiences wearing a capsule wardrobe over a three week period (Bardey et al., 2022). A common theme among participants was that they felt less stressed because "there were less options and therefore it was easier [for me] to get ready for work" (Bardey et al., 2022). During the post-study interview, participants noted that they became more confident in their wardrobe because it was better organized and had a defined style (Bardey et al., 2022).

Beyond improving creativity and being less stressful, studies have also found that a capsule wardrobe is fun and freeing. A study conducted by Rhee and Johnson (2019) looked at 42 college students wearing a six-garment wardrobe for 30 days. Fifteen students felt that it was fun to mix and match their clothes and eight found it easier to get dressed due to their small wardrobe size creating fewer options. Young women who have already adopted a capsule wardrobe for at least a year found a sense of freedom and a stronger self-identity through this trend (Sobreira et al., 2022). They no longer felt pressured by their peers to consume the latest

trends and became happier with the clothes they currently owned (Sobreira et al., 2022). They felt a sense of freedom departing from social pressures and a reduction in their consumption practices (Sobreira et al., 2022).

One of the main negative side effects researchers have observed when participants wore a capsule wardrobe was boredom. However, this experience was mostly observed when participants wore a very limited wardrobe, such as the Six Items or Less challenge. Wearing the same outfit combination repeatedly can lead to garment fatigue which can result in a sense of boredom (Lapolla & Sanders, 2017). When wearing a limited wardrobe some people found that they were unable to fully express their mood or self due to the nature of an extremely small wardrobe (Rhee & Johnson, 2019). When students were asked if they would adopt a minimal wardrobe for professional attire 64% said no with the main reasons being the need for self-expression, desire to shop, and becoming bored with a minimal wardrobe (Martindale & Lee, 2019).

The fashion industry is designed to pressure people to want to fit into trends. The main premise of a capsule wardrobe is to wear a small wardrobe that feels modern over many seasons and disembark from fashion fads. In the “wardrobe diet” study conducted by Rhee and Johnson, students were asked how they felt about the idea of the Six Items or Less challenge before participating. Most students reported feelings of concern if others would notice if they repeated an outfit. This led to feelings of insecurity because participants were afraid that their peers would notice them wearing the same outfit multiple times in a month and would not think of them as fashionable (Rhee & Johnson, 2019). Throughout the study, participants became less self-conscious of the idea of re-wearing an outfit, and upon their final reflection, they reported most of their peers had not noticed, which made them more confident in their ability to feel

comfortable with a small wardrobe (Rhee & Johnson, 2019). One participant of the Six Items or Less internet challenge noted that her husband didn't even notice her wearing the same six items for thirty days, which helped her realize that she did not need all the clothes in her wardrobe because in her case, no one noticed (Wilson, 2010). As previously referenced, a professor at a large U.S. southeastern university wore a transformable dress throughout a semester and surveyed her students at the end to see how they perceived her (Martindale & Lee, 2019). Among the 36 students, 69% of them noticed, and the majority of students who did notice were women (Martindale & Lee, 2019). Students gave positive feedback to a transformable wardrobe commenting that it is "easier to get dressed," "less to worry about," and "you don't have to spend a lot of money on multiple wardrobes" (Martindale & Lee, 2019). Seventy-five percent of students responded that it would be more socially acceptable for men to wear a minimal wardrobe because specifically female participants discussed how women are "expected to be stylish" and "men practically wear the same thing to work every day" and that "guys can pull off a limited wardrobe better" (Martindale & Lee, 2019).

People who have completed a capsule wardrobe study have expressed a desire to make more sustainable apparel practices in the future. At least half of the students who participated in an extreme wardrobe diet indicated that they would buy less apparel and/or donate garments that did not align with their wardrobe and preferred style (Rhee & Johnson, 2019). People who have adopted the trend independently of a research study said they were motivated to adopt the concept so they would no longer be pressured into trends and purchase clothing they may only wear a few times (Sobreira et al., 2022). It gave them the freedom of autonomy over their apparel consumption which made them feel more authentic and satisfied with themselves (Sobreira et al., 2022).

2.5 Technology Within Capsule Wardrobes

The integration of technology into people's everyday lives has also found a way to help consumers become more conscious of their fashion habits. The use of apps, AI, and virtual wardrobes helps people to become more conscious of their clothing and helps to show people what they already own when shopping (Bang & Su, 2022). A study done by Bang and Su (2022) asked participants to catalog their wardrobe using the digital wardrobe assistant, Finery. This system helps to organize a consumer's wardrobe and offers users a place to create a wishlist for their wardrobe, sale/promotion notifications from websites they frequent, and offer wardrobe suggestions based on their current closets (Bang & Su, 2022). The target demographic of this study was young consumers, such as Millennials and Gen Z, and this platform helped to bring awareness to a more socially responsible consumption practice (Bang & Su, 2022). This awareness helped participants to maximize the utility of clothing they already owned and led to the reduction of buying unnecessary items (Bang & Su, 2022).

A second type of technology that has been assisting consumers is Save Your Wardrobe — an app where consumers can upload images of their wardrobe and artificial intelligence helps you to understand how your clothes fit within your lifestyle and reduce unnecessary repeat purchases (Scaraboto, 2022). This app also helps to connect users to their local economy for garment repairs, cleaning, and alterations (Scaraboto, 2022). Its main goal is to reduce consumption and increase a garment's lifespan by creating easy access to resources to improve a garment's utility over time (Scaraboto, 2022).

A third tool to assist the consumer's wardrobe is Meet Your Wardrobe. This program features wardrobe usage tracking and offers sustainability analytics functionality ("Meet Your Wardrobe", 2022). Users can track what they are wearing in their wardrobe and when/how to

wash garments more sustainably as washing clothes uses a large amount of water and deteriorates garments quicker (“Meet Your Wardrobe”, 2022). This program also helps track how various garments interact with each other and provides users with better information about their wardrobe to make more informed decisions when purchasing apparel (“Meet Your Wardrobe”, 2022).

3. Method

This is a quantitative study that surveyed people ages 18–42 who had a predominately women’s wear wardrobe. Young women typically have the largest wardrobe and are most likely to benefit from the capsule wardrobe trend to improve the sustainability of their wardrobe habits. They also are the primary adopters of the capsule wardrobe trend, so looking at how they interact with their wardrobe can provide insight into the relationship between how a “core” wardrobe reflects the qualities of a capsule wardrobe (Heger, 2016).

3.1 Study Sample and Data Collection Procedure

The survey for this study was circulated by college professors to their students and they were encouraged to share it with their peers. The audience for the survey was limited to people with a women’s wear wardrobe between the ages of 18 and 42. Participants were asked to take pictures of their favorite 50 garments in their wardrobe that are regularly worn within professional, social, and educational settings, excluding undergarments, outerwear, and accessories. Participants were asked eight demographic questions and eight questions for each garment submitted (see Appendix). After each submitted garment, participants either repeated the garment questions with a different garment or ended the survey. Participants had to keep

track of how many garments they submitted. Participants were asked to select how often they wore each garment in the appropriate season from four options: once a week or more, one to three times a month, one to three times every six months, and once a year. They were also asked to approximate the month and year the garment was acquired. The survey took participants about two hours to complete.

3.2 Data Analysis Procedure

Results from the survey were sorted to look at what people wore the most. Responses were filtered to only look at garments that were worn at least once every 1–3 weeks. This criterion was chosen because frequently worn garments, out of participants' favorite clothing, are likely to represent the “core” wardrobe that may exist within their larger closet. Garments that met the given criteria were compared against recommended capsule wardrobes suggested by fashion publications and blogs. Individual’s capsule wardrobes looked different depending on their style (ie androgynous, feminine, or masculine) or needs (i.e. student, career).

In this study, an ideal capsule wardrobe was defined as a wardrobe of approximately 33 garments that offers versatility and flexibility. This wardrobe size was chosen because it is similar to a study conducted by Bang and Delong (2022) where they asked participants to create a wardrobe that was at most 33 items. However, their study included outerwear, shoes, and accessories in their item count because they had determined that 33 items were an ideal size for each season (Bang & Delong,2022). This study looked at a capsule wardrobe designed to be year-round as the survey asked participants to photograph their 50 favorite garments without asking what season each garment was worn. This survey looked at collections of tops, bottoms, and dresses (outerwear, shoes, or accessories were not included in this survey).

The ideal capsule wardrobe item distribution is between 12–17 tops, 7–9 bottoms, 2–3 dresses, 2–6 coats/jackets, and 7–9 shoes (Kellogg, 2023; Renee, 2024). These items usually follow a 4–6 color palette with roughly 3–5 neutral colors combined with 1–3 accent colors (“How to Build”, 2021). Neutral colors are white, gray, black, denim, brown, and even shades of muted greens or blues, while accent colors tend to be brighter and have more saturation (“How to Build”, 2021). Garments were sorted into one of twelve color categories by their most dominant color. The color categories were black, gray, white, brown, blue, denim, green, red, orange, yellow, pink, and purple.

Even though participants have different wardrobes based on their style, they should generally follow these guidelines if they wear a capsule wardrobe. The main goal is to see if participants' favorite frequently worn garments follow this distribution by looking at the garment's type (distribution of bottoms, tops, and dresses) and color (distribution of neutral and accent colors). This was done by individually classifying each garment into its type (top, bottom, and dress) and sorting garments into categories based on their dominant color (black, gray, white, brown, blue, denim, green, red, orange, yellow, pink, and purple). If participants' wardrobes follow these trends it can suggest that people do wear a capsule wardrobe and a transition to a smaller closet may be feasible without significant changes in behavior.

4. Results

4.1 Participant Attributes

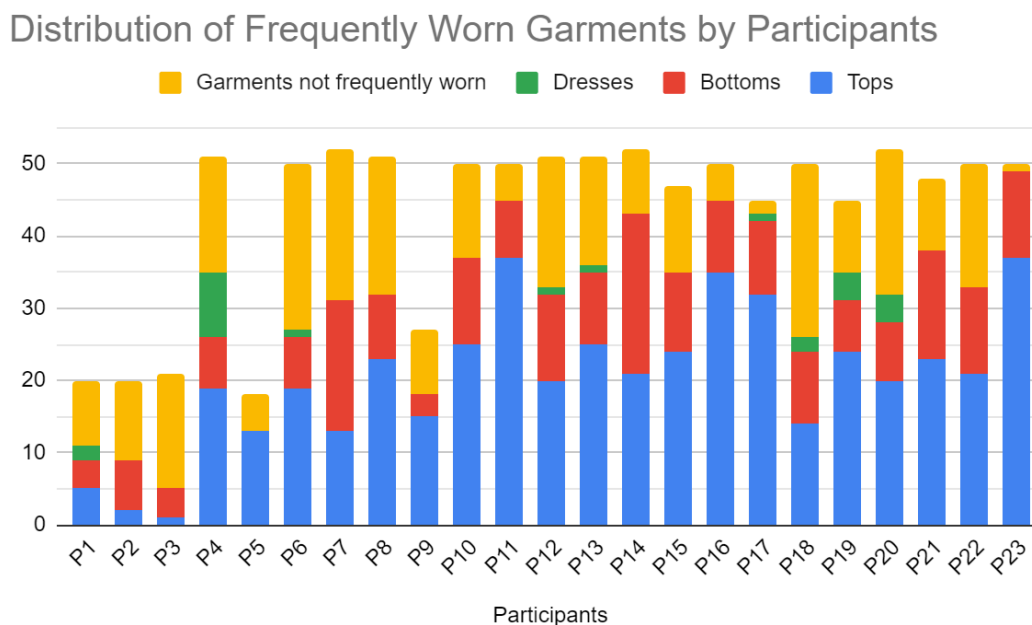
A sample of 23 women participated in the survey from different regions of the United States. Nineteen of the participants live in an urban area, while the rest live in a suburban (3) or rural area (1). Twenty of the participants are Gen Z (born between 1997-2012) and three are

Millennials (born between 1981-1996). Fifteen shop mainly in women's wear while the rest of the participants shop in a combination of categories like women's wear and men's wear. Seven reported a change in weight in the past 1–3 years and eleven experienced a lifestyle change in the past 1–3 years (i.e. graduating from school, starting a new job, or working from home). Both experiences resulted in needing new clothes or changing dress habits. Only eight participants did not experience any physical or lifestyle changes in the past 1–3 years. It is also important to note that not all participants submitted 50 garments.

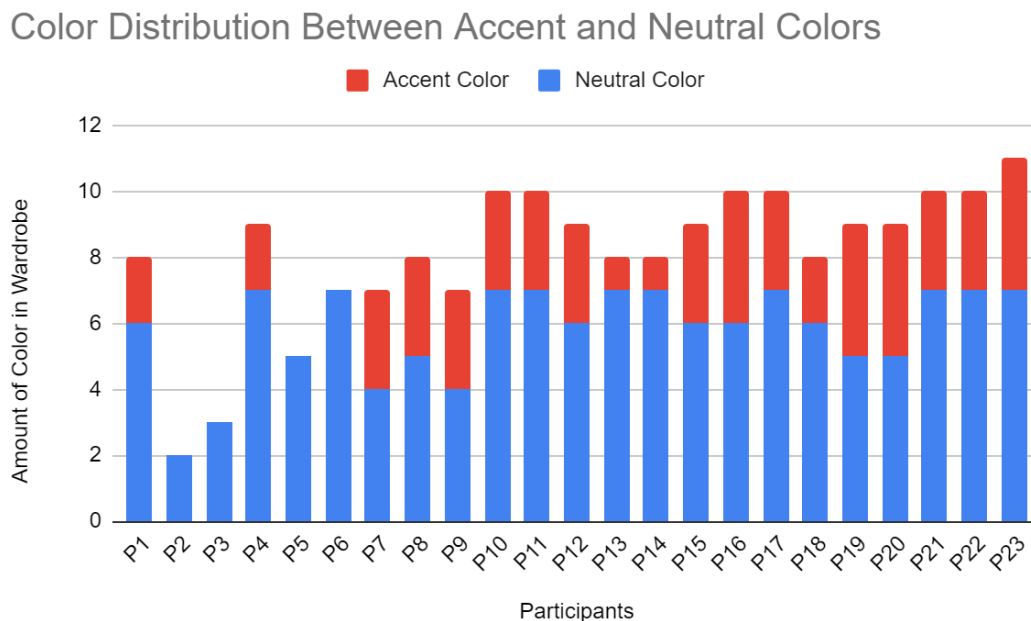
4.2 Wardrobe Attributes

The most common words participants wrote to define their own style were casual (13), comfortable/cozy/comfy (15), and classy/classic (7). The garments submitted to this study appeared consistent with participants' self-description of their wardrobe as many articles of clothing would fall into the athleisure market segment, such as leggings, sweatshirts, and classic t-shirts. Out of all garments submitted, 71% were frequently worn and participants ranged from frequently wearing 24%–98% of the total number of items submitted (between once a week to once every 1–3 weeks) — these garments were further analyzed in this study. Wardrobes with garments that match this wear frequency ranged between 5–49 garments and the interquartile range was between 26–37 garments.

Participants frequently wore between 14–24 tops and 7–12 bottoms. Pants made up most bottom submissions at 89.9%. In this study, 14 people did not wear dresses frequently. Of those who did wear dresses frequently, results indicated that they wore 1–4 unique dresses frequently (see Figure 3).

Figure 3*Distribution of Frequently Worn Garments by Participants*

Participants' most worn clothing tended to have an average of 8 different colors (range 2-11). There was a range of 2–7 neutral colors in wardrobes, and, on average, participants had 6 neutral colors. The most frequent neutral colors identified in wardrobes were black, white, blue, and gray. It was found that the participants ranged from having 0–4 accent colors with an average of 2 colors in frequent rotation in their wardrobe. The most frequent accent color that was worn was various shades of red (see Figure 4).

Figure 4*Color Distribution Between Accent and Neutral Colors*

5. Discussion

5.1 Participant Attributes

The survey was distributed to participants within the college-age demographic (18–22 years old). Their clothing is more casual as they attend classes and do a lot of walking. Their wardrobes mostly consist of athleisure wear which is defined by its stretchy, breathable materials that drape smoothly with examples being leggings, sweatshirts, and classic t-shirts (Kehoe, 2023). The data collected through this study largely reflects the wardrobe of a modern college student as a large portion of clothing could be classified as athleisure wear.

5.2 Wardrobe Attributes

Five participants had wardrobes with fewer than 18 frequently worn garments and were not candidates for already being able to wear a capsule wardrobe with their current wardrobe habits. Some of these participants had mostly tops or bottoms that matched the established criteria of being worn once a week to once every three weeks. One participant had 13 frequently worn tops and no bottoms or dresses. A different participant had 2 tops and 7 bottoms that were frequently worn while another participant had 1 top and 4 bottoms. In these cases, the data did not have strong enough evidence to support that these participants wear a capsule wardrobe because there was not enough breadth of clothing to exclusively create outfits of those clothes that matched the criteria. The 18 other participants in this survey had a wide enough range of types and styles in their frequently worn clothes to sustain a capsule wardrobe.

This study found that 71% of participants' clothes are worn between once a week to once every 1–3 weeks and the number of garments that are frequently worn is between 26–37 garments. This range is on the upper limit of what would be considered by Bang and DeLong (2022) to be a manageable capsule wardrobe size because it does not include outerwear, shoes, or accessories. However, the greater number of clothes worn in frequent rotation can be attributed to the fact that garments were not sorted into the seasons they are worn and instead grouped into a year-round capsule wardrobe.

The item distribution in participants' wardrobe was on average 14–24 tops, 7–12 bottoms, and for participants who wear dresses frequently between 1–4 dresses which is between 60–63% tops, 30–32% bottoms, and 5–10% dresses. The recommended range is 12–17 tops, 7–9 bottoms, and 2–3 dresses which would be approximately 60% tops, 30% bottoms, and 10% dresses (Kellogg, 2023; Renee, 2024). The participants' average garment ranges are at the upper end of

recommended, but as explained earlier, these numbers could be inflated by the lack of season division. The participants' wardrobe garment ratio aligns with the recommended division of clothing which suggests that participants' current wardrobe habits, in relation to garment types, mirror what is recommended for a capsule wardrobe.

Participants had approximately 8 different colors in their frequent wardrobe rotation. Renee (2024) suggests having between 4–6 colors to not overwhelm yourself with choices and to make it easier to pair different garments together. On average, 6 of the colors worn by participants were neutral colors. This can be attributed to neutral color's ease of versatility. Neutral colors can serve as a foundation to build outfits due to their flexibility to pair with each other along with accent colors ("How to Build", 2024). Neutral colors were likely worn the most by participants because those garments are versatile with the rest of their wardrobe. The recommended amount of accent colors to incorporate in a capsule wardrobe is 2 colors (Thompson, 2020). Participants had an average of 2 accent colors in their wardrobes. This suggests that participants may use garments that are not frequently worn to accent their core wardrobe which could explain why participants have more favorite garments than frequently worn garments. Since the average number of colors in participants' wardrobes is more than recommended, it suggests that participants use the additional neutral colors in their wardrobe to complement accent pieces in their closets. This can lead to more seldom-used garments and larger closets to build cohesive outfits.

They likely rely on other garments in their wardrobe to make use of a larger color palette to build coordinating outfits due to participants having larger wardrobes than what was observed. One inefficiency that was observed was the amount of college apparel in participants' wardrobes. The majority of the participants were college students who often had multiple college-branded

garments. Participants may be choosing garments that represent their school over colors and styles that would be more versatile in a smaller wardrobe.

6. Conclusion

This study aimed to analyze the wardrobes of young women to see if the color and type attributes of their frequently worn garments matched the recommended distributions for capsule wardrobes. Results show that most participants' most frequently worn garments did follow capsule wardrobe guidelines for garment type and color distribution suggested by Kellogg (2023) and Renee (2024). Garments that had a high frequency of use every week to once every one to three weeks followed the recommended item distribution of 60% tops, 30% bottoms, and 10% dresses. Participants did have more colors in their wardrobe color palette than recommended which suggests that they may find it challenging to build coordinating outfits with only their most frequently worn garments. This supports themes of overconsumption because participants frequently wore only a fraction of their wardrobes. This study implies that many participants could potentially adopt a capsule wardrobe without substantial behavior change. Purposely wearing a capsule wardrobe can aid in a consumer's desire to reduce waste with their fashion habits as a higher percentage of clothes in their closet are being used and overall fewer garments are entering and exiting their closets. The impact of owning a smaller wardrobe allows consumers to be more mindful of their consumption habits and move towards more sustainable fashion practices.

7. Limitations and Further Research

A key limitation of this research was the small sample size and that the majority of participants were young adults who were primarily still in college. This narrow age demographic can lead to bias, as these data results may not be able to describe how other age demographics interact with their wardrobe. An example of this bias could be that the frequent inclusion of college-branded apparel may have had an impact on color palette choices that may not exist outside of this demographic. Another limitation is that this study only looked at participants' 50 favorite garments and not their entire wardrobe. Examining a larger wardrobe can provide better insight into participants' fashion habits and give better context into whether a capsule wardrobe is feasible for them to wear.

Further research that can be done to determine the relationships between frequently worn garments and capsule wardrobes would be to ask participants what season each garment is worn in to help to understand what garments are being worn year-round, as multiple garments can be worn over multiple seasons. This study did not examine less frequently used garments in participants' wardrobes. Further research can be done to examine the relationship between frequently used and less frequently used garments in the wardrobe and what purpose less used garments serve. It would also be interesting to collect data on the outerwear, shoes, and accessories participants frequently wear. The addition of this data would help to gain a better understanding of how many items, from tops and pants to shoes and bags, are needed to create a year-round capsule wardrobe. A third aspect to further investigate is the regionality of participants' wardrobes. All the participants from this study are from northern U.S. states. It would be interesting to see if living in a warmer climate would change the amount of clothing in

a capsule wardrobe as the difference in the average high and low temperatures are much closer and the need for warm clothes is probably less than those living in cooler climates.

References

- Bang, H., & Delong, M. (2022). Everyday creativity practiced through a capsule wardrobe. *Sustainability*, *14*(4), 2092. <https://doi.org/10.3390/su14042092>
- Bang, H., & Su, J. (2022). Who uses virtual wardrobes? Investigating the role of consumer traits in the intention to adopt virtual wardrobes. *Sustainability*, *14*(3), 1209. <https://doi.org/10.3390/su14031209>
- Bardey, A., Booth, M., Heger, G., & Larsson, J. (2022). Finding yourself in your wardrobe: An exploratory study of lived experiences with a capsule wardrobe. *International Journal of Market Research*, *64*(1), 113–131. <https://doi.org/10.1177/1470785321993743>
- Caliope Sobreira, E. M., Moreira da Silva, C. R., & Leocadio, A. L. (2022). You wear what you are: Identity and clothing consumption in the capsule-wardrobe adoption process. *Revista dObra[s]*, *36*, 300–319.
- Choo, H. J., Sim, S. Y., Lee, H. K., & Kim, H. B. (2014). Effect of consumers' involvement and innovativeness on the utilization of fashion wardrobe. *International Journal of Consumer Studies*, *38*(2), 175–182. <https://doi.org/10.1111/ijcs.12078>
- Gong, M. (2014). *Sustainable fashion design: Transformable garments for versatility and longevity* (Version 1). Toronto Metropolitan University. <https://doi.org/10.32920/ryerson.14653341.v1>
- Heger, G. (2016). *The capsule closet phenomenon: A phenomenological study of lived experiences with capsule closets* (Master's thesis). The Swedish School of Textiles, University of Borås.

- Heinze, L. (2021). Wardrobe stories: Sustainability and the everyday aesthetics of fashion consumption. *Continuum*, 35(6), 853–869.
<https://doi.org/10.1080/10304312.2021.1993571>
- How To Build A Sustainable Capsule Wardrobe. (2022). In *Instablogs*. Athena Information Solutions Pvt. Ltd.
- Jandrisevits, L. (2022). Dressing with a Capsule Wardrobe as a College Student. In *University Wire*. Uloop, Inc.
- Jayde Archives Photography. (2021, August 5). *How to build a capsule wardrobe*. Retrieved March 3, 2024, from <https://jaydearchives.com/how-to-build-a-capsule-wardrobe/>
- Joung, H.-M. (2013). Materialism and clothing post-purchase behaviors. *The Journal of Consumer Marketing*, 30(6), 530–537. <https://doi.org/10.1108/JCM-08-2013-0666>
- Kehoe, J. (2023, August 11). *What is athleisure?* REI. Retrieved March 13, 2024, from <https://www.rei.com/learn/expert-advice/what-is-athleisure.html>
- Kellogg, K. (2023, January 24). *Capsule wardrobe: What is it?* Going Zero Waste. Retrieved March 12, 2024, from <https://www.goingzerowaste.com/blog/capsule-wardrobe/>
- Koo, H. S., Dunne, L., & Bye, E. (2014). Design functions in transformable garments for sustainability. *International Journal of Fashion Design, Technology and Education*, 7(1), 10–20. <https://doi.org/10.1080/17543266.2013.845250>
- Lapolla, K., & Sanders, E. B.-N. (2017). Encouraging more efficient wardrobes through recirculation of idle apparel. *Clothing Cultures*, 4(1), 45–60.
https://doi.org/10.1386/cc.4.1.45_1
- Maldini, I., Stappers, P. J., Gimeno-Martinez, J. C., & Daanen, H. A. M. (2019). Assessing the impact of design strategies on clothing lifetimes, usage and volumes: The case of product

- personalisation. *Journal of Cleaner Production*, 210, 1414–1424.
<https://doi.org/10.1016/j.jclepro.2018.11.056>
- Martindale, A., & Lee, Y.-A. (2019). Students' perceptions of adopting minimal transformable wardrobes. *International Journal of Fashion Design, Technology and Education*, 12(1), 76–85. <https://doi.org/10.1080/17543266.2018.1477998>
- Meet Your Wardrobe (MYW) releases free consumer wardrobe usage tracking and sustainability analytics functionality. (2022). In *M2 Presswire*. Normans Media Ltd.
- Molseed, J. (2021). How to curate a “capsule” wardrobe. In *TCA Regional News*. Tribune Content Agency LLC.
- Pettersson McIntyre, M. (2021). Shame, blame, and passion: Affects of (un)sustainable wardrobes. *Fashion Theory*, 25(6), 735–755.
<https://doi.org/10.1080/1362704X.2019.1676506>
- Renee, C. (2024, February 22). *3 capsule wardrobe formulas & how to use them*. The Elegance Edit | Build Your Dream Capsule Wardrobe. Retrieved March 3, 2024, from
<https://theeleganceedit.com/capsule-wardrobe-formula-guide/>
- Rhee, J., & Johnson, K. K. P. (2019). “The wardrobe diet”: Teaching sustainable consumption through experience with undergraduates in the USA. *International Journal of Fashion Design, Technology and Education*, 12(3), 283–292.
<https://doi.org/10.1080/17543266.2019.1590864>
- Scaraboto, D. (2022). Save your wardrobe: Supporting sustainable and mindful clothing consumption. *NIM Marketing Intelligence Review*, 14(1), 54–59.
<https://doi.org/10.2478/nimmir-2022-0009>

- The Elegance Edit | Build Your Dream Capsule Wardrobe. (2024). *How to build a capsule wardrobe you actually want to wear in 2024*. Retrieved March 3, 2024, from <https://theeleganceedit.com/how-to-build-a-capsule-wardrobe-that-lasts>
- Thompson, D. (2020, January 6). *How to choose a color palette for your capsule wardrobe*. Dani Thompson. Retrieved March 12, 2024, from <https://danithom.com/2020/01/how-to-choose-a-color-palette-for-your-capsule-wardrobe.html>
- ThredUp. (2019). Resale Report. Retrieved from https://www.thredup.com/resale/2019?tswc_redir=true (Accessed on February 12, 2024).
- Tighe, D. (2017, January). Average Number of Clothing Products Women in the United States Have in Their Wardrobe and Don't Wear. Statista. <https://www.statista.com/statistics/789475/clothes-women-don-t-wear/> (Accessed on February 12, 2024).
- Wilson, E. (2010, Jul 22). *Six easy pieces, 31 challenging days: [style desk]*. New York Times. <http://login.ezproxy.lib.umn.edu/login?url=https://www.proquest.com/newspapers/six-easy-pieces-31-challenging-days/docview/626180373/se-2>

Appendix

Demographic Questions

- 1) What state is your primary residence?
Free response
- 2) How would you describe your location?
 - a) Urban
 - b) Suburban
 - c) Rural
- 3) Which age group do you belong to?
 - a) Generation Z (Born between 1997-2012)
 - b) Millennial (Born between 1981-1996)
 - c) Other
- 4) Which of the following categories do you shop in?
 - a) Women's wear
 - b) Men's wear
 - c) Unisex wear
 - d) Children's wear
 - e) Other (free response)
- 5) What are your pronouns
Free response
- 6) Have you experienced a weight change or body shape change in the last 1-3 years? (e.g., have you experienced a weight change that resulted in the need for different clothing)
 - a) Yes
 - b) No
 - c) Not sure
- 7) Have you experienced a lifestyle change in the last 1-3 years? (e.g. have you changed jobs, work from home, graduated school, etc.)
 - a) Yes
 - b) No
 - c) Not sure
- 8) Describe your style in 3 words: (Eg: "Business casual classy")
Free Response

Garment Questions

- 1) Take a picture of the front of the garment
[chose file]
- 2) Take a picture of the back of the garment (only if it has interesting details)
[chose file]
- 3) Take a picture of the brand/size label of the garment

[chosed file]

- 4) Take a picture of the fiber content label of the garment
[chosed file]
- 5) Approximately when did you acquire this garment? (year, month)
Free Response
- 6) Approximately how much did this garment cost?
Free Response
- 7) How often do you wear this garment in season?
 - a) Once a week or more
 - b) 1-3 times a month
 - c) 1-3 times every 6 months
 - d) Once a year
- 8) What would you like to do?
 - a) I have a garment to enter
 - b) I don't have any more garments to enter, take me to the end of the survey.