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## **CHOICE OVERLOAD IN MAKEUP FOUNDATION**

Nicole Cristina Rocheteau Pires Almeida

Dissertation presented as partial requirement for obtaining  
the Master's degree in Information Management

NOVA Information Management School  
Instituto Superior de Estatística e Gestão de Informação  
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by

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## **ABSTRACT**

The cosmetic industry has grown exponentially, offering products for every taste, in a society that values beauty. In 2017, Rihanna launched one of the most inclusive colored foundations with a range of 40 colors. This launch revealed that the industry lacked options for darker-skinned women and men. Such discovery prompted brands to review their offer and soon they started to have more extensive sets of foundations available. This dissertation aims to study how this adaptation to the market has impacted consumers. The focus will mainly be to learn if consumers' attitudes and behaviors changed with the increase of options available. Thus, understanding whether the market was reaching a choice overload problem and knowing if this was working toward a positive or negative result when reaching a purchase decision.

The findings of this study have shown significant results in both choice overload and difficulty choosing when the number of options increased. The study fosters further brand consideration about the need to follow trends and avoid bringing additional choice overload problems to the market.

## **KEYWORDS**

Inclusivity; Diversity; Cosmetic Industry; Choice Overload; Makeup Foundation.

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# 1. INTRODUCTION

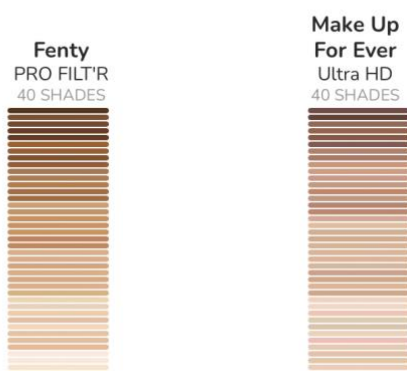
In 2017, the cosmetic industry saw a shift in how women and men perceived makeup and how important it was for this industry to be diverse and inclusive. Significant growth happened when Fenty Beauty entered the market and changed how dark skin foundation was seen (Mandell, 2017). For the first time, dark-skinned women and men could look for their perfect match without thinking they would need to mix two different foundations or even end up with an ashy look.

The past years have seen this industry adapt and become more diverse and inclusive, from more shades of foundations to an infinite number of lipstick colors, eye shadows, and even products that adapt to any skin color (Ketabchi, 2019). This study proposed to discuss the outburst of brands adjusting to the broadening of foundation ranges, including darker shades that were once very hard to find or too expensive for the average consumer. Further, such initiatives began sparking the questions of whether consumers were starting to feel choice overload in this market and how it affected their purchase intention.

Rihanna, the founder of Fenty Beauty, opened the door for a new type of inclusivity and diversity with the launch of 40 shades of foundation, from fair to dark skin. Considering Fenty’s objective to make everyone feel included (Fenty Beauty, 2017), it only made sense to work towards filling the void many women and men felt. This void was sensed by so many that when the launch happened, the first shades to sell out were the darkest ones, which only proved that something had to be done (Dall’Asen, 2017).

When Fenty Beauty launched, one of the first reactions from Make Up For Ever was that a 40-shade foundation was nothing new to them. They did not expect the comments associated with their ashy result (de Santis, 2017). So much so that Rihanna herself replied to Make Up For Ever saying they were still “too ashy.” As seen in the comparison image Figure 1 shared by Li et al. (2018), Fenty’s Pro Filt’r

**Figure 1** – Comparison chart between Fenty Beauty and Make Up For Ever  
**Fenty vs. Make Up For Ever**



foundation reached more types of skin tones and was keener to the golden undertones than the Make Up For Ever Ultra HD foundation.

Fenty Beauty's launch brought some controversial comments, as mentioned above. For brands such as MAC Cosmetics and Make Up For Ever, having a wide range of makeup foundations was already crucial on their offer, but they were not filling dark-skinned women's needs as Fenty Beauty's numbers soon proved. In the case of Make Up For Ever, getting undertones right was still a problem and would still make darker skin women seem like they had an ashy foundation. For example, for every foundation, a formula is created. Each foundation results from many ingredients that can be more suitable for drier or oilier skins. The type and amount of pigmentation present in each foundation create the range. If these are not well balanced, the result may give a grayer look to those with dark skin complexions (Gbeleyi, 2016).

Furthermore, customers must consider a couple of crucial distinctions. First is the skin tone, which lies before our eyes and changes according to seasons, age, time, or weather. This is what changes tones when we get tanned during the summer and pale during the winter. Secondly, the skin undertone, which does not change; is the color underneath the skin's surface (Darrisaw, 2020). These undertones can be warm, cold, or neutral and are what make a difference between seamless makeup and a more exaggerated look. When wrongly chosen or not correctly made, a foundation could make a face look greyer, and that is what is known as an ashy look. Consequently, as explained by Gbeleyi (2016), some cosmetic companies would take a shade for white skin and add red tones to darken it for black consumers, and that was one of Make Up For Ever's problems at the time of Fenty Beauty's launch (Rodulfo, 2018).

Once Fenty unveiled this clear gap, other brands worked to raise the number of their options in the luxury category and mass-market makeup. Through this launch, the Fenty effect happened (Saputo, 2019), and the 'Fenty 40' (Rodulfo, 2018) became a standard. More than 20 brands (Abelman & Dall'Asen, 2020) have enlarged their range, and more black-owned brands focused on dark-skinned women and men have emerged.

Consequently, the makeup industry has become much more diverse worldwide. Consumers can look at all price ranges and will be able to find foundations that go from fair to dark, that respond appropriately to the needs of oily and dry skins, for women or men, and offering more than one option to the consumer (*How The Inclusive Beauty Movement Is Redefining The Industry - CB Insights Research, 2021*). This broad offer could likely lead to two results. On the one hand, it could offer the consumer an opportunity to choose and change foundations in case they were not pleased with the formula of a specific foundation. On the other hand, it could saturate the market, leaving the clients

with too many options to choose from, which in the end could lead them to making no choice at all and a consequent decline in sales.

The present study focused on this niche in the cosmetic sector by looking at Fenty Beauty's launch as the turning point for how consumers perceived face foundations. It looked at how communication was done in the past and changed, so that inclusivity is now a part of it. Previous studies have focused on the specific effect that Fenty Beauty has had on consumers and how it changed the market's perspective by bringing more extensive ranges of foundations and making the industry more inclusive in every aspect (Werle, 2019). Studies also focused on whether the perceived and seen innovation impacted brand loyalty (Bayaah Siti Nor et al., 2018). Even though there were some intercepting points between this study with those previously conducted, the focus was on knowing whether there was a choice overload, specifically in the face foundation product line.

The theoretical foundation for this study analyzed how the market has been reacting since the launch of Fenty Beauty and discussed the innovation that arrived with this new concept. Simultaneously, it explained what other studies have done when studying cosmetic brands and the results gathered through those studies. Additionally, an experimental research study was conducted encompassing a controlled randomized survey to find whether this market is starting to experience choice overload. At the end of the study, the researcher discussed the results obtained by offering an answer as to whether the market became saturated with options and, if so, whether that caused a negative impact on purchase intention in the cosmetic and beauty industry.

Finally, the experimental research methodological approach of this study offered insights into the consumer perception of the more extensive range of options the industry provides. As time elapses, consumers form their opinions as they see that more brands offer the same type of products. This study provided information on how saturated the market was with these products and whether it had reached a point of choice overload or there was still space to grow in this sector.

## 2. LITERATURE REVIEW

### 2.1. CHOICE OVERLOAD

There was no previous research developed specifically on choice overload in the makeup industry and, more specifically, in foundation products. Therefore, to conceptualize choice overload, the researcher focused on previous studies conducted on the cosmetics and fast fashion industries and on the effects of choice overload.

Choice overload has been at the core of many studies since the end of the 20<sup>th</sup> century. Having too much or too little to choose from can be both a blessing and a curse. One of the most known and studied examples is the jam experiment Iyengar and Lepper conducted in the year 2000. These two researchers looked at choice overload as a problem that could arise from the simplest choices. Past studies suggested ““that as the complexity of making choices rises, people tend to simplify their decision-making processes by relying on simple heuristics”” (Iyengar & Lepper, 2000, p. 996).

A conclusion reached by Timmermans (1993), and then supported by Iyengar & Lepper (2000), was that the percentage of people that use an elimination strategy would go higher as the number of options grew. So, in the study it was found that while 21% used the process of elimination when they had three options, 77% used an elimination strategy when presented with nine options, which meant that people resorted to what was familiar to them to decide when there were too many options. Iyengar & Lepper (2000) applied this knowledge to their experiment with jams, where a group would see a tasting booth with six flavors and the other with 24. The objective was to understand if Timmermans’ conclusion would apply to something as simple as tasting jams. The results proved that more consumers used the elimination strategy for the booth with more flavors than the one with fewer options. It demonstrated that more consumers would be drawn to familiarity and not take risks when they have more options.

Furthering the constant quest for determining the point at which choice overload begins, led Mohan (2020) to investigate whether having more or less access to information, by living in urban or rural areas, could impact millennial consumers. Even though the study did not find vast differences, price and purchase convenience could also affect the consumer’s experience. As consumers from urban areas had more resources and exposure to choices than those from rural areas, the experience of each group was affected; consequently, the choice process was also impacted.

Additionally, organization, the assortment of products, and the amount of information can also affect how consumers choose when they are given too much information. Hunter & Goebel (2008) studied

the effects of information overload on a salesperson. They found that the amount of information supplied to a person could have a positive or negative impact depending on how much they needed to learn, which could also lead to frustration in accomplishing the day-to-day work. On the aspect of assortment, Hoch et al., (1999) studied whether consumers processed the variety of information in a superficial or analytical way according to how much information was presented. The results showed that assorted and organized products are better accepted by consumers, which helped the decision-making process. Diehl & Poynor (2018) also concluded that assortment size and the type of assortment could affect negatively or positively the satisfaction and the choice made by the consumer depending on the amount of products and information given.

Finally, Chan (2014) questioned whether choice overload affected negatively or positively a consumer's purchase decision. He suggested that consumer decisions were based on extrinsic or intrinsic choices and how consumers looked at their needs for product categories. In other words, these choices could be more utilitarian and social-oriented, extrinsic, or more emotional and altruistic-oriented, intrinsic. These categories helped to understand the kind of factors that might influence the choice of consumers of makeup foundation.

The upsurge of product options and information could be seen not just in the cosmetic industry. For example, a study was done in the fast-fashion retail sector to understand why too much information was being given to the consumer. Hwang et al. (2020) saw that despite the growth the fashion market had experienced in the past years, fast fashion retailers saw a flat increase in their numbers. They investigated whether the problem of the lack of growth was due to solutions like global outsourcing, e-commerce performance, and in-store shopping experiences. In the end, they found that the lack of development was on the time consumers had to spend in-store trying to absorb every bit of information that, in the end, did not help them decide. Consumers like to have options but get confused when there are too many options and do not understand how that can be helpful (Hwang et al., 2020).

## **2.2. COSMETIC AND BEAUTY INDUSTRY PAST STUDIES AND EXAMPLES**

Further investigating this shift in brands' and consumers' mentalities, it was essential to note what other studies have shown. Changes in the cosmetic and beauty industry did not start with Fenty Beauty in 2017. At the start of this century, Dove was one of the first brands to break the bias of what beauty meant and show how important it was to be inclusive (Indermill, 2015). In 2004, the "Campaign for Real Beauty" started to make a difference in the industry. The purpose was to bring back self-esteem and self-confidence to women of all ages. As Millard (2009) noted in her study about the campaign, in western culture, beauty norms were like a script for beauty campaigns. It was where everyone

expected actors to wear masks (makeup) and costumes (fashion) to fit what they were seeing. What Dove did at the beginning of the century was to start breaking this ideal.

Also happening in the early 2000s, Rea Ann Silva, the makeup artist that later became the founder of Beautyblender, felt the need to reinvent herself and her work. She was the makeup artist for TV Shows such as 'Girlfriends' and 'Friends.' During the transition to high-definition filming, it became evident that something had to be done so that pores and imperfections could stay hidden by the makeup applied without looking unnatural. The 'go-to' choice was airbrushing, a Hollywood technique that blows or sprays the makeup onto the face of actors. However, it soon became evident that it was not a solution because it took too long to retouch, and the actors had to leave set to correct their makeup. Rea Ann Silva then thought about cutting standard triangular sponges into a rounder shape, exemplified in Figure 2, and it worked. So much so that the sponges started disappearing from the set. It was then, in 2003, that Rea Ann Silva launched the Beautyblender, and since then has been the go-to product to blend foundations and give people a final softer look. Since the brand was launched, other brands have tried to offer sponges that promise the same result as a Beautyblender, but the quality could not be compared (Beautyblender, n.d.; Metrus, 2019; Ocbazghi, 2020).

**Figure 2** – Traditional triangular makeup sponges (left) (*Triangle Shape Makeup Sponges*, 2021) and the first Beauty Blender (right) (Silva, 2022)



These two examples previously mentioned showed two important moments in the makeup industry. The first showed how a brand started to break biases and created a campaign that allowed brands to explore beauty in different ways and for every skin color. It revealed the gap that Fenty Beauty worked to fill and brought more consciousness to the lack of foundations for dark skin. The second brand, just like Fenty Beauty, filled a void, and currently, it is possible to find sponges with other brands' names because they have revolutionized the industry.

### **2.3. CONCEPT OF BEAUTY AND INCLUSIVITY IN THE BEAUTY INDUSTRY**

Another aspect to explore is how advertisements affected women and their concept of beauty. As Pillay (2020) discussed, different generations reacted differently to campaigns, and new generations have more formulated opinions and new concepts of beauty. As feminist campaigns and parades have become more common, women have also started to gain their voice and decide what they wear as makeup. The same study mentioned how these are the women that will be more likely to recall a brand:

A study conducted by SheKnows Media (Skey 2016) proved that most Generation Y women are more likely to recall a brand with an empowering advertisement, and close to 50 percent of women switched between brands when advertisements depicted women as strong and empowered. Moreover, femvertising is 80 percent more likely to be shared, liked, and commented on in social media, especially among Generation Y and Generation Z women (Sylvendhal 2017). (Pillay, 2020, p. 5)

Cosmetic and makeup campaigns have been a part of our reality, and there is still some way to go for these campaigns to start showing that beauty is something reachable. All over the world, magazines, advertising, marketing, and fashion industries repeatedly emphasize the standards of ideal beauty (Greenfield, 2018). Although many brands have changed their focus to show the truth and what was said to be true beauty, many still focus on perfection. As Greenfield noticed, the idea of beauty was more than just a social construct; it was an ideal within reach of those acquiring a product. It was where beauty often became a negative aspect instead of a positive one. Until recently, there was still a large population that saw this ideal as unattainable because their skin color was not the correct one or there was no foundation fit for them.

A meaningful way to understand the impact of Fenty Beauty and the enlargement of foundation ranges was to investigate some studies about inclusivity in the beauty industry. Makeup brands have existed for over a century, and since their beginning, the most remarkable discussions have been around skin color in this industry. Werle (2019) asserted that at the start of the 20th century, women of color were not considered customers. This was due to the segregation and racism experienced in the United States then, as it was not until the Civil Rights Act of 1964 that it ended legally. The transition was not immediate, and just as there were buses for different skin colors, there were department stores that were still not prepared to receive customers with darker skin tones.

In 1935, Jewish chemist, Morris Shapiro, launched Lucky Heart Laboratories. Lucky Heart Cosmetics advertised that their products were unavailable in stores and sold only by sales representatives. It was

due to department store racism and segregation, that prohibited black clients and products. These brands had to rely on community members as sales representatives to promote their products. (Werle, 2019)

Soon enough, inclusivity started to make its way into the cosmetic market. It was in the 1960s that Ebony Fashion Fair, founded by Eunice Johnson, first came as a brand that would satisfy the market needs by offering foundations that matched the darker skin tones' complexities. The company launched a mail-order package, and "based on the overwhelming response, it was clear there was a demand for a Black cosmetics line. Fashion Fair Cosmetics was born in 1973, named after the fashion show that inspired it" (Adoukè, 2020, para. 11) .

However, as Inganji & Sharro (2020) noted, skin color was still a stigma to overcome. The study focused on finding whether consumers felt that the makeup industry had become more inclusive by having models of different skin colors. While hoping to find a shift in the consumer's view towards advertisements, they found instead that the shift had not yet happened.

#### **2.4. INNOVATION IN THE BEAUTY INDUSTRY**

Back in the 1900s, innovation became crucial in the fight for inclusivity. There was a desire to look for ways to make products available to dark-skinned women (Nittle, 2018).

In the beauty sector, the capacity to innovate is central to maintain product relevance. Therefore, it was crucial to look for studies about newness and beauty. When we look more into the different aspects of the ways brand innovativeness influences consumers, we can see what was expressed by Bayaah Siti Nor et al. (2018). There are various ways to make a consumers perceive brand innovativeness and feel more attached to a brand. Specifically focusing on the cosmetic industry, results have shown that when new and essential certifications are implemented to either a brand or a product, consumers have felt more attached to such brand. This can be implemented in packaging makeovers where certificates and updates to the brand can be made clear to the public, thus creating more brand loyalty. For example, Ma'or & Portugal-Cohen (2021) further their study on innovation in brands while studying AHAVA products, a brand launched in the western world with the main ingredient of Dead Sea salt. By looking at the array of products and the brand experience, they learned how this brand became relevant by maintaining the main ingredient and simply changing how they innovate through packaging, communication, and product offer.

Furthermore, Rao (2018) expressed how the conversation should go beyond discussing which brands now have a 40-shade offer in their lineup. Inclusivity in the cosmetic industry has been a conversation that has existed for many years. Now that Fenty Beauty drove brands to take this step and "as more



and more inclusive shade ranges continue to come to market, Gautam Pai said customers will now be looking to company ethos versus extended shades as proof of concept” (Rao, 2018, para.23).

In summary, brands are currently more open to innovate, test new colors, new formulas and reach everyone’s needs. The opportunity has opened for innovation to go above and beyond. Just as AHAVA has maintained its core ingredient but searched to innovate in areas like packaging and solutions that dead sea salt products could bring to consumers, makeup brands can go beyond the 40-shade mark. Consequently, they can look at other ways to innovate the makeup foundation market through their presentation, values or even ways to deliver the product.

## **2.5. RESEARCH OBJECTIVES**

Since previous studies on choice overload had not given much attention to the makeup industry, and more specifically, to the foundations’ product lines, the researcher proposed to conduct an experimental research to investigate some hypotheses. The primary purpose of this project was to gain insight and understand whether there was any difference between the number of options in the market and the choice overload effect.

As it had been studied and concluded over the years, “offering consumers a large variety of options to choose from can have a two-pronged impact on choice: It can both benefit and hinder choice” (Chernev et al., 2012, p. 334). Therefore, with the implementation of the experimental research, it was understood whether choice overload was starting to impact consumers and whether its effect was either positive or negative.

## **2.6. HYPOTHESIS**

As a foundation for this study, the researcher formulated the following hypotheses to guide the investigation.

As previously mentioned, there has been an exponential growth of options for foundations, leading stores to present solutions for every type of skin and color. Nevertheless, these options are ever-growing, and it might be challenging to understand the difference between different foundation products. Therefore, the hypothesis was to study whether the increased number of foundation options in the makeup industry negatively affected consumers’ purchase intention (**H1**).

Additionally, choice overload has been a problem that affected many products over time (Chernev, 2003; Hwang et al., 2020; Iyengar & Lepper, 2000). Even though brands were not always able to achieve this, the objective was to give the consumer a choice and an opportunity to try. Thus, the

second hypothesis was to understand if consumers felt they had too many options, leading to either the most effortless solution or making no choice (**H2**).

### **3. METHODOLOGY**

The following chapter approached the methodology implemented in this experimental study. Experimental researches usually measure a change or create a difference in variables to study the result (*Data Module #1: What Is Research Data?*, n.d.). It was prepared a between-subject design, where participants were exposed to one of three conditions in the survey developed for this study. It then created the difference in variables for analyzing the results, thus making this dissertation experimental research.

#### **3.1. THE STUDY**

The method chosen in this research was the Controlled Randomized Trial with a between-subject design, which resorted to questionnaires that randomly divided the respondents into groups. Appendix 1 shows how the researcher built the survey's flow to ensure that the respondents were split into even groups and consequently achieved more cohesive results.

##### **3.1.1. Survey**

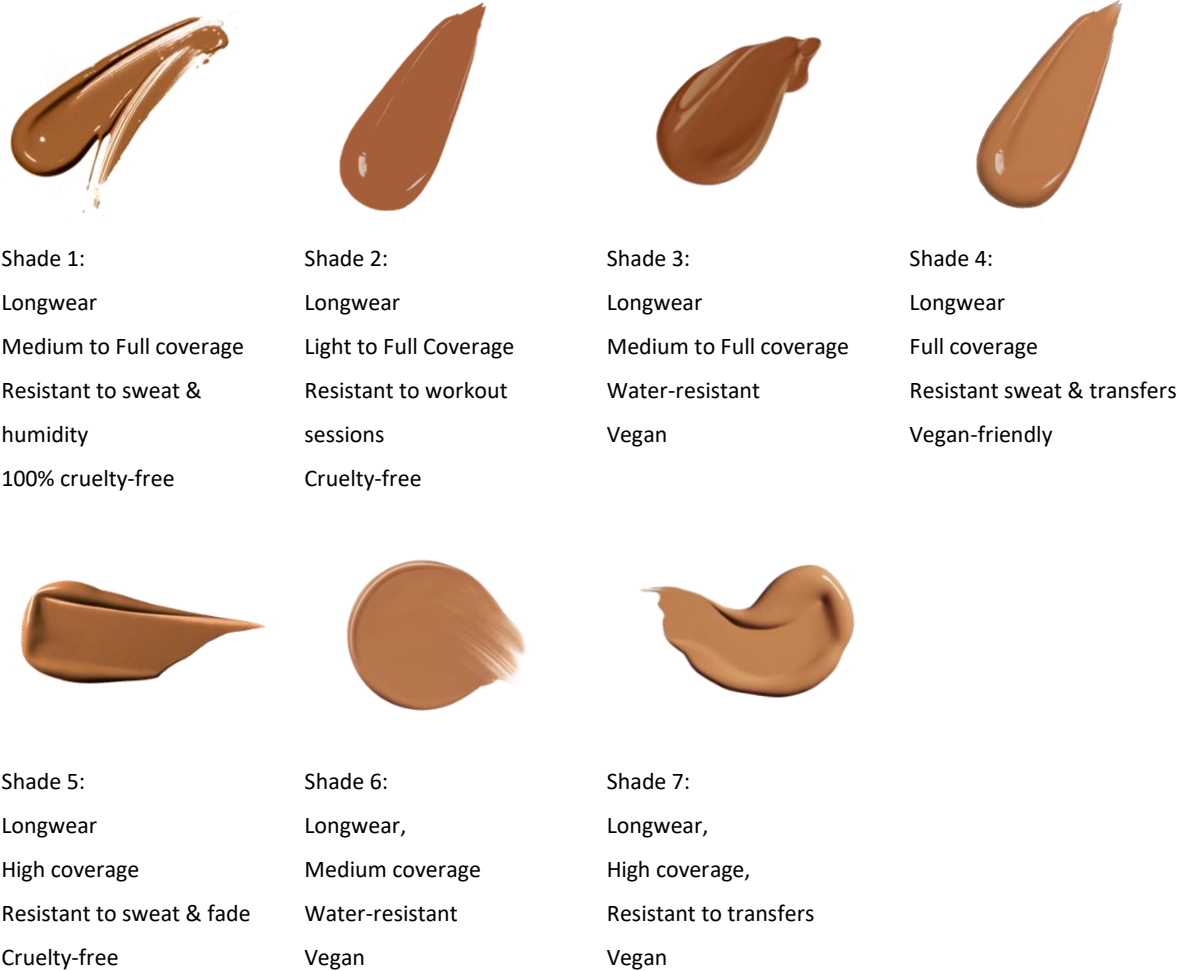
The researcher investigated both hypotheses through a survey instrument distributed amongst makeup foundation users.

The objective was to create three experimental conditions using Qualtrics to create a between-subject design. The digital platform randomly assigned to the respondent one of the conditions followed by the respective survey questions, as seen through the survey flow in Appendix 1 and then the complete survey in Appendix 2. This made possible an even distribution of the participants to each questionnaire so that there was an equal number of answers with no biases involved in the sample.

The initial process was to examine other studies on choice overload and their investigation questions regarding the topic ((Diehl & Poynor, 2018; Hoch et al., 1999; Hunter & Goebel, 2008; Iyengar & Lepper, 2000; Mohan, 2020). When the search was over, the questions were placed in one document and adapted to reflect the present study's purpose, as in Appendix 2.

The survey initiated with the consent form, and upon collecting the respondents' consent to the study, it took them to the independent variable, where they found one of the three conditions, also exemplified in Appendix 2. The respondents then had to choose one of the foundations shown, whether from 3, 5, or 7 foundation options. Afterward, they had to answer a set of questions to provide the data for the dependent variables, which was measured using a Likert-type 7-point scale. The choice for a 7-point scale was due to the opportunity of offering a more extensive range of options without making that decision too complicated. This way, respondents had two choices between the halfway

**Figure 3** – The seven foundations used to create the three conditions.



point and each extreme. Choosing a 5-point scale would have oversimplified the survey, and it could make respondents feel safer in selecting the option three more often. Figure 3 demonstrates the choices given to the participants.

By the end of the data collection process, the result analysis began. The researcher used the JASP software (JASP Team, 2022) to determine whether the hypotheses were supported. The results obtained also stimulated further research topics related to this theme and other approaches that could be done to understand this phenomenon in the makeup industry further.

**3.1.2. Development**

The survey call to engage participants for this project was made multiple times, on social media, over the course of two months. It was managed through Qualtrics and accomplished a total of 188 responses, of which only 91 were eligible for analysis. The dataset was cleaned to retrieve the final data, and everything not essential was removed.

The first step was to download the data from Qualtrics into a numerical excel document; while keeping the original data, a duplicate of the spreadsheet was created. During this first database clean up, the following details we deleted: start and end date, location latitude & longitude, distribution channel, user language, and empty columns. Furthermore, users that had a completed survey of 83% or less were also removed. This was due to users who left the survey incomplete. Not deleting these incomplete surveys would have led to incorrect assumptions for the study. After removing these elements, a new spreadsheet was created. The users who said they did not wear makeup foundation were removed from this sheet. The final step was to organize the conditions that each user answered into one column. For example, respondent 1 replied to the condition with three options, respondent 2 to the condition with five options, and respondent 3 to the condition with seven options. The column would read 3 | 5 | 7. Simultaneously, the researcher added a column to include each respondent's answer. During this process, the table was also organized to have the questions that were asked in the study in clearer manner, which simplified the database that was processed through JASP.

One of the last steps was to reduce from 12 dependent variables to 8 by grouping those variables that could be grouped. Consequently, the mean of the answers to the questions with similar topics was found and used with the newly created categories:

- Decision Difficulty: Q8 - How difficult was it to make your decision of which foundation to pick? & Q17 - Was it difficult to decide which option to choose?
- Overwhelmed: Q9 - How overwhelmed did the number of products available made you feel? & Q10 - How overwhelmed did the amount of product information made you feel?
- Frustration: Q11 - How frustrated did you feel when making the choice?
- Stress: Q12 - Was the number of products available stressful? & Q13 - The amount of information regarding the products caused you to make a mistake when choosing.
- Stress/Regret: Q14: Do you think you will regret the foundation you chose?
- Quantity: Q15 - Were there too many product options to choose from? & Q16 - Were there too few product options to choose from?).
- Confidence: Q18 - Are you confident that the foundation you chose will satisfy you?
- Future Choice: Q19 - For a future situation, are you likely to choose the same foundation?

Finally, the scales of Q16, Q18, and Q19 were inverted to reflect that the higher the number, the more negative the results were (e.g., More overwhelmed and extremely unlikely), thus ensuring that the answers made sense, and there would be no deviation in the results obtained.

## 4. RESULTS AND DISCUSSION

This chapter will present the results that were retrieved from the data collected from the survey, to determine whether there was any significant results demonstrating choice overload. Congruently, one-way ANOVAs were conducted to see which variable or variables showed significant differences in the results between the different groups. Subsequently, post hoc Tuckey HSD tests were conducted on the dependent variables that had significant results to determine which specific options were significant, thus helping look deeper into the choice overload issue.

### 4.1. RESULTS

Once the results were extracted and the data cleaned, it was possible to create a profile of those that answered. The sample was composed of 91 individuals, all of whom were females. The average age of the respondents was 31 years old. However, the leading group of females was in their 20s (48.4%). Regarding their education, 78% held a degree higher than a High School diploma. Of these, 47.3% had a Bachelor/Undergraduate degree, and almost 30% had a Master/Graduate degree. Of the 91 individuals questioned, 80% had some income as they either had a full-time or part-time job or were working students. More details can be found in Table 1.

**Table 1**  
*Sample Profile*

		N	%
Sex	Male	0	0%
	Female	91	100%
	<b>Total</b>	91	100%
Age	Up to 19	8	8.8%
	20 to 29	44	48.4%
	30 to 39	15	16.5%
	40 and above	24	26.4%
	<b>Total</b>	91	100%
Education	High School	20	22%
	Bachelor	43	47.3%
	Master	27	29.7%
	Doctor	1	1.1%
	<b>Total</b>	91	100%
Employment	Full-Time	54	59.3%
	Part-Time	4	4.4%
	Working Student	15	16.5%
	Student	13	14.3%
	Unemployed	5	5.5%
	<b>Total</b>	91	100%

The information was added to JASP (JASP Team, 2022) to compare results between the independent variables, the condition each respondent had, and the dependent variables, the questions asked after they had chosen a foundation.

A set of one-way ANOVAs was performed to compare the effect of the number of foundation options to choose from and the feelings that could have been felt throughout the selection process.

In Table 2, the descriptive and inferential statistic results were grouped. The columns represent the conditions (independent variables) each respondent was presented with and the lines represent the feelings that could have been experienced for the eight dependent variables.

The resulted showed a significant difference between the conditions for the following different types of feelings: Decision Difficulty,  $F(2, 88) = 7.24, p < .05$ ; Stress,  $F(2, 88) = 3.24, p < .05$ ; Overwhelmed,  $F(2, 88) = 7.22, p < .01$ ; and Quantity,  $F(2, 88) = 12.27, p < .001$ .

**Table 2**

*Descriptive and inferential Statistics for Responses to Survey Questions*

Feelings	Condition						df	F
	3 Options		5 Options		7 Options			
	M	SD	M	SD	M	SD		
Decision Difficulty	3.42	1.67	3.50	1.33	4.32	1.07	2, 88	7.24*
Overwhelmed	3.13	1.42	3.41	1.57	4.46	1.15	2, 88	7.22***
Frustration	2.90	1.73	2.79	1.52	3.21	1.52	2, 88	0.57
Stress	2.45	1.33	3.00	1.45	3.34	1.24	2, 88	3.24*
Stress/Regret	2.73	1.60	2.15	1.25	3.04	1.48	2, 88	3.00
Quantity	3.62	1.34	4.82	1.34	5.23	1.21	2, 88	12.27**
Confidence	3.90	1.56	3.06	1.50	3.68	1.54	2, 88	2.55
Future Choice	3.93	1.44	3.30	1.16	3.96	1.37	2, 88	2.51

\* $p < .05$ .

\*\* $p < .001$ .

\*\*\* $p = .001$ .

Furthermore, the significant results were followed through a series of Tuckey tests to determine the condition in which the significant difference was most relevant. In Table 3, the Tukey Test for multiple comparisons found that the mean value of Overwhelmed was significantly different between having

three and seven options,  $p < .001$ , and between having five and seven options,  $p < .01$ . There was no statistically significant difference between having three options and five options to select.

**Table 3**

*Post Hoc Tukey Test Comparison Results on Overwhelmed*

		95% CI for Mean Difference					
		Mean Difference	Lower	Upper	SE	t	ptukey
3 Options	5 Options	-0.276	-1.121	0.569	0.354	-0.778	0.717
	7 Options	-1.331	-2.211	-0.451	0.369	-3.606	0.001**
5 Options	7 Options	-1.055	-1.916	-0.195	0.361	-2.923	0.012*

\* $p < .05$ . \*\* $p < .01$ .

In Table 4, the Tukey test for multiple comparisons found that the mean value of Quantity was significantly different between having three options and seven options to choose from,  $p < .001$ , and between having three options and five options to choose from,  $p < .001$ . There was no statistically significant difference between having five options and seven options.

**Table 4**

*Post Hoc Tukey Test Comparison Results on Quantity*

		95% CI for Mean Difference					
		Mean Difference	Lower	Upper	SE	t	ptukey
3 Options	5 Options	-1.202	-1.984	-0.419	0.328	-3.660	0.001*
	7 Options	-1.615	-2.431	-0.800	0.342	-4.725	<.001**
5 Options	7 Options	-0.414	-1.211	0.383	0.334	-1.238	0.434

\* $p < .01$ . \*\* $p < .001$ .

In Table 5, the Tukey test for multiple comparisons found that the mean value of Stress was significantly different between having three and seven options,  $p < .05$ . There was no statistically significant difference between having three and five options or having five and seven options.



**Table 5***Post Hoc Tukey Test Comparison Results on Stress*

		95% CI for Mean Difference					
		Mean Difference	Lower	Upper	SE	t	ptukey
3 Options	5 Options	-0.550	-1.360	0.260	0.340	-1.618	0.243
	7 Options	-0.889	-1.733	-0.045	0.354	-2.512	0.036*
5 Options	7 Options	-0.339	-1.164	0.496	0.346	-0.980	0.591

\* $p < .05$ .

In Table 6, the Tukey Test for multiple comparisons found that the mean value of Decision Difficulty was significantly different between having three and seven options,  $p < .05$ . However, there was no statistically significant difference between having three options and five options to choose from or having five options and seven options.

**Table 6***Post Hoc Tukey Test Comparison Results on Decision Difficulty*

		95% CI for Mean Difference					
		Mean Difference	Lower	Upper	SE	t	ptukey
3 Options	5 Options	-0.083	-0.915	0.748	0.349	-0.239	0.969
	7 Options	-0.905	-1.771	-0.039	0.363	-2.491	0.038*
5 Options	7 Options	-0.821	-1.668	0.025	0.355	-2.313	0.059

\* $p < .05$ .

Furthermore, some additional observations were drawn from the results. First, even though Stress/Regret values (Q. *The amount of information regarding the products caused you to make a mistake when choosing.* and *Do you think you will regret the foundation you chose?*) were not significant, the Stress level regarding the number of products to choose from (Q. *Was the number of products available stressful?*) was proven significant. This seemed to indicate that when people were presented with many products to choose from, the increase in options stressed them, rather than the information itself, or the regret felt in the choice they made.

Secondly, Confidence values did not show a statistically significant difference when respondents were exposed to different number of choices. Nonetheless, a difference was found in the Overwhelmed variable, which seemed to indicate that the respondents may have felt overwhelmed with the many options for a product, despite feeling confident in their choices.

Finally, after further analyzing the survey results and looking at the data in hand it was possible to see that the Decision Difficulty and Overwhelmed variables demonstrated a statistically significant difference for each of them. This could be indicative that respondents may have felt more overwhelmed and had more difficulty choosing when more products were presented for them to select.

## **4.2. DISCUSSION**

The study aimed to understand whether the consumers were starting to feel a negative impact in the number of products offered in stores due to the rise of options in makeup foundations. This could indicate choice overload was starting to be felt and would leave consumers with difficulty choosing their ideal product.

Therefore, the first hypothesis proposed was to study whether the increased number of foundation options in the makeup industry negatively affected consumers' purchase intention (H1). After reviewing the results, it was concluded that the hypothesis was not supported. The people who answered the questionnaire did not regret their choices even when exposed to more options. They also had confidence in the choices they made. It seems to indicate that even when the number of options increased, there was no adverse effect on purchase intention.

The second hypothesis for this study was to understand if consumers felt they had too many options, leading to either the most effortless solution or making no choice (H2). The results of the study seemed to demonstrate that H2 was partially supported. Because it was able to find statistical significance in Overwhelmed as well as in Decision Difficulty. However, no significant result would indicate any impact on their future choice or frustration. It could indicate that while consumers could feel overwhelmed when they had many options to choose from, they would continue to come back and take the same product.

The findings regarding H2 were consistent with the findings made by Chernev et al., (2012), Iyengar & Lepper (2000), and Mohan (2020), where a choice overload effect was detected. Still, other factors also influence whether a person would buy a product or not. Mohan (2020), who investigated purchase intentions in his study, asserted that when the prices were high, consumers tended to like to have

more options for a decision. He also found that, with higher prices consumers also tended to consider the pros and cons of making an increased investment before they reached a final decision.

In light of the results, it was surprising that in this study, H1 was not supported, as exposure to and increasing number of options to choose from did not generate a significant impact on the purchase intention of participants. It was expected to find some significance as each foundation had an explanation of its benefits for the skin that could complicate the decision. However, the results may be explained by what Mohan mentioned about expensive products. The reason for not having a significant difference could have been due to the lack of prices presented in the survey, so the respondents could have assumed that the price was the same for all products.

## **5. CONCLUSION**

This chapter concludes the study by summarizing the key research findings concerning the research aims and questions and discussing the value and contribution thereof.

This study aimed to investigate the impact of choice overload on the makeup industry on makeup foundations. The results indicated that choice overload started to be experienced in the consumers' decisions when they were presented with a larger number of options. However, the study did not clearly show if this choice overload affected their current or future purchase decisions of a new foundation.

Even though there is still much to study in this industry, as will be further discussed below, the hope is that this study will be followed by further investigation and supplementary studies. So far, not much has been studied concerning choice overload in the makeup industry. Until very recently, there were still gaps and biases to break. After this study, more exploration can be done to understand consumers' feelings about the array of available products.

In conclusion, this study has found evidence of choice overload. However, the results indicate that there seems to be more to unveil.

## **6. LIMITATIONS AND RECOMMENDATIONS FOR FUTURE WORKS**

Throughout the investigation of this study, some limitations were felt to deepen the understanding of the issue. As a result, some recommendations for future research were offered.

### **6.1. LIMITATIONS**

A limitation while preparing the study was that it was impossible to create a deeper segmentation, due to legislation. For example, developing segmentations according to skin color was impossible. However, that could have helped understand whether a choice overload was primarily predominant in darker skin due to the number of brands and options currently offered in makeup foundations.

Another limitation of the survey was that it did not give a price comparison point for the various foundation options. It limited the possibility of determining whether product price would impact the purchasing decision. In future studies, it would be interesting to see if consumers also restrict their choice overload problem by not considering the more expensive products.

When further looking into the research and the generated results, the study lacked information on how brand awareness was affected by choice overload in the makeup industry. It could have given some more insight into how choice overload affected awareness. In sum, it could provide insight into how a brand could change the course of purchase decisions or how they are perceived in the market.

### **6.2. RECOMMENDATIONS**

The sample only reflected women's opinions, as those were the only participants engaging in the study. As men start to wear makeup foundation and it is becoming more acceptable by societies, it would be interesting to understand whether men feel the same. This topic involves making decisions, not least because of the color that needs to match the skin. Traditionally, society shows that men worry less about the type of products and their choices regarding such (Steingoltz & Santos, 2021). However, this is starting to change in skin care products, and men can also be more open to having more information and options regarding foundations (Chiquoine, 2020).

Additionally, the study mainly focused on western culture. However, the Asian culture looks at skin tones very differently (Chung, 2016). Thus, understanding whether they would feel any choice overload in their context would broaden the scope of the study. Future studies can do the same with African cultures.

Finally, with this exponential growth of products, it was also seen that brands that already had a significant market share and brand awareness invested in enlarging the foundation ranges. Therefore,

another recommendation is to study more profoundly the rise of foundations in the market industry, their influence on increasing brand awareness, and whether choice overload impacts this influence.

## 7. BIBLIOGRAPHY

- Abelman, D., & Dall'Asen, N. (2020, June 28). *21 Makeup Brands That Have the Most Inclusive Foundation Shade Ranges*. Allure. <https://www.allure.com/gallery/makeup-brands-wide-foundation-shade-ranges>
- Adoukè, D. (2020, July 16). *From Fashion Fair, the first black makeup brand to Fenty Beauty - Doria Adoukè*. Doria Adoukè. <https://doriaadouke.com/from-fashion-fair-the-first-black-makeup-brand-to-fenty-beauty/>
- Bayaah Siti Nor, A., Omar, A., Rudzi, M., & Mohd Roslan, R. (2018). Influence of Consumers' Perceived Brand Innovativeness on Customer-Brand Identification and Brand Loyalty. *International Journal of Supply Chain Management*, 7(4), 145–150. <http://excelingtech.co.uk/>
- Beautyblender. (n.d.). *Our Story of Success | Beautyblender® - One-of-a-kind Stunning Makeup*. Retrieved January 16, 2022, from <https://beautyblender.com/pages/our-story>
- Chan, E. (2014). *Is There In Choice No Beauty? Motivation for Choosing Moderates Choice Overload*. <http://hdl.handle.net/1807/73789>
- Chernev, A. (2003). When More Is Less and Less Is More: The Role of Ideal Point Availability and Assortment in Consumer Choice. *Journal of Consumer Research*, 30(2), 170–183. <https://doi.org/10.1086/376808>
- Chernev, A., Böckenholt, U., & Goodman, J. (2012). Choice overload: A conceptual review and meta-analysis. In *Journal of Consumer Psychology* (Vol. 25, Issue 2, pp. 333–358). Elsevier Inc. <https://doi.org/10.1016/j.jcps.2014.08.002>
- Chiquoine, J. (2020, February 18). *Men's Personal Care Market Is Ripe for Disruption*. CO. <https://www.uschamber.com/co/good-company/launch-pad/mens-personal-care-beauty-market>
- Chung, M. (2016, August 30). *I'm The Only Person In My Asian Family Who Wants To Be Tan | HuffPost Style*. Huffpost. [https://www.huffpost.com/archive/ca/entry/im-the-only-person-in-my-asian-family-who-wants-to-be-tan\\_b\\_11682684](https://www.huffpost.com/archive/ca/entry/im-the-only-person-in-my-asian-family-who-wants-to-be-tan_b_11682684)
- Dall'Asen, N. (2017, September 11). *The darkest shades of Rihanna's makeup line are selling out in record time at Sephora*. Insider. <https://www.insider.com/rihanna-fenty-beauty-foundation-is-selling-out-2017-9>
- Darrisaw, M. (2020, October 24). *What's Your Skin Undertone? Here's How to Find It*. Essence. <https://www.essence.com/beauty/how-to-determine-skin-undertone/>
- Data Module #1: What is Research Data?* (n.d.). Dewitt Wallace Library. Retrieved September 25, 2022, from <https://libguides.maclester.edu/c.php?g=527786/&p=3608643>

- de Santis, C. (2017, September 28). *Rihanna blasts rival beauty brand as “ashy” for shady post*. Daily Mail Online. <https://www.dailymail.co.uk/tvshowbiz/article-4928210/Rihanna-blasts-rival-beauty-brand-ashy-shady-post.html>
- Diehl, K., & Poynor, C. (2018). Great Expectations?! Assortment Size, Expectations and Satisfaction\*. *Journal of Marketing Research*, 47(2), 312–322.
- Fenty Beauty. (2021). *About Fenty Beauty | Fenty Beauty by Rihanna: Beauty for All*. Fenty Beauty. <https://fentybeauty.com/pages/about-fenty-beauty>
- Gbeleyi, T. (2016, July 17). *Bye Ashy: How to find your right foundation shade using undertones. Makeup for Melanin Girls*. . Makeup for Melanin Girls. <http://melaninmakeup.com/beauty-undertones-find-right-makeup-shades-melanin-rich-skin/>.
- Greenfield, S. (2018). *When Beauty is the Beast: The Effects of Beauty Propaganda on Female Consumers*. [https://digitalcommons.unomaha.edu/university\\_honors\\_program/20](https://digitalcommons.unomaha.edu/university_honors_program/20)
- Hoch, S. J., Bradlow, E. T., & Wansink, B. (1999). The variety of an assortment. *Marketing Science*, 18(4), 527–546. <https://doi.org/10.1287/mksc.18.4.527>
- How The Inclusive Beauty Movement Is Redefining The Industry - CB Insights Research*. (2021, June 23). CBInsights. <https://www.cbinsights.com/research/what-is-inclusive-beauty/>
- Hunter, G. L., & Goebel, D. J. (2008). Journal of Personal Selling & Sales Management Salespersons’ Information Overload: Scale Development, Validation, and its Relationship to Salesperson Job Satisfaction and Performance. *Journal of Personal Selling & Sales Management*, 28(1), 21–35. <https://doi.org/10.2753/PSS0885-3134280102>
- Hwang, J., Tung, T., & Cho, H. (2020). Too Many Choices? Consumer Behavior in Fast Fashion Stores. *Proceedings Virtual Conference* , 77(1). <https://doi.org/https://doi.org/10.31274/itaa.12187>
- Indermill, K. (2015). *The Dove® Campaign for Real Beauty: What’s Next for Inclusivity?* <https://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1107&context=joursp>
- Inganji, E., & Sharro, N. (2020). “Subconsciously, beauty is white and skinny.” *A qualitative study on colorism in makeup advertisements*. <https://www.diva-portal.org/smash/get/diva2:1437333/FULLTEXT01.pdf>
- Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, 79(6), 995–1006. <https://doi.org/10.1037/0022-3514.79.6.995>
- JASP Team. (2022). *JASP (Version 0.16.3)[MacOS]*. <https://jasp-stats.org/>
- Ketabchi, N. (2019, August 22). *Beauty Industry Growth*. Toptal. <https://www.toptal.com/finance/growth-strategy/beauty-industry>
- Li, J., Thomas, A., & Manian, D. (2018, June). *The Diversity of Makeup Shades: How inclusive are beauty brands around the world?* The Puddin. <https://pudding.cool/2018/06/makeup-shades/>



- Mandell, J. (2017, November 20). *Rihanna's Fenty Beauty Named One Of Time Magazine's Best Inventions Of 2017*. Forbes. <https://www.forbes.com/sites/jannamandell/2017/11/20/rihannas-fenty-beauty-named-one-of-time-magazines-best-inventions-of-2017/?sh=2860f63a30ea>
- Ma'or, Z., & Portugal-Cohen, M. (2021). Injecting Innovation to Traditional, Natural Cosmetic Ingredients: The Case of Dead Sea Minerals. *IEEE Engineering Management Review*, 49(2), 73–80. <https://doi.org/10.1109/EMR.2021.3072557>
- Metrus, L. (2019, September 15). *The Founder of Beautyblender Shares How the Miracle Tool Was Born*. Byrdie. <https://www.byrdie.com/facts-about-beautyblender>
- Millard, J. (2009). Performing Beauty: Dove's "Real Beauty" Campaign. *Symbolic Interaction*, 32(2), 146–168. <https://doi.org/10.1525/SI.2009.32.2.146>
- Mohan, S. (2020). *Choice overload and purchase intention among millennial rural and urban consumers* [Doctoral Dissertation]. Purdue University.
- Nittle, N. (2018, January 23). *Before Fenty: Over 100 Years of Black Makeup Brands - Racked*. Racked. <https://www.racked.com/2018/1/23/16901594/black-makeup-brands-history>
- Ocbazghi, E. (2020, September 11). *Beautyblender Was Created on the Set of "Girlfriends" for Black Women's Skin*. Business Insider. <https://www.businessinsider.com/how-beautyblender-became-revolutionary-makeup-product-rea-ann-silva-2019-7>
- Pillay, S. (2020). The future is female: Femvertising and attitude formation towards beauty brands. *Journal of Contemporary Management*, 17(2), 102–125. <https://doi.org/10.35683/jcm19069.66>
- Rao, P. (2018, July 17). *The Fenty effect: How beauty brands are responding to the new 40-shade foundation standard*. Glossy. <https://www.glossy.co/new-face-of-beauty/the-fenty-effect-how-beauty-brands-are-responding-to-the-new-40-shade-foundation-standard/>
- Rodulfo, K. (2018, May 31). *For New Foundation Ranges, "Fenty 40" Is The Magic Number*. Elle. <https://www.elle.com/beauty/makeup-skin-care/a20967710/makeup-companies-40-foundation-shades-fenty-beauty-influence/>
- Saputo, S. (2019). *Fenty Beauty's inclusive advertising campaign - Think with Google*. Think With Google. <https://www.thinkwithgoogle.com/future-of-marketing/management-and-culture/diversity-and-inclusion/-fenty-beauty-inclusive-advertising/>
- Silva, R. A. (2022). *The Original Beautyblender® Makeup Sponge*. Beautyblender. [https://cdn.shopify.com/s/files/1/0009/0000/5932/products/BB\\_Catalog\\_Allureseal\\_2000\\_V2.1.jpg?v=1663602323&width=1200](https://cdn.shopify.com/s/files/1/0009/0000/5932/products/BB_Catalog_Allureseal_2000_V2.1.jpg?v=1663602323&width=1200)
- Steingoltz, M., & Santos, E. (2021). Men's Beauty and Personal Care Is Poised for Handsome Growth. *L.E.K. Insights*, XXIII(48), 1–7. <https://www.lek.com/insights/ei/mens-beauty-and-personal-care-poised-handsome-growth>

Timmermans, D. (1993). The impact of task complexity on information use in multi-attribute decision making. *Journal of Behavioral Decision Making*, 6(2), 95–111.

<https://doi.org/10.1002/BDM.3960060203>

*Triangle Shape Makeup Sponges*. (2021). Dongguan Yaducai Cosmetic Fittings Co., Ltd.

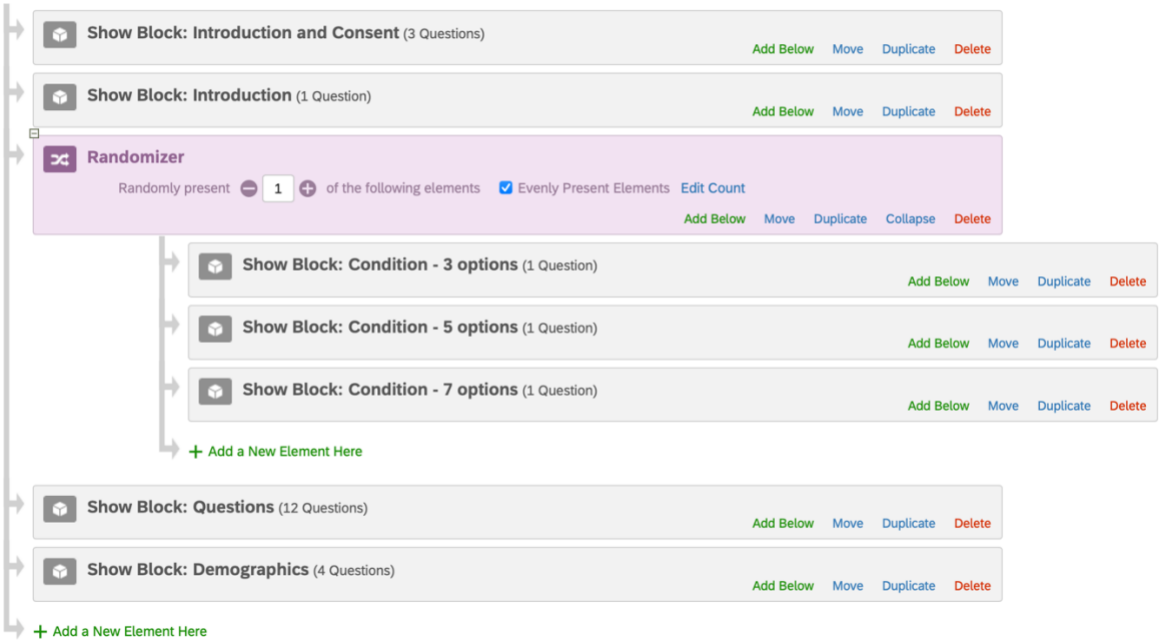
<https://image.made-in-china.com/2f0j00oMDfsuEGOzqv/Triangle-Shape-Makeup-Sponges-Makeup-Beauty-Foundation-Blender-Sponge-for-Liquid-Creams-Powders-Face-Cosmetics.jpg>

Werle, A. (2019). *Beyond Light, Medium, and Dark: Diversity and Inclusivity in the Makeup and Beauty Industries*. [https://digitalcommons.wku.edu/stu\\_hon\\_theses](https://digitalcommons.wku.edu/stu_hon_theses)

# 8. APPENDICES

## APPENDIX 1: SURVEY FLOW

Survey flow Draft



## **APPENDIX 2: SURVEY QUESTIONS FOR THE STUDY**

This is a study that is being made for the final dissertation of a Master's degree in Information Management with Specialization in Marketing Intelligence at NOVA IMS University in Lisbon, Portugal.

The purpose of this research project is to study consumer behavior with regard to makeup foundations. As such, the main target for this study is participants that wear foundation. If you do not wear makeup foundation, we appreciate your interest, but you are not eligible for this study.

Participation in this research study is voluntary, and you may choose not to participate. Should you decide to participate in this research, you may withdraw at any time.

The study involves completing an online survey that will take approximately 6 minutes. Your responses will be confidential and anonymous. This survey will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only.

If you have any questions about the research study, please get in touch with me, Nicole Almeida, at [m20200235@novaims.unl.pt](mailto:m20200235@novaims.unl.pt).

Thank you in advance for your collaboration!

### **ELECTRONIC CONSENT:**

By clicking on the "Agree" button below, you agree that you have read the above information, voluntarily agree to participate, and are at least 18 years of age.

- Agree
- Disagree

Do you normally wear makeup foundation?

- Yes
- No

Next, I will ask you to imagine yourself in the following situation: you are in a store and looking for a new makeup foundation for yourself.

On the following page, I will present you with a selection of makeup foundations for your consideration.

### Condition 1

Please carefully review the selection of makeup foundations presented below. Each option represents a different product.

Which product would you choose?



Shade 1:  
Longwear  
Medium to Full coverage  
Resistant to sweat & humidity  
100% cruelty free



Shade 2:  
Longwear  
Light to Full coverage  
Resistant to workout sessions  
Cruelty free



Shade 3:  
Longwear  
Medium to Full coverage  
Water resistant  
Vegan

### Condition 2

Please carefully review the selection of makeup foundations presented below. Each option represents a different product.

Which product would you choose?



Shade 1:  
Longwear  
Medium to Full coverage  
Resistant to sweat & humidity  
100% cruelty free



Shade 2:  
Longwear  
Light to Full coverage  
Resistant to workout sessions  
Cruelty free



Shade 3:  
Longwear  
Medium to Full coverage  
Water resistant  
Vegan



Shade 4:  
Longwear  
Full coverage  
Resistant sweat & transfers  
Vegan-friendly



Shade 5:  
Longwear  
High coverage  
Resistant to sweat & fade  
Cruelty free

### Condition 3

Please carefully review the selection of makeup foundations presented below. Each option represents a different product.

Which product would you choose?



Shade 1:  
Longwear  
Medium to Full coverage  
Resistant to sweat & humidity  
100% cruelty free



Shade 2:  
Longwear  
Light to Full coverage  
Resistant to workout sessions  
Cruelty free



Shade 3:  
Longwear  
Medium to Full coverage  
Water resistant  
Vegan



Shade 4:  
Longwear  
Full coverage  
Resistant sweat & transfers  
Vegan-friendly



Shade 5:  
Longwear  
High coverage  
Resistant to sweat & fade  
Cruelty free



Shade 6:  
Longwear,  
Medium coverage  
Water-resistant  
Vegan



Shade 7:  
Longwear,  
High coverage,  
Resistant to transfers  
Vegan

## **Investigation Questions**

### **Overwhelmed**

How difficult was it to make your decision of which foundation to pick?

1 -7 (very easy – very difficult)

How overwhelmed did the number of products available made you feel?

1 – 7 (not at all – very overwhelmed)

How overwhelmed did the amount of product information made you feel?

1 – 7 (not at all – very overwhelmed)

### **Frustration**

How frustrated did you feel when making the choice?

1 – 7 (not at all – very frustrated)

### **Stress**

Was the number of products available stressful?

1 – 7 (not at all – extremely)

The amount of information regarding the products caused you to make a mistake when choosing.

1 – 7 (not at all – extremely)

Do you think you will regret the foundation you chose?

1 – 7 (not at all – extremely)

### **Quantity**

Were there too many product options to choose from?

1 – 7 (not at all – extremely)

Were there too few product options to choose from?

1 – 7 (not at all – extremely)

Was it difficult to decide which option to choose?

1 – 7 (not at all – extremely)

### **Confidence**

Are you confident that the foundation you chose will satisfy you?

1 – 7 (not at all – extremely)

For a future situation, are you likely to choose the same foundation?

1 – 7 (not at all – extremely)

### **General Questions**

How do you identify?

- Male
- Female
- I prefer not to say

How old are you?

- Short text option

What is your highest degree or level of education?

- High School Diploma
- Bachelor's Degree
- Master's Degree
- Doctorate Degree

What is your current employment status?

- Full-Time
- Part-Time
- Working Student
- Student
- Unemployed