Kestä: Designing a Framework and Intervention to Reduce Consumers' Fast Fashion Purchasing Behaviour

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ABSTRACT

This research aims to reduce purchasing behaviour of fast fashion items, by increasing consumers' awareness through Kestä: the app that stimulates and cultivates sustainable purchasing behaviour. This study consists of a comprehensive literature search that resulted in key findings, which form the foundation for the design and development of Kestä. Through analysing and relating studies, this research finds that whilst consumers do have sustainability concerns, these rarely influence their purchasing behaviour. Especially young consumers show an interest in sustainable possibilities; however, they often reconsider or disregard their intentions due to the price and intricate procedures.

Kestä is an app that targets the dissonance consumers feel between wanting to behave more sustainably and disregarding these intentions somewhere along the way. Kestä aims to provide an easy and fun new platform that slowly but surely helps consumers develop sustainable behaviour. Kestä recognizes consumers' good intentions and addresses them through its user-friendly app in which users can log their outfits, create a digital closet inventory and competitively interact with others to encourage sustainable purchasing behaviour. The app is integrated with AI technology that allows users to add clothing items to their digital wardrobe by simply taking a mirror selfie.

Prolonged and consistent app use will result in increased awareness and develop sustainable habits, which will shape future sustainable purchasing behaviour. This research stresses that it requires collaborative efforts of increased awareness and the development of sustainable habits to successfully reduce consumers' purchasing behaviour on the long term.

1. INTRODUCTION

1.1 Research relevance

The fashion industry is experiencing rapid growth, leading to the creation of multiple sub industries. One of these sub industries is the fast fashion industry. Consumers' needs and desires have significantly changed in the last decades and companies have played into this (Long & Nasiry, 2022a).

Currently the dynamic fashion industry is experiencing a drastic change, in which the companies respond to this new type of demand for fashion items. (Dung & Ha, 2024a). This led to a diversification in key aspects of the fashion industry. In the fast fashion industry the focus lies on rapid production and low manufacturing costs, which goes hand in hand with a high turnover of fashion items.(Bishnoi & Guru, 2024a; Li et al., 2024a; Long & Nasiry, 2022a).

The production system in fast fashion is specifically designed to meet this new and continuous consumer demand for new fashion items (Dung & Ha, 2024a). This is achieved through the frequent restocking of popular items and the introduction of new collections (Long & Nasiry, 2022a). Production companies expand their product variety while maintaining short lead times, adapting to these changed consumer demands that result in shorter product life cycles (Camargo et al., 2020a).

Fast fashion items, which are specifically created for short term use result in higher turnover and generate a significant amount of waste (Sorensen & Jorgensen, 2019). Consumers frequently dispose of these lower quality products after using them a few times due to the ever-changing trends (Bailey et al., 2022). Millennials are attracted to affordable clothing but also show concerns about sustainability. In response to this fast fashion companies are introducing friendly collections and recycling initiatives (Sorensen & Jorgensen, 2019).

The relationship between price and quality influences consumer behaviour and brand positioning, higher prices typically imply better quality while lower prices suggest reduced quality (Simanjuntak et al., 2024). Fashion labels are divided into luxury, mid fast fashion categories. Luxury brands prioritize quality and exclusivity whereas fast fashion giants like Zara and H&M offer apparel at affordable prices. Brands strive to find a balance between quality and pricing, depending on the target audience (Bhardwaj & Fairhurst, 2010).

Consumers assess the quality of fashion items based on factors like material durability, craftsmanship, brand reputation and visual appeal (Simanjuntak et al., 2024). They recognize the trade offs between price and quality, and adjust their expectations accordingly (Joy et al., 2012).

Fast fashion often compromises on quality to maintain affordability by using less durable materials and production methods (Morgan & Birtwistle, 2009). The perceived worth of fashion products is shaped by their price point, quality level and brand image. Despite having durability levels compared to other segments fast fashion remains popular due to its cost effectiveness and trendy designs. This trend illustrates consumers preference for stylish and budget friendly clothing options, over long-lasting garment excellence.

While many people claim to care about sustainability and recycling, few are willing to spend extra on eco products only a small number actually follow through with purchasing them. There has not been study, into why this gap exists, particularly in the fast fashion industry (Graves et al., 2022).

Socially responsible consumption behaviour (SRCB) in fast fashion is influenced by multiple factors such as individual characteristics, ethical attitudes and values, as well as the trade-off between fashion and sustainability (McNeill & Moore, 2015). Previous studies do not adequately explain situations where ethical considerations are overshadowed by other factors. Therefore, a deeper understanding of the relationship between attitudes, intentions, and SRCB among fast fashion consumers could significantly enhance knowledge of fast fashion and sustainability (Ladhari et al., 2019).

(McNeill & Moore, 2015)(Ladhari et al., 2019)

1.2 Problem outline

Generation Y (people born between 1982 and 1994) has exhibited elevated levels of fast fashion consumption and limited awareness of its societal impact (Morgan & Birtwistle, 2009). Although young adults are more concerned about sustainability or social issues than previous generations and are willing to spend more on sustainable products and services, they still embrace and promote fast fashion. This indicates that valuing environmental protection does not always translate into sustainable behaviour, particularly in the fashion industry (McNeill & Moore, 2015). Aside from that, people experience a knowledge gap which prevents them from enforcing their values on sustainability. People are aware of general sustainability issues in the fashion industry such as child labour and increased pollution but lack the knowledge on how sustainability is translated into more direct aspects of a product such as which material is more sustainable (Papasolomou et al., 2023).

The fast fashion industry, and its production processes are a big contributor to environmental pollution. Eventually leading to greenhouse gas and carbon

emissions, as well as water pollution and waste. (Dung & Ha, 2024a). Besides the water waste, the water is also polluted where the quality degrades as well as increased landfill. There is need for more regulations and stricter management. For example, Coordinated global efforts for major producers of fast fashion. (Tiefenbeck et al., 2022). Furthermore, the environmental impact, there are negative social impacts on factory workers and their working conditions. (Bishnoi & Guru, 2024b; Li et al., 2024b).

Nevertheless, there are fast fashion companies that make use of greenwashing of superficial sustainability. Giving the consumer a feeling of conscious choices. This improves their public image, without the need for significant change (Sorensen & Jorgensen, 2019). This greenwashing is mainly done by misleading claims about green initiatives or environmental benefits. Resulting in undermining the genuine efforts that are made (Bailey et al., 2022).

Additionally, there are still quite some misconceptions about the quality and social norms of second-hand clothing. However, with the newer generation these views are shifting. A contribution to this is rebranding and informing consumers about the benefits and pitfalls of second-hand shopping. This is crucial to achieve change in the fashion industry (Sorensen & Jorgensen, 2019). Currently, customers often rely on the retailer to provide the correct information about the fashion items, their production and environmental impact (Papasolomou et al., 2023), this indicates that there is a desire to strengthen the consumers knowledge on sustainability in the fashion industry.

1.3 Research gap

There is a research gap on reducing purchasing behaviour, especially in the field of fast fashion. The existing studies are mainly focused on the general purchasing behaviours of consumers. Leaving fast fashion relatively understudied (e.g., Camargo et al., 2020; Li et al., 2024; Silva de Gregori & Prestes Maier, 2023). The large amount of case and observational studies, neglect the features unique to the fast fashion industry such as affordable and trendy clothing which make it appealing to consumers (Dung & Ha, 2024b; Long & Nasiry, 2022b).

Due to the impact on the environment and the rapid growth of the industry, there is a pressing need for aimed research and understanding of this purchasing behaviour and its possible reduction.

Therefore, this paper aims to design an intervention to reduce consumer need and purchasing behaviour in the fast fashion behaviour in the fast fashion industry.

2. PREVIOUS ENDEAVOURS

A division is made between successful and unsuccessful previous endeavours to achieve behaviour change. The first few are specific to the fashion industry. The last ones are successful endeavours to achieve behaviour change.

2.1 Unsuccessful endeavours

2.1.1 The Fashion Detox Challenge

According to Kidd et al. (n.d.), the Fashion Detox Challenge was a campaign aimed at shifting consumer behaviour from fast fashion. Starting in Scotland and going worldwide, participants gave up buying clothes for ten weeks while documenting their experiences on social media. (Kidd et al., n.d.).

Using van Manen's phenomenology, the study gathered insights from reflections and diaries, highlighting (van Manen, 2017):

- Emotional Triggers: Shopping driven by emotions rather than necessity.
- Consumerism: Increased awareness of existing, undervalued clothing.
- Challenges: Social expectations and marketing pressures.
- Behavioural Changes: Adoption of eco-friendly habits, though hard to sustain.

The Challenge underscored the difficulty of individual behaviour change and the strong influence of marketing and societal norms, calling for systemic support for sustainable shopping habits.

2.1.2 The ''Buy Nothing'' Project

The Buy Nothing Project is a global network of hyper-local community groups that promote community building and sustainability through the practice of gift economies. The project encourages members to share resources, reduce waste, and strengthen social connections within their neighbourhoods. Members of Buy Nothing groups offer items they no longer need for free, ask for specific items they require, and express gratitude for the gifts received, all without involving monetary transactions. With over 7.5 million members in more than 6,500 communities across 44 countries, the Buy Nothing Project operates both through Facebook groups and a dedicated mobile app (Williams, 2021). This platform facilitates the exchange of items, ranging from everyday household goods to unique gifts. While it has fostered strong local networks and sharing economies, the broader impact on reducing overall purchasing behaviour is limited, as many people continue to purchase novel items alongside participating in the initiative (Uhlig, 2021). This initiative shows that consumers are not able to maintain ''buy nothing'' behaviour or suppress the need for new items.

2.1.3 Vinted

Vinted is an online marketplace where users can buy and sell a variety of items, ranging from clothing to furniture. Acting as an intermediary, Vinted provides a secure trading platform that ensures safe transactions between buyers and sellers. By 2023, Vinted has garnered immense popularity, boasting over 105 million app users (Wylie, 2024). This success is attributed to its user-friendly interface and addictive social media-related features (Zonneveld, 2023). While the platform may succeed in promoting second-hand shopping, it also stimulates purchasing behaviour. The "Vinted Wallet," stores users' credit and earnings, this balance can be used for in-app purchases or be transferred to a personal bank account, thereby stimulating users' overconsumption and impulse purchases. Besides this, every sold item increases the negative environmental impacts associated with shipping and packaging. Vinted has successfully demonstrated a trend toward more sustainable purchasing behaviour in the fashion sector. Indicating there is a significant audience interested in reducing their purchases and being more sustainable.

2.2 Successful endeavours

2.2.1 Strava

The fitness application Strava was launched in 2009 and has integrated much of the Social Cognitive Theory to drive users toward increased activity. Learning is promoted through its functionality, whereby users can connect with friends and athletes, influencing behaviour through peer interactions. Users gain reinforcement in "Kudos" from peers, which motivates them to be continually involved in the activities provided by this platform. It also includes goal setting and progress tracking tools for self-regulation, which help users maintain their routines regarding fitness (de Pol, n.d.; Rivers, 2020; VAN DE POL, 2023). While these methods are effective in habit formation, long-term behavioural change varies across individuals (Middelweerd et al., 2014).

This app shows the huge impact that social interaction has on people to the extent that it causes a behaviour shift.

2.2.2 Buitenbeentjes

Buitenbeentjes is an initiative that was started by one of the biggest grocery stores in the Netherlands, the Albert Heijn, in 2014 (Ronde, 2015). The Buitenbeentjes are vegetables and fruits which have growth irregularities and thus look different from the 'normal'. The store wants to learn the

customer to accept all the grades and shapes in which the fruits and vegetables come, provided that the quality is good (Verheul, 2016) and with that decrease the waste of food. The initiative was created when the topic of food waste and overall waste-regulation awareness was on an increasing path (Verheul, 2016). This initiative also highlights people's interest and care for sustainable alternatives.

2.2.3 Enschede Fietsstad

The Enschede Fietsstad app, stimulates the user to take the bike for short distances by positive reinforcement. For every kilometre the user cycles, they get a point. These points can also de earned by doing challenges or challenging your friends. This social exchange is an extra push for the user to take the bike as they can earn extra points by being more active than friends. The app also registers if the users walk, drive or use the public transport. However, this has no influence on the points system. For these activities zero points are rewarded. The points can be used to buy vouchers in the internal app store. These vouchers are for discounts on bike or activities in Enschede, hoping people will put it back into Enschede, as Enschede aspires to be a Cycling city. An important take-away is that this initiative demonstrates the effects of positive reinforcement, gamification, and a points-based reward system on successfully achieving behaviour change (*Snel Groen - Enschede Fietsstad*, n.d.; T. Thomas et al., 2020)

3. THEORETICAL FRAMEWORK

To approach the intervention design correctly, it needs to be established which behaviours are applicable for the user to change. Three main theories were found applicable, which are shown in figure 1 below (the enlarged image can be found in Appendix B). There will be elaborated on the theories individually, as well as together. The Theories are integrated into a framework, to show an applied case.

3.1 Cognitive dissonance theory

This theory concerns the psychological conflict from holding two or more incompatible beliefs simultaneously (Festinger, 1957). Cognitive means thinking of the mind, and dissonance is inconsistency or conflict. Individuals are purposeful decision-makers who strive for balance in their beliefs. If presented with decisions or information that creates dissonance, they dissonance-reduction

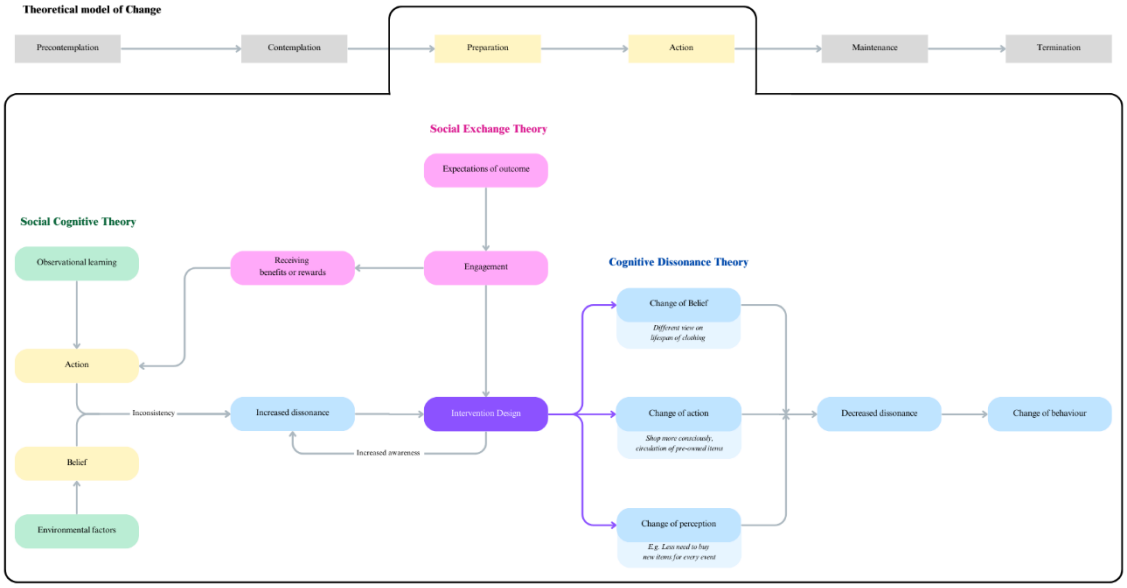

Figure 1 Framework to reduce purchase of fast fashion

strategies to regain equilibrium. Thus, this theory can manipulate people into a certain behaviour, by doing so these people will alter their attitude themselves. It is especially relevant in decision-making and problem-solving.

Relating this theory to the reduction of fast fashion purchases. Users can be aware of the fact that cheap clothing is not as durable in the long term and not sustainable. However, they still choose to buy these items due to a multitude of reasons. The dissonance consumers can experience here is the inconsistency between a sustainable attitude and unsustainable behaviour.

3.2 Social cognitive theory

Social Cognitive Theory focuses on understanding how people acquire and maintain certain behavioural patterns, emphasizing the importance of observing and imitating the behaviours, attitudes, and emotional reactions of others (Bandura, 1991).

In terms of fast fashion, this explains the attraction to new and cheap clothing, rather than choosing sustainable options. As their surroundings are doing the same, and the dissonance is not big enough to take action. Leading to continuous behaviour, even though it is known to be bad for the environment.

3.3 Social exchange theory

Social Exchange Theory suggests that individuals engage in relationships and interactions based on the expectation of receiving benefits or rewards in return

(Cook et al., 2013). With the main importance of offering mutual benefits to users in exchange for their engagement. Consumers are more inclined to engage with brands when they receive things like valuable content, discounts, or personalized experiences in exchange for their attention, data, or purchases. Brands can improve their engagement by providing incentives, this has a positive influence on loyalty, and positive brand associations, which are all factors that contribute to building a stronger consumer-brand relationship.

In terms of reducing fast fashion the set expectations of the user and the benefits they will gain, lead to them taking action, or leaving their behaviour unchanged. The engagement with the intervention design can add to resolving the dissonance in the user experience. The theory poses that people must first observe others to learn what the desired behaviour is, to then imitate this through practice and observational learning.

3.4 Strategies of change

Figure 2 shows a possible way to change the behavior of the user, these are based on the framework that can be seen in Figure 1. An enlarged image of Figure 2 can be found in Appendix C. The desired behaviour is the reduction of purchasing fast fashion items. The different strategies lay a path for possible change and how to maintain or stimulate this change. It is mainly based on change of view, engagement with people around them and their view. As well as the influence of social media.

It is split up in six sections, starting with the principles of change and closing with the changed behaviour. Figure 2 gives an

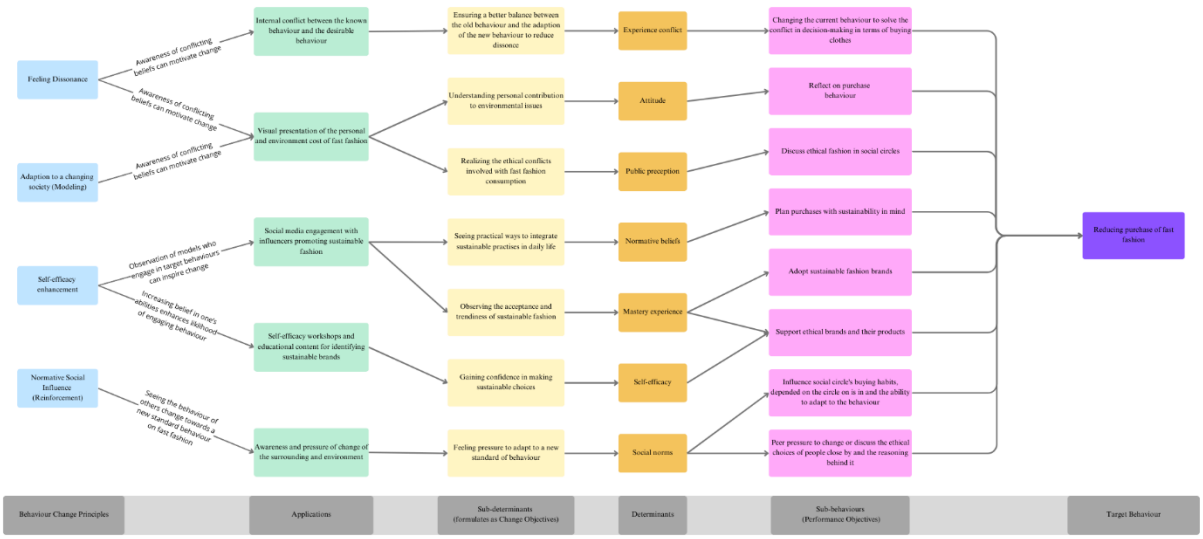

Figure 2 Strategies to change behaviour.

insight into the possible pathways the intervention design can use to let the user adapt their beliefs and view towards fast fashion and option to maintain this change.

The key aspect to take from this are the social influence of other, the dissonance that comes with confrontation and the stimulation when the right behaviour is mastered.

3.4.1 Implementation of the Iceberg Model

The Iceberg model led to a better understanding of the subconscious and internal motivation of the end user of the future design. With this knowledge their can, be adjusted to the needs of the user. This will eventually lead to permanent change of behaviour. In this case this reducing the purchase of fast fashion. To achieve this, the framework in figure 1 will be implemented, as well as figure 2. The Iceberg model can be found in appendix A.

The main take aways from this model are People feel the need to buy something new for each event, instead of reusing items. They are constantly attracted to buy things by changing fashion trends and sales, year-round. The design is aimed to change purchasing behaviour from buying out of desire to buying out of need.

4. INTERVENTION DESIGN

Based on the earlier mentioned research and frameworks the Intervention Design will be developed.

4.1 Kestä

The proposed intervention design consists of an app that utilizes AI technology to log users' daily fashion choices through outfit pictures and integrates a points-based reward system to encourage sustainable behaviour. The reward system employs positive reinforcement by awarding points for sustainable actions, such as wearing items multiple times. The reward system also uses negative reinforcement by subtracting points for unsustainable behaviours, such as frequently purchasing new fashion items. The reward system is designed to incentivize users to engage in sustainable practices, such as re-wearing older items. Below the screen that appears when users open the app is visualized. The app starts with a camera function where users can immediately take an outfit picture to provide the users with a low threshold to log their daily outfits in the app (see Figure 4). The name is a word play on the Dutch word "kast" and the Finnish word for sustainability, the Kestä logo is visualized below in Figure 3.

4.2 Goals of the intervention design

The goal of the intervention design is to raise awareness and ensure action is taken regarding the negative effects of fast fashion. Ultimately the increased awareness will result in reduced purchasing of fast fashion items. Thereby, a secondary purpose is to stimulate purchasing more sustainable items. Furthermore, the intervention design aims to increase sustainable use of owned items by stimulating the times an item is worn.

Figure 3 Kestä logo

Figure 4 Homepage with camera

4.3 Target audience

The target group includes Europeans aged 16-38 years, belonging to Generations Y and Z. The concentration in this segment will be on fashion lovers who have started to care about sustainability but who still have a robust demand for trendy, affordable fashion. As they already spend a large amount of time using their smartphones (Eurostat, 2024), they do shop independently. And while shopping, they are often indirectly influenced by social media (Tripathi, 2019). Kestä relies on an engaging, reward-based system that helps to reinforce sustainable choices by the user's wardrobe and integrating social sharing with incentives. It fills to their needs for trendiness but at the same time nudges them toward eco-friendlier fashion choices.

4.4 The entry point

Users need to be introduced to the app, the entry point should ensure continuous use. A way to get users is sparking their interest in fashion. As the app is an online wardrobe, in which outfits can be made, from anywhere and items can be rediscovered. This encourages the desired behaviour, through utilizing the app as a handy tool.

The app could be promoted by the brands that offer discounts and vouchers. As well as on social media or sustainable fashion influencers. Leading to exposure to the user and a lower threshold to try the app as they hear positive affirmations about it. Viewed as an online wardrobe, the focus is on the ease of making outfits within the app, so the behaviour change is a gradual change that is paired with positive reinforcement.

4.5 Requirements

To ensure the integration of the main goals and to validate the design, a list of requirements was made, among which:

- The logging of the user's wardrobe to track their outfits and the use of items;
- a rewards system to promote the sustainable use of owned items;
- tracking the user's behaviour to give insight in their progression and integrate external factors such as the weather;
- the option for social interaction to encourage sustainable behaviour. Appendix D contains the full list of requirements, ranked on importance.

4.5.1 Point based system

The goal of the points-based reward system is to motivate users to strive for higher scores, where their score reflects their conscious choices and sustainable behaviour (see Figure 5). There are positive points for wearing clothing items again and negative points for purchasing items. Points can be exchanged for real-life benefits and rewards, such as discounts at second-hand clothing stores or from sustainable brands, further encouraging the desired behaviour. These rewards are achieved with a lot of points, making cheating not worth it. The point-based system in the Enschede Fietsstad works similarly. The threshold to cheat is too high, as 100 points is 100 wears and rewards start from there. The rewards could be discounts at second hand stores and such. Some examples of this implementation can be found in Appendix D, with the requirements. Below the Points page in the app is visualized.

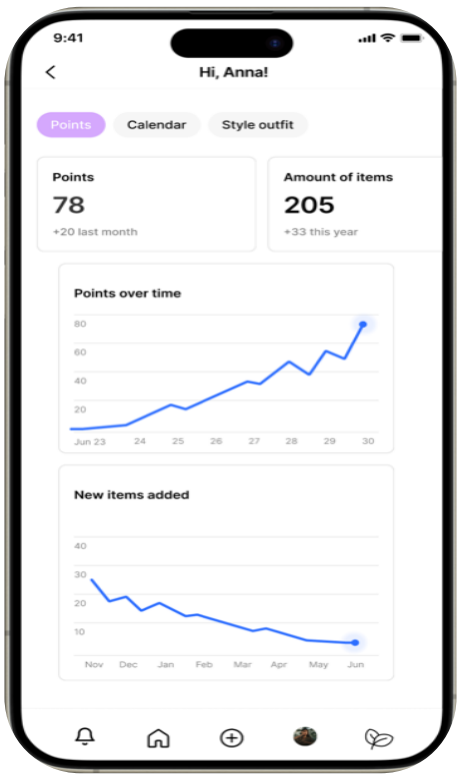

Figure 5: Points collection overview

4.5.2 Tracking and suggesting

The app uses AI to track which clothes the user is wearing, to log the number of wears of the item. It also mentions if an item on the photo appears to be new. The user gets the choice to log this item as ‘newly bought’, ‘second hand’ and ‘not logged yet’. This way the user has the ease of slowly incorporating their closet. Next to this there is the option to acquire clothing suggestions from the app. Based on the weather forecast clothes that are not worn for a while are suggested, together with an outfit based on the user’s style. In this wardrobe the user can add outfits or items manually if taken a picture is not desired. In Figure 6, the digital wardrobe in the app is visualized.

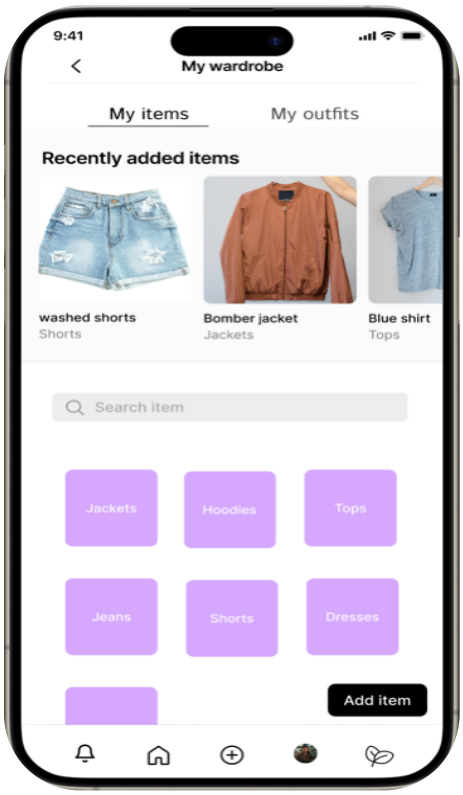

Figure 6 Wardrobe and outfit adding

4.5.3 Social interaction

The app allows users to interact with their friends in the Kestä community. Users have the option to add friends, view their scores, and engage in friendly competition. Competitiveness is a forceful incentive for users to strive to achieve the highest score. On the leaderboard users can see their ranking among their friends or in the entire community. The app supports community building through facilitating groups and forums for sustainable actions. I Figure 7, the home screen of the app is visualized in which users can access the Following page to look at their friends’ outfits and the For You and Inspiration get creatively inspired.

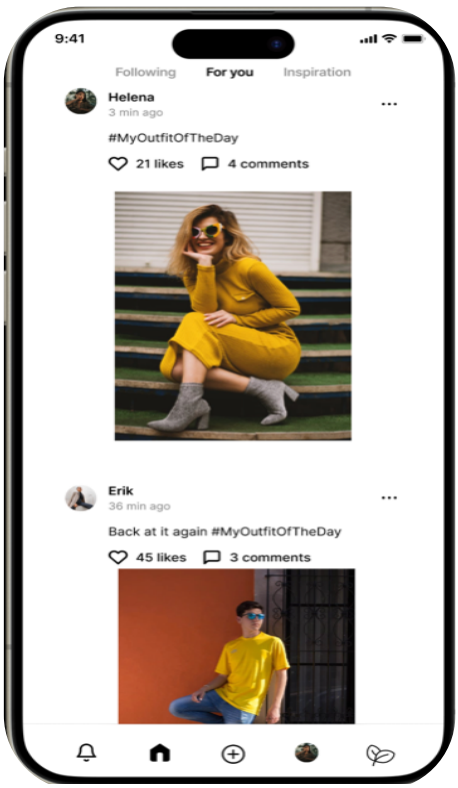

Figure 7 Feed with outfits of friends

4.5.4 Additional functions

The main functions of the app are explained, however later the app could have some further developments to improve the app. The app tracks users' scores, choices, and actions, providing monthly reports that detail how often items are worn, which items are most frequently used, and the frequency of purchasing new or second-hand items. This helps raise awareness of consumer behaviour.

Eventually datasets can be anonymized and be used to analyse larger trends in consumer behaviour. In figure 8, the Profile page is visualized to which extensions to the Points, Streak and Outfit page are linked. The full overview of the app and a link to the prototype can be found in Appendix E.

Figure 8 Profile page

4.6 Implementation of the framework

The three theories of the framework are incorporated into the design to ensure the goals are reached.

The cognitive dissonance theory comes back for example in adding new clothes to your wardrobe. As the action and beliefs do not line up in such a moment if the clothing item is not necessary. The number of minus points determines the sustainability of the clothing piece, which can lead to said dissonance. For the item the user owns at the beginning of the app, no minus points are rewarded. The use of the app helps the user solves the feeling of dissonance, as their good behaviour is rewarded and helped to achieve. The cognitive dissonance theory goes hand with the social exchange theory. The user might feel dissonance when their friends are collecting more points or add less items. To solve this dissonance, they need to wear items more often or buy more sustainable items, if needed.

The social exchange theory is incorporated into the point system. As the user expects a reward, when trying for good behaviour. In this case this leads to the points being validated to discounts or other rewards to make sustainable choices.

The third theory, social cognitive makes use of the actions and believes of the user. Each photo the user makes is rewarded and

can be seen as practice for changed behaviour and believes. Meanwhile, their environment is using this app as well. Which could lead to change in beliefs and actions of the environment as well. The app stimulates this, till the behaviour is changed and the app is purely optional for conscious fashion choices.

4.7 Threshold and pitfalls of the design

Several possible bottlenecks and potential pitfalls are discussed below.

- Logging of the owned wardrobe / Entry efforts

The application runs best and most smoothly when all the items which the user owns have been logged in their online wardrobe. The effort it takes to enter all these items into the app, however, is quite high. The user will therefore have the option to do this gradually and at their own pace. They get the option to add items when they create an account and when they add an item later on, they can indicate whether it is new, second hand or whether it is an item which they already have for a longer time.

- A daily photo needs to be uploaded to get points / Daily commitment.

Every day, the user has to upload a photo or manually add their outfit so that the app can keep track of how often you wear an item. This requires a certain level of commitment from the user and can be neglected. To promote the users to keep doing this, elements of gamification and rewards are added.

- General misuse of the app

A risk that most habit-tracking apps face is general misuse when for instance a user indicates to be wearing a different outfit from what they actually wear simply to get points. However, since the targeted users are people who actually want to learn something and change their behaviour to be more sustainable, the presumption is made that this will not happen on a big scale. The intervention will thus rely on the willingness of the user to change.

Another possible mis use is entering a lot of clothes per day to get points to use the discount. However, the number of points needed for a rewarded and the value of the reward make this a non-worthwhile activity.

5. DISCUSSION

This study consists of a comprehensive literature search that form the foundation for the design and development of Kestä. Based on these findings Kestä is developed to act as a tool that helps users to cultivate sustainable fashion habits and thereby gradually develop sustainable purchasing behaviour.

Kestä is designed to ensure slow but steady change in purchasing behaviour,

however traditional awareness campaigns often struggle to convert consumer concern into actionable behaviour change. Kestä aims to bridge this gap by integrating awareness directly into daily activities, thereby leveraging the power of continuous engagement and user retention.

User engagement and retention are pivotal for not only the app's success but also for successful and long-term behaviour change. Kestä employs gamification, competitive attributes and social interaction features to keep users motivated and engaged over time. However, as the app is heavily user dependent, if users do not engage or utilize the app enough the app fails to reach its purpose. This also relates to misuse of the app, users thus have to be intrinsically motivated to use the app honestly and correctly.

5.1 Limitations

The strategy and rationale behind the app are to reduce purchasing behaviour as users lessen the frequency of their desire to purchase novel items. Kestä emphasizes a gradual process, leading to meaningful and lasting changes in consumer behaviour, however this approach might be too indirect to have a significant impact.

The incorporation of AI technology to create a digital wardrobe from mirror selfies is fundamental to the app's functionality and usability. However, the reliability of AI in accurately identifying clothing items and potential privacy concerns are significant considerations. Ensuring a seamless, intuitive user experience while safeguarding user data is crucial for the app's adoption and success.

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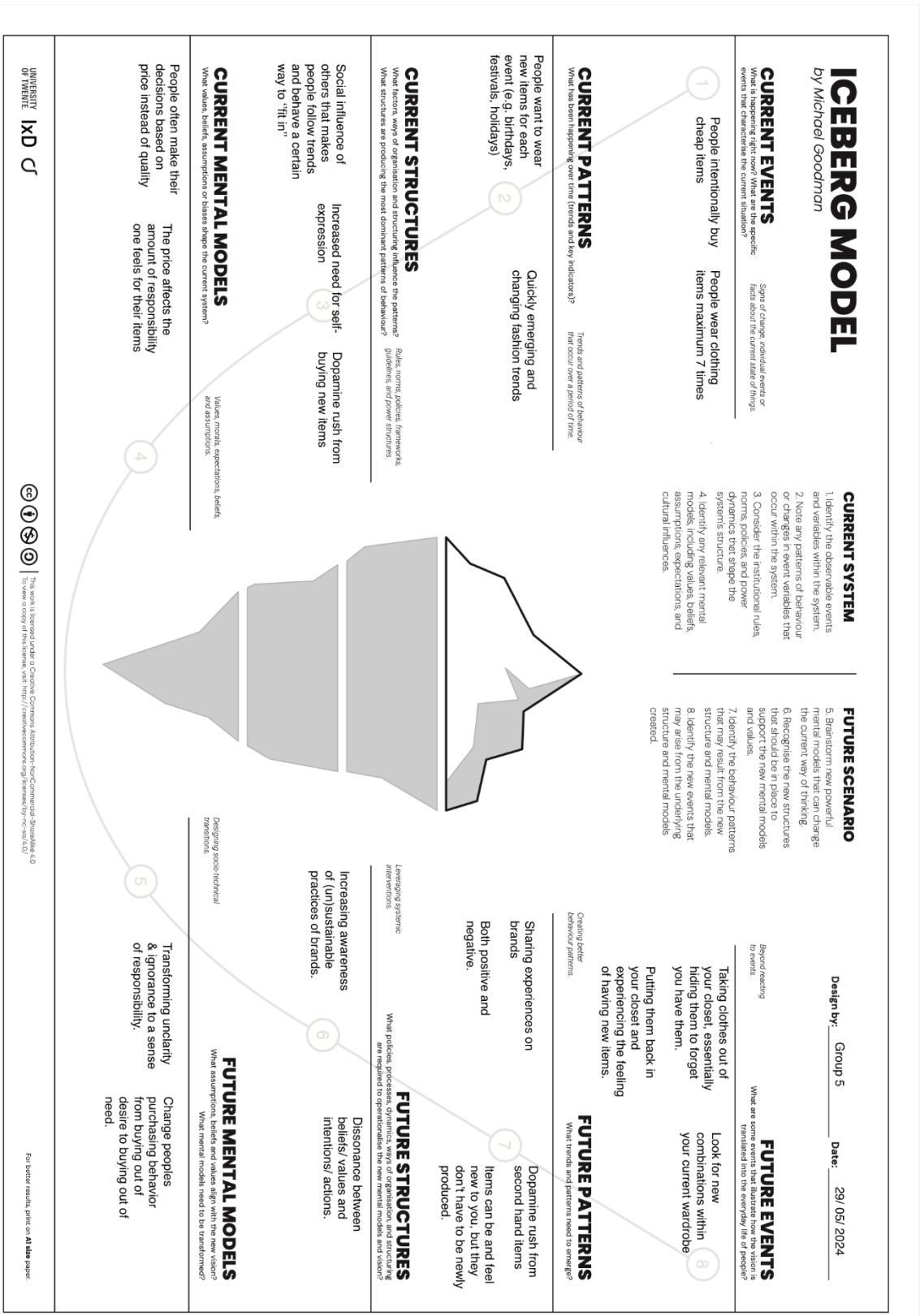
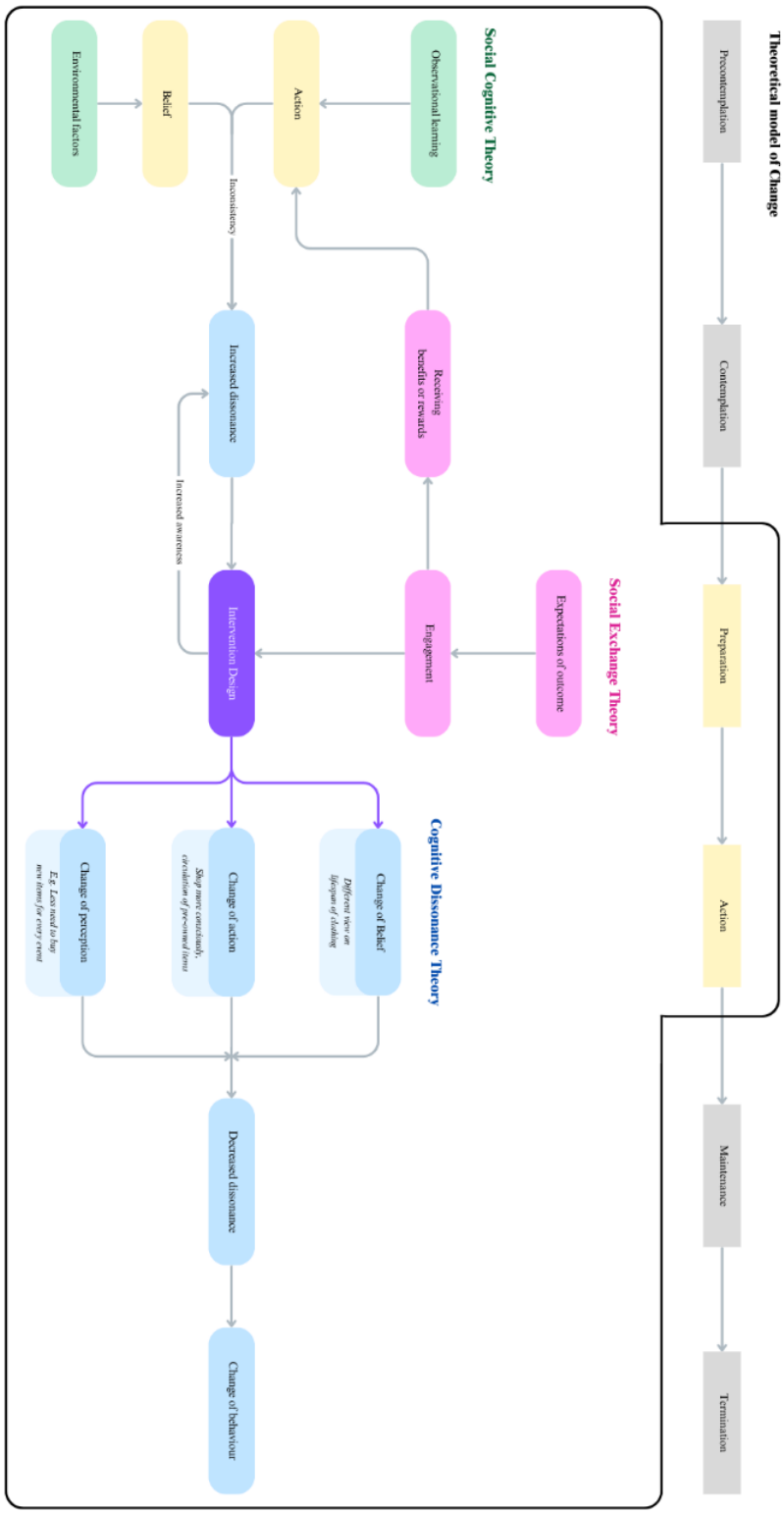
Appendices

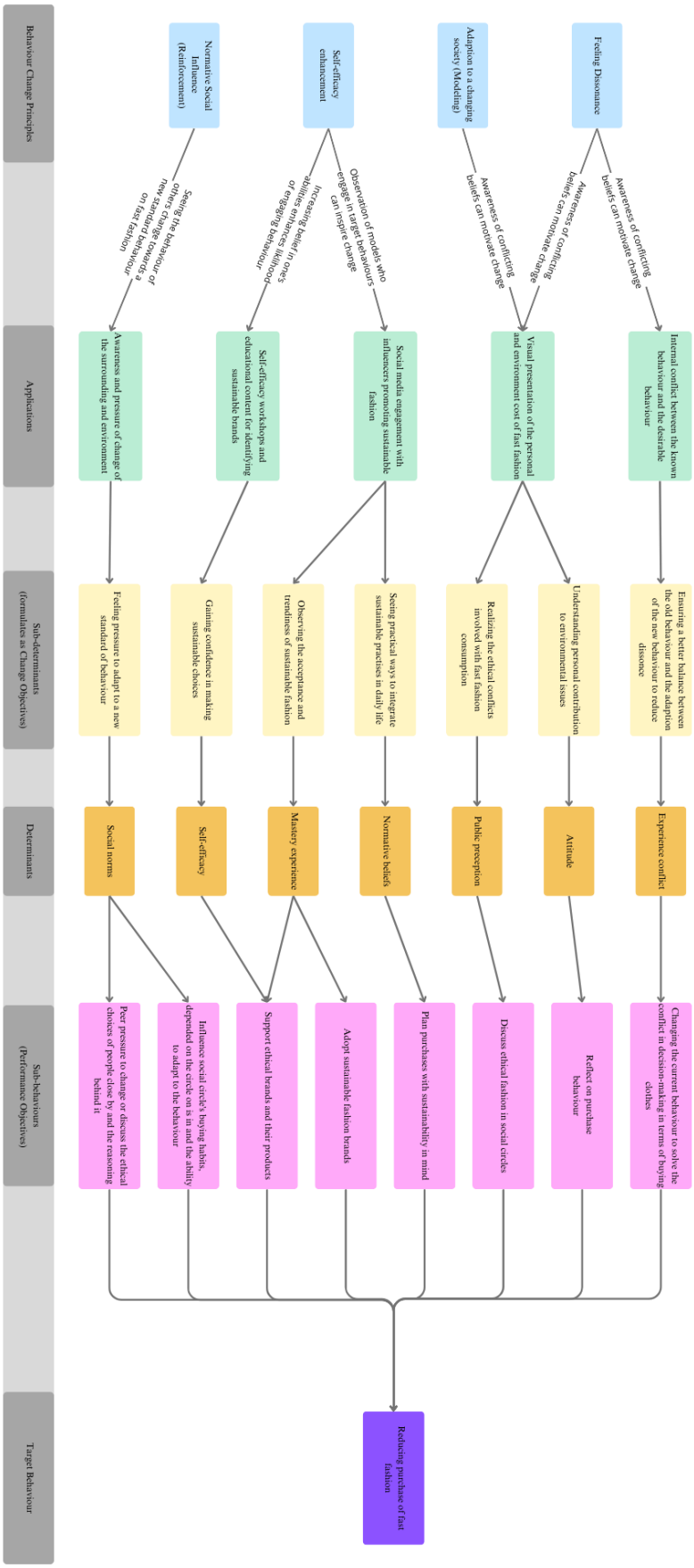
A. Iceberg model



B. Framework to reduce purchase of fast fashion



C. Strategies to change behaviour



D. List of Requirements

Goals

1. To raise awareness regarding the negative effects of fast fashion
    1. To buy more sustainable items
    2. To reduce the purchase of fast fashion
2. To increase the sustainable use of owned fashion items
    1. To stimulate the times an item is worn

Requirements

The list of requirements is ranked to importance using the MoSCoW method (ProductPlan, 2024). The letters each represent a level of demand.

- Must have: these are the minimum requirements that must be fulfilled and are essential. If they are not met, the design has not succeeded.
- Should have: the design should have these requirements. These are essential but not vital.
- Could have: these requirements can be good to have as an addition but not necessary for the core of the product.
- Will have (in the future): these requirements form a basis for future developments and do not form a priority for the current time.

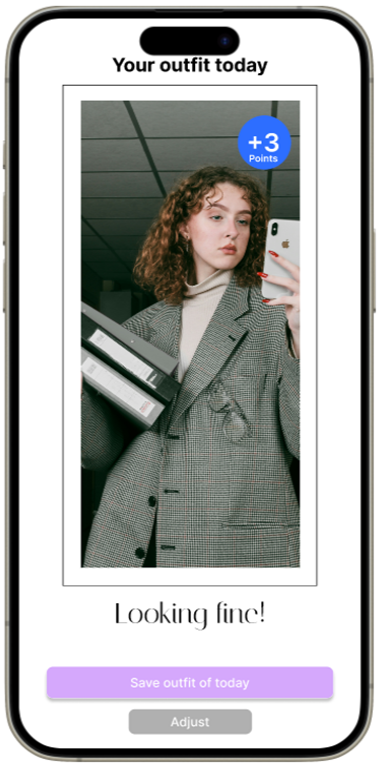
MoSCoW	Requirement
	1. Functional Requirements
	1.1. User Account Management
M	1.1.1. Registration and Login: Via email or social media.
M	1.1.2. Profile Management: Manage personal details and wardrobe items.
S	1.1.3. Minimum age requirement of 16 years old
	1.2. Wardrobe Logging
M	1.2.1. Outfit Tracking: Log daily outfits with pictures or manual entry.
M	1.2.2. Item Reuse Tracking: Monitor how often each item is worn.
S	1.2.3. Item Details: Add purchase date, brand, material, and more.
C	1.2.4. Maybe it can save outfits you wear, analyse these and make recommendations based on your favourite looks.
	1.3. Reward System
M	1.3.1. Points Allocation: Award points for sustainable actions, e.g.,
S	1.3.1.1. Wearing items multiple times.

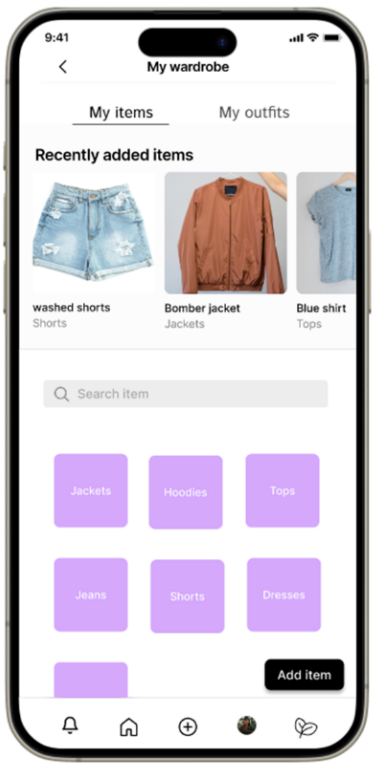
S	1.3.1.2. Wearing items not recently used.
C	1.3.1.3. Wearing/ borrowing others' items (sister/ friend etc.)
	1.4. Points Deduction: Deduct points for unsustainable actions, e.g.,
M	1.4.1. Buying new fashion items.
M	1.4.2. Smaller deductions for second-hand purchases.
S	1.5. Rewards: Redeem points for discounts at second-hand stores or sustainable brands.
	1.6. Behaviour Tracking
C	1.6.1. Usage Reports: Monthly reports on wardrobe use to raise awareness.
C	1.6.2. Weather Integration: Suggest appropriate outfits based on the weather.
S	1.6.3. Style Insights: Recommend outfits from less-worn items.
C	1.6.4. Maybe it can save outfits you wear, analyse these and make recommendations based on your favourite looks.
	1.7. Social Interaction
S	1.7.1. Friends and Community: Add friends, view their scores, and engage in friendly competition.
C	1.7.2. Leaderboard: Encourage sustainable behaviour through competition.
C	1.7.3. Kudos/Feedback: Give and receive positive feedback for sustainable actions.
	2. User engagement Requirements
	2.1. Cognitive Dissonance Reduction
S	2.1.1. Educational Content: Provide information on the environmental and social impacts of fast fashion.
C	2.1.2. Feedback Loops: Notifications and reminders to encourage sustainable behaviour.
	2.2. Gamification
C	2.2.1. Challenges and Achievements: Motivate users with challenges and badges for milestones.
S	2.2.2. Streaks: Track and reward consecutive days of sustainable actions.
	2.3. Social Influence
W	2.3.1. Community Building: Facilitate groups and forums for sharing tips and experiences.
W	2.3.2. Social Media Integration: Enable sharing of achievements and sustainable fashion journeys.
	3. Technical Requirements
	3.1. Platform Compatibility
M	3.1.1. Mobile App: Available on iOS and Android.

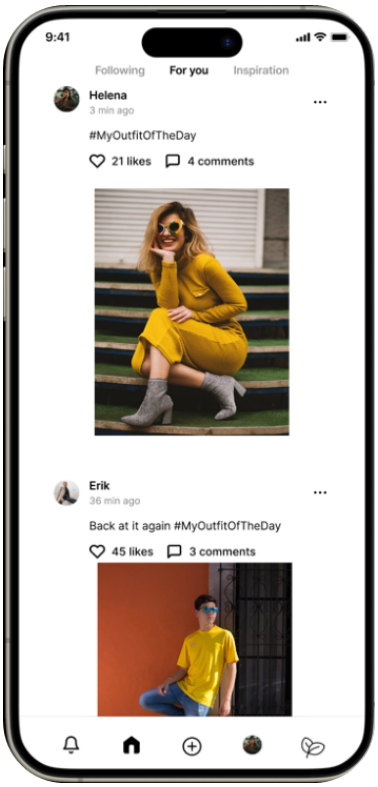
	3.2. Integration
S	3.2.1. Third-Party Apps: Integrate with lifestyle and weather apps for enhanced functionality.
W	3.2.2. E-commerce Links: Connect with second-hand and sustainable fashion stores for seamless shopping.
	3.3. Analytics
S	3.3.1. User Behaviour Analytics: Track and analyse user behaviour for continuous improvement.
W	3.3.2. Data Sharing: Use anonymized data to analyse and share consumer behaviour trends.

E. App pages

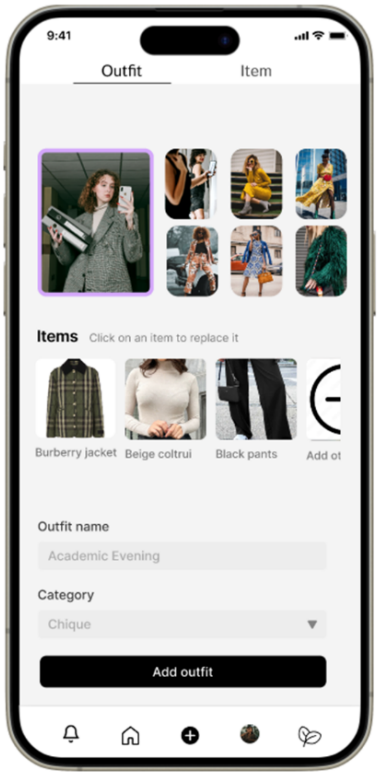
[Click here to see the app mock-up]

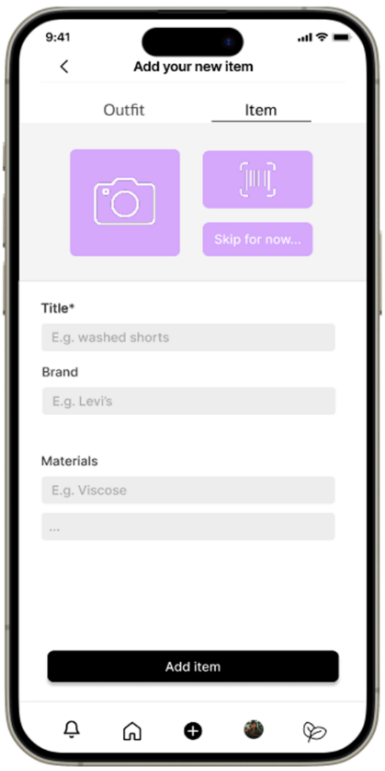


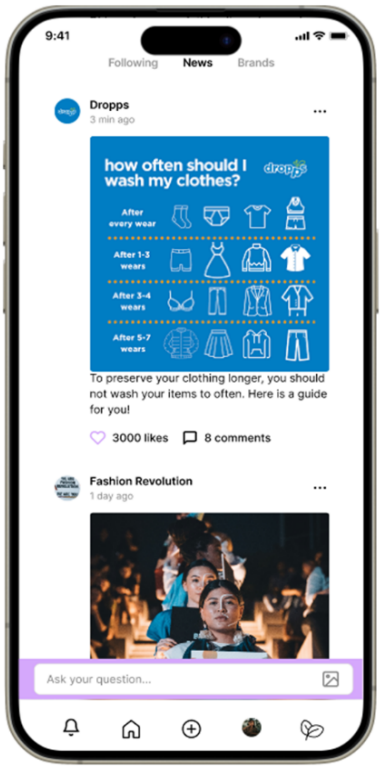


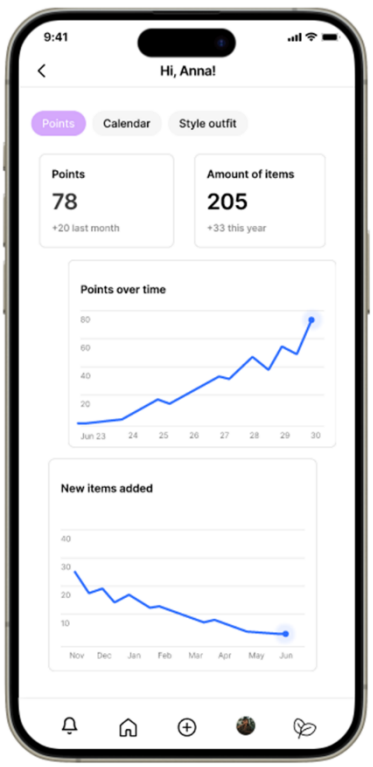

9:41
Following
For you
Inspiration
Helena
3 min ago
#MyOutfitOfTheDay
21 likes
4 comments
Erik
36 min ago
Back at it again #MyOutfitOfTheDay
45 likes
3 comments

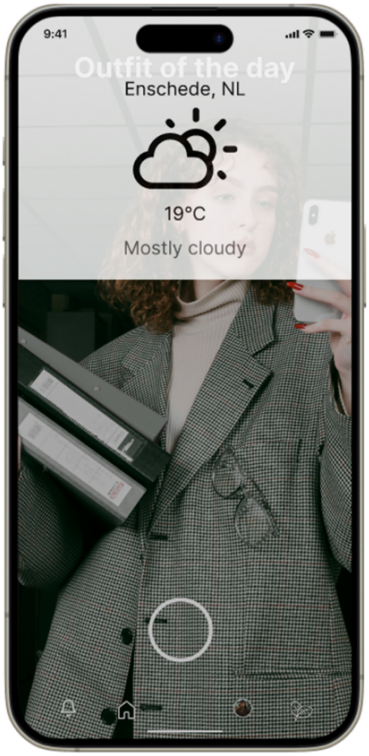

9:41
My wardrobe
My items
My outfits
Favourites
All
Casual
Chique
Your favourite outfits this month:
Add outfit

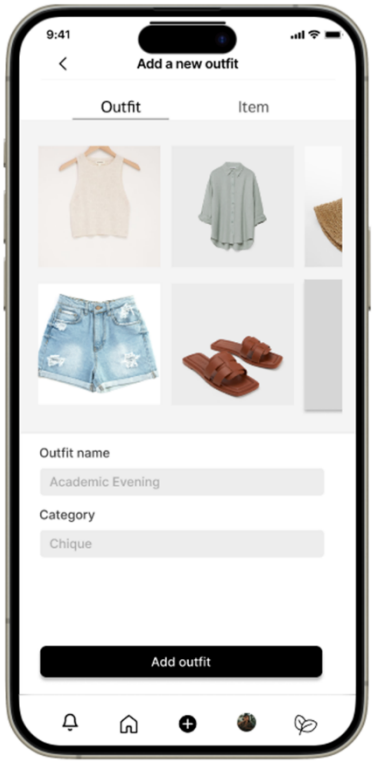

9:41
Outfit
Item
Items
Click on an item to replace it
Burberry jacket
Beige coltrui
Black pants
Outfit name
Academic Evening
Category
Chique
Add outfit


9:41
Add your new item
Outfit
Item
Skip for now...
Title*
E.g. washed shorts
Brand
E.g. Levi's
Materials
E.g. Viscose
Add item


9:41
Following
News
Brands
Dropps
3 min ago
how often should I wash my clothes?
After every wear
After 1-3 wears
After 3-4 wears
After 5-7 wears
To preserve your clothing longer, you should not wash your items to often. Here is a guide for you!
3000 likes
8 comments
Fashion Revolution
1 day ago
Ask your question...


9:41
Hi, Anna!
Points
Calendar
Style outfit
Points
78
+20 last month
Amount of items
205
+33 this year
Points over time
New items added


9:41
Outfit of the day
Enschede, NL
19°C
Mostly cloudy


9:41
Add a new outfit
Outfit
Item
Outfit name
Academic Evening
Category
Chique
Add outfit