

Nudging for sustainable fashion consumption

A concept design based on expert and consumer analysis

Bachelor's Thesis

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07.12.2022

Bachelor's Programme in Design

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Title of thesis Nudging for sustainable fashion consumption: A concept design based on expert and consumer analysis

Department Department of Art & Media and Department of Design

Degree programme Bachelor's Programme in Design

Year 2022

Number of pages 60

Language English

Abstract

The increasingly popular concept of green consumerism expects consumers to make analytical judgements of what is best for the environment when making purchase decisions. However, this approach is not reliable as consumers' decisions are often biased. For instance, fast fashion is still developing at a rapid pace although fashion consumers are increasingly more aware of their purchase decisions. Although consumers are showing interest in sustainable fashion products, a behaviour gap can be recognised between the intentions and the actual behaviour of consumers.

An approach to address this behaviour gap has been recognised in the approach of nudging. Thus far, nudging has been proven as a potential method for assisting consumers to make sustainable consumption decisions. As a result, brands have directed their marketing and branding efforts towards implementing nudges that would differentiate their product offering from other brands. For example, many fashion brands have implemented the nudge of clothing tags that carry sustainability claims to allow consumers to make sustainable choices. However, studies on nudging in the fashion industry are limited and therefore further research needs to be conducted to analyse the effectiveness and potential of nudging for sustainable fashion consumption.

Thus, the scope of this bachelor's thesis was to analyse the practice of nudging in the fashion industry context through the example of clothing tags nudges. The main research question posed was: How to nudge for sustainable fashion consumption? The sub questions supporting the research were: 1. How do clothing tags nudge fashion consumers? 2. How can the nudge of clothing tags be iterated in the future? To answer the research questions, expert and consumer interviews were conducted for an industry specific analysis of clothing tag nudges. To add, a visual concept was designed to conclude the findings of this research and to conduct a design process for developing nudging for sustainable fashion consumption.

The analysis of expert and consumer interviews revealed that nudging in the fashion industry is currently untransparent and the consumers do not trust the provided information due to information overflow and the spread of false information. Moreover, the expert interviews revealed that many of the clothing tags did not follow the principles of nudging: the critical analysis proved that companies have, thus far, designed nudges based on their own marketing needs. Therefore, it was concluded that further research and design should be conducted to deepen the understanding of nudging in the fashion industry, and to develop ethical practices of nudging based on consumer needs. To add, policies should be directed towards ensuring that fashion brands follow nudging principles when guiding consumers' decision-making processes. Moreover, the concept design showcased an alternative approach to nudging in the industry. Based on expert insights and consumer feedback, the concept visualised the potential features and implementations of an upcoming European Union policy to develop nudging in fashion. The concept design was an attempt to showcase how designers should develop and iterate nudges for sustainable fashion consumption.

Keywords nudging, sustainable fashion consumption, green consumerism, transparency, greenwashing, communicating sustainability, digital product passport, fashion, concept design

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Acknowledgements

This thesis has been a long project of mine that I have worked on with passion and excitement. I am curious to see where the findings of this research will take me, and what there still is to explore on the topic.

I want to thank my advisor Constantinos Miltiades for believing in my thesis topic and ideating creative design outcomes with me!

I want to thank Oscar Person and Namkyu Chun for offering guidance in writing thorough academic research.

I want to thank all of the experts who mentored me and gave their insights to develop this project. Without your help, I wouldn't have found this topic that inspires me in my design work.

I want to thank the consumers for participating in long discussion about clothing tags to find better solutions for sustainable fashion consumption promotion. Thank you for being realistic and pushing the ideas forward.

Finally, I want to thank my classmates and my family for offering support and helping me reach my best potential. You helped me realise the importance of my work!

6 December 2022

Reti Kilvet

1 Introduction

With the rise of eco-awareness, consumers are expected to make judgements for what is best for the environment (Moisander, 2007). Consumers are expected to decrease global problems by selecting, purchasing and consuming products that have low environmental impact and are ethically produced. However, consumers are often not able to make a critical analysis of the options available to them (Moisander, 2007) as several factors might influence their decision-making process. For instance, it can be difficult for consumers to navigate between a variety of information flows. Or consumers might feel intimidated to act differently from established social norms. Ultimately, the question arises whether green consumerism is a realistic approach to global overconsumption crisis.

An example of an attempt to green consumerism can be seen in the fashion industry. The fashion industry is built on fast trends and high production speed. Although awareness of sustainable fashion practices has increased in the industry, customers' purchase behaviour has not translated into making more sustainable choices (Roozen, Raedts & Meijburg, 2021). Consumers are showing interest in sustainable fashion products, yet they are affected by barriers such as (among others) the lacking availability of information, inertia, or a biased understanding of ethical clothing (Wiederhold & Martinez, 2018). To add, consumers strongly value fashion trends and self-expression which overpower weakly communicated environmental and ethical matters (Wiederhold & Martinez, 2018). This results in a gap between the ethical intentions and the actual behaviour of consumers (Belk, Devinney, & Eckhardt, 2005).

An approach to close said gap is nudging (Lehner, Mont & Heiskanen, 2016). Nudging is a method of guiding the consumer to make sustainable decisions without forbidding any options (Thaler & Sunstein, 2008). Essentially, nudging aims to encourage selected consumer habits by making the preferred decisions easier to make. For example, introducing a tax can decrease environmentally harmful behaviour by making it expensive to continue the harmful habits (Thaler & Sunstein, 2009). Nudges are designed with tools such as simplified information, default policies, emphasized social norms, or changes in the environment (Lehner et al., 2016). The approach is seen as a promising tool for promoting sustainable consumption (Lehner et al., 2016) as it allows to ease the pressure on the consumer to make sustainable decisions.

Therefore, as a result of fashion consumers becoming more conscious, fashion brands have directed their marketing and branding efforts towards implementing nudges that would differentiate their product offering from other brands. For example, many fashion brands have implemented the nudge of green clothing tags that have become carriers for sustainability claims and additional product information.

However, research done on the effectiveness of nudging for sustainable fashion consumption is limited. Thus far, studies have mainly experimented with visual and verbal nudges in guiding sustainable fashion and textiles consumption (Strähle, Wirtz, & Köksal, 2016; Roozen, Raedts, & Meijburg, 2021). For instance, findings showed that consumers were more likely to prefer a garment when it was presented with written or visualised information about its environmental-friendly characteristics (Roozen, Raedts, & Meijburg, 2021). However, most studies have been carried out in test environments and therefore the analysis of real-life implementations of nudges in the fashion industry remains lacking.

The scope of this bachelor's thesis is to analyse the practice of nudging in the fashion industry through the example of clothing tags. Furthermore, this thesis proposes a concept design to develop nudging for sustainable fashion consumption. Specifically, clothing tags collected from everyday fashion brands are examined with experts and consumers to better understand how nudging functions in the industry. Then, an iterative design is proposed to speculate future developments of nudging for sustainable fashion consumption. The main research question posed is: How to nudge for sustainable fashion consumption? The sub questions supporting the research are: 1. How do clothing tags nudge fashion consumers? 2. How can the nudge of clothing tags be iterated in the future?

This paper first gives an overview of research on the current fashion industry and nudging to provide context for the research questions. The overview covers the setting of today's fashion industry, the characteristics of a fashion consumer, the theory of nudging, and examples of nudging in the fashion industry with the aim to create a framework for analysing clothing tags as nudges. Secondly, used methodology is presented to showcase the research process of analysing clothing tags as nudges. The segment includes field study materials collected for research, interview guides

for expert and consumer interviews and the design process for iterating nudging for sustainable fashion consumption. Thirdly, the outcomes of the research are discussed, and a design concept for nudging in the fashion industry is proposed. Finally, conclusions, the research limitations and implementations of the outcomes of this study are discussed.

2 Literature review

A literature review is gathered to further understand the topic. The aim of the literature review is to provide an overview of the problem space of this thesis: the presented literature was selected to study the characteristics of the fashion industry, its consumers, and the possibilities of nudge implementations in the industry. Therefore, the literature review is presented in the following segments: 2.1. Fashion industry today; 2.2. Fashion consumer; 2.3. Nudging; and 2.4. Nudging in the fashion industry. The literature review provides a basis for the design process of this thesis.

Firstly, the fashion industry is studied in attempts to understand the context of the problem space of this thesis. The studies were selected based on the topic of fast fashion, the most prevalent system of fashion consumption, to showcase the urgent need for sustainable solutions. Secondly, studies on today's fashion consumers are presented to describe the modern fashion consumer, and to locate reasons for fast fashion development in an industry where fashion consumers are increasingly more eco-aware. Moreover, studies addressing fashion consumers' behaviour are presented to indicate the potential of nudging for sustainable fashion consumption. Thirdly, the methodology of nudging is presented through a selection of theory studies that describe the purpose, tools, and ethics of nudging. Finally, studies on nudging in the fashion industry are presented to provide an overview of research done thus far.

2.1 Fashion industry today

The fashion industry is a competitive market that has been vastly developing towards meeting consumers' growing needs for fashion trends and self-expression. According to Bhardwaj's and Fairhurst (2010) study, the development of the fashion industry in the last two decades can be seen in the increase of fashion seasons, speed to market, and low costs. Bhardwaj and Fairhurst characterize today's industry as a highly competitive market where retailers constantly produce new product ranges and modify their supply chains for flexibility and faster pace (Bhardwaj & Fairhurst, 2010). To add, studies showcase that fashion supply chains are designed for the low predictability of consumer demand (Christopher et al., 2004) and short product life cycles (Forza & Vinelli, 2000). This means that fashion brands and consumers are interdependent: with the low costs and vast availability of garments, the fashion trends become shorter, and consumers expect increasingly more products, which leads fashion brands to create even more product seasons to fulfil those needs. This development is termed fast fashion, which describes the changes in the fashion industry towards a faster pace and decreased price and quality (Bick et al., 2018).

Moreover, fast fashion has been attributed to the modern consumer who knows the latest fashion trends and is determined to adapt to them (Cachon & Swinney, 2011). Research reveals that the model of quickly delivered, trendy, low-cost products stimulates consumers who do not purchase out of need but to build a temporary personal identity (Gabrielli et al., 2013). Therefore, Gabrielli and colleagues (2013) point out that since fast fashion serves the consumer with continually renewed choices, the consumer's role is central to the development of the industry.

2.2 Fashion consumer

The global increase of consumer sustainability awareness has appealed the fashion industry as an upcoming trend. However, research shows that despite consumers' increasingly conscious behaviour, they have not adapted to sustainable consumption practices (McNeill & Moore, 2015; Bray et al., 2010; Moisander, 2007), especially when making fashion purchases (Joergens, 2006). Since the fashion industry is dependent on the consumer demand, consumers' active participation in making sustainable choices is crucial in improving the industry (Gabrielli et al. 2013). However, it has been argued that the consumer is often not able to make rational decisions for sustainability (Moisander, 2007). Research shows that fashion consumers desire to create and express an identity (Berger & Heath, 2007) within the bounds of social norms (Thompson and Haytko, 1997; Murray, 2002) often outweighs their decision drivers to be sustainable (McNeill & Moore, 2015). For example, a study revealed that consumers rely on a cost-benefit analysis when deciding whether to engage in sustainable consumption behaviours: they consider economic, social and psychological factors to get the best value by engaging in the behaviour (Diddi et al., 2019). In other words, consumers might consider the price of a garment and the benefits that they would gain from the purchase: for example,

how a social group might perceive the garment, and what could be expressed through wearing the garment. The complex decision-making processes can therefore result in a gap between consumers' sustainability awareness and purchasing behaviour.

According to Lee et al. (2020) this behaviour gap is a psychological imbalance that cannot be resolved by normative narratives, but it must be approached with subtle, yet essential guidance. Thus, to incorporate consumers into sustainable action, they need to be provided with tools to help them make complex judgements and sustainable decisions. Therefore, the technique of nudging has been seen as a feasible approach to guide the fashion consumers' decision-making process (Roozen et al., 2021).

2.3 Nudging

Thaler and Sunstein define the concept of nudging as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives” (2008, p. 89). In other words, nudging reduces undesirable behaviours and encourages desirable behaviours (Lehner et al., 2016) whilst allowing freedom of choice.

According to Sunstein's (2014) short guide to nudging, nudges follow three principles. First, nudges should allow freedom of choice and the goal of nudges is to simplify daily lives of the consumers. Second, nudges should be transparent for consumers to review and criticize. Third, nudges must be tested and iterated based on thorough user research and behavioural science to avoid failures (Sunstein, 2014). For instance, if a clothing tag with product information is placed on a garment at a store, the consumer has the freedom to choose to read it or not. To add, the consumer should be able to acknowledge that the clothing tag was placed on the garment, and to criticise the helpfulness of the tag. Finally, the fashion brand should collect consumer feedback and iterate the clothing tag.

Furthermore, Lehner et al. (2016) mention four kinds of tools for nudging: simplification and framing of information, changes to the physical environment, changes to the default policy, and the use of social norms. The simplification and framing of the information make the information processing more straight-forward and easy to understand. Changing the physical environment or the default policies around the consumer can guide the consumers' unconscious automatic decisions. Finally, encouraging selected social norms can encourage consumers to change their behaviour to fit into the social group (Lehner et al., 2016).

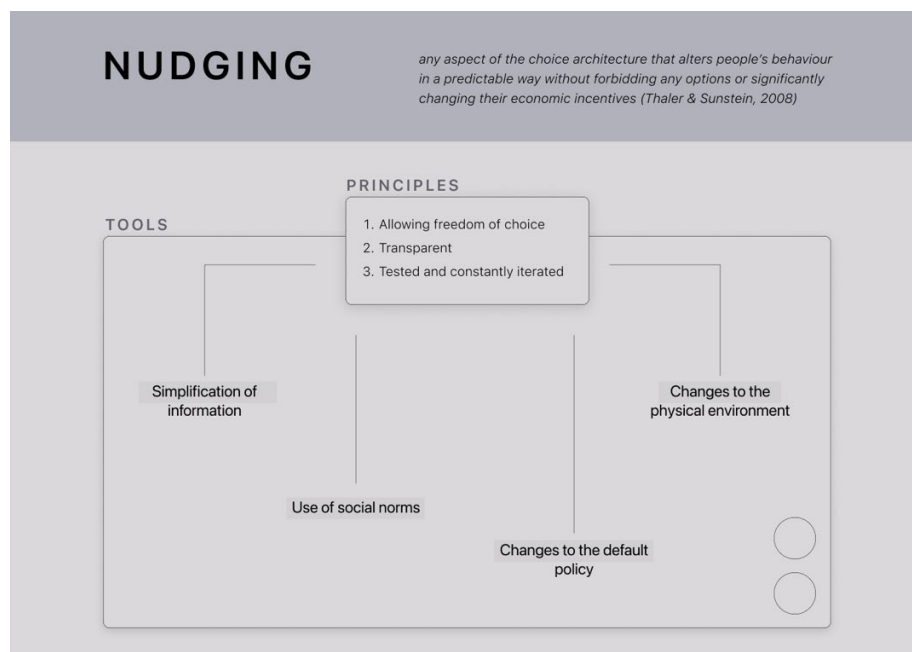


Figure 1. Nudging theory: principles and tools

Alternatively, researchers have criticised the ethical grounds of nudging. According to Soraghan and colleagues (2016), the practice of nudging often lacks in understanding the needs and desires of the target group as it is aimed at the “mindless choosing” aspect of consumers' behaviour. Hansen & Jespersen (2013) introduce a distinction between transparent and non-transparent nudges to differentiate manipulative practices from other uses of nudging. This distinction becomes essential in the analysis of nudging in fashion due to frequent cases of greenwashing and green marketing.

2.4 Nudging in fashion

Thus far studies have revealed that transparency in the production chain as well availability of information in the fashion industry can impact consumers' willingness to act for sustainability (Grappi et al., 2017; Roozen & Raedts, 2020). For instance, research by Roozen et al. (2021) showed that nudges in the form of verbal information have remarkable influence on the consumers' fashion purchasing decisions and consumers were willing to pay significantly higher prices for more sustainably produced garments. In the study, verbal and visual nudges were presented to consumers along with a cotton T-shirt. The outcome revealed that the consumers were willing to pay higher price for the T-shirt with a sustainability nudge rather than one without a nudge (Roozen et al., 2021). Other studies confirmed the effectiveness of labelling systems when standardized ethical and environmental conditions of clothing items were indicated on the tags (Aspers, 2008; Perez & Lonsdale 2018).

To conclude, research has proven the potential of nudging for sustainable consumption. Furthermore, studies in fashion have shown that factors such as availability of information and transparency can impact consumers' willingness to make more sustainable choices. Transparency and standardisation of the provided information is therefore imperative when designing for nudges in fashion. However, more experimentation and analysis of real-life nudge implementations is required to design the optimal nudges for the industry. In the next section, the research methods of this thesis are presented that were used to gain additional knowledge on nudging in fashion.

3 Methods

The research methods of this study were selected to gain a holistic overview of clothing tags as nudges for sustainable fashion consumption, and to design a realistic concept for possible iterations of nudging in the fashion industry. The research by the guidance of the research questions posed for the study.

As mentioned in the Literature Review, the goal of nudges is to simplify the life of the consumer, which is possible through understanding the consumers' choice-making processes and involving the consumers in the design process (see 2.3. Nudging). Therefore, the research was conducted an iterative user-centric approach to design for the consumers. Moreover, this study followed qualitative research methods for the author to gain in-depth understanding of the industry as a non-specialist.

The research was conducted in an iterative process (see Figure 2): the research questions were explored simultaneously with a practical design process that was conducted to test the gained knowledge (see Figure 2). The research process is described in the following segments: 3.1. Nudge sampling; 3.2. Semi-structured expert interviews; 3.3. Semi-structured consumer interviews; 3.4. Thematic Analysis, 3.5. Concept design.

Specifically, samples of clothing tags were gathered in a photo catalogue to visualise nudging in the fashion industry and to gather materials for the discussions with experts and consumers. Second, semi-structured expert interviews were conducted to analyse the contents of the sample catalogue, and to gain industry insights on nudging for sustainable fashion consumption. Third, semi-structured consumer interviews were conducted to discuss consumer experiences and perceptions of nudging, and their needs for future fashion consumption. Then, the semi-structured interviews were thematically analysed to gain an overview of the context of nudging in the fashion industry. Simultaneously, the collected qualitative insights created a framing for the concept design.

METHODS

- Designing a speculative nudge for sustainable fashion consumption
- Analysing nudging in the fashion industry

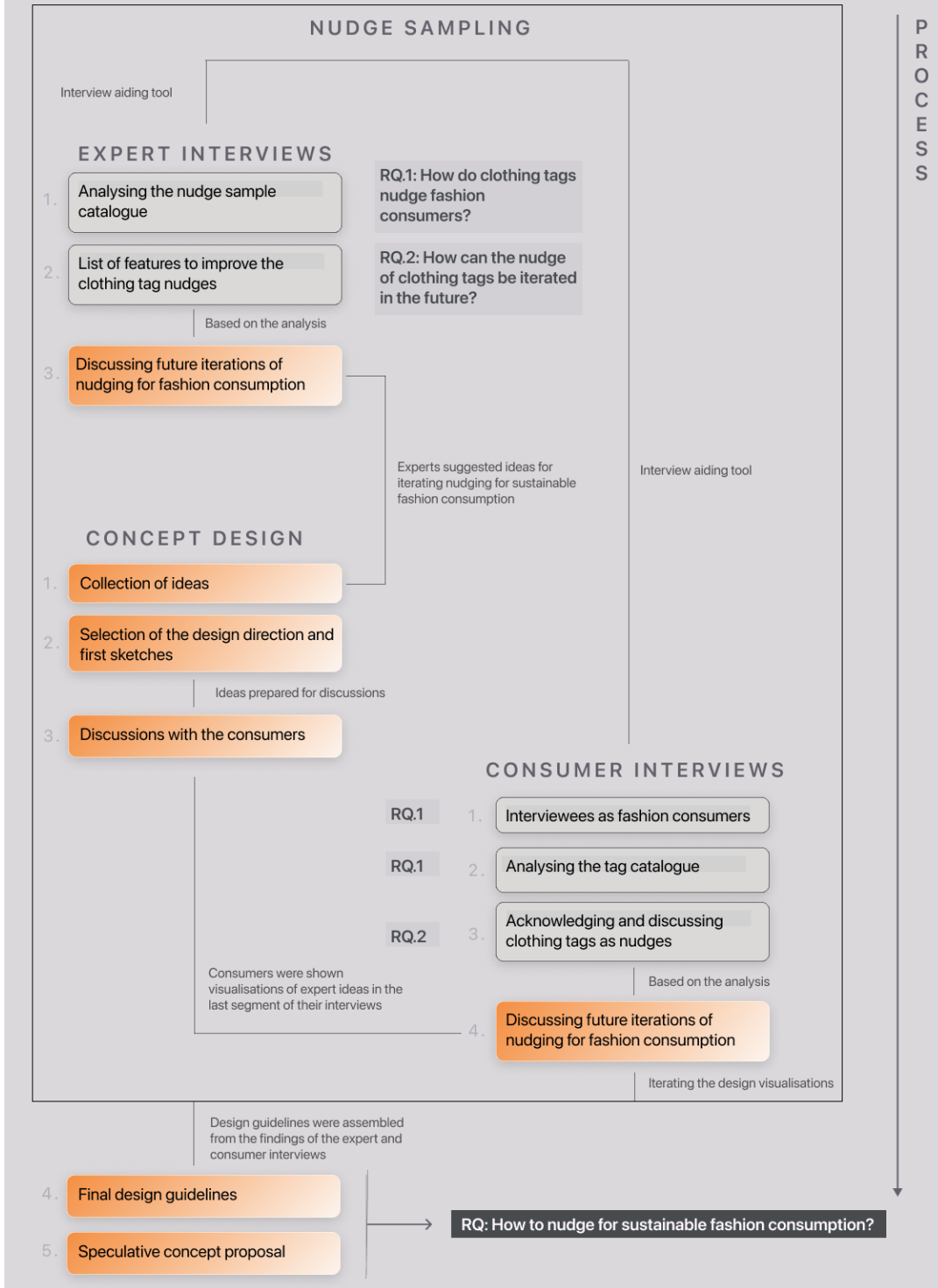


Figure 2. User-centric iterative design process conducted in this study.

3.1 Nudge sampling

First, a sample catalogue was assembled in preparation for the expert and consumer interviews (see Figure 3). The aim of the sampling process was to gather visual materials which could be analysed with experts and consumers in the semi-structured interviews. The catalogue was assembled through the purposive sampling method due to the scope of this study.

Purposive sampling is a non-random sampling technique where the choices of subjects' is made based on a judgement of the subjects' qualities (Etikan et al., 2016). This technique is often used in qualitative research to locate the most promising subjects for quality research (Etikan et al., 2016). In this study, the purposive sampling technique was used to collect evident examples of nudges in the fashion industry within a short timeframe.

Clothing tags in today's fashion industry are one of the most common physical nudges that have been adopted by many everyday fashion brands. Due to the popularity of clothing tag nudges, it was possible to collect a variety of samples for analysis and comparison purposes in the given timeframe. The samples were selected based on the author's judgements. For the purpose of insightful interviews, the catalogue had to create opportunities for the comparison of samples and for grouping samples with common features. Additionally, to allow in-depth discussions about experiences, the clothing tags had to be from fashion brands that the experts and consumers would most likely recognise.

Inspired by the Literature Review, the author's selection was guided by three categories: a) tags with sustainability symbolics/ information; b) tags with no additional information; c) tags with general additional information. The clothing tags were gathered in the centre of Helsinki (Finland) at Kamppi and Forum shopping malls from big first-hand fashion brands (such as H&M, Zara and Marimekko).

The tags were photographed in the stores and assembled into numbered photocards in preparation for the expert and consumer interviews. The full photo-catalogue can be found in the Appendix 1.



Figure 3. Clothing tag photo catalogue

3.2 Semi-structured expert interviews

Next, expert interviews were conducted to gain industry insights on the use of nudges for fashion consumption. The expert interviews were arranged in a semi-structured interview format to allow in-depth expertise-based discussions. The nudge sample catalogue (see 3.1. Nudge Sampling) and an interview guide were used in the discussions to facilitate the experts' insights. The interview findings were thematically analysed for a holistic overview of the fashion industry context.

Semi-structured interviews were chosen as the technique to gather expert insights of nudging in the fashion industry as they have experienced it. As the author is not an expert on the topic, it was essential for the author to remain in the listener's role rather than leading the discussion. Semi-structured interviews consist of open-ended questions that encourage in-depth responses (Ryan et al., 2009). This method usually is accompanied with an interview guide that facilitates the interviewees' descriptions of their experiences without the researcher shaping the discussion (Streubert & Carpenter, 1995).

Four experts were selected from different expertise areas to create an overview of clothing tags as nudges. The selection was made from Aalto University's limited number of fashion or nudging related researchers based on availability. The experts were contacted via email with a brief description of the study and the topics of the interview. The experts who responded with interest to participate in the interview were selected for the interview. Two experts were in the field of textiles and fashion, one expert was in the field of fashion and design research, and one expert was in the field of social design with expertise in nudging theory and methodology.

The 45-minute expert interviews were arranged individually online (on Zoom) or in person. The interviews were facilitated with the use of the nudge sample catalogue (see Appendix 1) and an interview guide (see Appendix 2) to encourage in-depth discussions on the topic and to allow the experts to lead the conversation. The interview guide consisted of three segments (see Figure 5): 1) analysing the nudge sample catalogue, 2) listing features that would improve clothing tag nudges, 3) discussing future iterations of nudging for sustainable fashion consumption. The nudge sample catalogue was presented to the interviewees in the form of two-sided photocards which were randomly placed on a table or on a Miro board (online) (see Figure 4).



Figure 4. The nudge sample catalogue was presented to the interviewees in the form of photocards which were randomly placed on a table.

1) Analysing the nudge sample catalogue

During the first segment, the experts were asked to inspect and categorise the photocards based on I) contents and II) design. By locating and grouping common features of clothing tags, the experts could get more familiar with the samples, and they could use the tags as examples to provide their comments. To add, the experts were asked to locate nudging features on the clothing tags, and to critically analyse clothing tags as nudges.

2) Listing features that would improve clothing tag nudges

In the second segment, the potential iterations of clothing tags were discussed based on the conclusions of the first segment. After analysing the tags and discussing potential flaws in them, experts were asked to list important features that fashion nudges should include to solve the flaws.

3) Discussing future iterations of nudging for sustainable fashion consumption.

Finally, in the third segment the experts were asked to share their ideas on how nudging for sustainable fashion consumption could be iterated in the future. ¹

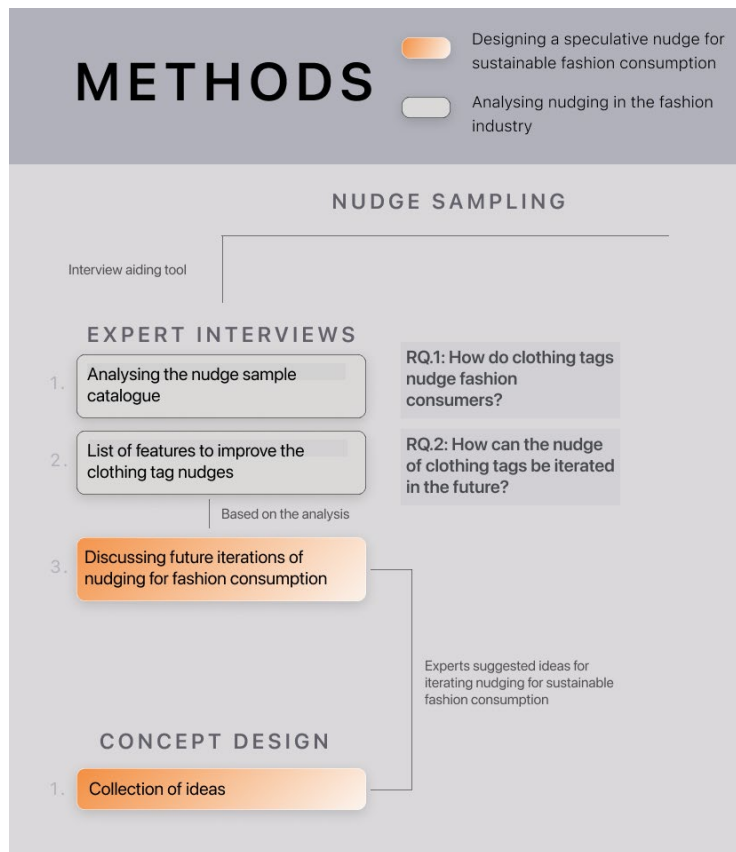


Figure 5. Expert interviews consisted of three segments and gave design directions the speculative concept design.

¹ To simplify the description of the iterative design process that happened simultaneously with the interviews, segment 3) is described more in depth in subchapter 3.4. Concept design. Although the expert interviews consisted of three segments that were conducted at once, the segments are discussed separately to divide the research on nudging from design ideation discussions. This segment provided direct base for the speculative concept design process.

3.3 Semi-structured consumer interviews

The expert interviews created a base for the consumer interviews. The aim of the consumer interviews was to discuss the consumers' experiences with clothing tags as nudges, and to specify their needs and expectations for external decision-making guidance for fashion purchases. Thus, the consumer interviews were semi-structured to allow consumers to share their life stories from past fashion consumption experiences. The discussions were facilitated by an interview guide (see Appendix 3) and the nudge sample catalogue (see Appendix 1). Moreover, the interviewees were selected with the purposive sampling method due to time constraints. To add, the interview transcripts were thematically analysed for a holistic overview of the fashion industry context.

The consumers were selected with the purposive sampling method to gain insights of consumer experiences, perceptions and expectations for nudging in the fashion industry. To ensure the depth of interviews and active discussions, the selection criterium for the interviewees was narrowed to early adopter fashion consumers in Finland who are aware of the sustainability issues in the industry and are willing to change their consumption habits. The interviewees were reached through relevant Aalto University's student networks with a description of this study and the interview topics, and the author's contact. The consumers were encouraged to take part in the interview if they were interested in learning more about the topic of nudging for sustainable fashion consumption. The consumers were asked to notify the author of their interest to participate in the interview. Every consumer who contacted the author was interviewed as they were active fashion consumers who were interested in participating in the discussions of iterating the industry.

Through this process, eight fashion consumers were reached to participate in the interview. The interviews were conducted individually online (on Zoom) or in person and they lasted 30-45 minutes. The nudge catalogue was presented to the interviewees in the form of two-sided photocards which were randomly placed on a table or online on a Miro board. Additionally, digital visualisations of expert interview outcomes were prepared to be shown to the consumers.

The interview guide consisted of four segments (see Figure 6): 1) interviewees as fashion consumers, 2) analysing the tag catalogue, 3) acknowledging and discussing clothing tags as nudges and 4) discussing iterations of nudging for sustainable fashion consumption.

1) Interviewees as fashion consumers

First, the interviewees were asked to introduce themselves as fashion consumers and to share their regular shopping habits. Additionally, they were asked to evaluate their level of awareness in sustainability. This segment allowed the interviewees to talk about their fashion consumption experiences which was acted as an easy conversation starter on the topic.

2) Analysing the tag catalogue

Second, the interviewees were asked to categorise the photo cards from the tag catalogue. The interviewees were allowed to decide the basis of their categorisation. The aim of the categorisation exercise was to note which features caught the attention of the consumers. Identifying the consumers' first impressions

3) Discussing iterations of nudging for sustainable fashion consumption.

Finally, the interviewees were presented with visualisations of expert interview outcomes. The interviewees were asked to comment on the ideas for validation and feedback. ²

² The purpose of segment 4) is described more in depth in subchapter 3.4. Concept design. This segment provided direct feedback to the speculative concept design process.

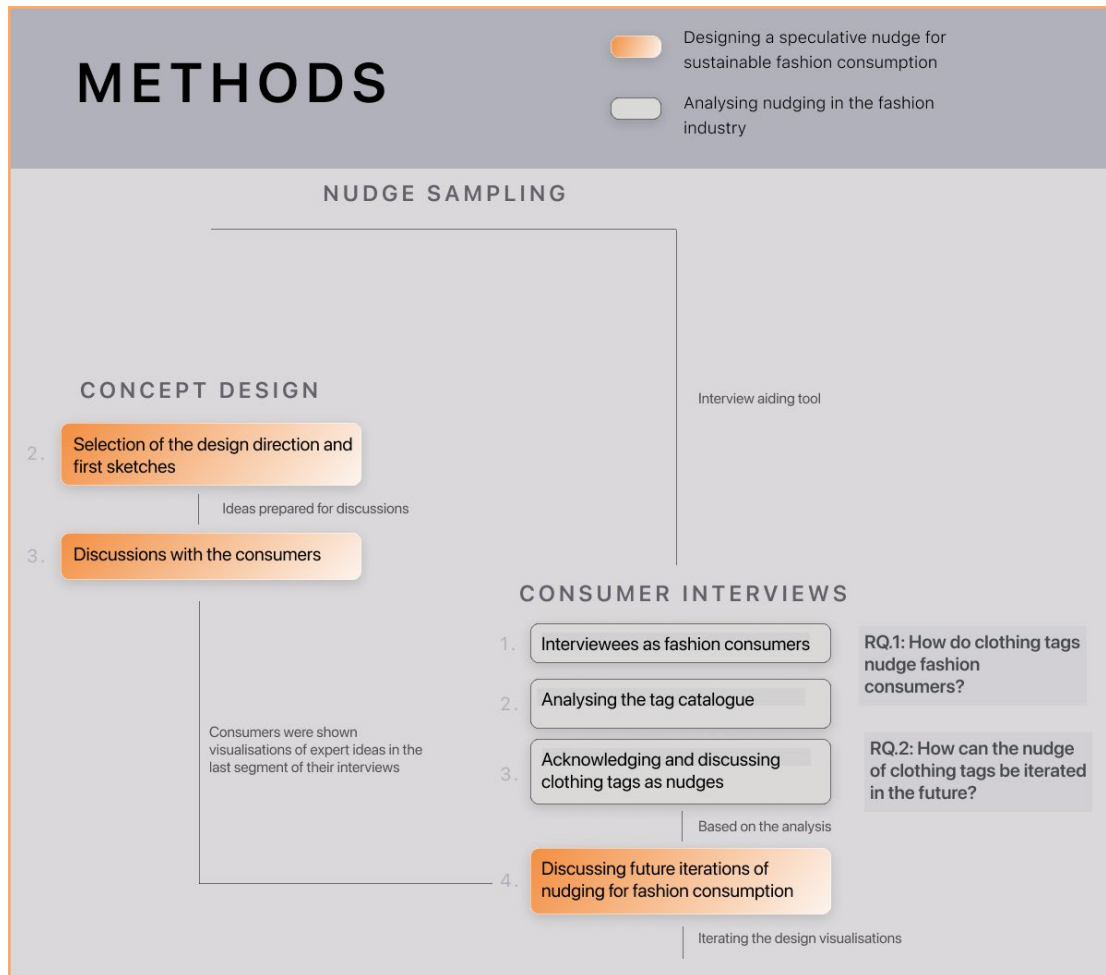


Figure 6. Consumer interviews consisted of four segments and guided the iterations of the expert ideas.

3.4 Thematic analysis

The expert and consumer interviews were analysed with thematic analysis approach to assemble a coherent interpretation of the context of nudging in the fashion industry. The interviews were audio-recorded and automatically transcribed with partial edits to interviewees' extracts. Then the extracts were gathered under themes and presented in a codebook for easier access and management. Due to personal nature of the interview topics, the collected data in this study was anonymized, and the names of the interviewees were replaced with codes.

The interviews were analysed with the thematic analysis method due to the limited number of interviews, and the semi-structured interview format which led to a variety of discussion topics. A thematic analysis allows the researcher to gather a holistic overview of common threads of topics across an entire set of interviews (DeSantis & Noel Ugarriza, 2000). Moreover, a thematic analysis allows the researcher to interpret interviews that might not have repeating topics but have a cohesive context: as opposed to content analysis which gathers frequency of codes to find meaning in data, thematic analysis allows researchers to interpret various aspects of the research topic and combine the interpretation with a specific context (Vaismoradi et al., 2013).

A thematic analysis is usually performed by 1) familiarising with data; 2) coding interesting features of data across interviews; 3) gathering data into initial themes; 4) refining and naming themes; 5) presenting the analysis with a selection of extracts whilst relating back to research questions (Braun & Clarke, 2006: 87). This list of actions was also followed in the thematic analysis of the expert and consumer interviews of this study. It must be noted that expert interviews were analysed as an individual set of interviews, whilst consumer interview analysis was guided by expert interview findings³

1) Familiarising with data

Firstly, according to Braun and Clarke (2006) the first step of a thematic analysis is to transcribe the data, and to read it multiple times whilst noting down first ideas. Thus, in preparation for the thematic analysis, a verbal consent was asked from interview participants to audio record and transcribe the discussions. The audio recordings were captured on the Voice Memos app on an iPhone, and the transcriptions were automatically created with the Microsoft Word software. The automatic transcriptions were not fully edited due to the scope of this thesis: the author only edited the interviewees comments for clearer overview and categorisation of interviewee extracts. The transcriptions were created shortly after each interview with edits (sentence correction) in interviewees' extracts. During the transcription process, the author already marked interesting segments with highlights (see Figure 7), and marked down theme ideas.

Speaker 2
But do you think it's like the same for all of these categories, or could there be any differences between those categories for the regulations for example or the purpose? Why these tags exist?

Speaker 1

Yes, some are totally unnecessary. Like you know there is some message saying we are like sustainable. Whatever that is. Like added message to signal to consumer that we care about this matter.

The bottom line is I think the signal that we don't violate the law in the local region.

But because primarily fashion or clothing is value added product. We don't buy the material itself by default, but you look for some added value so in that sense consumers tend to look for what added value this piece of clothing can contain more than this material itself.

So by adding this message like... This is in a way, a space where they can play with.

First to signal, to project what kind of brand or company they are and what kind of mission that they carry to communicate indirectly with their customers.

Figure 7. The author highlighted interesting extracts in the interview transcriptions.

2) Coding interesting features of data across interviews

Secondly, data is to be coded systematically across the entire data set (Braun & Clarke, 2006). Therefore, the author conducted two initial coding sessions for both the expert interviews and the consumer interviews. First, the author drafted an overview of the highlighted interesting discussion topics and findings. Then, similar extracts were given initial codes/ keywords describing their contents (see Figure 8).

Simplified information:
Interview 3:
Let's go to number 19.
Again there, there's the visuals. It's a good question. To me somehow, there's the visual and next to it is like the definition of it. To me it's less kind of genuine than this one somehow, where it kind of says it in a sentence, and the fact that we are working to reduce the impact of garment manufacturing. Somehow you know it to me screams like a long term value thing.
Whereas here it's like. Is it just this piece of clothing. Or yeah. I also like the "scan to know more" that's always very good.

Figure 8. The interview extracts were given keywords describing their contents.

³ The thematic analysis process for the interviews is explained generally in relation to both expert and consumer interviews unless noted otherwise.

3) Gathering data into initial themes

Thirdly, the codes should be gathered into common themes (Braun & Clarke, 2006) that are inspired by the research context and the aim of the interviews. Therefore, the author created initial themes based on the literature review findings on the fashion industry and nudging, and the research questions that guided the interviews. The author concentrated on creating themes that would give a holistic overview of nudging in the fashion industry. Moreover, the initial themes and codes were combined in a codebook draft (see Figure 9). A codebook is a commonly used tool for tagging segments of text into categories for distillation into major themes (Miles & Huberman 1994; Silverman 2001). The codebook offered a simplified overview and management of the interview quotes.

CODE BOOK DRAFT FOR EXPERT INTERVIEWS

Themes

Contents themes

- RFID tags were pointed out (need to research how they are used and what do they mean)
- Labels, icons and standards – what is true and what is just made up?
- Lacking proof/ evidence
- Experts saw mainly 3 categories (proved sustainability, stating sustainability without proof and no sustainability related information)
- Tags also include the brand message

Design themes

- Meaningless icons
- QR codes were noticed
- Colour and material of tags

Tags as nudges – what needs to be there?

- Need for comparison to help the consumer decide
- Simplification is necessary– there is too much information already available for the consumer to process. There should be an easy way to understand which products they should buy.
- Need for context– information should be presented in a way that allows the consumer to understand the context of the information. Random numbers or words don't create reliability.

Figure 9. The initial themes and codes were combined in a codebook draft.

4) Refining and naming themes

Next, the themes were reviewed across the whole data sets of expert and consumer interviews. For instance, the expert interview themes were corrected through the process of rereading the collected extracts and understanding their content. On the other hand, the consumer interview themes were mainly reviewed in relation to the expert interview findings: the aim was to find relations between the two sets of interviews. In this segment, the author also created the final codebook layouts, and wrote descriptions for each theme and subtheme (see Figure 10).

5) Presenting the analysis with a selection of extracts whilst relating back to research questions

Finally, the analysis of the interviews is usually presented with a selection of extracts to explain the findings in relation to the research questions (Braun & Clarke, 2006). Thus, the interview findings are presented in the Outcomes section of this thesis work. The relation to the research questions is presented also in the Conclusions section.

Topic	Description	Themes	Example quotes	Distribution (nr. of interviews)	Frequency (nr. of quotes)	Subtheme	Example quotes
1. Categorisation based on contents	The experts were asked to freely categorise the clothing tags based on their contents. The main categorisation strategy for the experts was to separate the tags based on sustainability-related information. The main themes were tags with certified sustainability statements (1.1), uncertified statements (1.2) or no information about sustainability (1.3).	1.1 Proved sustainability	1.1_E1Q1 And to the right, I would categorize those that are strongly related to sustainability in my mind. 1.1_E2Q1 And this one on the right-hand side there are more the material sustainability where they are sourcing how they are producing or what kind of material they are using to create the clothes.	3	3		
		1.2 Stating sustainability	1.2_E2Q1 OK, so this upper corner is very much about... Not much about actually real sustainability. It was actually more about the packaging or the label itself, not the clothing or clothes that they are selling. So, the actual contents of the product that intent to communicate. 1.2_E3Q1 [Referring to one of the categories:] One. "I say I'm sustainable but I don't say how or what or what's changing.	3	3		
		1.3 No sustainability-related information	1.3_E1Q1 So, to the left side, I would categorize those that I don't see, like talking about sustainability.	3	3		
2. Categorisation based on design	The experts were asked to freely analyse the clothing tags based on their design. They mainly noted the use of icons, colours and the tags' materials when analysing the clothing tags.	2.1 Icons	2.1_E2Q1 I mean these icons are also one thing. It's like, kind of... How do you say? You are relying on certain authority because you are not necessarily believing in that company, but the label itself kind of tells that it has done something to get this label so that they are kind of thinking "OK, this some data also Uh, issued this certificate to guarantee that it has done something.	2	2		
		2.2 Colour and materials	2.2_E2Q1 So, uh, in terms of sustainability, you can convey certain message a different way. For instance, this BikBok is very... I mean, it already used the color of green, and some other brand... like I don't know what is this "C" *referring to Cubus*, but anyway this some brand has like this more sustainable... Oh this one! Vero Moda used this bit more neutral tone paper to say about, you know what kind of thing that they are made of So, they are using strategically this kind of signal like this Monki also has this green part written, but at the same time like Muji itself, Muji is like the company that doesn't necessarily... I				

Figure 10. Final codebook layout.

3.5 Concept design

Finally, based on the findings of expert and consumer analysis, a concept design was created to explore the possibilities of future iterations of nudging for sustainable fashion consumption. Due to the nature of the interview insights, conceptual design approach was chosen to pursue alternative future options of nudging in the fashion industry. The conceptual design allowed to conclude the findings of the research thus far and to encourage discussions on the use of nudging in the industry. The main aspects considered in the design process were emphasis on the importance of context and real-life facts in the concept design and audience engagement. Thus, the final proposal was designed based on industry insights and validation gained from the interviews, and the aim of the design was to provoke discussion in the industry about nudging practices.

The design process was conducted to create design guidelines for nudging for sustainable fashion consumption. The design process consisted of four stages: 1) Collection of ideas; 2) Selection of the design direction and first sketches; 3) Discussion with the consumers; and 4) Assembly of the final design guidelines. The design guidelines were used to design the final speculative concept.

1) Collection of ideas

First, the ideas shared by the experts in the segment 2) of expert interviews were gathered and studied for potential design directions that could be pursued to iterate nudging for sustainable fashion consumption.

2) Selection of the design direction and first sketches

Secondly, the first design process was conducted to visualise the findings of the expert interviews. The goal was to prepare initial sketches of possible iterations of clothing tags as nudges that could be discussed in consumer interviews. The design process began with reviewing themes from the expert interview codebook (see Appendix 4) regarding future iterations of nudging for sustainable fashion consumption. The ideas were then studied (some experts recommended relevant literature) and ideated upon in different combinations. The illustrations were intended to capture the main changes upcoming in the industry in near future, and to address the main flaws of clothing tags located by the experts. The illustrations were used to facilitate discussions with the consumers about the possibilities of iterating nudging for sustainable fashion consumption based on their needs.

3) Discussions with the consumers

The sketched ideas were showed to the consumers during interviews to open a discussion about their expectations for nudging in fashion, and to validate the design directions taken. The consumers were given a brief introduction to the illustrations, after which they could share their perceptions in an open and spontaneous discussion. The aim of this segment was to encourage the consumers to think of purchasing situations where transparent nudges would be considered helpful for the consumers to decide for more sustainable clothing options. The common themes in the consumers' feedback inspired the development of the final design.

4) Final design guidelines

Based on the expert and consumer interviews, final design guidelines were assembled to guide the speculative concept features. The speculative concept was designed to respond to these guidelines and to showcase an alternative approach to nudging for sustainable fashion consumption.

To conclude, the iterative design process of this study was conducted with qualitative research methods that allowed for gaining in-depth knowledge of nudging in the fashion industry. The insights from the interviews were used to design illustrative concepts that would provoke critical discussions with the consumers. The outcomes of the data collection and the design process are presented in the next segment.

4 Outcomes

In the outcomes section, the research outcomes are analysed and presented in the attempts to understand the challenges and opportunities of nudging for sustainable fashion consumption based on the example of clothing tag nudges. Firstly, the outcomes of the expert interviews are shared to analyse industry insights and ideas gained from the experts. Secondly, the consumer interview results are presented to interpret early adopter fashion consumers' perceptions on clothing tag nudges. Finally, the speculative concept design is presented to visualise the gained knowledge and to provoke discussions on the topic of the iteration and implementation of transparent nudges in the fashion industry.

4.1 Expert interview clothing tag analysis

Firstly, the outcomes of the first segment of the semi-structured expert interviews are presented. In the first segment of the expert interviews, an in-depth critical analysis of clothing tags as nudges for sustainable fashion consumption was conducted. Specifically, the experts located flaws in the clothing tag nudges, and shared thoughts on how to improve the clothing tag nudges. The outcomes of the analysis are presented in three parts: 4.1.1. Analysing the nudge sample catalogue; 4.1.2. Flaws in clothing tags nudges; and 4.1.3. Necessary features for clothing tags as nudges. The design ideation segment outcomes of the expert interviews are presented in chapter 4.3. Speculative design.

The interview extracts presented in the analysis are referred to with the codebook codes (for example, the abbreviation 1_E1Q1 stands for Topic 1_Expert 1 Quote 1).

4.1.1 Categorising clothing tag nudges

The experts categorised the clothing tags based on two guidelines 1) contents and 2) design. The experts' choice for contents' categories was mostly guided by sustainability information on the tags, whilst the design categories were mainly selected based on the use of icons or based on the colour and materials of the clothing tags. The semi-structured format of the interview allowed for spontaneous development of the discussions, and therefore, the categorisation segment became an introduction to analysing the clothing tags as nudges.

1) Categories based on contents

When asked to categorise the clothing tag photocards in the nudge sample catalogue, all experts⁴ recognised three categories of clothing tags based on their contents: a) tags that included information to prove the sustainability of the garment b) tags stating sustainability without any provided proof or additional information c) tags with no sustainability related information.⁵ The categorisation of the sample clothing tags revealed that many of the clothing tags included unsourced statements which showcased that nudging through clothing tag was not always transparent.

For example, Expert 1 described their selection of categories based on the characteristics of the provided information in relation to sustainability. They made three categories: tags that stated liable sustainability information, tags that included statements of sustainability without context, and tags that did not have any sustainability information (see Figure 11):

1_E1Q1

So, to the left side, I would categorize those [photo cards] that I don't see, like talking about sustainability [c]. And to the right, I would categorize those that are strongly related to sustainability in my mind [a]. And

⁴ One expert did not participate in the categorising activity due to time constraints. Instead, they briefly reviewed the cards.

⁵ The mentioned categories have been marked in the author's comments within extracts for easier comparison (for example, [c] refers to category c) tags with no sustainability related information).

in the middle, I will categorize those that are kind of something [sustainability related], but not too much [b].

Specifically, Expert 1's first selection of clothing tags was guided by locating standardised certificates (for example Fair Trade) that they recognised:

1.1_E1Q1 & 1.1_E1Q3

I only found these two [clothing tags that have liable sustainability information]: this Fairtrade cotton [referring to tag #6] and then this BikBok label [tag #19] that are the most convincing to me sustainability wise [...] This [tag #19] [has] 100% sustainability [written on the tag], so that is like a real promise. Also, a Fairtrade mark [on tag #6] is like real promise.

However, since the sample catalogue also included clothing tags with uncertified sustainability statements with no additional context, the expert created an additional third category for clothing tags with unproved sustainability-related information:

1.2_E1Q1

Then I found this big bunch of brands that promise something but I can't see any measures. For example, if they say that this is more sustainably done. So, in relation to what? How much way there is to go?



Figure 11. Expert 1's categorisation. Categories from left to right: a) tags with no sustainability-related information; b) marketing-heavy tags that state sustainability without additional context; and c) tags with certified sustainability statements.

A similar analysis was performed by Expert 3, whose selection of categories was influenced by contextual value of the statements on the clothing tag. The expert created three categories to differentiate the level of liability of the clothing tags from a consumer's viewpoint:

1_E3Q1

One [category]: I say I'm sustainable, but I don't say how or what or what's changing [b]. The other [category]: I [the fashion brand] say I'm certified by these people, which gives me [as a consumer] more of a standing to actually appreciate [the fashion brand's efforts], like oh OK, at least they got certified [a]. Which is not easy to do. It's fairly expensive [to receive a certification]. So, a lot of the smaller companies are not going to do it because it's expensive. Then, [in the final category] we have this group that did nothing [c].

The experts' categorisations revealed that the sample catalogue included clothing tags that carried sustainability statements without further explanations. Therefore, it can be analysed that two out of three categories of the clothing tags were designed to act as informative nudges. However, only one category represented transparent nudging by providing additional information to the consumers.

2) Analysing the design features of the clothing tags

The experts also located and compared design features on the clothing tags. This categorisation segment was rather a discussion about the visual elements on the clothing tags due to the time limit and to allow in-depth discussions. Most experts noted that in addition to sustainability information, the clothing tags also included sustainability symbolics to create visual nudges. The main symbolics recognised by the experts were a) Icons and b) Colour and materials. The discussions about the design of the nudges revealed that clothing tags are also visual nudges that can communicate sustainability through iconography, and the choice of materials and colour. Thus, the experts noticed a risk in misused visual nudges that could mislead consumers.

a) Icons

Firstly, some experts pointed out that many clothing tags included icons to visually communicate sustainability to the consumer. However, they noted that the iconography could be misleading to the consumers. For instance, Expert 2 pointed out that for them, the fastest method for categorisation was to divide clothing tags based on iconography: the expert could recognise and locate the tags without reading them. Thus, Expert 2 located icons that they were already familiar with:

2.1_E2Q1

If I just explain my justification for grouping, it's the use of iconography that I can recognize more immediately. I mean like this Fair Trade mark or this FSC [Forest Stewardship Council] or this recycle mark that is commonly known or so. This kind of labelling [that is based on what we know]: this recycled triangle... [These labels are already] familiar to me.

However, some experts also recognised a risk in the use of commonly recognised icons. After a more careful inspection, the experts recognised that many of the icons lacked additional information or context. For example, experts noticed that some of the clothing tags included misleading recycling icons that were communicating the recycled material used in the production of the physical clothing tag and not the garment. Expert 4 explained that the recycling icon could be confusing for the consumer to interpret because the icon can also communicate the recyclability of the garment (Expert 4).

b) Colour and materials

Secondly, the experts commented on the colour and materials used for the clothing tags. They shared that the use of colours and materials can also convey a message of sustainability that would nudge consumers' purchase decisions. Expert 2 explained that the use of green or neutral tone paper could be a strategic signal to consumers about sustainability:

2.2_E2Q1

So, in terms of sustainability, you can convey certain messages in a different way. For instance, this BikBok [tag #19] [...] already used the color of green, and [...], Vero Moda [tag #2] used this more neutral tone paper to say what kind of [material the garment is] made of. So, they are using strategically this kind of signal...

To add, Expert 3 divided the clothing tags based on the use of colours that imitated recycled paper. To showcase how the colours and choice of materials of the clothing tag can influence how the tag could be perceived by the consumer, the expert decided to visually categorise clothing tags with no sustainability information. The expert placed the clothing tags into two categories: sustainable-looking tags and plain clothing tags:

2.2_E3Q1

If I was to separate this group [into] which [clothing tags] look more sustainable and which ones don't? I would go like this. Mainly because these look more sustainable: Muji [tag #5], Marimekko [tag #8], Karve [tag #13], Never Denim [tag #14] and Wrangler [tag #12]. Mostly because of the choice of colors [...] these [the selected tags] are more raw colours. The paper looks recycled. [...] So, I would classify so number 8, 12, 13, 14 and 5 as looking more sustainable. And 17, 18 and 15 as no way they're sustainable.

To conclude, the experts' comments revealed that the design of the clothing tags could be considered a visual nudge in the shopping environment as the choice of iconography, colours and materials of the tag can communicate sustainability. The expert analysis of the clothing tag designs showcased the importance of design for visual nudging. However, the experts also noted that a possible risk of visual nudging is misleading or confusing the consumer. As one of the experts explained, many clothing tags were designed to visually communicate sustainability even though the garment itself is not sustainable.

4.1.2 Flaws in clothing tags nudges

Continuing from the discussions of reviewing and categorising the sample catalogue, the experts criticised the sample clothing tags as nudges. According to the experts, the main flaw of the clothing tags was the low liability of the information provided on the tags. Thus, the experts shared their industry insights to analyse the sustainability claims made on the clothing tags. To add, the experts located risks that the misuse of sustainability claims can cause.

Firstly, all experts identified that the main flaw of the clothing tags was the low liability of the provided information. For instance, Expert 3 analysed a clothing tag from Zara to showcase how the context for the sustainability statements was lacking on the clothing tag:

3.1_E3Q1

*[*referring to card nr 1*] So, I was reading this Zara one: "Recycling reduces the consumption of virgin raw materials through reduction of water consumption." Great by how much? "Reduction of energy consumption", "Reduction of emissions"– it couldn't be broader than this, like they don't give any actual data....*

Additionally, most experts criticized the sustainability claims made on the clothing tags by providing scientific reasonings that revealed false statements. For instance, an expert noticed a sustainability claim that was conflicting

with the production processes of the used material of the garment. Specifically, the clothing tag included a statement about recycled elastane. The expert revealed that recycling elastane is a process for creating the “hybridous monsters” (3.1_E3Q3) because the non-recyclable and non-compostable material is mixed with cotton which is bio-compostable and recyclable resulting with a material that is difficult to recycle afterwards (3.1_E3Q3). To add, Expert 4 shared that the cotton industry is also struggling with the misuse of sustainability claims. The expert said that in the cotton industry ... *there is a lot of cotton that is being claimed to be organic cotton and they have found out that there is simply not enough land to grow that much organic cotton that is stated that is in the world on the market* (3.1_E4Q4). Thus, the experts proved that in addition to the lack of context on the clothing tags, the sustainability claims are often also false.

After identifying false information on the clothing tags, most experts located risks regarding the use of false sustainability claims. Expert 4 analysed the sustainability terminology used on the clothing tags. The expert criticised that the sustainability statements are often misused without scientific reasoning which causes the statements to lose their value to the consumers. The expert explained that:

3.1_E4Q1

... it matters what information is there [on the tag] because I think this is very typical that brands claim all sort of sustainability related [statements] and OK, we can discuss what is sustainability, eco-friendly, all these kinds of [statements]. But then quite often if there is no scientific information to back that up? So, they just give out lots of numbers and figures and then people are like: “So what?”

To conclude, the experts revealed that many of the clothing tags included sustainability claims that were vague and had not been scientifically proven. Thus, the experts’ industry insight allowed for the critical analysis of the clothing tags to specify if the statements were correct. This segment showcased that the main flaw of clothing tags as nudges is their low level of liability. This poses risks in the effectiveness of nudging fashion consumers towards sustainable fashion consumption.

4.1.3 Necessary features for clothing tags as nudges

Finally, the experts listed the necessary features that clothing tags should have as nudges. The experts mentioned three main features that should be considered when designing a nudge for fashion consumers: 1) Point of comparison. 2) Simplification of information. 3) Context.

1) Point of comparison

The point of comparison is a nudge feature that fulfils the nudging principle of retaining freedom of choice (Sunstein, 2014). According to the experts, point of comparison is crucial for creating an environment for the clothing tag nudges. Simply put, in a situation where a more sustainable garment is tagged with a special clothing tag, and a regular garment is tagged with a regular clothing tag, the freedom choice is ensured, yet one option is more noticeable than the other.

Expert 1 explained a scenario where a consumer who is conscious of sustainability matters would go to a store where there is a point of comparison between a sustainable option and a non-sustainable option:

4.1_E1Q2

Let's think that I have like, there are two products that look the very same to me. [...] So, I have tried both on, the cost is the same, they look the same, they both are very comfortable. And now I think, OK, I have these two. Which one will I choose? [...] And then I think, OK, I also want to mind sustainability then these Noisy May [tag #18] says nothing about sustainability, this Zara [1] says a little bit, and this BikBok [tag #19] gives me the proof of this 100% [sustainability]. Then this 100% proof wins in this category.

In that scenario, the garment with the sustainable claim clothing tag was chosen. However, the expert added that in case there is no comparison between the garments' sustainability, then *it's a question of whether to take it or go without* (4.1_E1Q2) which could be difficult for the consumer.

2) Simplification of information

Another necessary feature for the clothing tags as nudges for sustainable fashion consumption was the simplification of information. The experts shared that the industry is suffering from the overflow of information directed towards consumers. The information is often too complex for the consumers to comprehend during their shopping activities which might result in the information being ignored or disregarded. Thus, the information should be designed into informative but concise segments that could be understood by a wide audience, whilst still remaining helpful for the consumers.

For example, Expert 4 shared that they are concerned of the fast pace of developments in the industry that are causing the information overflow towards consumers:

4.2_E4Q3

It's great that there's so much happening at the moment, but then there is this risk that there is already too much information. And so, like I said in the beginning, that's going to be a bigger challenge that, OK, with all that information, how do you communicate so that the customer does not get totally lost and then just give up?

To avoid creating a situation where consumers are overwhelmed with information, and to create successful nudges to simplify and guide their decision-making process, the information should be simplified. Therefore, the expert suggested that the nudges would have to be *very simple and shouldn't leave room for a lot of speculations* (4.2_E4Q4).

3) Context

Finally, the experts noted the need for context for the information provided on the clothing tags. As mentioned before, the main flaw of many clothing tags nudges was their low level of liability. Thus, the expert emphasised on the need for scientific reasoning behind informative nudges.

For example, Expert 3 shared that the consumers need to understand the metrics to measure whether the numbers presented are influential or not:

4.3_E3Q1

[...] anything should be put into some context. For example, I think some energy companies are saying that: "OK. By doing this you are saving X amount of energy, and this corresponds to for example, the heating of a central heated house in Finland during winter." So that is much easier for people to understand that, so, is this a lot? Or is this very little? I think that is what is quite often.

Based on the example of an energy company, the expert explained that by providing the consumers with additional context and metrics to measure the information, the consumers could more easily understand the information presented to them.

Expert 1 explained that the consumer might have many questions when reading the sustainability claims on the clothing tags:

4.3_E1Q1

If [the numbers on the tag] say that this is more sustainable, then I [as the consumer] don't know in relation to what, how much, how much there is to go still.

Thus, clothing tags should include context for the information provided that the consumer could easily comprehend and analyse.

To conclude, the expert interviews revealed industry insights to the clothing tags as nudges and listed features that would need to be fulfilled to create effective clothing tag nudges (see Figure 12). The expert interviews provided an in-depth analysis of the clothing tag nudges that revealed that many of the nudges in the catalogue were not transparent and did not serve the purpose of guiding the consumers towards more sustainable decisions. Thus, the need for iterations of clothing tags as nudges was apparent. The experts shared the view that the main flaw of the clothing tag nudges was the low liability of the provided information. Therefore, the experts agreed that efforts should be focused on developing the features of point of comparison, simplification of information, and contextualisation.

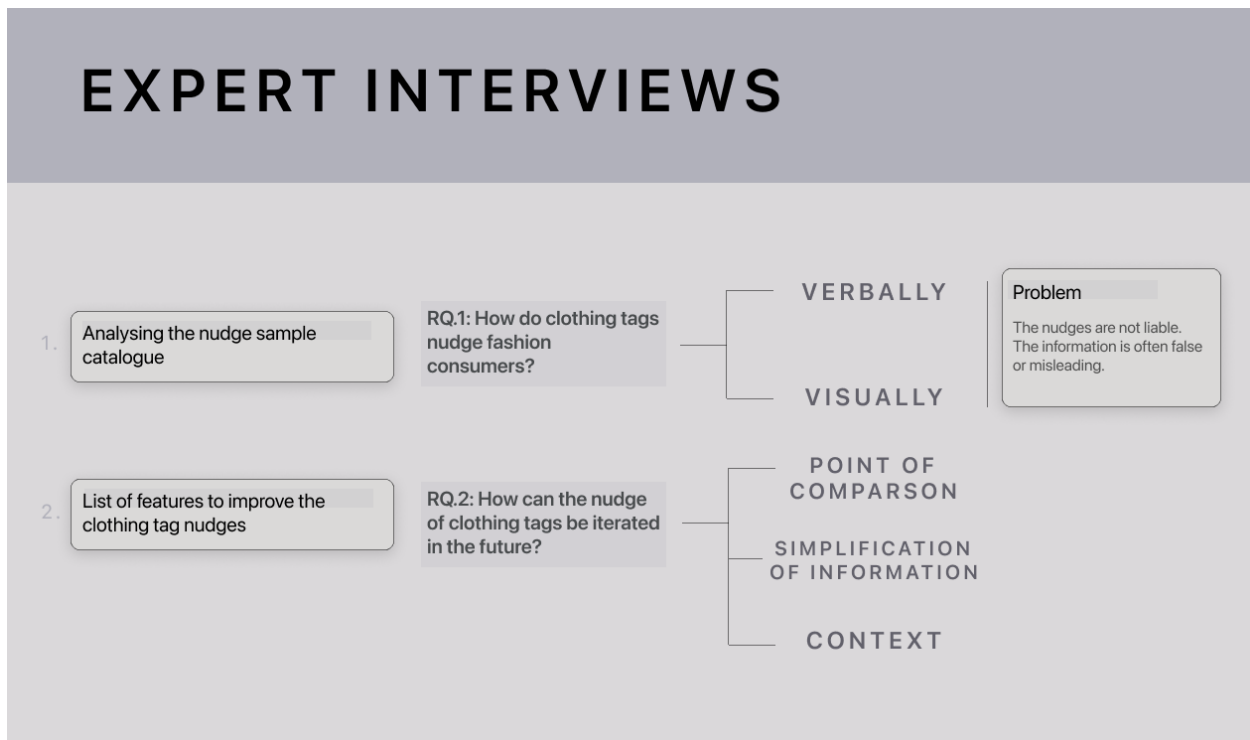


Figure 12. Expert interviews' first segment outcomes.

4.2 Consumer interviews

Secondly, the outcomes of the semi-structured consumer interviews are presented in an analysis of the consumers' perceptions and experiences with clothing tags as nudges. The consumer interviews revealed insights to consumer expectations for nudges in fashion and provided guidance for the speculative concept design. Based on the interview guide structure, the consumer interview outcomes are presented in five segments: 4.2.1. Interviewees as fashion consumers; 4.2.2. Categorising clothing tag nudges; 4.2.3. Clothing tag analysis; and 4.2.4. Clothing tags as nudges. The design ideation segment outcomes of the consumer interviews are presented in chapter 4.3. Speculative design.

The interview extracts presented in the analysis are referred to with the codebook codes (for example, the abbreviation 1_C1Q1 stands for Topic 1_Consumer 1 Quote 1).

4.2.1 Interviewees as fashion consumers

Firstly, the interviewees fashion consuming habits were discussed to understand the consumers' level of awareness and their choice-making process when consuming fashion. The interviews were arranged with early adaptor

consumers. Therefore, most of them were aware of sustainability issues in the fashion industry and had adapted to more sustainable consumption habits. The fashion consumption reasoning processes of the consumers were often guided by the combination of the need to act more sustainably, and the need for durable goods that would have a suitable price per usage.

1) Awareness

All the interviewees were rather conscious fashion consumers, who were open to learn more to make informed consumption decisions. When asked to describe their awareness of sustainability, the consumers mostly described themselves as aware fashion consumers, yet some added that changing their consumption habits to be more sustainable would require effort due to lacking information availability of the fashion brands.

For instance, Consumer 4 expressed that they considered themselves aware, but they often could not make sustainable decisions because of the low liability of mainstream brand. Thus, in order to make an informed purchase, they would need to do additional research about the brand:

1.1_C4Q1

So, I know that if I were to make sustainable choices, it would require me to do a significant amount of research, and sometimes I do that. But because of the amount of effort that it requires, I don't do it with all of my purchases [because] it would require a specific time when I'm putting more effort into thinking about what I'm buying.

However, the consumer expressed that with impulse purchases, they would not take the time to research the brand.

Consumer 2 added that they are aware of brands using sustainability claims for marketing purposes, which implies that the information is not always transparent:

1.1_C2Q1

I think I'm always aware that even though the brands can look very sustainable [with] the whole branding, [...], they can also include a lot of staff and most of the production step could happen in third countries like Vietnam or a Bangladesh [...], so, as a consumer, I don't think every brand is transparent and every brand is sustainable even though they claim [so].

Thus, the consumer explained that they would prefer to purchase clothing from a brand that they already know to ensure that they are not supporting a fashion brand whose ethics they do not agree with.

2) Consumption reasoning

The consumers' description of their consumption habits gave an overview of their decision-making reasonings when consuming fashion. The interviews revealed that the consumers' choice depended on the following factors: a) durability and utility and b) price.

a) Durability and utility

Many of the consumers mentioned that they would purchase clothing based on its durability and utility. The consumers preferred clothing that could be used for long, and they were willing to pay more for higher quality garments. Consumer 2 explained their preferences for purchasing more durable items:

1.2.1_C2Q3

[...] now I look for more durable items so if I know that there's something that kind of carries a mission to last longer then yeah, I wouldn't mind paying a bit more expensive.

To add, Consumer 7 described their consumption habits to be guided by durability and usability. For them, investing in durable clothing would also be an economic investment as the clothing could be worn longer, and there would be no need to purchase additional clothing:

1.2.1_C7Q3

[Interviewer: What is the main driver for you to buy more durable clothing?] I guess it's a mixture of different motivations, like for one thing, buy something more durable. It's like good for the usability. Like I wouldn't like carrying something suddenly will break on the street. And also it's more economic, like I wouldn't shop the same item within a short period of time and or so.

b) Price

Another factor guiding the consumers' decisions is pricing. Although consumers were willing to pay more for durable clothing, the pricing of clothing often influenced consumers to consider second-hand or fast fashion options. Consumer 5 shared that they prefer second hand stores because *it's a lot cheaper and I like the sustainability side of it* (1.2.2_C5Q1).

Additionally, Consumer 6 expressed that making an investment in a sustainably produced piece of clothing can also be a risk when done at the wrong time:

1.2.2_C6Q1

[...] I feel like I haven't had the kind of like capacity financially to invest in pieces that would cost more money because they're sustainably produced. Because I don't even know if they are something that I can have for a longer time or if I have to resell them again in a few months' time if I'm going to go and travel again.

To conclude, the interviewees were conscious fashion consumers who were aware of false information spread in the fashion industry. Thus, they saw the need to learn more about the brand where they purchase their clothing. However, they admitted that doing individual research is time consuming and therefore they do not practice this habit for every purchase. To add, the consumers mostly valued durability and price when deciding on clothing to purchase.

4.2.2 Categorising clothing tag nudges

Next, the consumers categorised the clothing tags based on their first impressions of the tags. The consumers created their own categories based on features they could locate the best. Thus, the categorisations of the consumers differed. The consumers located familiar certificates and green labels, studied the colour and the material of the tags, and compared the amount of text that was provided. However, the common themes that emerged from the discussions allowed the author to locate the main features that the consumers identified on the clothing tag nudges. These main features can be categorised in three segments: 1) Visuals 2) Mentions of sustainability 3) Brand awareness.

1) Visuals

Three consumers categorised the clothing tags mainly based on visuals. The main visual feature identified by the consumers was the amount of information provided on the clothing tag. For instance, Consumer 4 specified categories based on whether the tags included a logo, a logo with additional information or text only:

2.1_C4Q1

[...] I mean, the first categories that come to mind are like the ones that just have like the logo. [...] And then the other one, I guess would be like logo plus like something else like this where it's like just a simple tag that

has something else on it other than the logo. [...] These [#13 and #5] to me are just like. These are just purely informative to me.

2) Mentions of sustainability

Two interviewees categorised the clothing tags based on the mentions of sustainability. For instance, Consumer 1 categorised the clothing tags into two categories of clothing tags with *traces of sustainability*, that mentioned something for being more sustainable and the other category that actually didn't (2.2_C1Q1).

3) Brand awareness

Finally, one interviewee mentioned the clothing tags based on brand awareness. Consumer 2 created two categories: the brand that they recognised and brands that they did not know:

2.3_C2Q1

[...] The bottom [category] are the brands I'm aware of and maybe [I have] bought from them, but the top [category] is like I never bought from them and I don't know them.

The categorizing segment revealed that the consumers recognized different features on the clothing tags. This spontaneous exercise was a way to imitate the brief interactions with the clothing tags that the consumers might have at clothing stores. Thus, based on the discussions it can be assumed that the features of the clothing tag nudges need to consider the varying perceptions of the consumers.

4.2.3 Clothing tags as nudges

Finally, the consumers analysed clothing tags as nudges. During the interviews, the main concerns located by the experts were discussed with the consumers. Thus, the analysis of clothing tags as nudges is presented in three segments: 1) Clothing tags' importance in consumer decision-making; 2) Nudging or marketing and 3) Analysing clothing tags as nudges.

1) Clothing tags' importance in consumer decision-making

Firstly, the level of transparency and effectiveness of the nudge of clothing tags was validated during consumer interviews. The consumers acknowledged clothing tags as nudges to some extent, yet they did not see it as a major factor in their decision-making process.

Consumer 1 was aware of the use of clothing tags for the purpose of convincing the consumers. However, they did not know that the companies intentionally use it on a wider scale to guide the consumers decision-making towards certain purchase. *I guess it's more implicit when it's on the tag* (4.1_C1Q1), the consumer commented.

To add, Consumer 2 had noticed the trend in the industry to include information of sustainability on clothing tags:

4.1_C2Q1

I notice that they start to put more info of sustainability and put like icons or sustainability [claims] on the clothing tag [...] so yeah, I notice the difference you know.

The consumers' answers differed when discussing whether they would use the clothing tags as guides in their decision-making process. Many of the consumers were hesitant because they did not know if they could trust the information provided on the clothing tags. For example, Consumer 2 explained that the clothing tag could convince them to not buy the product if they were already uncertain about the material of the garment. If the clothing tag would reveal the material of the garment, it might influence them to choose not to purchase the product:

4.2_C2Q2

I think maybe sometimes I don't always look for the material [...] but for example, when maybe I touch something that feels so clean or feels a bit strange to me then I want to know what it is. Maybe when I look at it and I saw a mix of synthetic fabric, I might feel like, maybe yeah, maybe [it convinces me not to buy it].

Additionally, Consumer 4 explained that they would use the clothing tag as a guide if they would have already done background research on the company beforehand. If they knew they could trust the company, the nudge of clothing tags would be effective on them:

4.1_C4Q2

They could say that these ones and these ones are [sustainable] and then in the situation of [visiting fashion] companies who I've researched, I know that they're sustainable [and] the distrust isn't there because I've done the research and I know that I can trust that company. So, in those cases, that type of nudging, probably would work on me in the way that like big companies intended to.

2) Nudging or marketing?

Based on the consumers' replies about nudging, a discussion emerged on the topic of how to differentiate nudging and marketing. The consumers were concerned that nudging could be easily mixed with marketing. Thus, their level of trust in the fashion brands is low, influencing their openness to nudging.

Consumer 3 pointed out that some sustainability claims sound like marketing statements which lessen the credibility for them (4.3_C3Q1). To add, Consumer 4 shared that seeing the logo of a fast fashion brand such as H&M on a clothing tag would immediately communicate to them that the garment is unsustainable even if a sustainability statement is presented (4.3_C4Q3).

Consumer 7 noticed that fast fashion brands turned sustainability claims into brand messages:

4.3_C7Q1

But I noticed that for especially are they are these like Cubus and Monki and Mango and Zara– are they all fast fashion? But you can see they are putting a lot of like information regarding the social responsibility or sustainability and try to make it more fun, like, approachable in the brand voice. Yeah, that's what I see.

To add, consumer 6 shared that in their opinion, the fashion brands might be including the sustainability statements in their branding to respond to the consumers' expectations:

4.3_C6Q2

So, to me it feels like they're almost trying to implement lot of these strategies or include like 10% of organic causes in this specific model of a T- Shirt so that they just put it on a tag. So that they would have some aspect of sustainability performance and they could communicate it with the tag. Because that's becoming more and more important for the consumer. It's almost like a part of the marketing strategy you know, like it's very visible.

Thus, it was possible to assume that brand reputation might be the main driver for the implementations of clothing tag nudges in stores.

3) Analysing clothing tags as nudges

Finally, the consumers analysed the clothing tags as nudges to locate flaws or areas of improvement. The consumers located two main flaws in the clothing tag nudges: a) information is unclear or difficult to read and b) Certifications are recognisable but additional context is needed.

a) Information is unclear or difficult to read

In the clothing tag analysis, most consumers noted that they could not trust the provided information, or it lacked explanations. Similarly to experts, the consumers expressed that additional context would be necessary to make the provided information more comprehensible. For instance, Expert 3 shared that they could not understand percentages provided on a clothing tag as the number was presented independently without context:

4.4.1_C3Q4

[referring to tag #3] [...] it says recycled cotton. Yes, it's 20%. And then they kind of describe what the 20% refers to, but it's like 80% of [I just] don't know where that comes from.

To add, another consumer noticed that fashion brands had presented their webpages' homepage as a source for more information, which in practice would mean that the consumer would have to search for the information on the company's webpage. This, however, is a task that would take time, and it might even be that the website will not contain the extra sustainability information sources that were promised:

4.4.1_C6Q2

[...] For example, Cubus "learn more about our sustainability strategy" and then they give their websites [...] it's still going to take you to the front page of the brand website [...] [and] as a consumer you just know [...] that if you navigate to this main page of the brand that you're not going to find the specific information on these jeans. Or if you want to, it's going to be such a hassle to do that.

b) Certifications are recognisable but additional context is needed

Some consumers were also concerned of the liability of the certifications presented on the clothing tags. The consumers did not trust the certifications because they were aware of the use of self-made labels, and the issues revolving around established certifications like Fair Trade or Better Cotton Initiative. For instance, Consumer 3 explained that they would not trust Fair Trade labels if additional information is not presented. They explained that they know that the company must have gone through a process to claim the label, and therefore it could be a way to create liability. However, they noted that Fair Trade's rules and criteria in different industries might not always be sustainable:

4.4.2_C3Q2

*[*explaining the Fair Trade certification process] [...] it's so extensive and there's rules. There's so many categories that the people have to adhere to that sometimes it just makes it really hard for you to be sustainable in the like final place.*

To add, Consumer 7 explained that they would trust common certifications more than self-claimed ones. According to the consumer, the third-party labels would have at least *gone through some process to get this certificate* (4.4.2_C7Q2). However, they would trust the certifications only in a situation if they had to choose between a self-made label and a certified label: *So, if I have to choose among all this, maybe, I think yeah, the number 6 [tag #6] looks like I can trust it slightly more [as it carries the Fair Trade label]* (4.4.2_C7Q2).

To conclude, the consumer interviews revealed that clothing tags as nudges was not a trusted form of guidance for the consumers. The consumers were suspicious of the clothing tags being part of the brands' marketing strategy which resulted in them not interacting with the clothing tags during their shopping experiences. The consumer interviews validated the concerns raised by the experts as issues in the transparency and liability of the information were criticized by the consumers. The consumers expressed that context is important for creating transparent and liable nudges. The findings of the consumer interviews are concluded in Figure 13.

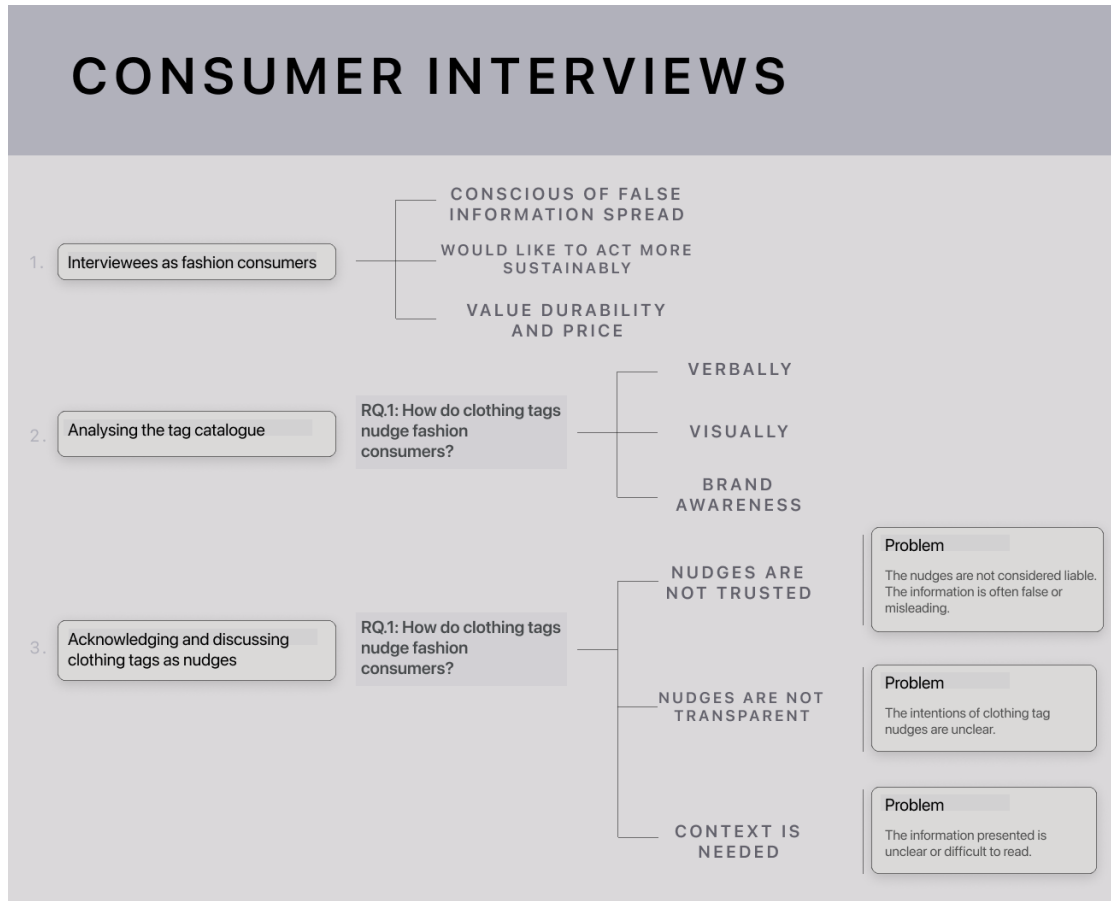


Figure 13. Consumer interviews' outcomes of clothing tag analysis.

4.3 Concept design

Finally, the concept design is presented based on the research findings. This segment gives an overview of the insights that guided the design choices of the concept. Thus, the segment consists of two parts: 4.3.1. Design guidelines; and 4.3.2. Concept design for nudging for sustainable fashion consumption. First, the design guidelines collection process is explained based on expert and consumer interview outcomes. Next, the final concept design is presented with a description of its features and a possible use-journey.

4.3.1 Design guidelines

Firstly, the design concept was crafted based on the findings of the expert and consumer interviews. The design was iterated simultaneously with the interviews. Specifically, the design of the speculative concept was first derived from expert industry insights of existing or upcoming sustainability initiatives. Then, the first concept designs were discussed with consumers for early validation for design directions. Finally, the design requirements were established to frame the design of the speculative concept. The iterative process is presented in four parts: 1) the collection of

experts' ideas; 2) selection of the design direction and first sketches; 3) discussion with the consumers; and 4) final design guidelines.

1) Collection of ideas

The outcomes of the design segment of the expert interviews (see 4.1. Expert interviews) revealed that nudging for sustainable fashion consumption should fulfil the requirements of creating a point of comparison, simplifying information, and providing context to the consumers. In addition to these features, the experts shared their ideas on alternative approaches to nudging for sustainable fashion consumption. During the ideation, the experts shared existing initiatives that could be adapted in the speculative concept design. To add, they suggested potential consumer interests that could be further explored during the consumer interviews.

Firstly, most experts suggested that the speculative concept should be created based on existing sustainability initiatives in the industry. Expert 4 explained that designing a new certification would be inefficient as it would require time and efforts to gain the trust of the consumers:

5.2_E4Q2

There's so many [certifications] already, so in that sense, I don't see the point of making a new one again. But try to take the best out of these existing [certificates] because I think it's also like once you start introducing something new, that takes years that people sort of recognize that OK, this [certificate] is a reliable one.

Thus, the experts recommended initiatives that could be integrated into the speculative iteration of nudges for sustainable fashion consumption. During the ideation, most experts recommended sustainability initiatives that are planned to be implemented in Europe soon. For instance, Expert 1 introduced a carbon budget system that is utilised by the S-Group (Finland) to give consumers direct feedback of the carbon emissions of their purchases. Based on the carbon budget initiative, every consumer would have a set budget of carbon emissions that they can spend on necessities (or clothing). If the budget is exceeded, the consumer would be notified through a feedback loop. According to expert 1, the carbon budget system would nudge consumers to make more considered choices:

5.2.3_E1Q1

Because then one nudge here would be [that] if you choose this [option of a product], you will save [emissions in your carbon budget]. So, it will have a negative footprint. Though [when you] buy new goods, you always produce carbon emissions. So there's no going around that. But if you buy recycled goods, then you think that, OK, I bought this one, I did not buy a new one. So, [if] I'm keeping using something that exist already, then it's like negative carbon emission.

To add, expert 4 mentioned an upcoming policy of the European Union, which would entail the implementation of product passports for clothing. According to Expert 4, the Union is in the process of developing a Digital Product Passport system, where the durability, journey map and other details about a clothing item would be unique to the product and presented to the consumer at the point of purchase (Expert 4).

Secondly, most experts shared practical ideas for the speculative concept design. The experts pointed out that acknowledging the habits and needs of consumers is necessary to design effective nudges. For instance, experts 2 and 4 noted that the clothing tag nudges would need to have a longer lifespan. Specifically, if the consumer had a reason to keep the clothing tag, they would be more likely to acknowledge the information stated on it (Experts 2 & 4). Expert 2 shared an idea of making the clothing tags collectable to encourage consumers to keep the tags after purchase:

5.1_E2Q1

[...] if a tag has [some reason to be kept] and it's not just like this kind of information that you just read and throw away, but it has a certain benefit to keep [...] the tag itself can be some item to collect. But it has a

certain message in it as well. Then it can become, I think, maybe useful strategy to design a tag in more useful ways.

Expert 4, however shared an idea of embroidering information on the clothing so that it would be always visible to the consumer when they are wearing or handling the clothing:

5.1_E4Q1

[...] so, some of these garments might have the information printed or embroidered on the garment itself, and I think that's better because I don't think anybody really keeps [the clothing tags].

Additionally, experts 3 and 4 pointed out that consumers would be most likely interested in the cost and durability of the clothing. In other words, the experts explained that consumers are likely to be interested in the value that they gain in exchange for the price. Thus, according to experts 3 and 4, the speculative design iterations should consider presenting information that is most relevant to the consumer, such as durability or cost-per-use:

5.3.1_E4Q1

OK if you go to the textile laboratory, you can do these tests according to standards [...] but then at the same time that should be somehow translated to the language of how many times you can wear these clothes? I think it's a good advice and, well, more people are saying that you shouldn't just stare at the price of a garment you should think that how many times are you going to use it and then [you should consider the] price-per-usage.

To conclude, most experts suggested that the speculative concept should be developed based on existing or upcoming initiatives. To add, most experts suggested that the concept design should acknowledge the consumer habits and needs by understanding when and why consumers would be looking for the guidance of nudges.

2) Selection of the design direction and first sketches

Based on the expert interviews, the author decided to focus on the upcoming European Union wide policy suggested by Expert 4. The selected initiative was the European Union Strategy for Sustainable and Circular Textiles (Directorate-General for Environment, 2022) which implied a wide scope of actions that could respond to the problem space identified in the expert interviews. For instance, the initiative (2022) includes actions towards banning unproved green claims and the utilisation of green words without permission. Additionally, the strategy includes the implementation of the Digital Product Passport. The Passport is intended to present relevant and transparent information to consumers at the point of purchase. The information would, for example, include standardised information such as the expected lifespan, the journey log and the recycling and repairing information of the garment (Directorate-General for Environment, 2022). Furthermore, the Digital Product Passport would allow to identify garments after the point of purchase: the Passport would be used to implement more circular fashion business models where clothing is recycled or repaired after an identification. Thus, this initiative became the basis for the speculative concept design in this thesis.

Based on the selected design direction and taking inspiration from the expert interviews, the author created three visualisations to facilitate discussions about the product passport system with consumers. The visualisations showcased the concepts of a) collectable physical product passports; b) embroidered product passports; and c) a digital product passport.

a) Collectable physical product passports with QR codes to access the garments' journey log and other changing information

The first sketch was inspired by Expert 2's idea of collectable clothing tags (see Figure 14). The sketch visualised collectable product passports. The product passport concept would be present in a hybrid approach: the information is provided both physically and online. The passport would replace clothing tags and they would include relevant

c) Digitally collectable product passports

The final sketch visualised a digital product passport that would allow consumers to access their whole closet from their phones (see Figure 16). In this concept, the collection concept of the clothing tags was digitalised and combined with the Digital Product Passport in a wallet-like app. The app would be a tool for accessing Digital Product Passports in store, as well as a collection of purchased Passports. Consumers could use the app to investigate information about garments before the point of purchase. To add, they could access and manage their purchased garments' passports to engage in circular consumption systems such as reselling or returning their garments.

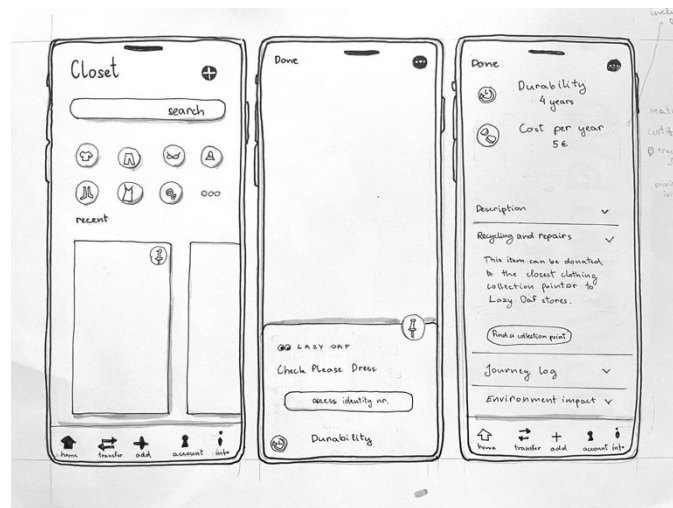


Figure 16. Product passport version c)

3) Discussion with the consumers

The feedback of the consumers in the design discussions segment suggested that the consumers would prefer collectable digital product passports. The digital format would simplify the process of accessing the information about the garment and allow the consumers to archive their product passports safely and conveniently. For instance, Consumer 1 explained that looking for the product passport inside the clothing would be inconvenient, whilst collecting the product passports in a physical format would result in hefty passport albums. Thus, interviewee 1 preferred digital libraries for product passport collection:

5.1_C1Q1

If there's a QR code, what about just cutting the QR code and adding it to a platform online? That would have this digital library of all the clothes you have. Maybe that could be something non-physical I mean.

Additionally, some consumers were concerned with the trustworthiness of physical product passports. For example, Consumer 3 explained that people could start producing fake clothing tag passports that could be used illegally:

5.1.1_C3Q1

I would also be afraid of people really replacing them [the collectable tags]. [It is] easy to replace the clothing tags in this version [visualization a.] [...].

Consumer 4 also recognised a threat in the use of physical product passports. The consumer pointed out that physical product passports could be easily removed or distorted. Thus, relying on the information on the clothing tag would make the system vulnerable and untrustworthy:

5.1.1_C4Q2

If someone tried to resell a piece of clothing and it had a tag that's considered negative or something, then they might want to remove it or alter it in some way. And that's really the only motivation that I could think of that if someone is trying to resell a piece of clothing and they want to increase their chances of someone buying it then they might make it seem like a more sustainable piece of clothing.

Finally, some consumers expressed interest in participating in circular consumption systems with the support of digital product passports. The consumers were interested in accessing information about the durability, recyclability and repairing of clothing: they were curious about fashion brands implementing business models where clothing could have a longer lifespan, and consumers could be empowered to act more sustainably. For instance, Consumer 7 pointed out that the concept of product passports could encourage fashion companies to implement repairing and recycling services:

5.2_C7Q2

I think it will be useful because with all these collections, it helps the other relevant services like swapping and repairing being developed. Because nowadays if we want to swap, it's within like a friend circle because we know what each other has. But what if you are such a person, like your friends are just totally different size with you and you want to swap with someone else and it gets like this digital platform will like help people to get access to like outside the circle and also the repairing services.

To conclude, the discussions with the consumers revealed the consumers' expectations and preferences for future nudging for sustainable fashion consumption. Although the concepts were not tested and validated with the consumers in the scope of this research, the discussions allowed the author to choose a relevant design direction for the final speculative concept.

4) Final design guidelines

All in all, the ideation with the experts and the discussions with the consumers were used to frame the design guidelines for the final concept design (see Figure 17). The experts' suggestions from the first interview segment included a set of requirements for effective nudging for sustainable fashion consumption. To add, in the second segment of expert interviews, the experts recommended initiatives as a base for the speculative concept, and they shared potential expectations of the consumers. The analysis segment of the consumer interviews was translated into three main requirements (Liability and transparency, Contextualisation, and Design). Additionally, the consumers design discussion results were added to the design guidelines.

DESIGN GUIDELINES

EXPERT REQUIREMENTS

Point of comparison

Simplification of information

Contextualisation



COLLECTION OF IDEAS

Utilising existing initiatives

For example:

1. Carbon budget concept
2. Digital Product Passport

Why?

- It is time costly to create a new policy
- There is promising changes happening in the industry.

Designing for the consumer

For example:

1. Prolonging the lifespan of the nudge
2. Considering what information is most relevant to the consumer

Why?

- To design nudges that consumers would use as guidance.

CONSUMER REQUIREMENTS

Liability and transparency

Contextualisation

Design

For example:

1. Simplification of information
2. Visuals
3. Materials

DISCUSSING WITH THE CONSUMERS

The concept should be digital

Why?

- Collecting digital clothing tags is convenient.
- The digital passport is most trustworthy.

The concept should encourage the implementation of circular business models

Why?

- The concept could empower consumers to engage in circular consumption activities such as swapping, repairing or recycling clothes.

Figure 17. The final design guidelines were constructed from expert and consumer insights

4.3.2 Concept design for nudging for sustainable fashion consumption

The final concept was an attempt to propose an alternative future solution for nudging in the fashion industry, and to showcase the possibilities of implementing expert and consumer insights in the process of iterating nudges. The design process was conducted based on the design guidelines gained from the interviews.

The concept design is based on the Digital Product Passport (from now on DPP) system from the European Union Strategy for Sustainable and Circular Textiles (Directorate-General for Environment, 2022). The Digital Product Passport concept created for this thesis visualises the possibilities of the implementation of the initiative. In this speculative concept, the DPP is implemented as a local default app on consumers' smartphones (see Figure 18). Inspired by the Apple *Wallet* app (Apple Inc., 2015), the digital product passports would be collected into a secured *Closet* app that tracks the users' fashion purchases and the transfers of the product passports. *Closet* would allow the consumers to access product information at the clothing stores, receive and archive their purchased product passports, and transfer their ownership of the product passports. To add, the application could be used by fashion brands to implement circular business models. For instance, fashion brands could track the lifecycles of garments, identify returned garments, and limit the illegal market of fake products.

The application concept design responds to the design requirements stated by the experts (see Figure 17). The standardised DPPs would always showcase the same information of every product to the consumer, which would simplify the information presentation, and create a point of comparison between products. Moreover, the comparison between the data, as well as the coherent characteristics of the data would contextualise the information provided to consumers, allowing consumers to quickly search for information from the product passport. Thus, in this concept, fashion brands would be required to share mandatory data based on the format of the app— the brands cannot choose which information is going to be showcased. The DPP of this concept includes speculative information that could be showcased on the passports as detailed information of the DPP contents has not been released yet.

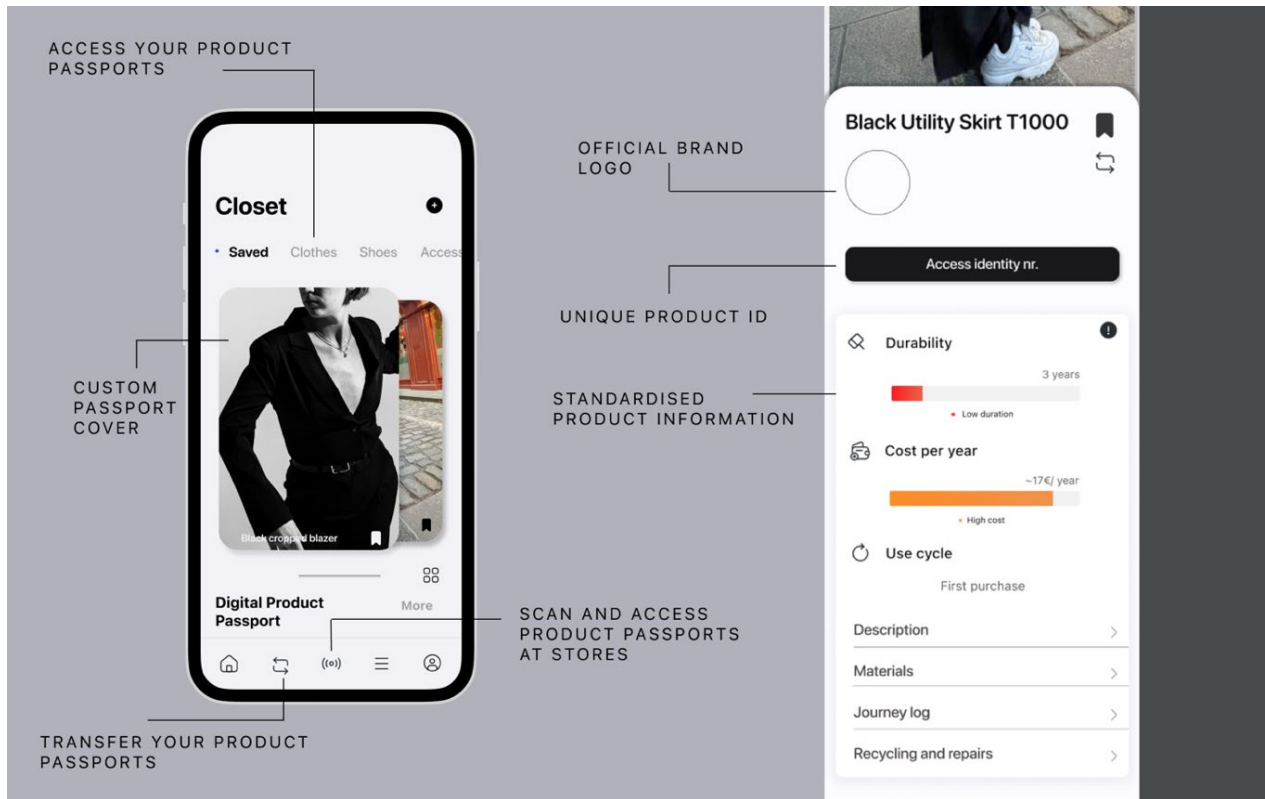


Figure 18. The Closet app's features

To add, the application was designed with an user-centric view-point. By corresponding to the consumer requirements (see Figure 17), the application aims to nudge consumers to make rational fashion consumption decisions. As mentioned, the design of the application is intended to make product information transparent and liable to consumers whilst providing necessary context through a minimalistic and simplified data design. Moreover, the application interface allows for the promotion of brand identity to allow consumers to recognise and authenticate brands, as well as to create a marketing benefit for fashion brands through DPPs. Thus, the application interface includes large product photos and brand logos (see Figure 18).

In practical detail, according to the DPP system from the European Union Strategy for Sustainable and Circular Textiles (Directorate-General for Environment, 2022) the initiative should be implemented along with physical components to make the use of DPPs safe and trustworthy. In this concept, every garment would carry a washable RFID tag that would include the unique product passport. RFID tags are seen as a potential development in the industry for tracking the manufacturing processes and the travel journeys of products (Nayak et al., 2015) and they are already being implemented in the industry. Moreover, after purchase, the product passport would be transferred to the consumer's smartphone and the RFID tag would receive updated information about the use cycle of the garment. Finally, as the DPP initiative specifies that the product passport should also be physically available at the point of purchase, fashion retailers could add QR codes on physical clothing tags for the consumers to scan (see Figure 19).



Figure 19. DPP purchase journey

Finally, the implementation of DPPs would encourage consumers to participate in circular fashion consumption models by exchanging, recycling, or returning their garments. For instance, a potential journey of the DPP could be the following (see Figure 20): 1) A consumer claims the ownership of a DPP through a first-hand purchase of a garment and the RFID tag is updated about the first lifecycle of the garment; 2) After a few years the consumer returns the garment at a clothing collection point. The collection machine can recognise the RFID tag and the product passport is transferred to the second-hand store. The second-hand store prints a clothing tag with a QR code for easy access to the product passport; 3) Another consumer finds the garment at a thrift store and views the product information through a QR code on the tag before purchasing the product.

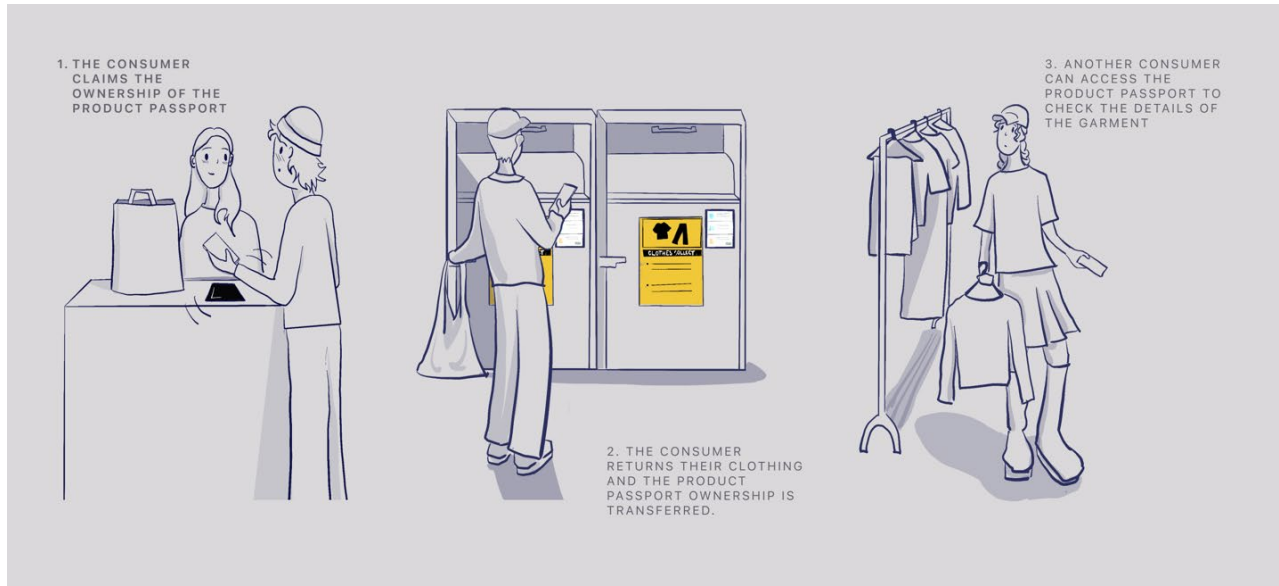


Figure 20. A potential use journey of the DPP.

To conclude, the final design concept was an attempt to visualise a potential approach to the Digital Product Passport system. Guided by expert and consumer insights, the concept focused on the implementation and the user experience of the initiative. The aim of the concept design was to encourage the start of discussions in the industry about nudging and its usefulness in guiding consumers and fashion brands towards sustainable fashion consumption practices.

5 Conclusions

As mentioned, the research topic of nudging in the fashion industry remains relatively new and unexplored. Previous studies have showcased in closed environment experiments that nudging could be a potential tool for guiding consumer decision-making processes toward more sustainable fashion consumption. However, research done in real-life context remains limited. Therefore, this study was conducted to analyse an existing nudging practice in the fashion industry. The aim of this study was to answer the main research question: How to nudge for sustainable fashion consumption? The research was conducted utilising a case example of clothing tags to analyse the existing practices of nudging in the fashion industry and to seek for areas of improvement. To add, experts and consumers were interviewed for industry insights.

The analysis of expert and consumer interviews conducted in this study revealed that nudging in the fashion industry is currently untransparent and the consumers do not trust the provided information due to information overflow and the spread of false information. Specifically, the expert interviews revealed that many of the clothing tags did not follow the principles of nudging. For instance, the experts located false information on the clothing tags, and lack of transparency in the information provided. To add, the clothing tags often targeted the consumers unconsciously with visual symbols of sustainability. Thus, the experts expressed concern that the clothing tag nudges could lose their liability as consumers learn to not trust them. This concern was confirmed by consumers as many of them expressed that they did not trust clothing tag nudges due to the spread of false information and greenwashing. To add, the consumers criticized the poor information transparency and the lack of context of the statements made on the clothing tags.

However, the interviews gave insight to how nudges for sustainable fashion consumption could be iterated in the future. Firstly, there was the need for comparison: nudging cannot function when there is no distinct differentiation between sustainable products and other products. For instance, the consumer interviews revealed that consumers do not follow the guidance of clothing tags if they know that the brand is generally not sustainable or that the same store sells unsustainable clothing. The consumers expressed that if they do not know why choosing one product over another makes a difference, then they are unlikely to acknowledge the nudges. Secondly, simplification of information was crucial. The consumers preferred easy access to contextualised and simplified information during their shopping experiences to reduce the efforts needed for finding guiding information. Thirdly, the need for context was imperative according to the interviews. In many cases, clothing tags included numbers and icons that remained unexplained. The consumers often disregarded the information provided on clothing tags as they could not understand its meaning or the context of the information.

Finally, a concept was designed from the guidelines of the expert and consumer interviews to set an example of how iterations of nudging could be executed in the fashion industry. Moreover, the aim of the concept was to provoke discussions in the industry, and to encourage people to think of the opportunities that nudging could allow in the industry. The conceptual design approach allowed for the application of industry insights in pursuing alternative nudging solutions.

All in all, the topic of nudging for sustainable fashion consumption researched in this study evoked a discussion over how nudging is used in the fashion industry. Many of the interviewees contacted the author on their own initiative to hear more about the topic as they were excited about the possibilities of nudging and were eager to share their input to the iterations. This suggests that discussion on nudging for sustainable fashion consumption is relevant to the industry and it is of importance to develop it further.

To add, the design approach of developing nudging in the fashion industry led to the discovery of alternative potential of nudging. Although nudging principles state that the development of nudges should be conducted based on user needs and behaviour, the clothing tag case study proved that companies have designed nudges based on their own marketing needs thus far. In this study, the development of nudges was approached with a user-centric design process. The alternative approach revealed how nudging could become a reliable and helpful tool for fashion consumers to consciously utilise when making purchase decisions. Moreover, the method of conceptual design allowed for visualising possibilities of nudging which could be discussed with experts and consumers for industry input.

6 Limitations

The scope of this study created limitations in the data collection and the design validation of the speculative concept. Due to the scope of this study, the sampling of clothing tags, number of interviewees and testing of the speculative concept were limited. Therefore, further research and design should be conducted to deepen the understanding of nudging in the fashion industry, and to test and validate nudging approaches for sustainable fashion consumption.

To start, a limitation is presented in the representation of clothing tag nudges in the industry. Due to the scope of this thesis, the sampling of clothing tags was limited to larger fast fashion brands in the centre of Helsinki as they were most accessible to the author, and assumably most relatable to the consumer interviewees. However, future studies could carry out a sampling for a larger selection of nudges in fashion stores as there might be brands that have implemented different solutions or created more successful clothing tag nudges. A wider sampling process would allow for a better comparison of nudges in fashion stores, and it could inspire designers to create more alternative nudging iterations.

Moreover, the research conducted in this study is only the representation of the perceptions of four experts and seven consumers from the Aalto University environment, which makes the interview findings narrow and at risk of excluding other opinions and views in the industry. The number of interviewees was limited due to the scope of this thesis course and time constraints: the interviewees were selected based on availability. For instance, the author could not reach fashion marketing experts to learn more about the designing processes and intentions of clothing tag nudges. To add, the consumer interviewees were similar in their viewpoints which led to unchallenged conclusions. Thus, further studies could be conducted with a wider interviewee sampling to reach a variety of viewpoints between different fashion consumers or experts. A wider sampling of interviewees would allow researchers to make more holistic conclusions of the fashion industry, and designers could involve the industry insight to the design of nudges on a deeper level.

Additionally, the upcoming policies of European Union could not be studied in depth due to lack of detailed information in the policy announcements. Thus, the concept design mainly included mentioned information titles and speculative data to visualise the upcoming policy of Digital Product Passports (DPPs). Due to this constraint, the concept remained on the idea level and would need to be developed further for testing purposes. Therefore, as more announcements will be made in the future about the details of the policy and its implementation, designers could develop the concept further and start testing the DPP system. Moreover, the fashion industry might not be open to the changes that are intended with the implementation of the DPP system. For instance, currently, the main threat for implementing the Digital Product Passport is that the fashion companies do not want to provide their information to centralised platforms because they do not want to give away the ownership of the brands' information to the owners of the platforms. Therefore, due to the stubborn nature of fashion brands in the industry, it is crucial to ensure that nudging iterations are designed based on the consumers' needs not fashion brands. By starting a discussion and involving more designers, the upcoming European Union policy could be guided towards applying user centric methods in the implementation of the Digital Product Passport.

To conclude, findings of this research could inspire policy makers and designers to further explore the topic. For instance, involving the consumer in the design process of developing nudges, and standardising nudging tools in the fashion industry are an interesting focus point for policymakers and designers. As the research in this study indicated, policies should be directed towards assuring that fashion brands follow nudging principles when guiding consumers' decision-making processes. Moreover, designers should be involved in the process of developing and iterating nudges as they have expertise and methods for creating nudges that are user centric.

Appendices

Appendix 1. Clothing tag catalogue.





17.



18.



19.



Appendix 2. Expert interview guide.

EXPERT INTERVIEW GUIDE

1. Introduction.

Asking for permission to record the session

*Explaining the interview purpose to the interviewee. * “This interview is arranged as a part of my BA thesis on the topic of nudges in the fashion industry.

Today, we will be looking through fashion tags of everyday fashion brands and analyzing their function as nudges for more sustainable fashion consumption.

The goal of this interview is to understand these tags as nudges and to discuss possibilities for future iterations.

As we go through the interview, I would like to ask you to freely communicate your thinking process.”

1. Introduction

Introducing my background:

Could you tell me a bit more about you and your academic background?

2. General categorization

In front of you, I have randomly mixed a set of cards with fashion tags on them. You can flip through them and get more familiar with the cards.

What do you see?

Could you categorize the tags based on their contents?

3. Discussing the categories.

Let's dive into each of the categories. Can you explain your selection in each category?

What is seemingly the purpose of the tags in each category?

4. Nudge theory. Analyzing the tags as nudges for sustainable consumption.

As mentioned before, I am looking into nudges for sustainable consumption in the fashion industry. Have you heard of the concept “nudging” before?

Nudging is a method of helping the consumer to make sustainable decisions without forbidding any options (Thaler & Sunstein, 2008). Since consumers' biased decisions can cause harmful consequences (to the environment or themselves), the aim of nudges is to guide consumers towards desired behavior (Abdukadirov, S. (Ed.),

Appendix 3. Consumer interview guide.

Consumer interview guide

1. Introduction.

*Asking for permission to record the session and to take screenshots of the desk during the interview for archiving purposes. *

*Explaining the interview purpose to the interviewee. * “This interview is arranged as a part of my BA thesis on the topic of how clothing tags can nudge for sustainable consumption.

Today, we will be looking through fashion tags of everyday brands and analysing their function from the consumer’s point of view.

The goal of **this** interview is to understand these clothing tags as guides for consumer decision-making processes.

As we go through the interview, I would like to ask you to freely communicate your thinking process.”

2. Introduction

Could you tell me a bit about yourself as a fashion consumer?

Helping questions:

- How often do you purchase clothing?
- Where is your favourite place to shop for clothing?
- Would you consider yourself aware in terms of sustainability?
 - o If so, does this awareness also translate to your shopping habits?

3. General categorization

In front of you, I have randomly mixed a set of cards with fashion tags on them. You can flip through them and get a little bit more familiar with the cards.

- What do you see?
- Do you usually read into clothing tags when shopping?

Now, could you categorize these cards based on their contents?

4. Discussing the categories.

Let’s dive into each of the categories. Can you explain your selection in each category?

What is seemingly the purpose of the tags in each category?

5. Nudge theory. Analysing the tags as nudges for sustainable consumption.

Appendix 4. Expert interview codebook.

Topic	Description	Themes	Example quotes	Distribution (nr. of interviewees)	Frequency (nr. of quotes)	Subtheme	Example quotes	Distribution (nr. of interviewees)	Frequency (nr. of quotes)
1. Categorisation based on contents	The experts were asked to freely categorise the clothing tags based on their contents. The main categorisation strategy for the experts was to separate the tags based on sustainability-related information. The main themes were tags with certified sustainability statements (1.1), uncertified statements (1.2) or no information about sustainability (1.3).	1.1 Proved sustainability	<p>1.1_E1Q1 And to the right, I would categorize those that are strongly related to sustainability in my mind.</p> <p>1.1_E2Q1 And this one on the right-hand side there are more the material sustainability where they are sourcing how they are producing or what kind of material they are using to create the clothes.</p>	3	3				
		1.2 Stating sustainability	<p>1.2_E2Q1 OK, so this upper corner is very much about... Not much about actually real sustainability. It was actually more about the packaging or the label itself, not the clothing or clothes that they are selling. So, the actual contents of the product that intent to communicate.</p> <p>1.2_E3Q1 [Referring to one of the categories:] One. "I say I'm sustainable but I don't say how or what or what's changing.</p>	3	3				
		1.3 No sustainability-related information	<p>1.3_E1Q1 So, to the left side, I would categorize those that I don't see, like talking about sustainability.</p>	3	3				
2. Categorisation based	The experts were asked to freely analyse the clothing tags based on their design. They mainly noted the use of icons, colours and the tags' materials when analysing the clothing tags	2.1 Icons	<p>2.1_E2Q1 I mean these icons are also one thing. It's like, kind of... How do you say? You are relying on certain authority because you are not necessarily believing in that company, but the label itself kind of tells that it has done something to get this label so that they are kind of thinking "OK, this some data also Uh, issued this certificate to guarantee that it has done something.</p>	2	2				
		2.2 Colour and materials	<p>2.2_E2Q1 So, uh, in terms of sustainability, you can convey certain message a different way. For instance, this BilkBok is very... I mean, it already used the color of green, and some other brand... like I don't know what is this "C" "referring to Cubus", but anyway this some brand has like this more sustainable... Oh this one! Vero Moda used this bit more neutral tone paper to say about, you know what kind of thing that they are made of So, they are using strategically this kind of signal like this Monki also has this green part written, but at the same time like Muji itself, Muji is like the company that doesn't necessarily... I mean, this is their brand identity. They are not visual but they are based on this text. So in a way they are trying to communicate in their language.</p>	2	2				
3. What is lacking in clothing tags as nudges?	The experts noted that liability was a common shortcoming of the clothing tags as nudges.	3.1 Liability	<p>3.1_E1Q1 There are a lot of products with so-called self-made labeling and those are not very convincing to me. But I guess that for many consumers who are not that familiar with these certifying systems, they could easily trust these labels.</p> <p>3.1_E1Q2 I think that most these labels in these categories suffer all from this like vagueness of promises. So, I can't really make anything tangible out of this.</p> <p>3.1_E4Q3 And next question how do they define sustainable cotton? Because it doesn't have any audit or certified marks there. They just say it's sustained. The usual. Maybe it's said somewhere else, but then yeah, this is, I think this is very typical one. They just claim it's sustainable, but based on what?</p>	3	10				
		4.1 Comparison	<p>4.1_E1Q1 If I have a need for example, I need a new shirt or trousers, and then I want to mind sustainability in my purchase. So then I go to a shop, then the nudge would be what prompts me to choose shirt and product, over something else. So there would be a lot of choice, I need to choose. And then the nudge is like the defining or distinctive information that, like, guides me towards some kind of choice or something else.</p> <p>4.1_E1Q2 Let's think that I have like, there are two products that look the very same to me. So, let's say that these two, these Noisy May and then these BilkBok trousers. So, I have tried both on, the cost is the same, they look the same, they both are very comfortable. And now I think, OK, I have these two. Which one will I choose? And then, oh, let's take a third one, for example, these Zara. I have these three. And now I think, OK, I will afford, I will buy only one. So, which one will it be from here? And then I think, OK, I also want to mind sustainability then these Noisy May says nothing about sustainability. This Zara says a little bit, and this BilkBok gives me the proof of this 100%. Then this 100% proof wins in this category. And if there's only like one, then it's a question of whether to take it or go without. And I know that this going without that, it's very difficult for consumers because, well, we need to purchase goods.</p>	1	2				

4. Tags as nudges: necessary features	The experts listed three features that are necessary for clothing tags as nudges.	4.2 Simplification of information	<p>4.2_E3Q1 I think in a way they're doing what the industry seems to understand. They are declaring their sustainability. But they're not saying anything else. [Interviewer: So kind of the consumer has to go out of their way to find more information on this.] [Interviewee:] And to be fair, we know consumers are not going to do it. And also there's things like the "Committed". So if part of a brand is sustainable and the other part is not. Why the other part is not, you know like? Why do they just make a little bit sustainable or not everything?</p> <p>4.2_E4Q3 It's great that there's so much happening at the moment, but then there is this risk that there is already too much information. And so, like I said in the beginning, that's going to be a bigger challenge that, OK, with all that information, how do you communicate that the customer is not totally lost and then just give up and and I don't know because they never want truth about anything either. So it is such a complex topic.</p>	2	5			
		4.3 Context	<p>4.3_E1Q1 Numbers that tell me like if they say that this is more sustainable, like then I don't know in relation to what, how much, how much there is to go still. And some of these say that this card or label (clothing tag) comes from sustainable sources. So that is not too much in compared with the actual product.</p> <p>4.3_E3Q1 I mean, OK, maybe that is coming, but anything like it should be put into some context that for example, I think some energy companies are saying that "OK. By doing this you are saving X amount of energy and these correspondence corresponds for example, a heating of central heated house in Finland in winter." So that is much more easier. In order for people to understand that, so is this a lot? Or is this very little? So I think that is what is quite often. Missing in these ones.</p>	2	4			
		5.1 Longer lives	<p>5.1_E2Q1 I think how tags can be improved is that as I said, I mean it was my personal initiative of collecting but if tag has something for reason to keep and it's not just like this kind of information that you just read and throw away, but it has a certain benefit to keep /.../ the tag itself can be some item to collect. But it has a certain message in it as well. Then it can become, I think, maybe useful strategy to design a tag in more useful ways.</p> <p>5.1_E4Q1 All I mean OK, so because these are tags, so some of these garments might have those in that information printed or embroidered on the garment itself, and I think that's better because this tags, I don't think anybody really keeps these, so once it's bought then you just throw them away. And then if only information is only in this tag, I think it's lost.</p>	2	4	<p>5.1.1_E2Q1 I think how tags can be improved is that as I said, I mean it was my personal initiative of collecting but if tag has something for reason to keep and it's not just like this kind of information that you just read and throw away, but it has a certain benefit to keep /.../ the tag itself can be some item to collect. But it has a certain message in it as well. Then it can become, I think, maybe useful strategy to design a tag in more useful ways.</p> <p>5.1.1_E2Q3 Maybe it becomes like a passport or something that you carry, don't throw away, but I see now some brands have this idea of like bring your old clothes then you will get some discount to buy new clothes or bring your old clothes then you can fix it, or even exchange or something like that. So then the value of tags is more appreciated maybe.</p>	1	4
					5.2.1 RFID tags	<p>5.2.1_E3Q1 So the thing about RFID has to do with the whole idea of you tracing back all the stages, which might be what you said that they do "referring to Bikkok tag from earlier". I don't know if they do this. But it does say that it has RFID. So maybe it's traceable...</p> <p>5.2.1_E4Q1 I'm actually starting at this Monk label and I noticed that they said RFID code, so it's not the only one that has a ... Or actually, it's probably just for the... OK, it's mostly like stockkeeping, so it's not for the consumer, it's just an RFID tag. But if they don't remove it and you walk out from the store, you get alarmed.</p> <p>So that has been used for a long time for like a business-to-business world that, for example, I think Amazon has shops that you can just like go through these gates and then it takes what you buy and how much you are charged. And then for example big laundries or big workwear companies, they quite often have these tags. For example, they're so small that you can put it in the pocket or some like a sleeve or something so it's basically an identifier for that particular garment.</p> <p>So they can, for example, the workwear business, they have those so they can follow that how many times those clothes have been washed? When do they need maintained? But then that's something that is really not shown to the consumer.</p>	2	3

5. Design iterations	The experts shared suggestions for improving nudging for sustainable fashion consumption.	5.2 Utilising existing initiatives	5.2_E4Q2 [Answering the question: Should a new certificate be introduced?] There's so many already, so in that sense, like I don't see the point of making a new one again, but try to best take best out of these existing ones because I think it's also like once you start introducing something new, that takes years that people sort of recognize that OK, this is reliable one. And then to be honest, I don't know how much ordinary consumers know about these, for example, this organic cotton issue. Because they are... quite often then it just like "oh, this is the scandal." And then next scandal comes and then it gets forgotten and so on.	2	3	5.2.2 Upcoming EU policies	5.2.2_E4Q3 I guess there's some standards that would help, like for example in this EU strategy somehow claims that there should be some measurements for measuring, for example, durability of the clothing, because there's nothing. OK if you go to the textile laboratory, you can do these tests according to standards of like how many rounds of some wearing devices and things like that but then at the same time that should be somehow translated to the languages of how many times you can wear these clothes? I think it's a good advice and well, more people are saying that you shouldn't just stare at the price of a garment you should think that how many times are you going to use it and then price per usage.	1	3
		5.3 Increasing clothing's value				5.2.3 Carbon budget	5.2.3_E1Q2 So this means that every person in this planet, every country, us here in Finland, somebody in Africa, somebody in China, has a certain amount of carbon budget. And if everybody would limit their consumption to the maximum of this carbon budget, then our climate would warm 1.5% or less. And of course, it's around like this 2,500 tons. And for example, if I buy a pair of jeans and there goes, for example, 500. Then you can see that if this is my whole year's budget, then this 500 is awfully a lot out of that. It's like a calorie budget. If somebody is thinking about calories and seeing that, OK, I have 2500 calories a day and here is the pizza and the pizza is 1000 calories, then I know that I can't eat too much more anything that day because the pizza is already so much. I would like to know how much this is and how much the carbon budget is, then I could evaluate that: "OK, if I buy these jeans and here goes my budget, then what?" How much I will have left for anything else?	1	2
						5.3.1 Price-per-use and durability	5.3.1_E4Q1 OK if you go to the textile laboratory, you can do these tests according to standards of like how many rounds of some wearing devices and things like that but then at the same time that should be somehow translated to the languages of how many times you can wear these clothes? I think it's a good advice and well, more people are saying that you shouldn't just stare at the price of a garment you should think that how many times are you going to use it and then price per usage.	2	2

How to decode: 1.1_E1Q1 = Theme 1.1 Expert 1 Quote 1
Every expert has a number: Expert 1, Expert 2, etc.

Appendix 5. Consumer interview codebook.

Topic	Themes	Description	Subtheme	Example quotes	Distribution	Frequency
1. Interviewees as fashion consumers	1.1 Aware but not always acting on it	The consumers were rather conscious fashion consumers, who were open to learn more to make informed consumption decisions. When asked to describe their awareness of sustainability, the consumers mostly described themselves as aware fashion consumers, yet some added that changing their consumption habits to be more sustainable would require effort due to lacking information availability of the fashion brands.		<p>1.1_C4Q1 I'm aware of it, but I don't consider it maybe as much as I could, mostly because like even if I do look out for like if brands are like "oh this is a sustainable decision" or whatever I don't trust when like mainstream brands say that this is a sustainably produced product. So, I know that if I were to make sustainable choices, it would require me to do like a significant amount of research, and sometimes I do that. But because of the amount of effort that it requires, I don't do it like with all of my purchases like it would require, like a specific time when I'm putting more effort into thinking about what I'm buying and stuff like that. So like with impulse purchases, I don't really take that into consideration.</p> <p>1.1_C6Q1 Uhm, therefore when I buy things new, I feel like it's so rarely that I kind of justify for myself if they are not something like the most sustainable or ecological brands, which is of course I know that this is something that I also want to improve on and work on because I'm really interested in these matters. But I think, especially in the recent years I've been on the go a lot and like my life situation has been really unstable and also I feel like I haven't had the like kind of like capacity financially to invest in like pieces that would cost more money because of if they're like sustainably produced because I don't even know if like they are something that I can find like have for a longer time or if I have to resell them again, in a few months time if I'm like gonna go and travel again or whatever.</p>	6	6
			1.2.1 Durability and utility	<p>1.2.1_C7Q1 Things like maybe five years ago I started like choosing clothes when I'm shopping is not really based on their style but also like feel the materials and comfortable like the fittings I want to wear something like quite comfortable and suitable for like multiple purpose. Like working also and hanging out with friends. So yeah, that's I think reduce the shopping, maybe it's also one of the practices to be sustainable in fashion consumptions. Yeah, reduce and also prolong the usage time, yeah.</p> <p>1.2.1_C7Q2 When I really need something, for example, now I think I probably need a backpack. I wouldn't like just buy anything. I would really see something that looks really durable and promising and I know how to fix it. I will buy it. Other than that, I wouldn't like buy extra unnecessary stuff.</p>	4	8
	1.2 Reasoning fashion purchases	The consumers' description of their consumption habits gave an overview of their decision-making reasonings when consuming fashion. The interviews revealed that the consumers' choice depended on the following factors: a) durability and utility and b) price. Additionally, some consumers mentioned c) urgency, and d) the feeling of responsibility.	1.2.2 Price	<p>1.2.2_C9Q1 So before coming to Finland. Uh, I would definitely spend a lot of like if I would spend my money or yeah, the stuff that I would buy it would be fast fashion stores so it would be H&M, it would be Zara it would be a New Yorker and stuff like that because I usually didn't spend a lot of money on things and that was kind of my reason for not going into like more expensive stuff.</p> <p>1.2.2_C5Q1 [why do you shop mainly secondhand?] It's a lot cheaper and I like the sustainability side of it because I don't. Yeah, and I didn't actually like that much like these clothing stores, I think it's pretty exhausting to go into a clothing store, and yeah.</p>	5	5
			1.2.4 Urgency	<p>1.2.4_C4Q1 If I'm looking for something specific that I need on short notice it will probably be H&M because that's the closest available to me. But then sometimes I also buy secondhand stuff. But that's usually for like if I'm doing like for costume purposes or stuff like that, like if I'm going to an event that requires me to fit a certain theme, then I'll go to second hand places 'cause I might not wear those clothes like a lot afterwards. Yeah, I think that's about everything.</p> <p>1.2.4_C6Q1 Uhm, so yeah I would say like 95% second hand and then some like very specific pieces that I would buy new and with those pieces there might be more. Yeah, not the most ethical choices because they would be like really kind of on dem and like "Oh my God, I really need this right now" and I can't find it second hand. You know?</p>	2	2
			1.2.5 Feeling of responsibility	<p>1.2.5_C6Q1 Uhm, therefore when I buy things new, I feel like it's so rarely that I kind of justify for myself if they are not something like the most sustainable or ecological brands, which is of course I know that this is something that I also want to improve on and work on because I'm really interested in these matters.</p> <p>1.2.5_C7Q3 I think I would like to learn more about which store is more sustainable, because for now, but for I mean I would like to learn more about which brand is more sustainable, but also thrift shop for me is like a alternative for less expensive things I think the most, the biggest competence of fast fashion is they are really cheap but and I also kind of as just as a broke student. But I don't want to spend money for them. Then I start to think, yeah, maybe thrift shop fits that need.</p>	3	3
2. Tag categorisation	2.1 Visuals	The consumers categorised the clothing tags based on their first impressions of the tags. Some consumers categorised the clothing tags based on their visual assets.		<p>2.1_C5Q2 [Explaining the purpose of the categories]. OK, yeah, maybe in the simplified [category] they have made a design decision only to focus on the logo and maybe showing a like for example in the #11 there is like sustainable enhancement, but for example in... when we go to the #9 it's from Monki, but they have the same kind of info, but it's like far more. There's like lot more info in this one. Or is there anyway I'm not sure.</p>	4	4

	2.2 Mentions of sustainability	The consumers categorised the clothing tags based on their first impressions of the tags. Some consumers categorised the clothing tags based on whether they mentioned sustainability.		2.2_C1Q1 Well, these two ended up being in two categories, but it's like I can bring them closer, I guess. I guess, like the one on the left is more like there are traces of sustainability, like they mentioned something for being more sustainable and the other side actually don't. So I guess that would be the thing that separates them.	2	2
	2.3 Brand awareness	The consumers categorised the clothing tags based on their first impressions of the tags. Some consumers categorised the clothing tags based on brand awareness.		2.3_C3Q1 Yeah, I yeah 'cause I said like there are many things that can pop up in my mind and then I can do very like different categories, but then if I can do something that quite like quickly, I think the first thing coming to your mind is the familiarity towards the brand and maybe after that maybe you can consider to look more closely, but I guess your intention in this is that let the interviewee to do like very quick one so. Yeah, that that's the go-to I do. I do just what I know and what I don't know.	2	2
3. Tag analysis	3.1 Design	The consumers commented on the design of the clothing tags.		3.1_C6Q1 Uhm, then there is wait this one I don't know from which brand it is though, but you're at the same tag as I am [Mango]. I like the visuality. Yeah OK I like the visuality of it. And I think that's another aspect like if I see a beautiful and visually engaging tag, I would feel more... I would be definitely more prone to actually like pay attention to it. And I think that they have managed to do that very nicely here. 3.1_C4Q1 Uhm, if they stand out to me, yes, I mean I, I read the tag every time you check the size and like the price. Yeah, it would have to be like designed in a way that it catches my eye. I can I like point out like an example or something like. Yeah, so like #6 for example, I would be able to see the Never Denim, but I wouldn't read this smaller amount of text right here. Stuff like #3 and #11 would stand out to me 'cause it has very, very small amount of text like #5.	3	4
	3.2 Icons	The consumers commented on the icons on the clothing tags.		3.2_C2Q1 But I mean, if Zara has that, then I also like quite skeptical 'cause you can just put those icons there and just yeah, maybe add another layer of sustainability, but the brand is still Zara. Maybe that's a bit of judgmental feeling towards Zara but... Yeah, but I but my point is that sometimes these tags communicate about sustainability to the icons.	2	2
	3.3 Sustainable style colours	The consumers commented on the sustainable colours of the clothing tags.		3.3_C6Q1 And also I guess the green color kind of indicates about the sustainability, though I also think that's a bit of a old fashioned view in that sense that you know sustainability discussion and communication shouldn't always like... I think we have to expand from that traditional "only shades of green are being used" kind of perspective, but at least I think the majority of consumers at this moment in time that would still kind of clearly indicate about like green values.	2	2
	3.4 Materials	The consumers commented on the materials of the clothing tags.		3.4_C1Q1 ...so I like I entered shops and I never really like explicitly paid attention to [clothing tags] but I do understand like now looking at the uh, the different tags I kind of remember like sometimes, for example, if the thread that links the tag to the clothes, if this is kind of like plastic thing, uh, then I would not interpret it as a like a sustainable thing, right? Whereas if it's a, uh, a cord, or like a thread and actual thread. Or like these kind of uhm? I don't know how it's called, but you know, like not this thread as like textile. But this thing that's a bit more rough. Yeah, the Never Denim. For example, when I see it, I'm more towards this, yeah, this idea that they didn't go for the plastic one and to me this is like one that that I would consider more as a sustainable thing. Or at least they put more emphasis on the sustainable aspects of the clothing and the tag.	2	2
4. Clothing tags as nudges	4.1 Transparency of the nudge- consumers acknowledge clothing tags to some extent	The consumers analysed the transparency of the nudge in their shopping experiences.		4.1_C2Q2 So to be honest, maybe the clothing tags mostly provide me info about like price and maybe I would take note of the brand if that's like completely new to me, then I search for them, but maybe I don't buy them at that moment, so the clothing tags maybe nurture me to learn about the brand first before I choose to buy from them. 4.1_C6Q1 Yeah, but I think I've never really kind of consciously thought about their function a lot more than that. Of course, they would provide you some information on that company or on the garment itself, and like of course they you are expected to find certain basic information on that so like, yeah, there is usually the price or the where it's being produced or and something about that how to take care of the garment and like something about the sustainability aspects. Uh, so these would be the information that I would expect to find or that I would have recognized that I see in tags but I haven't like thought about their functionality so much.	5	10

	4.2 Clothing tags are minor factors influencing the consumers' purchase decisions	The consumers did not consider themselves majorly influenced by the clothing tag nudges.	<p>4.2_C2Q1 Maybe when I buy an item and then they have an extra tag to say that this is recycled from plastic bottles or something and maybe I would feel a bit more convinced to buy that over like the same one also it makes the items feel more like special in a way, even though it's very basic, but it's feel like yeah, it's kind of carry a mission or something like that.</p> <p>4.2_C3Q1 First glance, no. But that's kind of always how it is. I'm not sure how I would I, but I feel that that's something that doesn't really change for me and wouldn't really change even 'cause I don't feel like. If I'm just looking at this. Like I'm just drawn to something over anything else, you know. And I would always make the decision after I actually read it, and I should actually look at it instead of just kind of relying on the 1st instinct.</p> <p>And anyway, if I'm going into the store, so are we comparing now between brands? Because if I'm going to a store. I'm probably going to be buying from this one brand right because I'm going to the store of this one brand. So then it would be comparing products in that specific brand. Like for example these two 15 and 3 right? Where like the one says nothing and the other one says 20% recycled cotton.</p> <p>It's a good question whether that would make a difference.</p>	4	7
	4.3 Nudging or marketing?	The consumers could not differentiate nudging from marketing and expressed that they did not trust clothing tag nudges due to this reason.	<p>4.3_C3Q2 [referring to card number 10] Yeah, so it's to me. It's always like a question of does the company actually... It was the same thing as here. Like, does the company actually care or are they just doing it for the purpose of competitive advantage.</p> <p>4.3_C4Q1 I don't know if I've ever called them nudges like I wasn't aware of that specific term. But I know that like with how popular greenwashing is in the discussion of fast fashion and that I know that these types of that tags are there intended for me to be like if I'm really quickly looking at clothes, then I look at that tag and I go "Oh, this is a sustainable option for me", so it's like it's intended to sort of manipulate me to feel better about the clothes that I buy and therefore maybe encourage me to buy those clothes.</p>	6	11
	4.4 Analysing nudge features	The consumers analysed the nudging features on the clothing tags. The main comments from the consumers were that the information was unclear or difficult to read, additional context is needed with sustainability claims, and lastly that QR codes could add value to the clothing tags.	<p>4.4.1_C1Q1 [Answering question: Would you dive into reading this tag actually to find out if it's actually sustainable?] Definitely not. Not reading the tag from from from Muji 'cause it's too much reading and I hate reading and to me actually like comparing it to Dickies is a good idea because I feel like these two are at the same level. Yeah, to me in terms of sustainability, like Dickies for example the tag the little logo that they they're displaying on the back of the tag, it's like for the forest like it's kind of good, it's OK, but it's also only for the tag and I don't know what measures they took for the article in itself.</p> <p>And yeah and Muji also is a yeah, I don't. I don't know about Muji. That's it. You know it's not this some like super cheap garment either. Uh, it's very minimalist, which is maybe one thing that I appreciate more than Dickies. But yeah, I don't know. I don't know to me there there's not much differentiating in terms of sustainability. There's not much differentiating Dickies from Muji.</p> <p>4.4.1_C7Q2 Sometimes you really want to know more about what do they mean? Like this #2, the "cutting edge technology with lower environmental impact fiber". Sounds cool, but I want to know what exactly happened.</p> <p>4.4.2_C3Q1 [Referring to card number 6] #6. Yes, it's fair trade.</p> <p>However, to me. I guess yeah. So that. Yeah, I guess it is, sort of an indicator, however, to me based on like what I've researched and heard about it, it depends. It really much depends, so I would have to kind of see a bit more about it if I wanted to get more info in here. It doesn't really say anything in the back which is not bad, just it's just kind of. Yeah, it's there.</p> <p>4.4.2_C3Q2 It's a question, for example Fair trade, right? And the stuff that goes into these. Uh, it's so extensive and there's such rules. There's so many categories that kind of the people have to adhere to. That sometimes it just makes it really hard for you to be sustainable in the like final place.</p> <p>4.4.3_C6Q1 Well, like I said definitely the QR code is a better choice and like showcasing the website because that gives me a feeling that I could directly get to the... I would expect to get to the section where they address the specific garment or the specific claim they have made in the tag. And so, I would not just... To me, it's a bit of bullshit like "Navigate yourself to hm.com" like they know that people won't do that because that will take you nowhere. And if you wanted to find the information that way, like it basically doesn't add any value.</p> <p>And the QR code would.</p> <p>What I like about the BiBok tag is that it mentions traceability of source, which is something that I didn't see any of the other ones doing that would already I don't know that would make me more curious as well to scan the QR code and actually like kind of see what they are communicating.</p>	4	10
			<p>4.4.2_Certifications are recognisable but additional context is needed</p> <p>4.4.3_QR codes could add value to the tags</p>	3	6
				4	5

5. Design feedback	5.1. Digital is more convenient	The consumers preferred digital libraries for product passport collection because it was the most trustworthy solution.	5.1.1. Trustworthiness	5.1.1_C3Q1 I would also be afraid of people really replacing them [the collectable tags]. Easy to replace the clothing tags for it in this version. Uhm, because there would need to be like a uniform way of doing this.	2	4
	5.2. Participating in circular business models	Some consumers expressed interest in participating in circular consumption systems with the support of digital product passports.	5.2.1 Durability, recyclability and repairing Information of clothing would encourage brands to implement circular business models	5.2_C7Q2 I think it will be useful because with all these collections, it helps to other like relevant services like swapping and repairing, being developed because nowadays like if we want to swap either, it's within like a friend circle because we know what each other has, but what if you are such a person, like your friends are just totally different size with you and you want to swap with someone else and it gets like this digital platform will like help people to get access to like outside the circle and also the repairing services.	3	4

How to decode: 1.1_C1Q1 = Theme 1.1 Consumer 1 Quote 1
Every consumer has a number: Consumer 1, Consumer 2 etc.

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