

Appendix A: Complete Survey

Master Thesis Survey (multiple choice version) - Definitive

Start of Block: Introduction

Bijdragen aan duurzaamheid in de kledingindustrie? Doe mee aan dit onderzoek en maak kans op 50 euro Bever shoptegoed!

U bent uitgenodigd om deel te nemen aan een onderzoek getiteld: 'Analyzing Consumer Behaviour Towards Product Care of Technical Outdoor Garments'. Dit onderzoek wordt uitgevoerd door Rychon Tokromo (student) van de TU Delft en Bever, onder begeleiding van Lise Magnier (professor) en Stefano Parisi (professor) van de TU Delft. Het onderzoek heeft als doel het consumentengedrag bij de verzorging van buitenkleding te onderzoeken en zal ongeveer 8-12 minuten duren. Verzamelde gegevens zullen worden gebruikt voor onderzoeksinzichten en worden gepubliceerd in de Master's Thesis, beschikbaar via de TU Delft repository aan het einde van het project. Gegevens kunnen ook worden gebruikt voor toekomstige onderwijsdoeleinden. Drie deelnemers worden willekeurig geselecteerd om vouchers te ontvangen als compensatie voor deelname. Het risico van een datalek bestaat altijd. Uw antwoorden in dit onderzoek blijven vertrouwelijk. We minimaliseren risico's door u een anonieme enquête aan te bieden. Er worden geen persoonlijke gegevens, inclusief IP-adressen, verzameld, en alle gegevens worden veilig opgeslagen. **Uw deelname aan dit onderzoek is volledig vrijwillig en u kunt zich op elk moment terugtrekken. We vragen u om de vragen eerlijk te beantwoorden. U mag vragen overslaan.** Bijgedragen gegevens kunnen niet worden verwijderd na het voltooien van de enquête. Voor verdere vragen kunt u de onderstaande contactgegevens gebruiken:

- Rychon Tokromo (Corresponding Researcher):
- Lise Magnier (Responsible Researcher):

Door te beginnen en door deze anonieme enquête te klikken, stemt u in met deze openingsverklaring en de voorwaarden die van toepassing zijn op het verstrekken van gegevens voor dit onderzoek zoals eerder vermeld.

End of Block: Introduction

Start of Block: Explanation

Uitleg Terminologie **Wat is buitenkleding?** Buitenkleding verwijst naar kledingstukken die specifiek zijn ontworpen om de gebruiker te beschermen tegen het weer, zoals waterdichte broeken en met dons gevulde jassen. **Wat is productverzorging?** Wanneer er in dit onderzoek wordt gesproken over productverzorging, onderhoud of verzorging, verwijzen we naar de was- en droogpraktijken van buitenkleding.

End of Block: Explanation

Start of Block: Houding tegenover product verzorging van technische buitenkleding

Q1 Hoe ervaren bent u in productverzorging van buitenkleding?

- a) Erg onervaren: "Ik heb helemaal geen ervaring met productverzorging van mijn buitenkleding." (1)
- b) Onervaren: "Ik geringe ervaring met productverzorging van mijn buitenkleding." (2)
- c) Ervaren: "Ik heb redelijke ervaring met productverzorging van mijn buitenkleding." (3)
- d) Erg ervaren: "Ik heb uitgebreide ervaring met productverzorging van mijn buitenkleding." (4)

Q2 Wat motiveert u om uw buitenkleding te onderhouden?

	Heel Onwaar (1)	Onwaar (2)	Waar (3)	Heel Waar (4)
"De oorspronkelijke prijs of financiële waarde motiveert mij." (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Het plezier of de vreugde die het product biedt, motiveert mij." (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Het product sluit aan bij mijn identiteit, wat mij motiveert." (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"De functionaliteit van het product motiveert mij." (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Het merk heeft het uitdagend/moeilijk gemaakt om voor het product te zorgen, wat mij motiveert." (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"De esthetiek van het product motiveert mij." (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Mijn duurzame persoonlijkheid motiveert mij." (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Emotionele gehechtheid aan het product motiveert mij." (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Iets anders motiveert mij, namelijk:

Q4 Wat triggert u om uw buitenkleding te onderhouden?

	Heel Onwaar (1)	Onwaar (2)	Waar (3)	Heel Waar (4)
Veranderingen in uiterlijk, zoals vuil of verkleuringen (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Een regelmatig onderhoudsschema (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sociale invloeden, zoals weten dat anderen uw kleding zullen zien (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eerdere ervaringen met productverzorging van buitenkleding (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De uitdaging van productverzorging van buitenkleding (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 Iets anders triggert mij, namelijk:

Q6 Wat maakt buitenkleding onderhouden moeilijk voor u?

	Heel Onwaar (1)	Onwaar (2)	Waar (3)	Heel Waar (4)
"Ik heb niet de juiste vaardigheden of kennis." (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Productverzorging kost te veel tijd of moeite." (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Ik heb niet de juiste hulpmiddelen voor productverzorging van buitenkleding." (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Ik wist niet dat buitenkleding productverzorging nodig heeft." (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 Iets anders maakt het moeilijk, namelijk:

End of Block: Houding tegenover product verzorging van technische buitenkleding

Start of Block: Gebruikspatronen

Q8 Wat voor buitenkleding heeft u in bezit?

- Waterdichte jas; Jas met meerlaagse waterdichte en ademende stoffen, behandeld met een waterafstotende coating (1)
 - Waterdichte broek; Broek met meerlaagse waterdichte en ademende stoffen, behandeld met een waterafstotende coating (2)
 - Waterafstotende jas; Niet waterdichte jas met alleen een waterafstotende coating (3)
 - Waterafstotende broek; Niet waterdichte broek met alleen een waterafstotende coating (4)
 - Waterresistente jas; Jas met een strak gewoven waterresistente stof, niet behandeld met water afstotende coating (5)
 - Waterresistente broek; Broek met een strak gewoven waterresistente stof, niet behandeld met water afstotende coating (6)
 - Met dons gevulde jas; Jas geïsoleerd met vogelveren (7)
 - Met dons gevulde broek; Broek geïsoleerd met vogelveren (9)
 - Synthetisch gevulde jas; Jas geïsoleerd met synthetische isolatievezels (8)
 - Synthetisch gevulde broek; Broek geïsoleerd met synthetische isolatievezels (10)
-

Q9 Hoe vaak heeft u uw buitenkleding in de afgelopen 12 maanden gebruikt?

- Meer dan één keer per week (1)
- Één keer per week (2)
- Één keer per maand (3)
- Een paar keer in de afgelopen 12 maanden (4)
- Nooit in de afgelopen 12 maanden (5)

End of Block: Gebruikspatronen

Start of Block: Huidige productverzorging

Q10 Hoe vaak doet u aan productverzorging van uw buitenkleding?

- Wekelijks (1)
 - Maandelijks (2)
 - Een paar keer per jaar (3)
 - Nooit (kunt u uitleggen waarom?) (4)
-

Q11 Door wie wordt de productverzorging uitgevoerd?

- Door mezelf (1)
- Door een familielid of vriend (2)
- Door een professionele service (3)

Q12 Wat houdt deze productverzorging in?

Q13 Welke hulpmiddelen gebruikt u voor productverzorging van uw buitenkleding?

- Een wasmachine (1)
 - Een droger (2)
 - Droogrek/waslijn (10)
 - Normaal wasmiddel (3)
 - Wasverzachter (12)
 - Wasmiddel voor buitenkleding (4)
 - Schoonmaak spray (5)
 - Anders, namelijk: (8)
-

Q14 Waar heeft u de informatie over productverzorging van uw buitenkleding gevonden?

- Ik heb informatie verzameld van het waslabel dat door het merk is verstrekt (1)
 - Ik heb informatie verzameld van een winkelmedewerker (2)
 - Ik heb informatie verzameld uit de productbeschrijving op een webwinkelpagina (3)
 - Ik heb informatie verzameld uit andere bronnen, namelijk: (4)
-
- Ik heb geen informatie om te volgen, want: (5)
-

Q14 Doet u aan andere productverzorgingsactiviteiten die niet wassen en drogen omvatten?

- Ik gebruik een waterproofing spray (1)
- Ik gebruik een waterproofing impregneermiddel (7)
- Ik gebruik een waterproofing spray en impregneermiddel (12)
- Iets anders, namelijk: (6)

- Nee (2)

Q15 Merkt u wanneer uw buitenkleding productverzorging nodig heeft?

- Ja (kunt u uitleggen wat u opmerkt?) (1)

- Nee (kunt u uitleggen wat er mist?) (2)

End of Block: Huidige productverzorging

Start of Block: Demografische info

Q17 Wat is uw leeftijd?

Q18 In welke provincie leeft u?

- Noord-Brabant (1)
- Zuid-Holland (2)
- Noord-holland (3)
- Zeeland (4)
- Limburg (5)
- Overijssel (6)
- Drenthe (7)
- Groningen (8)
- Friesland (9)
- Flevoland (10)
- Utrecht (11)
- Gelderland (12)

End of Block: Demografische info

Start of Block: Overige Vragen

Q28 Wilt u uw e-mailadres achterlaten om in aanmerking te komen voor een digitale voucher van 50 euro shoptegoed bij Bever? (3 Winnaars worden willekeurig gekozen na sluiting van de survey)

Q19 Heeft u nog aanvullende opmerkingen over de productverzorging van uw buitenkleding?

Q20 Wenst u iets specifiek om uw buitenkleding beter te kunnen onderhouden?

Q21 Heeft u nog opmerkingen over deze enquête of Bever in het algemeen?

End of Block: Overige Vragen

Appendix B

Rebellion Against Brand Policy Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	43	32,1	32,3	32,3
	Untrue	70	52,2	52,6	85,0
	True	18	13,4	13,5	98,5
	Very true	2	1,5	1,5	100,0
	Total	133	99,3	100,0	
Missing	System	1	,7		
Total		134	100,0		

Aesthetics Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	13	9,7	9,7	9,7
	Untrue	35	26,1	26,1	35,8
	True	74	55,2	55,2	91,0
	Very true	12	9,0	9,0	100,0
	Total	134	100,0	100,0	

Intrinsic Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	10	7,5	7,5	7,5
	Untrue	31	23,1	23,1	30,6
	True	59	44,0	44,0	74,6
	Very true	34	25,4	25,4	100,0
	Total	134	100,0	100,0	

Aesthetics Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	13	9,7	9,7	9,7
	Untrue	35	26,1	26,1	35,8
	True	74	55,2	55,2	91,0
	Very true	12	9,0	9,0	100,0
	Total	134	100,0	100,0	

Financial Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	7	5,2	5,2	5,2
	Untrue	27	20,1	20,1	25,4
	True	87	64,9	64,9	90,3
	Very true	13	9,7	9,7	100,0
	Total	134	100,0	100,0	

Fit with Identity Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	7	5,2	5,2	5,2
	Untrue	48	35,8	35,8	41,0
	True	68	50,7	50,7	91,8
	Very true	11	8,2	8,2	100,0
	Total	134	100,0	100,0	

Pleasure Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	3	2,2	2,2	2,2
	Untrue	10	7,5	7,5	9,7
	True	91	67,9	67,9	77,6
	Very true	30	22,4	22,4	100,0
	Total	134	100,0	100,0	

Irreplaceability Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very untrue	12	9,0	9,0	9,0
	Untrue	42	31,3	31,3	40,3
	True	55	41,0	41,0	81,3
	Very true	25	18,7	18,7	100,0
	Total	134	100,0	100,0	

Appendix C: First list of requirements

Research conclusion relevant criteria

- The solution provides all three FBM factors are sufficient to activate participation in TOG product care:
 - The solution acts as a facilitator for TOG product care, due to low ability factors.
 - The solution needs to enhance the user's knowledge and skills about TOG care
 - The solution needs to educate the user about proper tools
 - The solution needs to educate the user about proper care guidelines
- The solution provides necessary tools for TOG care
- The solution is time-efficient
- The solution is easy to understand and use
- The solution is designed to be used by an individual at home
- The solution is applicable to all TOG types:

Bever relevant criteria

- The solution needs to appeal to the average Bever consumer
 - The solution motivates the intrinsically sustainable Resposables through sustainability aspects
 - The solution caters to the Status Conscious by using sustainability as means of showing status.
 - The solution allows Developers to freely participate in product care.
- The solution needs to encompass the Best Services identity pillar of Bever
 - The solution helps consumers to enjoy their Bever products for longer by offering products and services that extend TOG lifetime.

Circular Economy criteria

- The solution contributes to extension of TOG lifetime by encouraging product care
- The solution leverages the design for maintenance principle by providing the means to simplify TOG care
- The solution assists in retaining value of owned TOG by encouraging and guiding product care

The following wishes were made;

- The solution encourages TOG product care through existing motivations
- The solution triggers people with an appearance based trigger
- The solution leaves a positive experience about product care, hoping to trigger future participation
- The solution has a physical manifestation
- The solution has no primary digital aspects

Appendix D: Complete Booklet

REFER TO SEPARATE APPENDIX D

Appendix E: Validation Table

Fogg Model Criteria		
Criteria	Status	Elaboration & Validation Questions
The Buitenmens Sherpa enhances the user's knowledge and skills about TOG care by providing information about the process (Knowledge & Skills)	To be tested	Do users experience the provided TOG care information helpful and easy to understand?
The Buitenmens Sherpa provides the proper tools for TOG product care, and instructions on how to use them (Lack of Tools + Knowledge & Skills)	Yes, but has to be tested	Tools are given for TOG care, but do users experience the provided instructions easily understandable?
The Buitenmens Sherpa is easy to understand and use by the average Bever consumer (Time & Effort)	To be tested	Do users experience the Buitenmens Sherpa easy to understand and to use during the entire TOG care process?
The Buitenmens Sherpa is time-efficient (Time & Effort)	To be tested	Does the user take less or more time than is generally described for each TOG care process?
The Buitenmens Sherpa is supposed to be used by the user in their homes.	Yes	The design is stored in washroom, and the use scenario mainly happens by the user at home.
The Buitenmens Sherpa is tailored to all TOG types	Partially	After evaluation of how the Care Mark works in terms of direct skin contact, it seems that the installation seems only viable in jackets. Most TOG pants are worn with other pants and socks underneath, making that direct skin contact difficult without sacrificing comfort. Also, there are no tools given for down/synthetic fill garments. The specific down/synthetic fill detergents, and dryer balls are not present in the current version.

Concept Component Criteria		
The Kit		
Criteria	Status	Elaboration & Validation Questions
The Kit efficiently contains all other components of the Buitenmens Sherpa	Yes	The Booklet, Care Mark, and TOG detergent and waterproofing all fit in the Kit
The Kit neatly presents the tools to the user through a foldable construction	To be tested	- Do users think the folding construction is intuitive? - Do users think the presentation of tools is neat?
The Kit allows for neat storage of tools after use	Yes	Everything component is contained by the Kit, which can be stored in the washroom for example.
The TOG Care Booklet		
Criteria	Status	Elaboration & Validation Questions
The booklet provides information about the TOG care processes	Yes, but to be tested	Is the provided TOG care information easy to understand?
The booklet provides information about the Care Mark	Yes, but to be tested	Is the provided Care Mark information easy to understand?
The booklet has an A5 size to provide an easy to handle item during maintenance	Yes, but to be tested	Is the A5 size of the booklet easy to handle during TOG care?
The Care Mark		
Criteria	Status	Elaboration & Validation Questions
The Care Mark is installed on the interior of a garment	Yes	3M and Velcro installation is used
The Care Mark utilizes a reactive textile to make contaminants visible	Yes, but to be tested	- Do users understand the connection between colour change and contaminants? - Does the Care Mark significantly change over 6 months of use?
The Care Mark utilizes a reactive textile to trigger product care	To be tested	Does the Care Mark trigger product care through the colour change?

Bever Criteria

Criteria	Status	Elaboration & Validation Questions
The Buitenmens Sherpa makes invisible contaminants visible to the user through the utilization of a reactive material	Yes	Halochromic dye makes sebum visible, a common contaminant in TOG that can also hamper protective functionalities.
The Buitenmens Sherpa motivates the intrinsically sustainable Responsibles through sustainability aspects	Yes	The design facilitates an inherently sustainable practice that should be attractive for this archetype of consumer.
The Buitenmens Sherpa caters to the Status Conscious by using sustainability as means of showing status	Yes, but to tested	What do people think of the appearance of the Buitenmens Sherpa? In specific, what do they think about the Kit's appearance?
The Buitenmens Sherpa allows Developers to freely participate in product care	Yes	Guidance is given, but no part of the design restricts the user during the process of TOG care.
The Buitenmens Sherpa needs to encompass the Best Services identity pillars of Bever	Yes	The Buitenmens Sherpa adds another layer to the services that Bever already provides.
The price of the entire concept has to be affordable by the target audience of Bever	To be calculated	What is the cost of manufacturing the Buitenmens Sherpa?

Circular Economy Criteria

Criteria	Status	Elaboration & Validation Questions
The Kit uses repurposed textiles for the kit component	Yes	Old TOG were used for the prototype, collected from the Bever warehouse. This same collection system can be used for manufacturing the Kit.
The Care Mark uses non-synthetic means to achieve its reactivity	Yes	Halochromic dye from red cabbage was used.
The Buitenmens Sherpa assists in retaining value of owned TOG through TOG lifetime extension by encouraging and guiding product care	Yes	Each component of the design facilitates TOG care.
The Buitenmens Sherpa leverages the design for maintenance principle by providing the means to simplify TOG care	Yes	Each component of the design facilitates TOG care.

Appendix F: Test's complete instructions, introduction, survey, interview questions, and observation script

Interview answers summarized

1. Clarity of the Booklet

Common feedback about the booklet included:

- People were generally positive about overall clarity.
- However, there were suggestions for a more compact or clearer layout.
 - Background information can be moved to the back.
 - Indexing more clearly highlighted throughout the Booklet.
- People expressed the wish for a Dutch version.

2. Care Mark Intuitiveness

People experienced mixed responses to the Care Mark:

- Overall, participants found the Care Mark clear and easy to understand. The colour change was understood quickly with assistance of the colour cycle visual.
- Participants also stated that they appreciated the color change indication system.
- Some participants experienced initial confusion with the Care Mark because of its novelty.
- Questions about the placement and effect on aesthetics.

3. Design Impressions

People gave the Kit's appearance the following feedback:

- Participants were generally positive about the design of the Kit.
 - Clean and aesthetically pleasing, while also being functional.
 - People expressed it has a distinctive appearance because of the colours.
- Some preferred more neutral colors than the current vibrant ones.
- Participants also praised the functionality and ease of use.
- The recycled appearance was not noticed by the participants. Perhaps this can be emphasized better.

4. Desirability insights

User's value perception:

- People perceived the Buitenmens Sherpa to be valuable for maintaining TOG.

- People explained value of the Buitenmens Sherpa because of high price of most TOG.
- There were concerns about Care Mark placement affecting the appearance of their TOG.

5. Price Point

Price expectations varied:

- Most responses between 20-50 euros.
- Highest suggestion at 100-110 euros.
- Lower range around 25-30 euros.

Observations summary

Based on the observations across our participants, several key patterns emerged:

- **Initial Interaction Patterns:**
 - Most participants read through the entire booklet first
 - Many checked reference labels and care instructions carefully
- **Navigation Behavior:**
 - Participants typically reviewed all instruction steps before starting
 - Some people did not realize that they were reading information from chapter that was not for their TOG type
 - Some had difficulty maintaining their place in the instructions. Alternating between handling the garment and the booklet caused people to lose where they were during the process. Sometimes resulting in continuing from the wrong chapter.
 - Users actively cross-referenced between the booklet and jacket labels
- **Care Mark Understanding:**
 - Most participants correctly interpreted the clean/dirty status of the Care Mark
 - The Care Mark's colour indication system was generally well-understood. If people got confused, the colour cycle visual offered guidance.
- **Usage Patterns:**
 - Participants showed careful attention to the TOG care instructions.
 - Most users followed the preparation steps correctly. However, some participants grabbed the wrong detergent bottle: waterproofing instead of detergent
 - Some confusion occurred during transitions between washing stages

Areas of Improvement:

- Request for Dutch language support
- The chapters need clearer indexing to indicate which chapters apply to specific TOG types
- A bookmark is needed so users can continue where they left off after accidentally closing the booklet
- Participants sometimes confused the waterproofing and detergent bottles, indicating a need for clearer labeling to show which bottle corresponds to each step

Survey Data



Appendix G: Graduation Brief



IDE Master Graduation Project

Project team, procedural checks and Personal Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME

Complete all fields and indicate which master(s) you are in

Family name	<input type="text" value="Tokromo"/>	IDE master(s)	IPD <input checked="" type="checkbox"/>	Dfi <input type="checkbox"/>	SPD <input type="checkbox"/>
Initials	<input type="text" value="R.A."/>	2 nd non-IDE master	<input type="text"/>		
Given name	<input type="text" value="Rychon"/>	Individual programme (date of approval)	<input type="text"/>		
Student number	<input type="text" value="4840844"/>	Medisign	<input type="checkbox"/>		
		HPM	<input type="checkbox"/>		

SUPERVISORY TEAM

Fill in the required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

Chair	<input type="text" value="Lise Magnier"/>	dept./section	<input type="text" value="DOS, MCR"/>	<p>! Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.</p> <p>! Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.</p> <p>! 2nd mentor only applies when a client is involved.</p>
mentor	<input type="text" value="Stefano Parisi"/>	dept./section	<input type="text" value="SDE, MM"/>	
2 nd mentor	<input type="text" value="Marjolein Vendrig"/>			
client:	<input type="text" value="Bever"/>			
city:	<input type="text" value="Pijnacker"/>	country:	<input type="text" value="The Netherlands"/>	
optional comments	<input type="text" value="Marjolein Vendrig is the CMO/Marketing Director at Bever"/>			

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in by the Chair of the supervisory team

Sign for approval (Chair)

Lise Magnier

Digitally signed by Lise Magnier
Date: 2024.07.10 12:24:46 +02'00'

Lise Magnier

Name

Date

Signature

CHECK ON STUDY PROGRESS

To be filled in by SSC E&SA (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total EC

Of which, taking conditional requirements into account, can be part of the exam programme EC

<input type="checkbox"/>	YES	all 1 st year master courses passed
<input type="checkbox"/>	NO	missing 1 st year courses

Comments:

Sign for approval (SSC E&SA)

Name

Date

Signature

APPROVAL OF BOARD OF EXAMINERS IDE on SUPERVISORY TEAM -> to be checked and filled in by IDE's Board of Examiners

Does the composition of the Supervisory Team comply with regulations?

YES	<input type="checkbox"/>	Supervisory Team approved
NO	<input type="checkbox"/>	Supervisory Team not approved

Comments:

Based on study progress, students is ...

<input type="checkbox"/>	ALLOWED to start the graduation project
<input type="checkbox"/>	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Name

Date

Signature

Personal Project Brief – IDE Master Graduation Project

Name student Rychon Tokromo

Student number 4,840,844

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title Demystifying Consumer Maintenance of Technical Garments in collaboration with Bever

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

For my graduation thesis, I will be collaborating with Bever about an issue regarding the maintenance of technical garments by their consumers.

Bever is one of the Netherlands' largest outdoor sports gear stores, offering a wide range of products from various brands to outdoor enthusiasts. Their product portfolio largely consists of technical garments, such as waterproof clothing, insulating clothing, and specialty footwear, which require specific maintenance due to their materials. Unfortunately, consumers often face barriers and uncertainties in the maintenance process, leading to improper or neglected care. I aim to investigate and solve this issue during this project.

As a company that emphasizes the great outdoors, Bever feels responsible for the environment. Consequently, they provide post-purchase services, such as repair and maintenance, which could serve as a gateway for the future solution.

One constraint is that Bever sells products they do not produce themselves, so the solution developed during this thesis will be applicable only in the per/post-purchase context, and to different types of garments.

→ space available for images / figures on next page

introduction (continued): space for images

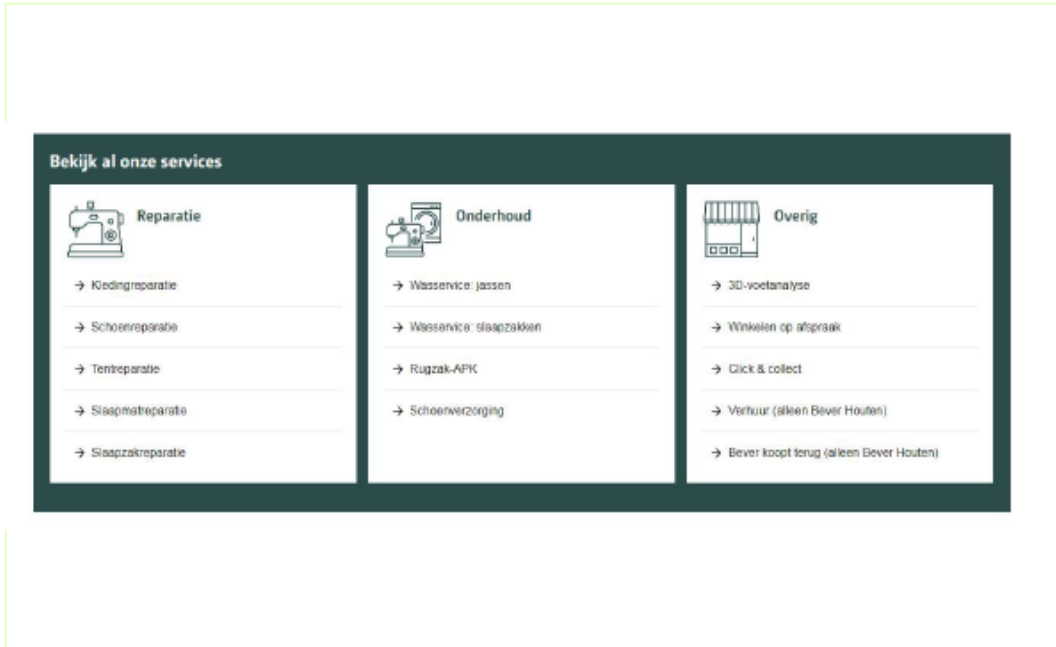


image / figure 1 Examples of post-purchase services provided by Bever via their website.

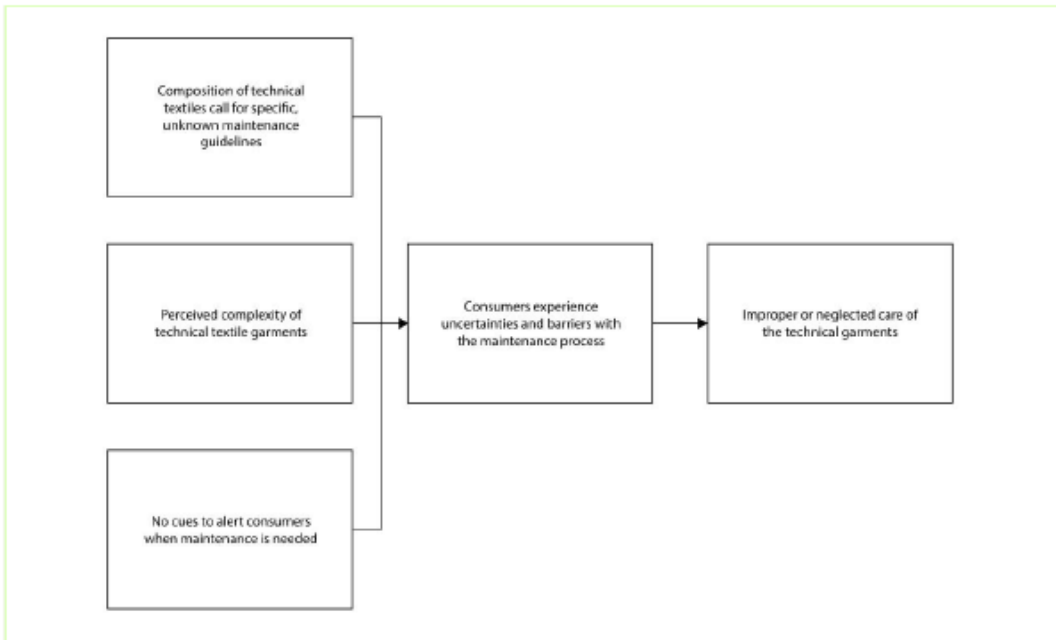


image / figure 2 The problem visualized.

Personal Project Brief – IDE Master Graduation Project

Problem Definition

*What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice.
(max 200 words)*

Technical garments offer protection against the weather and the environment. However, factors like wear and tear, dirt, sweat, and other contaminants, diminish their protective properties. So, engaging in proper care and maintenance is essential to restore these properties, and ensure a longer lifespan.

The composition of technical textiles calls for specific methods and tools to maintain them. For example, Gore-Tex is a complex membrane often treated with a durable water repellent (DWR). After prolonged use, it must be washed according to precise guidelines, and the coating must be reapplied to recover water repellency.

Due to their perceived complexity and relative novelty compared to cotton or denim garments, maintaining these products can be intimidating or unknown to everyday consumers, leading to improper or neglected care. Furthermore, detecting when maintenance is needed can be challenging.

To ensure that consumers can enjoy their technical garments as long as possible, efforts must be made to find a solution that alerts consumers when their technical garments need maintenance and simplifies this often unfamiliar process.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design a guideline/prototype to demystify the maintenance process of technical garments for Bever's consumers who buy and own technical garments in the Netherlands.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

For this project, I will be applying the triple diamond model, integrating relevant methods to converge or diverge:

- Stage 1: Researching and Analyzing (Understand consumer barriers and uncertainties through interviews and/or the Ma2E4 toolkit and applying the Fogg model, Interview Bever employees, Find action points to start conceptualizing).
- Stage 2: Conceptualizing Solutions (Ideate based on findings and action points, Concept validation, Lo-Fi Prototyping)
- Stage 3: Development & Evaluation (Elaborate the design, Hi-Fi prototyping, Evaluate with Bever's consumers, Optimize and improve the chosen concept).

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

Kick off meeting	9 Jul 2024
Mid-term evaluation	11 Sep 2024
Green light meeting	5 Nov 2024
Graduation ceremony	3 Dec 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	<input checked="" type="checkbox"/>
For how many project weeks	9
Number of project days per week	4,0

Comments:

Until september I will be working part-time, after which this will be a full-time project.

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.

(200 words max)

I was intrigued when the opportunity arose to collaborate with Bever on a sustainability issue connected to technical garments. I have had a strong affinity for fashion, sneakers, and textiles since I was a teenager, and I wanted to pursue that direction for my career. However, the textile/fashion industry heavily pollutes our world and I believe that circularity and sustainability should be inherent to clothing, which is why I am eager to start this project!

This project will be a pivotal point in my academic career. So, I want to use and test my acquired skills to create a project that can be used as leverage when applying for jobs after graduating.

During my thesis, I would like to:

- Invest myself in Consumer Behaviour (Change), by applying the Fogg model to the project for example.
- Apply Material Experience methods to the design process, such as the Ma2E4A toolkit or Material Driven Design.
- Use my analytical strengths as an IDE student to find solutions via a methodical approach (triple diamond method).
- Analyze the problem through quantitative and/or qualitative research.
- Contribute to the implementation of circularity in fashion and textiles.
- Get engaged in the physical prototyping of my design.
- Broaden my knowledge about technical textiles.

Appendix G: Consent Forms & opening statement

You are invited to participate in a research study titled: '*Analyzing Consumer Behaviour Towards Product Care of Technical Outdoor Garments*'. This study is conducted by Rychon Tokromo from the TU Delft and Bever, in supervision by Lise Magnier and Stefano Parisi from the TU Delft.

The study aims to investigate consumer behaviour in the product care of technical outdoor garments, and will take approximately **8-12 minutes**. Collected data will be used for research insights, and will be published in the Master's Thesis, available through the TU Delft repository at the end of the project. Data could also be used for future teaching purposes. Participants will be randomly selected to receive vouchers as a token of appreciation for completing the survey.

As with any online activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by presenting you an anonymous survey. No personal data, including IP addresses, will not be collected, and all data will be securely stored with limited access to the research team

Your participation in this study is entirely voluntary, and you can withdraw at any time. We ask you to truthfully answer questions about your experiences and perspectives. You may omit any questions. Contributed data can not be removed after completing the survey, as this survey is anonymous. For further questions, please use to the contact details below:

- Rychon Tokromo (Corresponding Researcher):
- Lise Magnier (Responsible Researcher):

By starting and clicking through this anonymous survey, you are agreeing to this Opening Statement and the conditions that apply to providing data for this research as previously stated above.

Appendix H: Validation test consent form & Opening statement

You are invited to participate in a research study titled: '*Analyzing Consumer Behaviour Towards Product Care of Technical Outdoor Garments*'. This study is conducted by Rychon Tokromo from the TU Delft and Bever, in supervision by Lise Magnier and Stefano Parisi from the TU Delft.

The study aims to gather your feedback about created designs and will take approximately **25 minutes**. Collected data will be used for research insights, and insights will be published in the Master's Thesis, available through the TU Delft repository at the end of the project. Data could also be used for future teaching purposes.

To the best of our ability your answers in this study will remain confidential. We will minimize any risks by presenting you an anonymous survey. Personal data will not be collected, and all data will be securely stored with limited access to the research team

Your participation in this study is entirely voluntary, and you can withdraw at any time. We ask you to truthfully answer questions. You may omit any questions. Contributed data can not be removed after completing the survey, as this survey is anonymous. For further questions, please use to the contact details below:

- Rychon Tokromo (Corresponding Researcher):

- Lise Magnier (Responsible Researcher):

Tick this box below if you agree to this Opening Statement and the conditions that apply to providing data for this research as previously stated above.