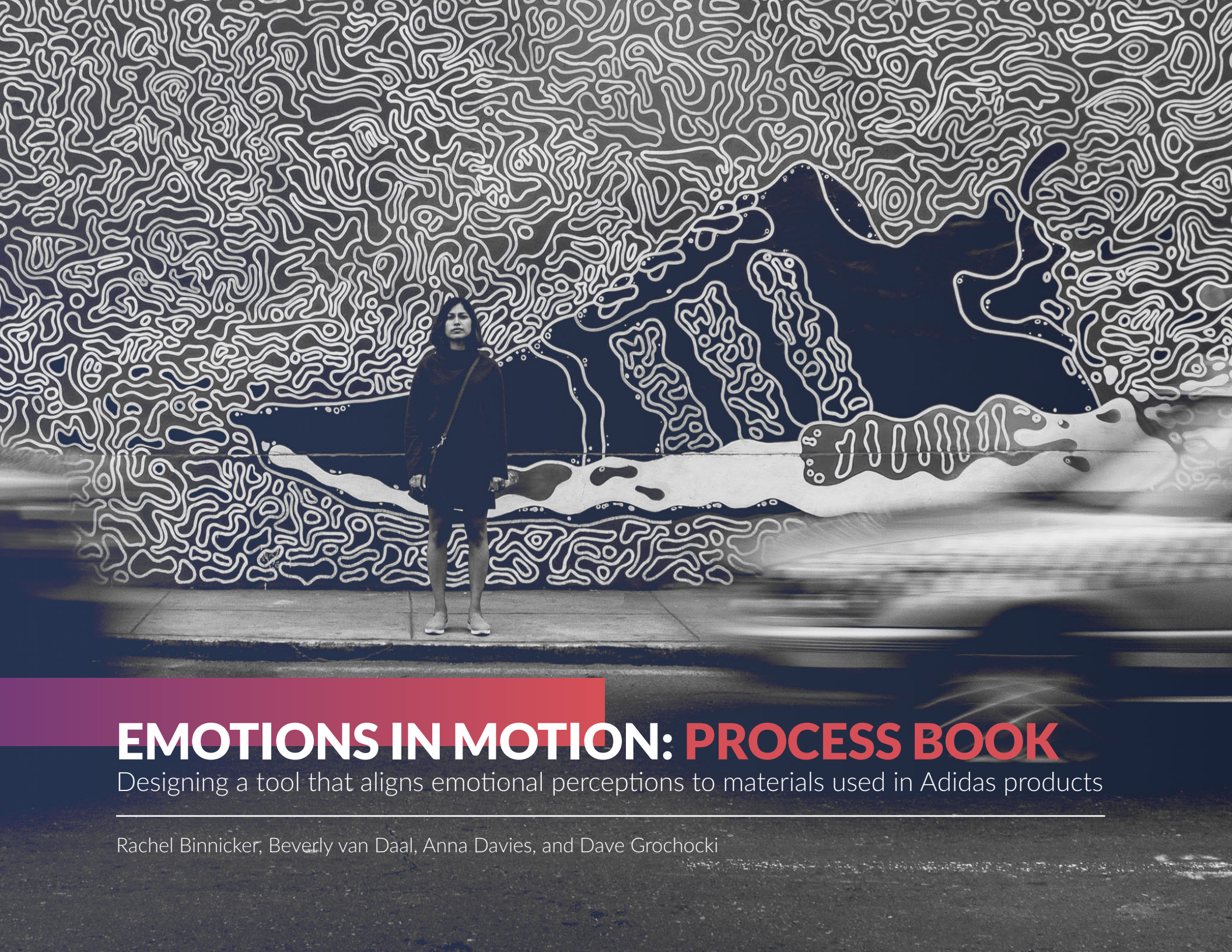


EMOTIONS IN MOTION: PROCESS BOOK

Designing a tool that aligns emotional perceptions to materials used in Adidas products

Rachel Binnicker, Beverly van Daal, Anna Davies, and Dave Grochocki

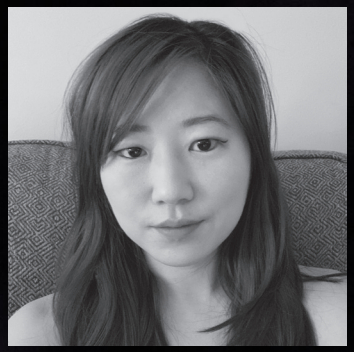
CONTENTS

ABOUT THIS PROJECT

Adidas shoe designers are looking for a tool that enables them to see the relationships between material properties and human emotional responses.

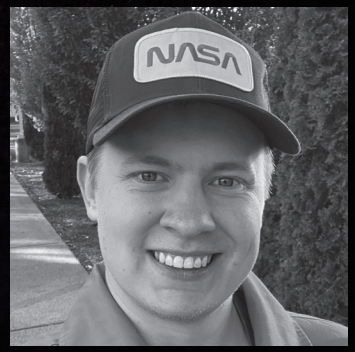
THE TEAM

RACHEL works as a User Experience Researcher for the company 98point6 where she uses both quantitative and qualitative research methods for formative and evaluative user research to drive product designs. She has experience working as a member of a cross-functional design team and contributing data driven insights to designs.



BEVERLY is a UX Writer at Microsoft who leverages content and design to deliver new features and in-app experiences that release across all versions of Excel to nearly a billion users worldwide. Previous to Excel, she worked on Visio and also the lifecycle experience for all of Office for Mac and mobile.

ANNA works as a UI/UX designer at Microsoft, tasked with designing solutions for productivity spaces in Microsoft Office. While she has a focus on user experience and interface design, she has also worked in graphic print/web marketing, branding, and event promotion.

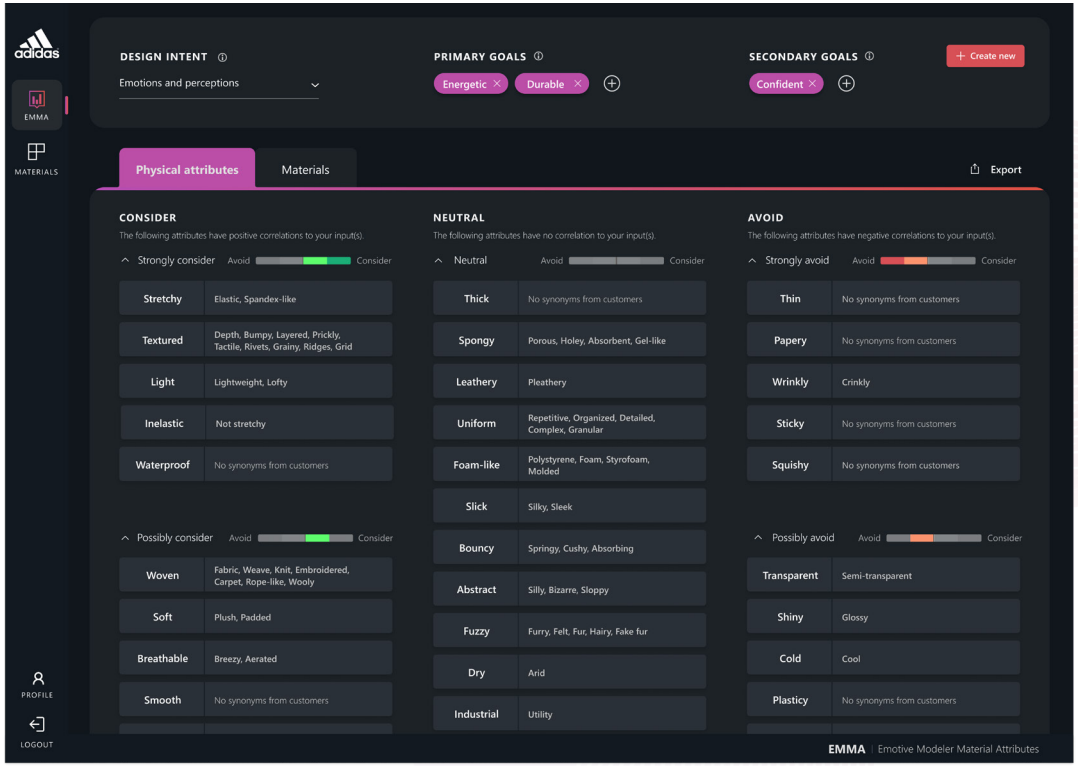


DAVE works as a Senior Program Manager at Microsoft working on the first-party apps that ship with Windows. He partners closely with user research, design, and engineering teams to add new features to existing apps and build new apps across different device form factors. Previously, he worked as a software engineer with more than 15 years experience.

Executive Summary

This project sought to create an understanding of the intrinsic, subjective, and emotional responses to different materials and their relationship to various material attributes. Adidas has an existing materials selection process, but the decisions are up to the discretion of their shoe designers and engineers. We attempted to quantify the emotive perception of materials in order to help Adidas shoe designers and engineers make informed, research-driven decisions to indirectly increase consumer satisfaction.

Through a systematic approach, the aim was to connect subjective emotive responses with objective material properties. This project resulted in an internal tool for Adidas employees intending to help shoe designers in making informed decisions based on research when designing new shoes. Our primary target audience was Adidas designers who would be using the tool, but we are indirectly serving Adidas consumers, who will hopefully benefit from both the research we have conducted and the tool we built for designers to build better products.



THE PROBLEM

Adidas designers and engineers rely on intuition to select materials for new shoe designs. To help increase customer satisfaction, shoe designers and material engineers want to use an evidence-based framework for material selection.

RESEARCH QUESTIONS

What are the emotive responses evoked by sensory interactions with various materials?

GOAL

Explore and develop an understanding of the intrinsic, subjective and emotive responses to various materials used in shoe design.

How might we better connect these emotive responses to the material attributes in shoe design?

GOAL

Analyze and distill the research of subjective emotional responses and their objective material attributes into a quantifiable framework.

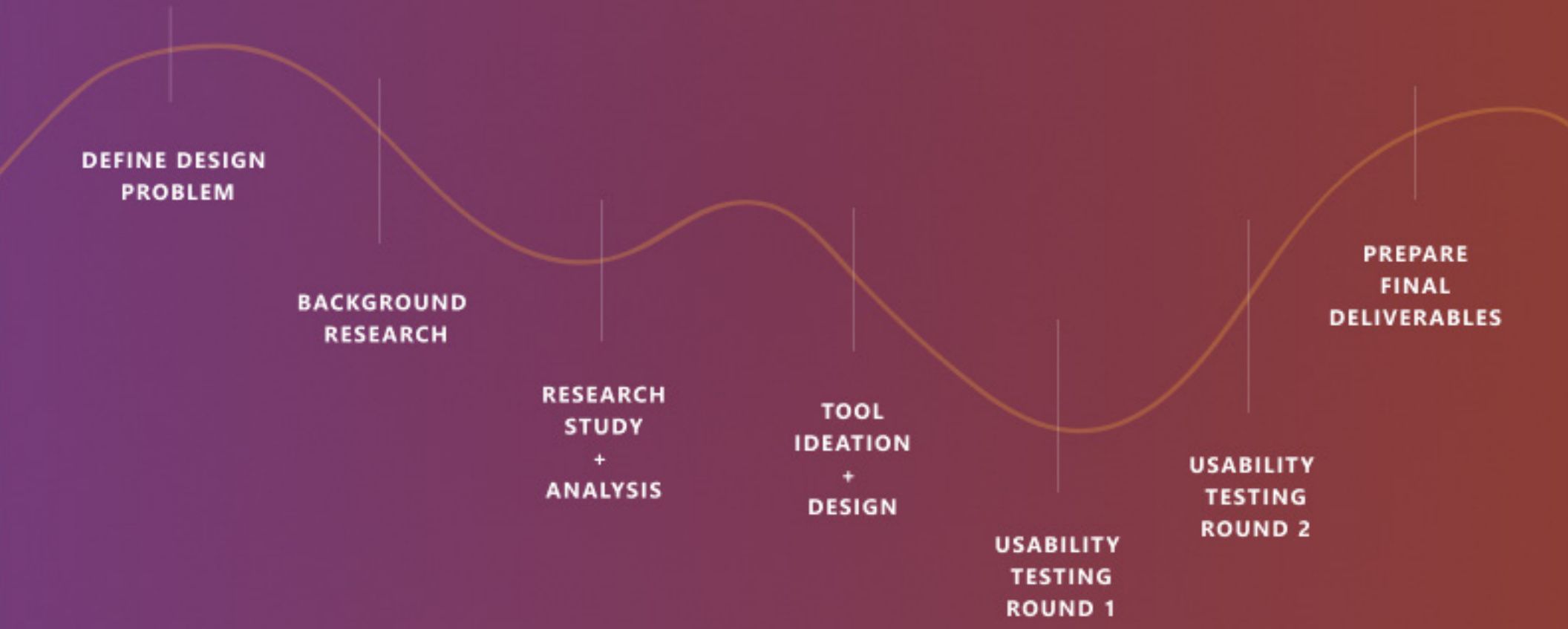
How can we design a tool that can help guide Adidas designers in selecting materials based on emotional personality, as opposed to strictly material properties?

GOAL

Create an internal tool for Adidas employees that will help shoe designers in making informed decisions based on research when designing new shoes.

OUR PROCESS

PART II: **DESIGN**



PART I: **RESEARCH**

PART I : CONSUMER RESEARCH

The first half of our project was focused on research. In order to build a tool for Adidas designers, we had to develop a recommendation algorithm based on how consumer emotionally respond to various materials, so we conducted a material research study to gather the necessary data to serve as the basis for these recommendations. Prior to this study, we conducted background research to inform the study design.

Background Research

We first conducted background research to gain an understanding of the current landscape of footwear design, and to investigate techniques used in similar studies on human emotional responses. This background research helped us to design our consumer material study.

Literature Review

A literature review was completed to better understand the way emotive frameworks are currently being used across all domains—not limited to just the shoe and apparel industry. The literature review served as a deep dive into the existing knowledge of emotive responses to materials and their properties. We looked at the ways material properties and form factors have historically influenced shoe design as well as the current process in hopes to reveal any challenges with the system today.

Specifically, a study conducted by MIT researchers explained the need for a deeper understanding of the emotional response to materials. The author discusses how designers are responsible for the interpretation of products, which is determined by their emotional responses to materials. This was motivation for our focus on consumer research for the first half of this project.

We found resources through a toolkit created by the Materials Experience Lab that provided guidance for our study design. This toolkit was an excellent starting point for our research. Because the toolkit, which included a word bank and notetaking guides among other materials, was created based on evidence, we were able to confidently design our research study using the toolkit as a model.

Comparative Analysis

A comparative analysis is an opportunity to learn if and how other companies in industry as well as across other domains are using emotive frameworks to help guide design decisions. This analysis looked at the differences in footwear material between Adidas and competitors, specifically in the athletic apparel industry. The broader goal of the comparative analysis was to better understand the industry and to learn how Adidas designs fit into the larger landscape.

From the comparative analysis we learned that while many other companies, such as Nike, have developed robust material classification systems, their systems do not take into account emotional responses. This was further motivation for our project, as it allows Adidas to get ahead of the competition.

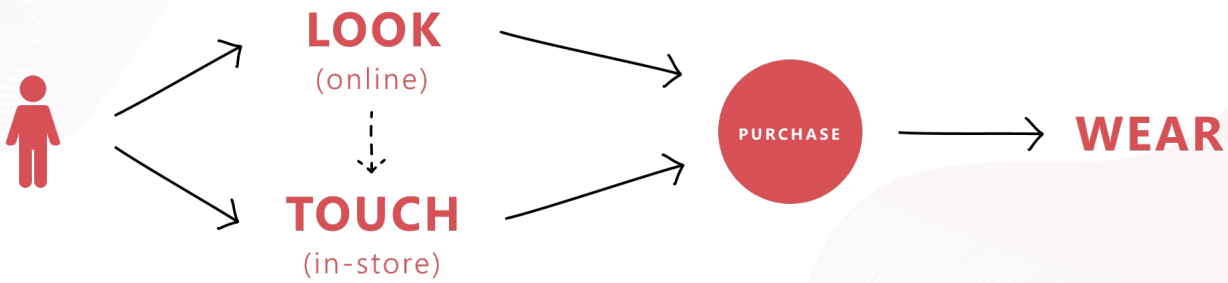
Consumer Trends Analysis

Trend Hunter is a leading research and data firm that tracks consumer trends across different industries. This analysis summarized a snapshot which highlights individual shoes that were trending in the market at the time of our study. While the individual shoes were not interesting in themselves, trending materials and build characteristics along with the associated feelings and emotions they invoked were noteworthy.

Physical Material Study

The study consisted of both an **online survey** and an **in-person two-part physical material study**. As part of the study, we used a set of materials supplied by Adidas used by their designers and represented a variety of physical properties. We also generated a list of emotional responses to serve as a word bank compiled from both the MaE24 toolkit word bank and a list of emotional responses generated by Adidas.

Based on discussions with our sponsors at Adidas, we decided to design the online survey and material study with the typical consumer purchasing flow in mind. That is, a customer might view a shoe online first, then go to the store to touch it and see it in person, and then either purchase or try it on. For our physical material study design, we decided to emulate this by gathering emotive perceptions from our participants via an online survey first, and then having them complete the in-person material study.



Mechanical Turk Survey

We also conducted a mass online survey leveraging the Amazon Mechanical Turk platform. The purpose of this survey was to understand how consumers respond to visually examining different materials. We leveraged the taxonomy we derived from the in-person material study, but the goal here was to better understand how the visual interpretation of materials alone impacted emotional responses. With online shopping, consumers' initial impressions increasingly rely on how they first respond to seeing the product, so understanding similarities and differences in how consumers might visually perceive a product before trying it on is important to consider. The insights from this additional analysis were included in the algorithm that resulted from this research.

Participant Online Survey

Prior to the in-person study, our participants each completed an online survey. In the survey, participants were shown an image of each material and were asked to imagine they were purchasing activewear online and came across an item that contained the material.

They were then asked two questions about each material:

1. In one or two words, how does this material make you feel?
2. Please select up to three words from this list that you most associate with this material.

In-Person Material Study

Participants who completed the survey were scheduled for a two hour in-person session where they completed a two part study.

Part One

In part one, participants were shown one material at a time and given time to play around with each. For each material, when the participant was ready, they were asked the following two questions one at a time:

1. Please describe how this material physically feels.
2. Please describe how this material makes you feel.

Researchers allowed the participant to spend as much time and voice as much feedback about a material as they wanted to. Next, the participants were shown a word bank, and were asked to select up to three words that they most associated with the material. This process was repeated for each of the 39 materials.

Part Two

In part two of the study, the materials were laid out in a grid in front of the participants. Researchers went through the word bank from part one of the study and asked participants to select the one material they most associated with each word.

The goal of this exercise was to determine what words may have changed from viewing the material online to feeling it in person.

Study Findings and Outcomes

The results of this research were two-fold. First, there were several interesting findings, some of which influenced the way we built and designed the tool, and some that were passed along to Adidas to consider when integrating this tool into their existing tools and processes. Secondly, the research results were used to create the algorithm that the tool surfaced the results of.

Key Findings

Certain material attributes had strong correlations to specific emotive responses

7/7 participants (100%)

Some correlations between material properties and emotional reactions were stronger than others, with the strongest correlations as:

Soft-Relaxed (24)
Strechy-Curious (23)
Stretchy-Comfortable (22)
Stretchy-Energetic (19)
Squishy-Comfortable (18)

Emotive responses differed from visual only to tangibly touching materials

7/7 participants (100%)

We found that participants oftentimes had different feelings about the materials when physically interacting with them than they did in the initial visual only online study. The most common reason cited for this discrepancy was that the picture did not accurately depict the material.

Color had an impact on perception of materials

7/7 participants (100%)

Participants explicitly noted their reactions to the color of some materials when asked how a material made them feel. When color was referenced, it had a tendency to be particularly polarizing, with participants responding either really positively or really negatively to specific colors.

Participants had both emotive responses and perceptions of materials

5/7 participants (71%)

Participants had trouble discerning their feelings about the materials from the way they perceived the materials, and oftentimes responded with how they thought they would use the material or what they thought the material was made of or used for.

Participants often used combined antonyms to describe material attributes and emotive responses

7/7 participants (100%)

Participants used opposite words when conveying different perceptions, like “firm but soft”, and during the free form portion, there were several instances in which participants never considered certain emotive responses, but upon being presented with the word bank, they chose certain patterns of words.

Emotive responses and perceptions are impacted by material form factor

5/7 participants (71%)

We found that participants were not able to generate emotional responses without thinking about what the material would be used for. Knowing that a material was for use in a shoe biased that participant to react more positively as they were able to think of an application.

Participants emotions were impacted by their personal histories

3/7 participants (43%)

Many responses to materials seemed to be linked to the past experiences that a participant related to a given material. Participants often told stories about a time when they interacted with a material similar to the ones they were being shown.

The Recommendation Algorithm

The raw data was first sanitized by removing all pieces of feedback that were not strictly descriptor or emotional responses. We also removed all conversational and anecdotal responses from the data. This left us with a list of physical attributes and emotional responses, perceptions, and feelings.

The second step in the data analysis was to normalize, or code, the data. The goal of this step was to create a single list of physical attributes and emotional responses that was consistent across all participants. The coded data was then analyzed to determine relationships between material attributes and emotional responses.

In order to compare and contrast different materials, emotions, and physical attributes, we needed to normalize our data. With these normalized scores, we were able to produce visualizations that could be used to better understand the relationships between materials and their physical attributes and emotional responses.

	How does the material feel?					How does it make you feel?			Word bank		
A1	Flexible	Thin	Rubbery	Spongy		Mediocre	Hostile		Disappointment	Stability	
A2	Soft	Flexible				Cozy	relaxation		comfort	relaxation	security
A3	Fuzzy	Mesh	Rough	Smooth	Spongy	performance	relaxation	comfort	lively	performance	confidence
A4	Natural	Spongy	Sturdy	Rough	Manmade	Mediocre	Hostile				
A5	Soft	Smooth	Stretchy			comfort	Light	relaxation	Comfort		
A6	Thin	Foam-like	Squishy	Firm	Bouncy	curiosity	comfort	Cozy	curiosity	performance	comfort
A7	Plasticy	Rubbery	Smooth	Waterproof	Thin	Functional	Mediocre		performance		
B1	Thin	Soft	Smooth	Light	Flexible	relaxation	comfort	Light	comfort	relaxation	
B2	Rigid	Spongy				Cozy			natural		
B3	Thin	Rigid	Manmade	Plasticy	Rubbery	Mediocre	curiosity	performance	Curiosity	performance	
B4	Soft	Heavy	Light	Rubbery	Manmade	Mediocre			performance		
B5	Spongy	Sturdy	Rough			Mediocre	Hostile				
B6	Mesh	Stretchy	Rough	Manmade	Light	Dislike	Uncomfort	Hostile	disappointment	relecitance	
B7	Papery	Plasticy	Matte	Waterproof		curiosity	Happy	Edgy	Curiosity	curiosity	
C1	Heavy	Foam-like	Firm			Functional	curiosity	Mediocre	performance		
C2	Breathable	Bouncy				comfort	performance		curiosity	performance	
C3	Flexible	Thin	Rubbery	Spongy		Mediocre	Hostile	Happy	confidence		
C4	Manmade	Furry	Rough	Thick		Playful	confusion	Uncomfort	disgust	reluctance	
C5	Firm	Breathable	Flexible	Bouncy		curiosity	Mediocre		curiosity	curiosity	
C6	Natural	Flexible	Thin	Rubbery	Spongy	Mediocre	Hostile		natural		
C7	Manmade	Woven	Smooth	Soft		comfort	Cozy	relaxation	comfort	relaxation	
D1	Soft	Spongy	Rubbery	Flexible	Bouncy	comfort	Lively	Happy	comfort		
D2	Textured	Thin				Happy	curiosity		curiosity		
D3	Woven	Papery	Smooth	Waterproof	Shiny	Adventurous	curiosity	performance	sleek	curiosity	performance
D4	Foam-like	Soft	Squishy	Flexible		comfort			comfort		
D5	Thin	Soft	Stretchy	Fuzzy		Happy	comfort	Light	comfort	relaxation	
D6	Leathery	Shiny				disgust	Luxurious		disgust	reluctance	
E1	Textured	Light				Happy	comfort	Cozy	comfort	security	
E2	Rigid	Sturdy	Spongy			Hostile					
E3	Manmade	Flimsy	Shiny	Matte	Stretchy	Fake	Lively		lively		
E4	Stretchy	Mesh	Soft	Light	Breathable	Happy					
E5	Smooth	Rigid	Firm			Mediocre	Dislike				
E6	Stretchy	Thin				comfort	performance	Lively	comfort	lively	
F1	Foam-like	Squishy				Functional	Mediocre		performance		
F2	Thin	Stretchy	Manmade	Woven	Abstract	Mediocre	comfort	Cozy	curiosity	performance	
F3	Thick	Woven	Mesh	Rigid	Breathable	Mediocre					
F4	Stretchy	Woven	Rough	Manmade	Textured	Mediocre	relaxation	Lively	comfort		
F5	Foam-like	Squishy	Bouncy	Firm		comfort	Mediocre		comfort		
F6	Sturdy	Rigid	Woven	Smooth	Rough	confusion	Hostile		disappointment		

While the visualizations in themselves provide interesting insights into these relationships in isolation, they do not capture the complexities of combining multiple materials together, so we created a basic recommendation algorithm to help with this. We calculated a weighted average score based on the inputs characteristics being designed for, taking into account the primary and secondary attractors and detractors as well as the global attractors and detractors.

PHYS ATTRIBUTE	Prima	Auxili	Prima	iary D	SCORE
Stretchy	62.50	66.67	0.00	50.00	0.510
Textured	81.58	0.00	0.00	50.00	0.487
Light	49.34	50.00	0.00	50.00	0.370
Soft	94.74	66.67	75.00	0.00	0.315
Breathable	55.92	16.67	25.00	25.00	0.211
Inelastic	35.53	0.00	0.00	25.00	0.204
Waterproof	28.29	16.67	0.00	25.00	0.191
Woven	32.89	0.00	0.00	25.00	0.184
Rubbery	23.03	0.00	0.00	0.00	0.173
Spongy	13.16	16.67	0.00	0.00	0.140
Leathery	12.50	16.67	0.00	0.00	0.135
Rough	21.05	83.33	25.00	25.00	0.116
Slick	15.13	0.00	0.00	0.00	0.113
Firm	18.42	33.33	0.00	50.00	0.096
Abstract	5.26	16.67	0.00	0.00	0.081
Smooth	18.42	16.67	0.00	50.00	0.055
Bouncy	2.63	33.33	0.00	25.00	0.041
Fuzzy	5.26	0.00	0.00	0.00	0.039
Mesh	7.89	16.67	0.00	25.00	0.038
Uniform	10.53	33.33	0.00	50.00	0.037
Dry	2.63	0.00	0.00	0.00	0.020
Industrial	0.00	0.00	0.00	0.00	0.000
Natural	0.00	0.00	0.00	0.00	0.000
Worn	0.00	0.00	0.00	0.00	0.000
Matte	0.00	0.00	0.00	0.00	0.000
Dirty	0.00	0.00	0.00	0.00	0.000
Manmade	7.89	0.00	0.00	25.00	-0.003
Thick	48.68	0.00	25.00	75.00	-0.010
Flimsy	0.00	0.00	0.00	25.00	-0.063
Foam-like	15.79	0.00	0.00	75.00	-0.069
Plasticy	32.89	0.00	50.00	0.00	-0.128
Heavy	10.53	16.67	25.00	25.00	-0.129
Sturdy	18.42	16.67	25.00	50.00	-0.133
Flexible	40.13	50.00	75.00	0.00	-0.137
Transparent	5.26	0.00	25.00	0.00	-0.148

Primary	Energetic	Durable
Auxiliary	Balanced	
Primary Detractor	Cheap	Unsupported
Auxiliary Detractor		

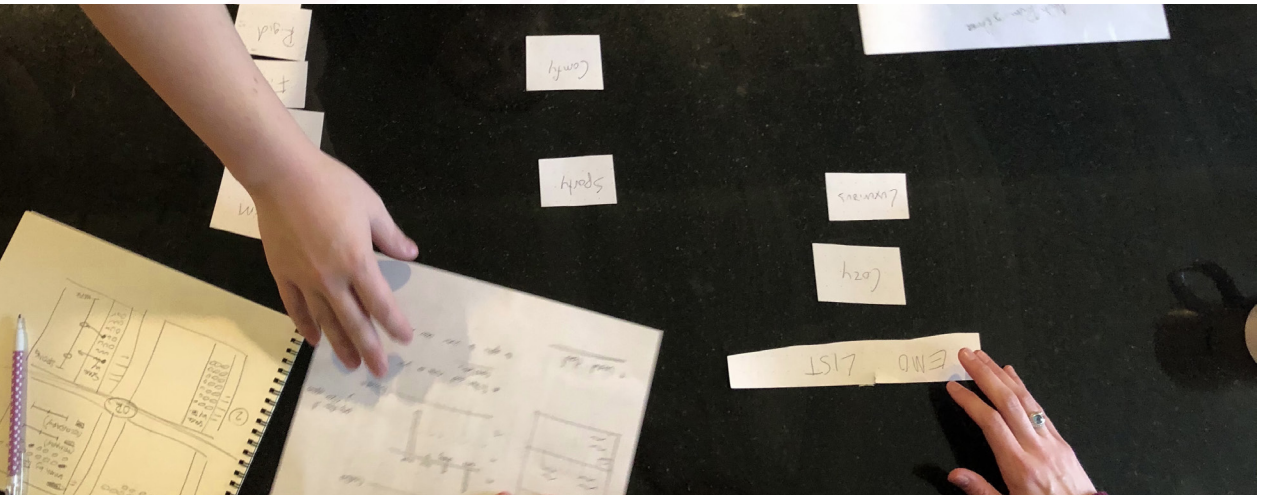
In this example, Energetic Durable, and Balanced are the inputs that result in these correlated physical attributes.

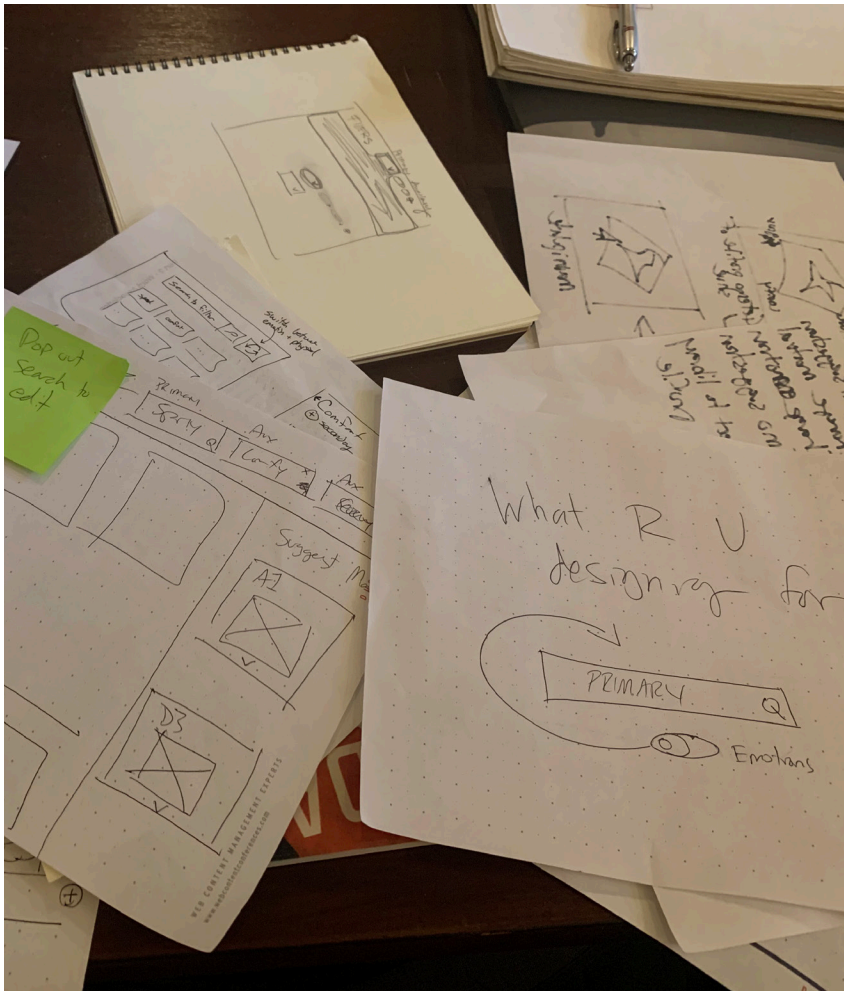
PART II : DESIGN + USABILITY STUDY

The second part of this project consisted of designing and testing a tool that would surface the data from the research in part 1. The goal of this tool was to communicate the findings and output from the consumer research in a way that was usable for Adidas designers. To create the tool, we started with the algorithm that generates correlated emotive perceptions or material attributes based on the design inputs. Using this model, we used paper prototyping techniques to generate ideas for the initial wireframe. Then we created a low-fidelity prototype that we tested with Adidas designers and engineers. Through two rounds of usability testing and iteration, we created a final, high fidelity prototype.

Ideation & Paper Prototyping

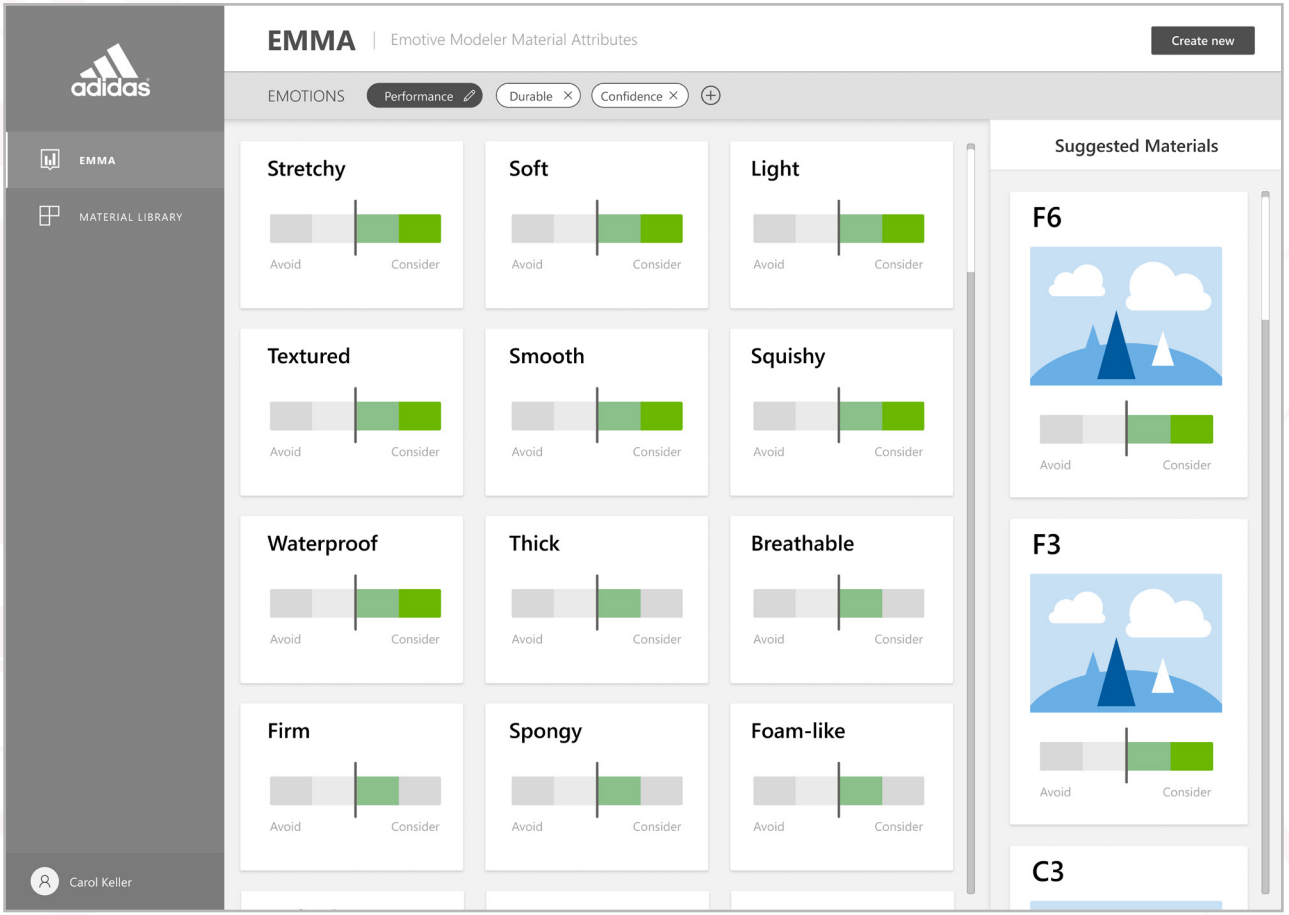
To start the design process, we first sketched out ideas for the tool. These sketches were based on the results of a written interview we had Adidas designers complete. This gave us insight into the process of designers. Each team member sketched on their own and we came together to review our sketches and decide which elements of each design we wanted to use. From there, we began paper prototyping to decide on the layout of the main screens and the main input method for the tool.





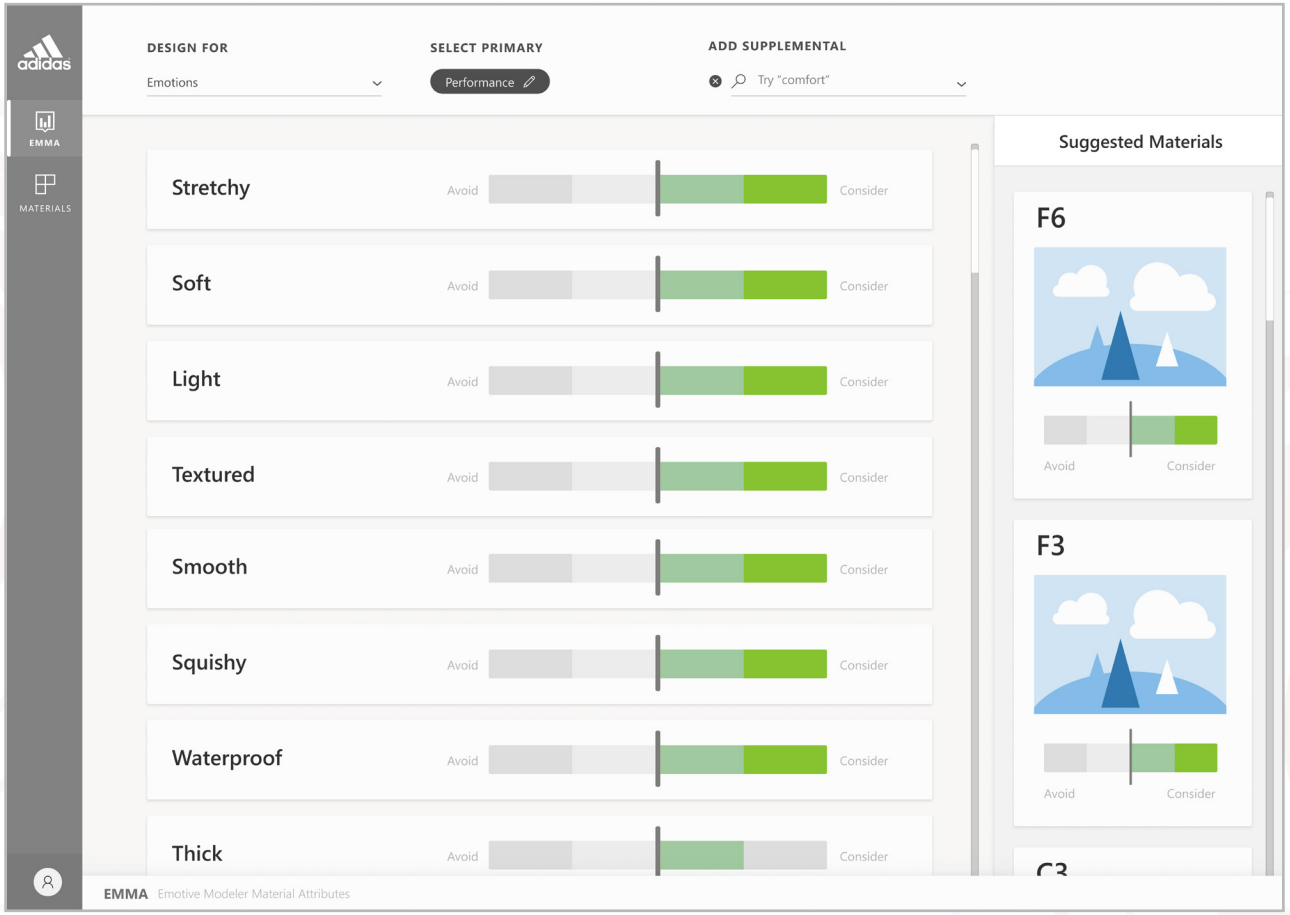
Initial Wireframes

After we consolidated ideas and ran through a hero scenario, we found that we had two different versions of the tool that we wanted to test. The paper prototypes were recreated into wireframes in Figma with placeholder images and assets so that we could test them virtually with Adidas designers.



In version A, we opted for a rectangular card view that enabled a user to see more.

In version B, we used a list view that implied a hierarchy to the results shown.



Usability Study Round 1

For this round of usability testing, we tested Version A and Version B of our initial wireframe prototypes. We ran moderated studies with Adidas designers and engineers remotely over Microsoft Teams. There were six participants for this round. Due to the condensed nature of the capstone project, we decided to approach this inital usability study as a task-based usability study with a user research-oriented interview. The goal of this round of testing was to get initial feedback on the tool concept and the content being delivered to the users.

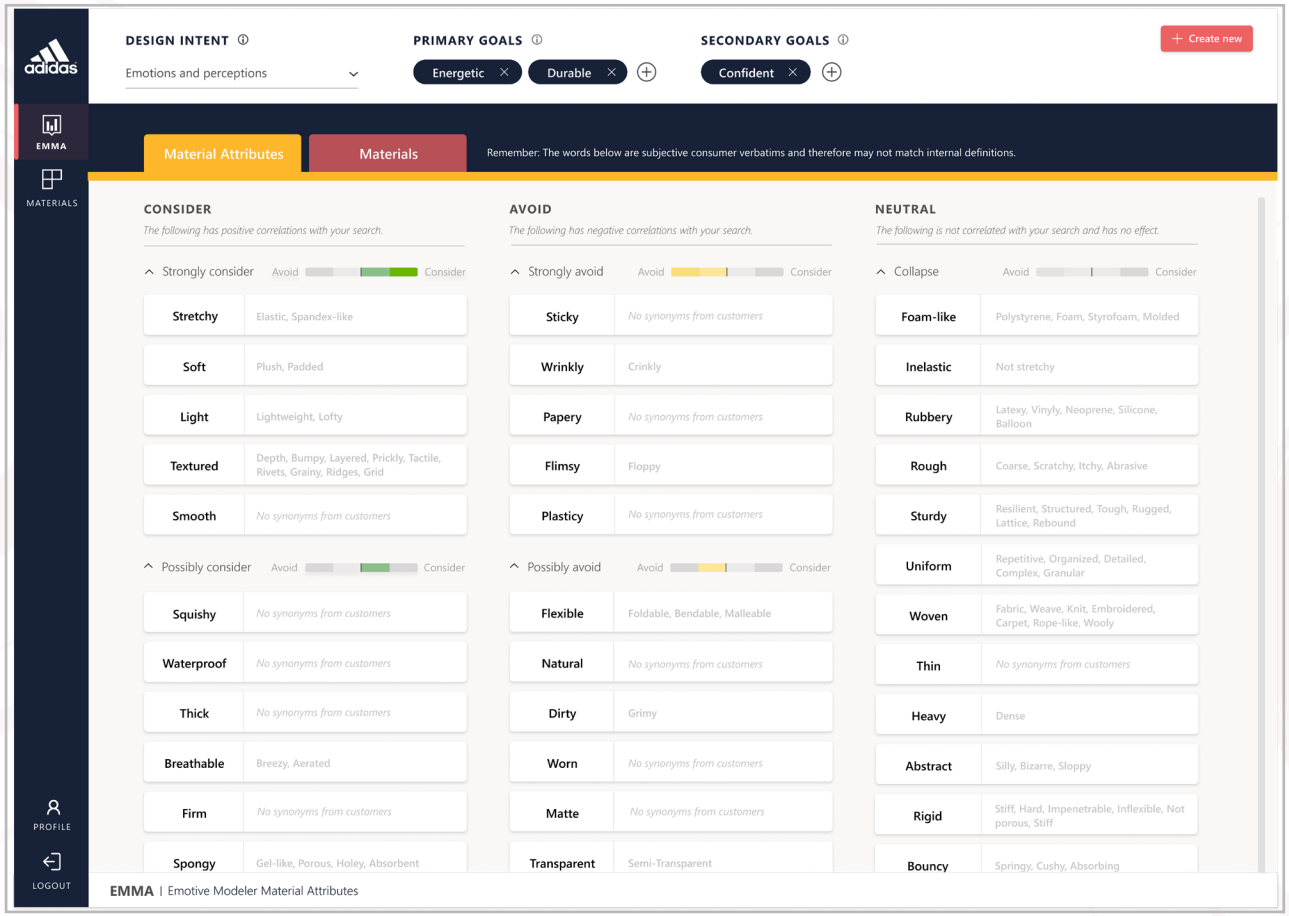
Top Findings for Round 1

- The distinction between emotion and material property differs from consumer to user.
- Participants wanted the ability to adjust the weights of their inputs.
- Participants struggled to add supplemental inputs.
- Participants were unsure how to get started with the tool.
- The graph is not usable at this fidelity.
- Not all of the information on the material detail card was useful or scalable.
- User role determines what needs to be a priority in this tool.
- Users expected to be able to explore the connections between different emotions and material attributes.
- Engineers expected to be able to filter the materials section of the report by engineering spec.
- Technical users wanted to better understand the underlying data and recommendation algorithm.

The results from this round of testing led us to move forward with one version of the tested prototypes, and resulted in a list of recommendations based off the findings for incorporation into the second iteration of the tool.

Iteration Based on Feedback

After the first round of testing, we discussed the findings and recommendations and determined how the changes would be realized in the second iteration of the prototype. We used sketching methods to play around with different ideas. Once decided on, the features and changes were made in the Figma prototype. For this iteration, the prototype fidelity was increased in order to start gathering feedback on visuals and other UI. The fidelity of the graphs was a specific focus of this iteration, so that we could get more accurate feedback about their usefulness. We also added more color and focused on updating the typography in this iteration.



We began to experiment with color language to further differentiate elements in the UI.

Usability Study Round 2

The next round of testing was on a more refined, higher fidelity, prototype. For this round of usability testing, we ran unmoderated studies with Adidas designers and engineers remotely using Validately, an online usability testing tool. Five of the six designers and engineers who participated in the first round of testing participated in this second round. This was a task-based usability study and the goal was to find any remaining usability issues and validate changes made after the first round of testing. The findings from this round of testing led to tweaks and changes in the final prototype.

Top Findings for Round 2

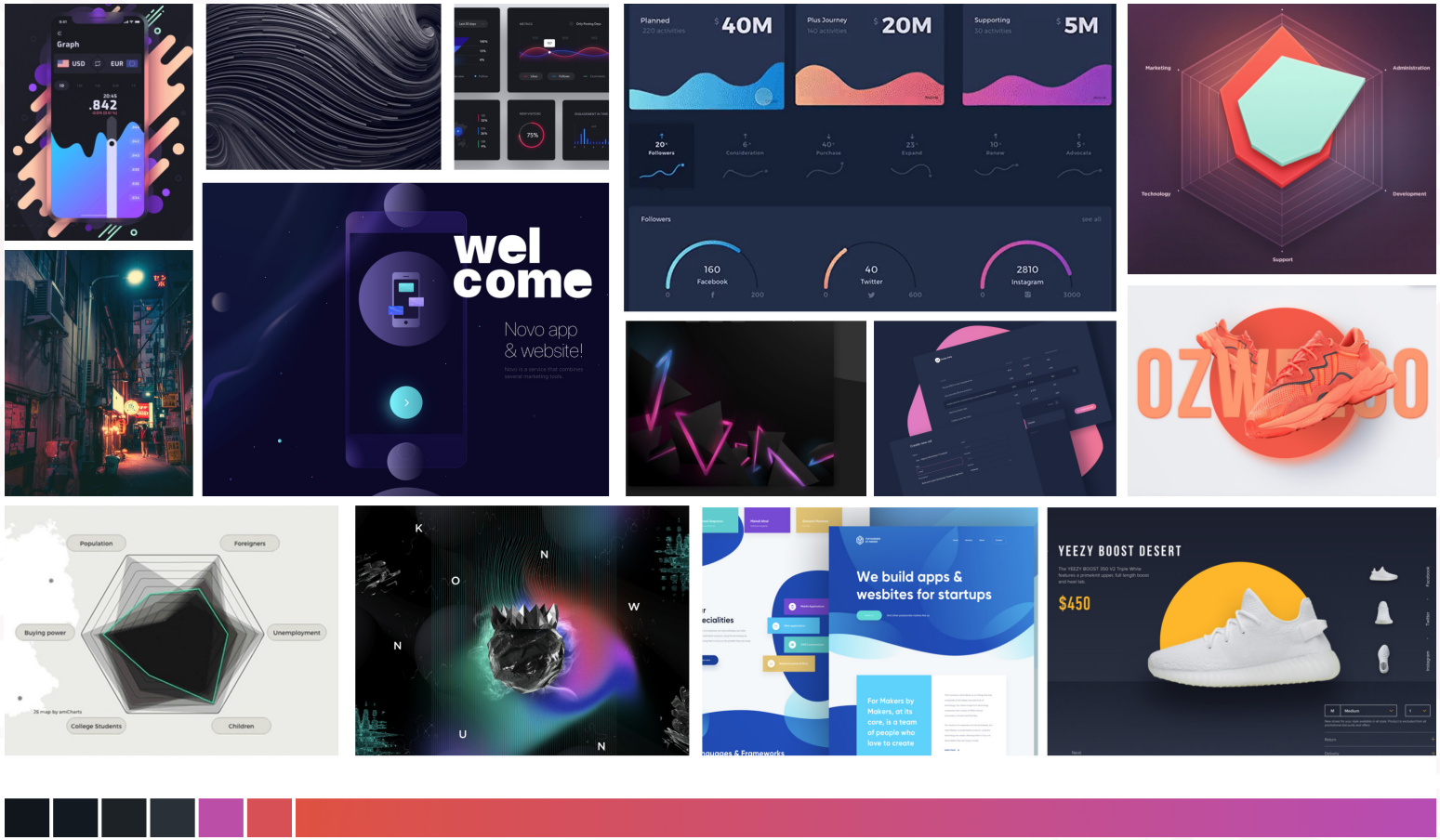
- Related attributes section of cards was confusing for participants.
- Participants want more confidence in the tool by seeing how the underlying data is achieved.
- Participants want the ability to export or save their queries.
- Participants associated a hierarchy with the left to right column presentation
- Participants were not able to distinguish the columns at a glance.

FINAL PROTOTYPE

After the second round of testing, we took the more focused set of findings and recommendations and made some final tweaks to the prototype. Changes included making content on the material and material attribute cards easier to understand, updating the layout of recommendations to reinforce the order of strength of the recommendation, and a number of smaller quality-of-life improvements to address use cases brought up by participants. With the user experience finalized, we turned our focus to visual design explorations.

Visual Design Explorations

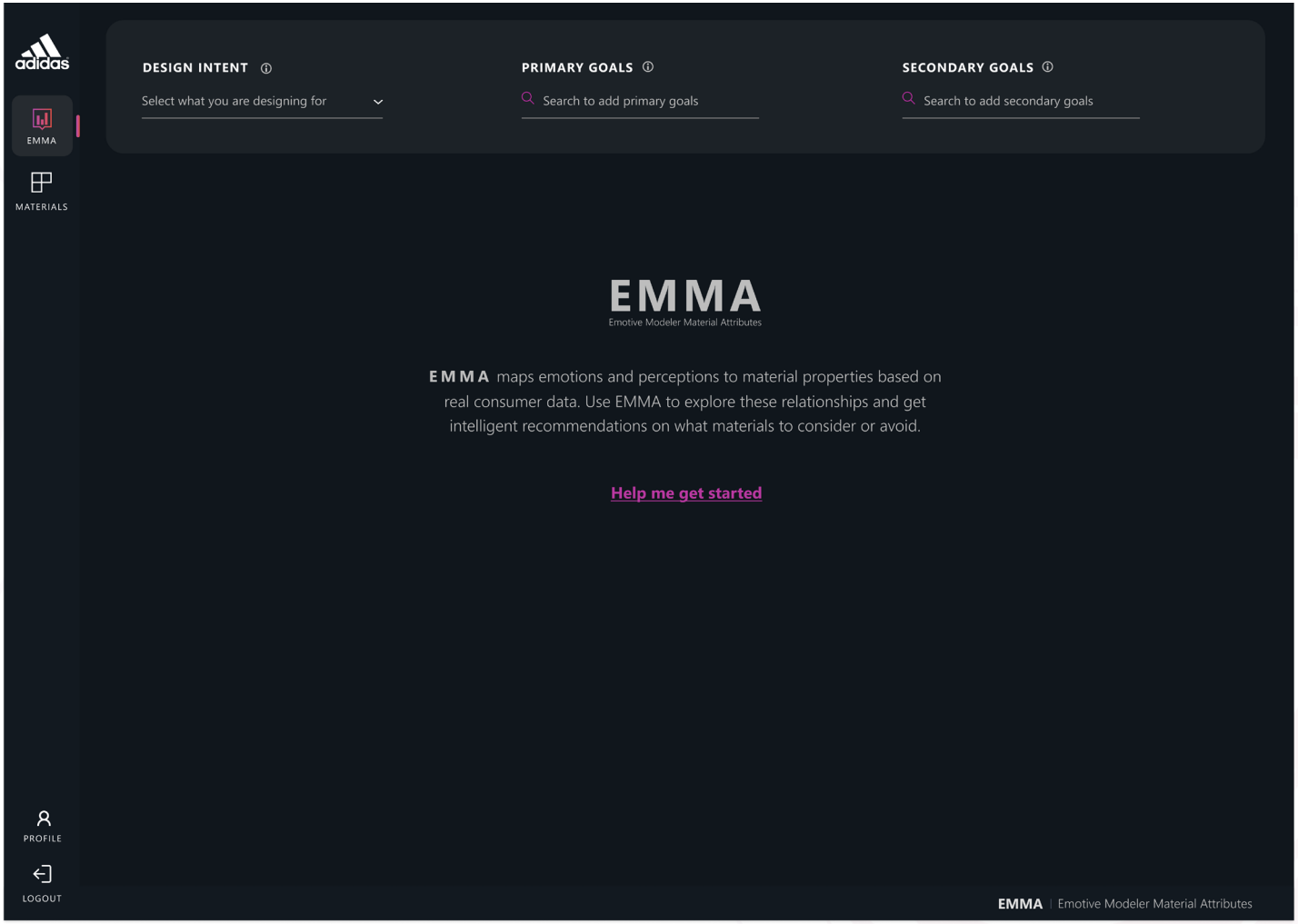
To determine the visual direction we wanted to take with this prototype, we took some time to explore different visual treatments. We started by creating a mood board containing different interface options that we thought would work well in our tool. After discussing this mood board together, we added some of these visual elements to our prototypes. We ended up with a few different versions and came together to discuss the elements from each we wanted to include in the final prototype. These visual updates were incorporated into the final prototype to create the high fidelity tool we handed off to Adidas.

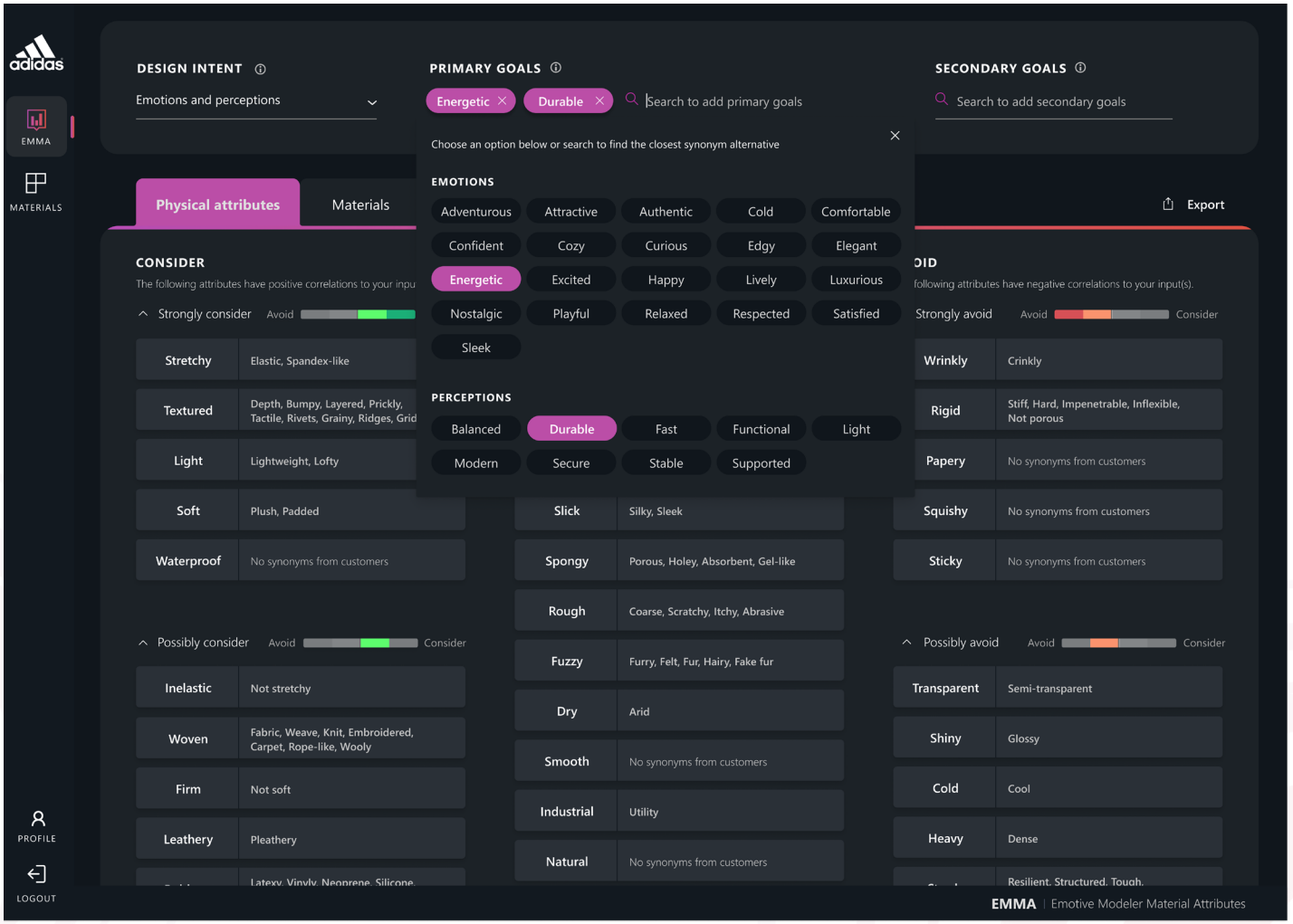


The Final Prototype

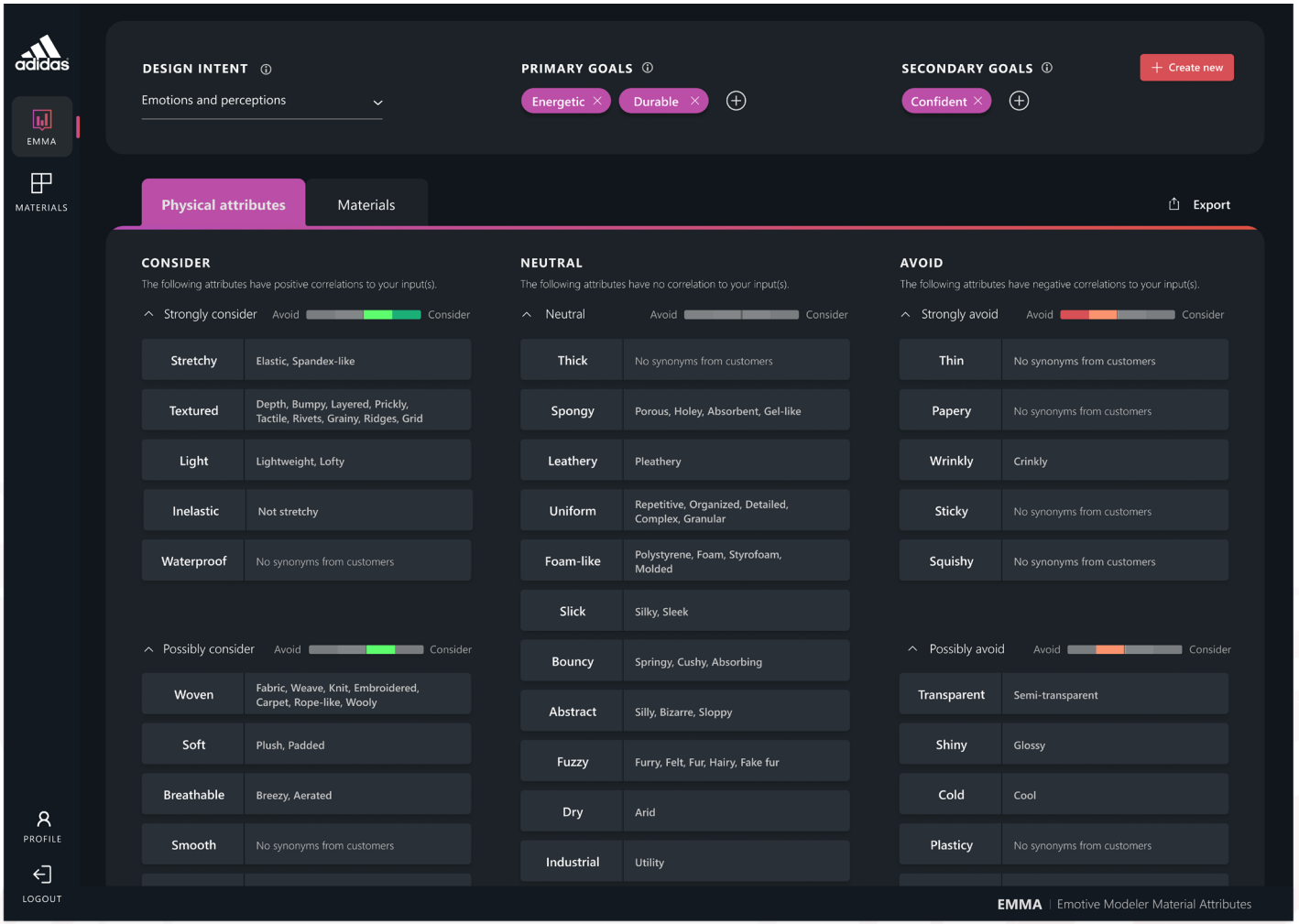
With the final user experience defined and our desired visual design direction understood and applied to our prototype, we present a select set of screens from our final high-fidelity prototype, EMMA, or the Emotive Modeler Material Attributes tool.

EMMA starts with a helpful first-run experience that was added as the result of our finding that participants initially struggled with understanding inputs.

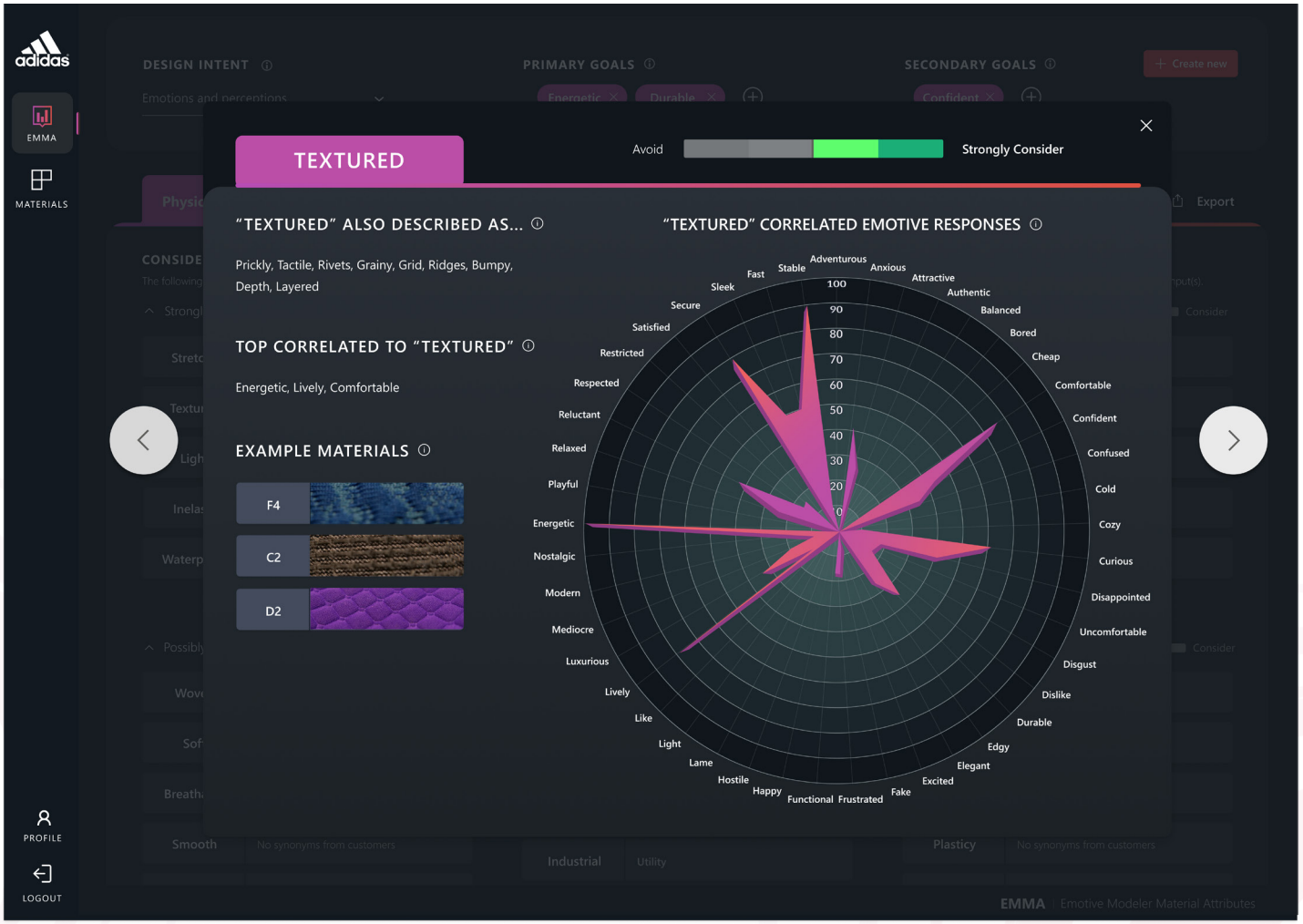




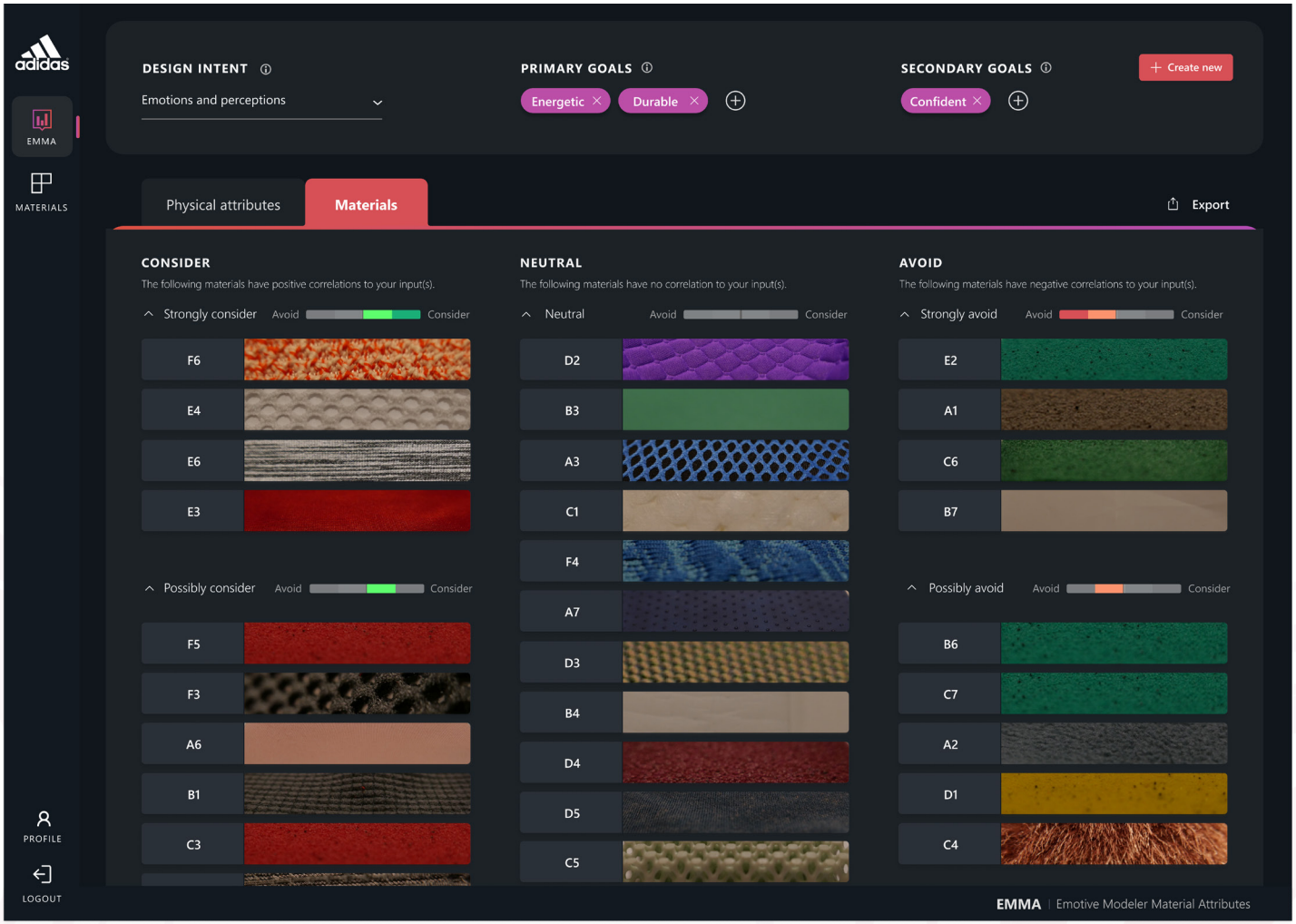
The tool's header focuses on user input. Well-known UI patterns were used to encourage multiple inputs at once, as this was confusing during earlier usability studies. The input header is always visible, so users can quickly modify queries.



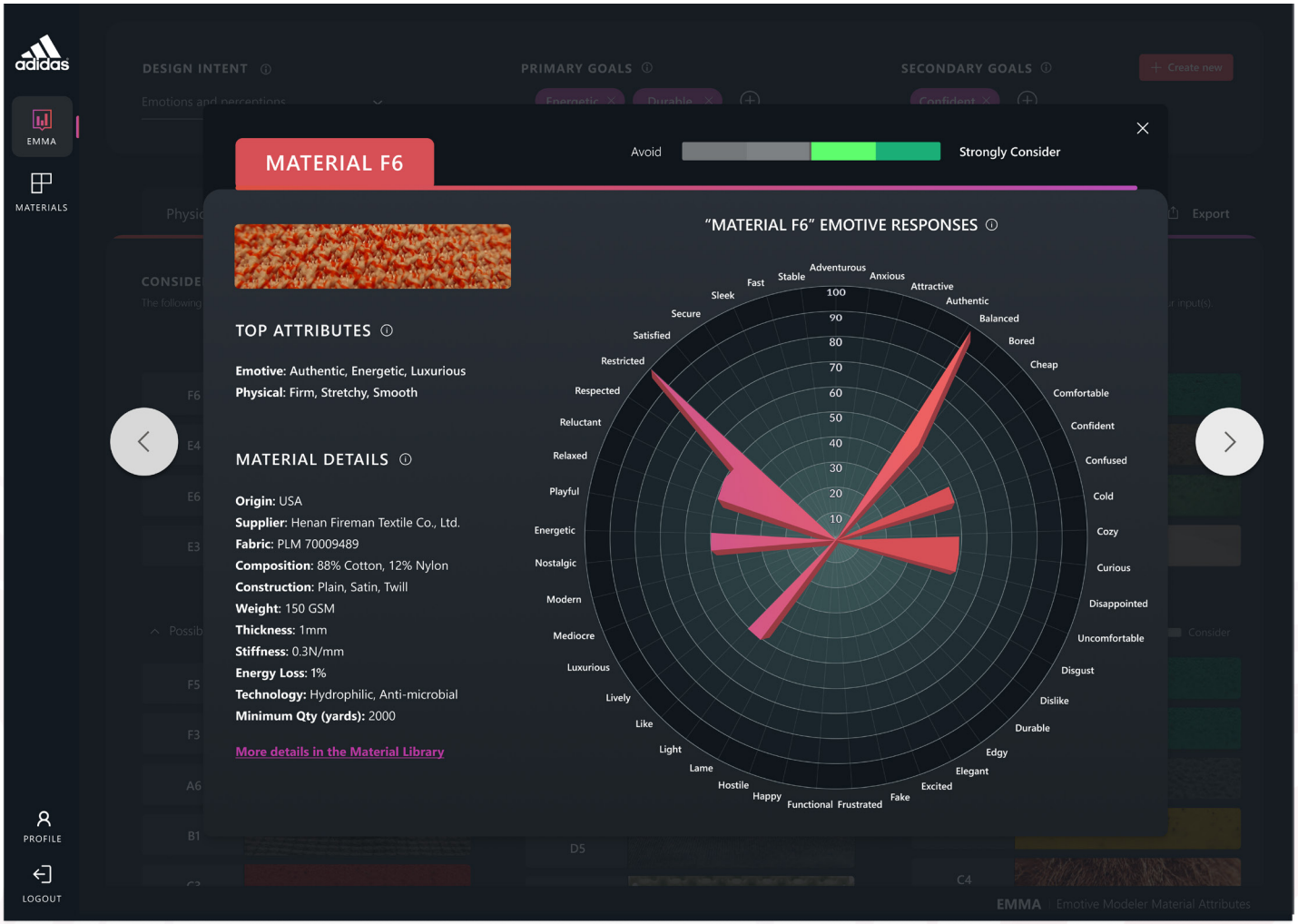
The report view displays the correlated results to the user's inputs. These are updated dynamically as they add or edit goals to encourage discovery.



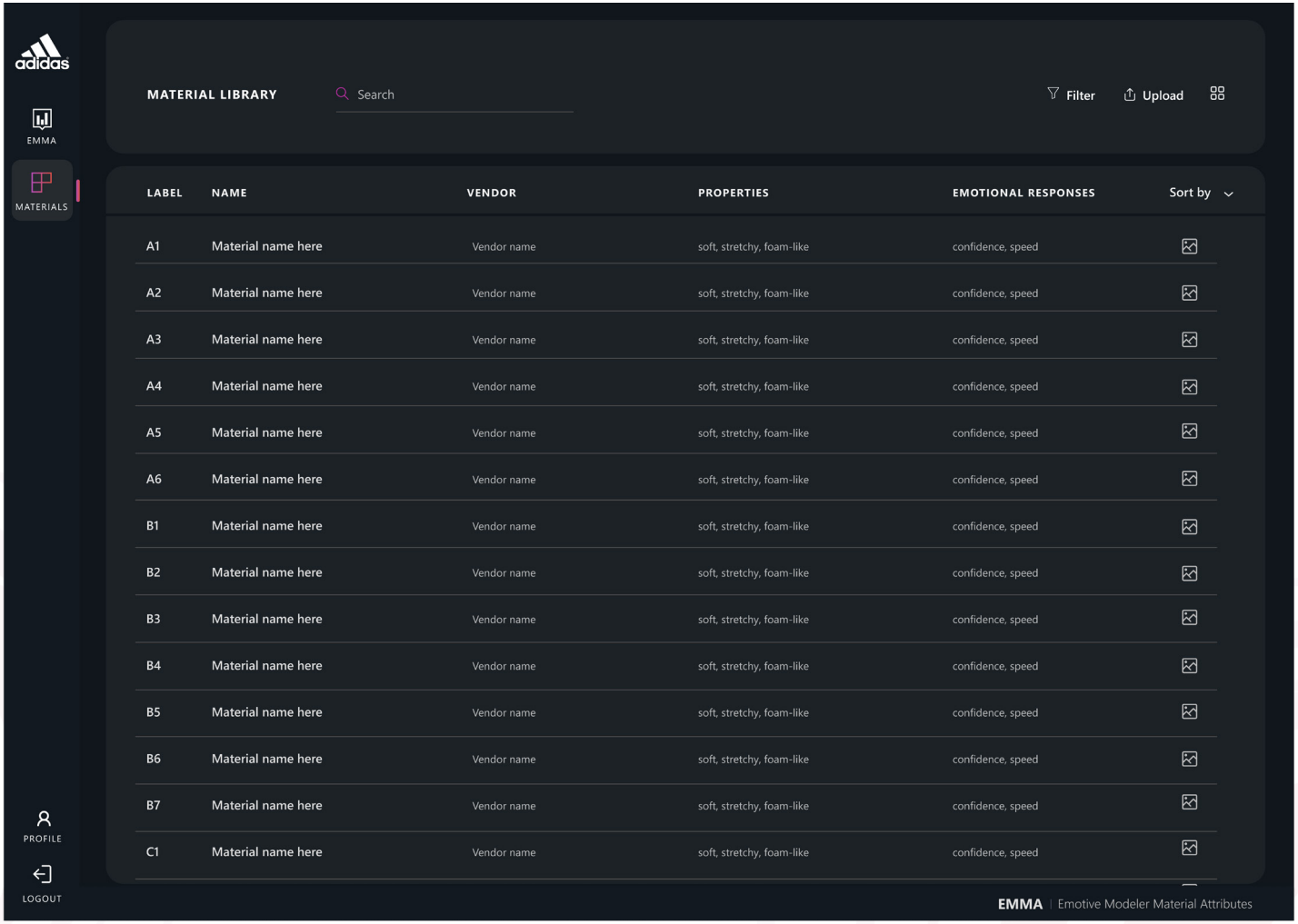
Users dig into any material or emotive attribute's profile to learn more. What is displayed is based on the user's selected design intent.



Users can also view material recommendations based on their design goals from the Adidas inventory.



Users can learn more about individual materials by viewing their profiles.



A materials library was provided for users to search and sort through various materials from the Adidas inventory.

FUTURE DIRECTION

We identified a few areas based on research and usability study findings that fell outside the scope of our project. We felt it was important to highlight for future exploration.

Explore Machine Learning

While we weren't able to construct a machine learning model using the data we collected, we believe this is a path worth further consideration in future iterations of this research.

Adidas System Integration

Some feedback focused on how the tool would work with existing systems and workflows. Based on this, we recommend integrating this tool with the material inventory of Adidas.

We observed expectations that the material library would pull information from existing Adidas material databases, with the functionality to sort and filter on mechanical properties from EMMA's Material Library.

We also suggest including information about current product uses for materials and linking to customer reviews. Cost information was also requested for materials. We recommend including the ability to filter by any of these properties.

Conduct Another Material Study

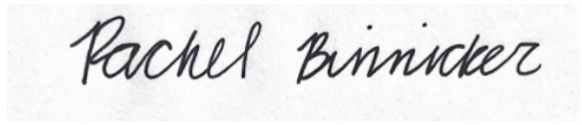
We recommend running another physical material study with a few changes. Because form factor played a large role in our participants perception of the materials, the study should be run taking form factor into account. The participants should be asked about their emotive response to a material given its intended use. The study should also be run with a larger set of materials in order to capture the emotive responses to all material properties and allow for full integration with the entire Adidas material library.

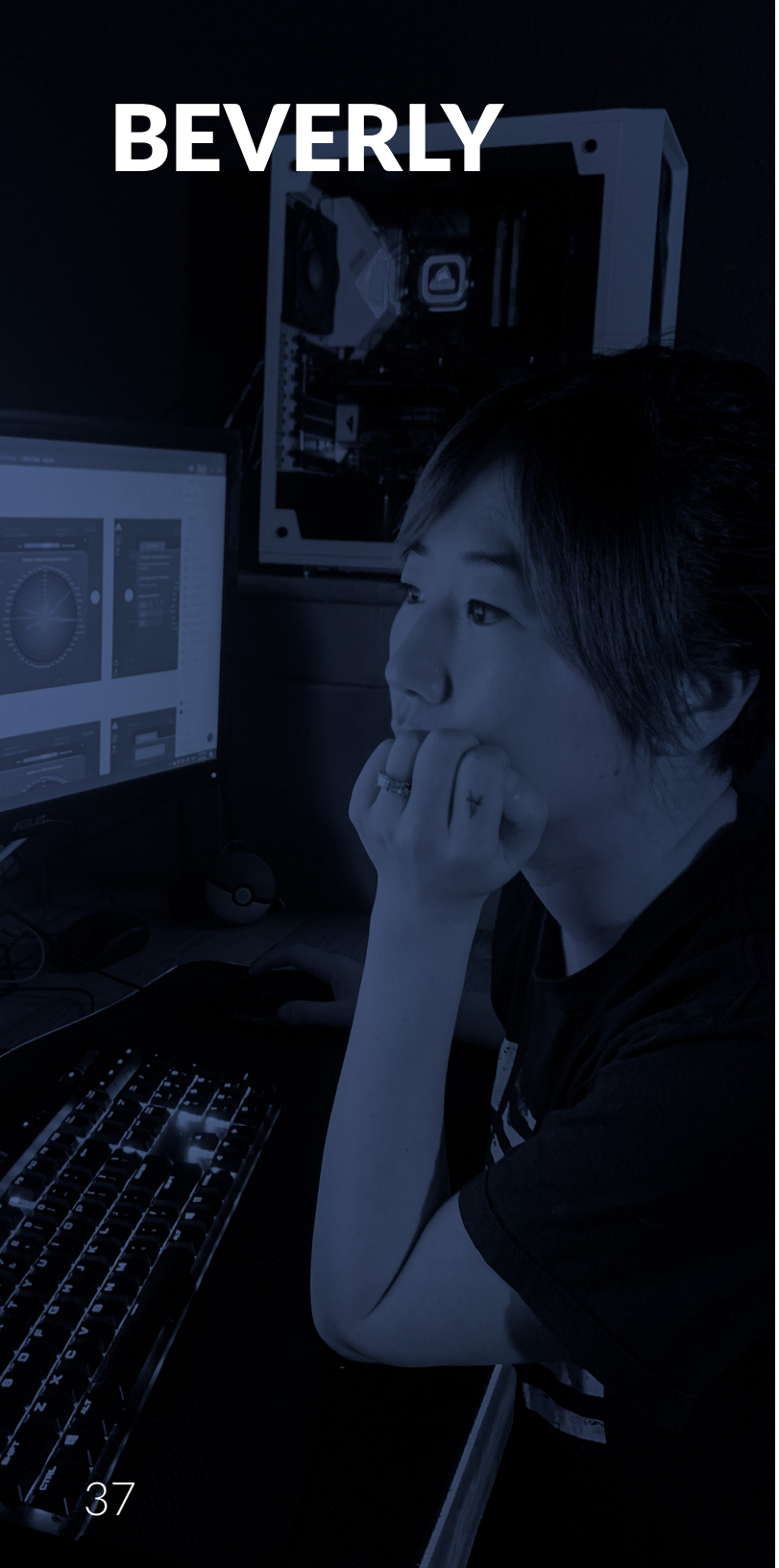
Add Project Management Features

Some feedback focused on adding features to support typical project management flows (e.g., saving queries, sharing queries, etc.). While we considered these to be out-of-scope for our prototype, we believe these types of features are "must have" for any practical design tool, especially in team environments.

Final Reflection

With this project, we were able to introduce a new study design for investigating the relationships between feelings and emotions. We were able to combine previous pieces of research to design a study that we feel captures the most accurate data. We also introduced the concept of combining both a visual and physical material study to account for the ways consumers purchase products. This was a novel approach and one I am proud of. This project was an excellent opportunity for me to practice aspects of the user-centered design process that I am less familiar with, thus a great learning opportunity. While I spearheaded the research portions of this project, I was also able to be heavily involved in the design and engineering portions. Working in a multidisciplinary group allowed me to get feedback and guidance while working on these unfamiliar areas so that I was able to learn as much as possible. If I was doing this project again, I would focus more of my time into the prototyping to gain some more experience there while employing the help of my more experienced peers. We encountered some limitations along the way that impacted our project. First, because we were dealing with a public health crisis, the COVID-19 pandemic, we were forced to operate more remotely. This was particularly difficult for a project requiring a physical study. Because of this, we were not able to complete a pilot study, and there were some changes to the study we wished we had made after the fact. With the design portion of this project, we did not design for accessibility. Before this project goes live, a fully accessible version will need to be explored to meet all accessibility requirements. Finally, this tool was designed for a specific user base and there will be many considerations if this is to be used by a broader user group.





Final Reflection

There aren't many opportunities in the technology field to delve wholly into qualitative research. This was one of the primary reasons why this particular sponsored capstone project stood out to me. Working with Adidas on this project has been incredibly influential in helping me step outside of many comfort zones. Seeing this project through end-to-end, researching, conducting usability sessions, iterating on the UX... all in an expedited amount of time has helped me stretch beyond the disciplines I know best and has pushed me to think critically about our process along the way. A particular challenge was distilling the qualitative consumer research into something quantifiable that Adidas could work with. I'm extremely grateful for my peers, sponsors, and instructors who have been instrumental in making this project and the experience of working on it, fantastic.

Throughout most of my HCDE journey, there's been a distinct focus on screen experiences. Exploring tactile sensations and the perceived emotive responses to them has opened up new avenues for me in consideration to how one's subjective experiences can ultimately change your perception of an object. I'm interested in exploring this further and bringing it back to screen experiences--what kind of qualitative research exists out there that marries emotive responses to on screen elements. What frameworks are there for touching on people's emotions through virtual interfaces? How can we as designers toe the line between positive associations and emotional manipulation?

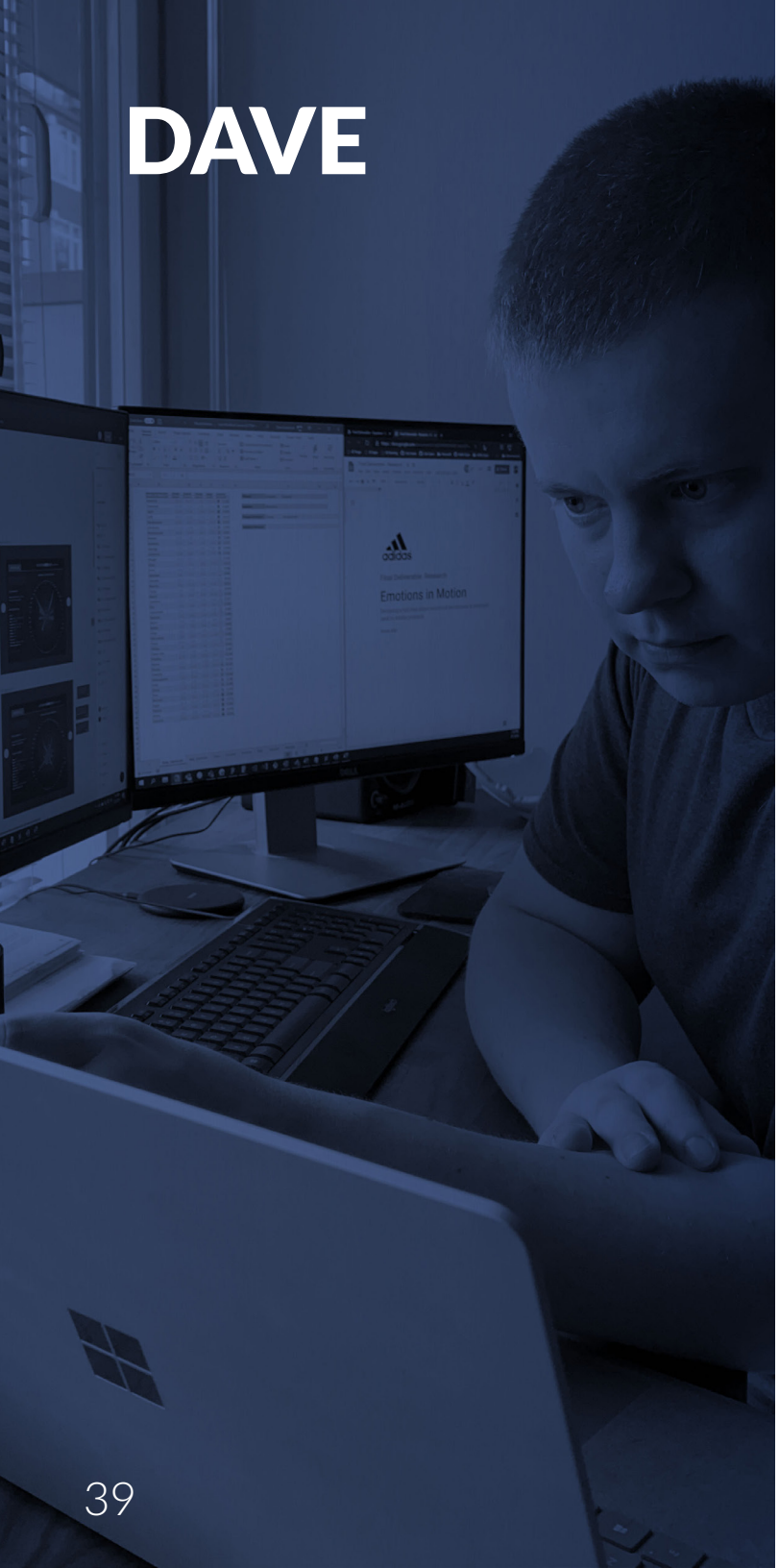
Beverly van Daal

Final Reflection

While conducting the background research for this project, we scoured company resources across various industries to understand how designers choose which materials for their products. Most of these companies focused on sustainability and quality of material as the determining factors that influenced a decision to use a specific material. There was little to no existence of an emotive framework that guided designers to select materials based on how their customers were to perceive them.

Our tool is designed to help designers improve their material selection process, but the tool only works if the research backing the algorithm is an accurate representation of their target audience. As a result of COVID-19, our limited sample size for research participants was confined to our inner circles, leading to unconscious bias in the results. In an ideal scenario, we would have conducted studies with participants who were not familiar with the project with more diverse demographics, backgrounds, and activity levels.

There were several moments over the course of this project where I think we all felt stretched beyond our comfort zones. Understanding what to do with all the data we received was a difficult challenge to tackle, and one that required more diligent critical thinking and collaboration than we were expecting it to. I am proud of what we accomplished as a team, and am so grateful to have worked with such talented, driven, and creative peers.



Final Reflection

With capstone, I was excited to have the opportunity to work with Adidas on a project that was outside the domain of what I have typically worked on in the tech industry. We knew that the background research would serve as the foundation of the rest of the project, but I was surprised by how little formal research existed in the field around emotive frameworks like the one we were investigating. This brought a level of excitement to our consumer research study, and it felt like we were really pushing the boundary in understanding how people respond emotionally to different materials, especially in the context of shoes and activewear.

One place I wish we could have done more was conducting an expanded consumer research study. While ultimately, I feel like our study helped us develop the right high-level emotive framework, I wish we were able to do more validation. Due to logistical challenges brought on because of COVID-19, we were not able to collect responses from as large or as diverse of a sample population as we would have liked. I think it is important to run another study based on our framework to validate and build on top of our initial findings.

Overall, I could not be more proud of my group, and I think we were able to effectively leverage our different strengths for different parts of the project in a way that is representative of how an effective multidisciplinary team would in a professional environment. While I supported each phase of the project, I focused more heavily on analyzing the data and developing our algorithm. I appreciated the chance to learn from my group in phases of the project I had less experience in. I hope that what we put together for Adidas goes on to help improve the design experience for their design team and ultimately leads to better products for their customers.

GRATITUDE + THANKS

A huge thank you to everyone involved who helped make this capstone memorable, challenging, and rewarding! Thank you for all the support!

SPONSORS

The Future Team at Adidas:

Elise Hall

Daniel Fulton

Iain Hannah

CAPSTONE INSTRUCTORS

Adi Azulay

Tyler Fox

Jared S. Bauer