The Influence of Minimalist Package Design on Beauty Consumers’
Attitudes and Behavior Toward Cosmetic Products

Rachel Matthews
Department of Advertising, Public Relations, and Media Design
College of Media, Communication, and Information
University of Colorado Boulder

Committee Members:
Toby Hopp, Ph.D., Assistant Professor, (Faculty Advisor)
Department of Advertising, Public Relations, and Media Design
College of Media, Communication, and Information

Burton St. John, Ph.D., Professor and Associate Chair for Undergraduate Studies
Department of Advertising, Public Relations, and Media Design
College of Media, Communication, and Information

Heather Adams, Ph.D., Instructor
Department of Organizational Leadership and Information Analytics
Leeds School of Business

Defense Date: April 10, 2020
# Table of Contents

Abstract........................................................................................................................................3  
Chapter 1: Literature Review........................................................................................................6  
Chapter 2: Method........................................................................................................................19  
Chapter 3: Results.........................................................................................................................26  
Chapter 4: Discussion.....................................................................................................................28  
References......................................................................................................................................34  
Acknowledgments..........................................................................................................................39  
Appendix A.....................................................................................................................................40  
Appendix B.....................................................................................................................................41  
Appendix C.....................................................................................................................................53
Abstract

In a quantitative research study with 198 participants, this paper examines how minimalist cosmetic package designs influence beauty consumers’ perceptions of product quality, perceptions of product attractiveness, purchase intentions, and how much they are willing to pay for the product compared to more complex cosmetic package designs. The results indicate beauty consumers find more complex package designs more attractive, which may have important implications in terms of quality perceptions and purchase decisions. This study presents important information to marketers and product designers and extends upon package design literature. In concluding the paper, implications for further research are discussed.

Keywords: packaging, package design, design elements, minimalism, cosmetics, attitude formation, cognition, affect, emotion, aesthetics, consumer behavior, purchase intent
The Influence of Minimalist Package Design on Beauty Consumers’ Attitudes and Behavior Toward Cosmetic Products

The beauty industry is currently valued at an estimated $532 billion and analysts expect it to grow substantially in the coming years (Biron, 2019). As the beauty sector revealed itself to be a lucrative one, innovation and entrepreneurship flourished, and several retailers have launched their own beauty brands, including H&M, Net-a-Porter, and Lululemon (Kestenbaum, 2019). This has resulted in a crowded market, giving beauty consumers an abundance of choice when buying. Therefore, it is a more important time than ever to understand how to differentiate cosmetic products to achieve product success. Product packaging is a crucial differentiator and a clear determinant of product success (Bloch, 1995) because of its ability to influence consumer purchase decisions due to its high level of involvement at the point of purchase (Orth & Malkewitz, 2008).

In an effort to differentiate products and catch the eye of the consumer, the trend of minimalist packaging entered the cosmetic industry. For example, direct-to-consumer brand, Glossier, successfully differentiated itself in the crowded market with its clean and simple brand identity. Following in Glossier’s footsteps, minimalist packaging became a popular design choice for cosmetic brands as marketers have preached “less is more” when it comes to package design, as they believe consumers are “information-rich and time-poor” (Neumeier, 2005). However, as this trend continued to grow and more brands adapted this style, its ability to serve as a differentiator subsided.

Despite the trend in minimalism, empirical design studies suggest a more complex or elaborate design may lead to higher perceptions of quality and attractiveness, positively affecting consumer purchase intentions (Henderson & Cote 1998; Orth, Campana, & Malkewitz 2010;
Orth & Malkewitz (2008). However, there is a lack of research on perceptions of cosmetic packaging, something this paper aims to address. This is important right now as new cosmetic brands are adapting minimalist package design at the same time Gen z and Millennial beauty consumers are placing a large emphasis on packaging alone for purchase decisions (Mintel, 2018). Therefore, it is important for marketers to understand how this dimension of cosmetic package design affects consumers’ attitudes and behavior toward the product, as extant research suggests there is attitude transfer from packaging to the product that shapes behavior (Crilly, Moultrie, & Clarkson, 2004; Underwood, 2002).

The present study addresses two fundamental questions: (1) how does minimalist cosmetic package design influence beauty consumers’ attitude toward the product via a cognitive route and an affective route?; and (2) how does minimalist cosmetic package design influence beauty consumers’ behavioral intentions as they relate to the product? In the crowded cosmetic industry, it is important for marketers and designers to understand how to design the ideal packaging, which is superior to alternatives in its ability to evoke positive responses from the target market (Bloch, 1995).
Chapter 1: Literature Review

Importance of Package Design

Packaging is one of the most fundamental characteristics of a product, which constitutes one of the four P’s of the marketing mix, a foundational model for marketing (Bloch, 1995). The importance of packaging for product success has been widely studied through theoretical and empirical research, which has revealed its ability to differentiate products, gain consumer attention, and serve as a central driver of consumer preference (Bloch 1995; Crilly, Moultrie, & Clarkson 2004; Hoegg, Alba, & Dahl 2010; Reimann et al. 2010).

Extant research also indicates packaging is an extremely influential medium for product performance, especially new products, because of its ability to influence consumers’ attitudes and behavior toward the product and brand (Bloch 1995; Crilly, Moultrie, & Clarkson 2004; Underwood 2002). Bloch’s (1995) conceptual model aimed to identify consumer responses to product form or packaging. The model identified that consumers have psychological and behavioral responses to product form, revealing the importance of packaging as a determinant of consumer perceptions and purchase decisions. In addition, Orth, Campana, and Malkewitz (2010) found that package design influences consumers’ price expectations via judgements of quality and attractiveness.

Another important aspect of packaging is its ability to communicate essential information to the consumer. Underwood (2003) performed an exploratory qualitative study to support the hypothesis that packaging serves as a communication vehicle for the product and brand. The study interviewed five subjects during a grocery store walk-through to identify perceptions of product packaging and brands. The results indicated package design elements including graphics (e.g., color, typeface, logos, etc.) and structure (e.g., shape, size, material, etc.) communicate
product perceptions that impact purchase decisions. In addition, Orth and Malkewitz’s (2010) empirical study on holistic package design also revealed the importance of packaging as a means of conveying information to the consumer, including brand impressions.

In conclusion, effective packaging serves to differentiate products, gain consumer attention, positively influence consumer attitudes and behavior, and communicate information to the consumer to ultimately influence consumer purchase decisions. However, there are a variety of individual design elements that work together to create the overall package design for a product. The success of a product’s differentiation or perceptions therefore depends, in part, on the overall package design.

**Holistic Package Design**

Package design spans a wide variety of functional and visual attributes that contribute to the overall effect of the packaging (Bloch 1995; Orth & Malkewitz 2008). While not minimizing the importance of functional attributes, this paper focuses on the visual attributes associated with packaging including color, typography, and graphics. Theoretical and empirical evidence suggests that packaging’s visual attributes play a significant role in shaping consumer attitudes and behavior toward a product and brand (Bloch 1995; Orth, Campana, & Malkewitz 2010; Orth & Malkewitz 2008). Gestalt psychologists believe the overall effect of package design comes from the Gestalt of all the design elements working together, not from individual design elements (Koffka, 1922). Therefore, Orth and Malkewitz (2008) define *package design* as “the various elements chosen and blended into a holistic design to achieve a particular sensory affect” (p. 64).

In line with Gestalt theories, a number of empirical package design studies have measured consumer response to design from higher-level generic design factors, or holistic
CONSUMER RESPONSE TO MINIMALIST PACKAGE DESIGN

designs, that consist of individual design elements (Henderson & Cote 1998; Henderson, Cote, & Giese 2004; Orth, Campana, & Malkewitz 2008; Orth & Malkewitz 2008). Henderson and Cote (1998) identified three higher-level generic design factors for logos to assist managers in selecting logos to achieve desired consumer responses. The three overarching design factors were natural, harmony, and elaborate. The natural factor consists of lower-level characteristics such as representative and organic. It reflects the degree to which the design depicts commonly experienced objects. The harmony factor includes characteristics of balance and symmetry, while the elaborate factor includes complexity, active, and depth. Elaborate designs capture the concept of design richness and use simple lines to convey a visual representation’s essence.

To test the validity of measuring consumer response to generic design factors and extend the research beyond logos, Henderson, Giese, and Cote (2004) confirmed the three factors as drivers of impressions using typeface design and included three additional type-specific design factors including flourish, weight, and compressed. For typeface design, the natural factor included positive loadings for curved, organic, slanted, active, and a negative loading for looks typed (in contrast to looks handwritten). Harmony included positive loadings for uniform, balanced, smooth, and symmetrical. The elaborate factor contained positive loadings for distinctive, ornate, conveys meaning, and depth, while containing negative loadings for readable and common use. In an additional study, the relevance of the three design factors natural, harmony, and elaborate was further confirmed across cultures (Henderson et al. 2003). These three empirical studies confirmed that impressions derive from holistic design factors and suggested further research opportunities to understand the relationship between design and response for larger stimuli, including packaging. Based on this research, Henderson, Giese, and
Cote (2004) suggested that there may be universal design factors and responses that are generalizable across stimuli.

Following the study on logos and typeface design, Orth and Malkewitz (2008) performed an empirical study to identify prototypical holistic package designs and relate them to generalizable brand impressions to develop guidelines for designing packaging to achieve desired consumer responses. The study first identified 62 design elements from previously reviewed literature and professional designer’s evaluation which served as the basis for identifying the underlying factors of holistic package designs. Using cluster analysis, the study revealed five holistic package designs from similarities of the stimuli’s 62 design elements. The five holistic package designs identified were labeled massive, contrasting, natural, delicate, and nondescript. Through statistical analysis, the researchers revealed eight design factors that are essential in differentiating the five holistic design clusters. In line with Henderson and Cote (1998) and Henderson, Giese, and Cote (2004), three of the design factors were natural, harmony, and elaborate. The five remaining design factors were size, symmetry, compressed, flourish, and weight.

The present study is interested in the results associated with the holistic package design “nondescript.” Prominent within nondescript package designs is the scarcity of outstanding design characteristics. Orth and Malkewitz’s (2008) study found that nondescript package designs are differentiated from the four other holistic designs by below-average natural and elaborate design factors and above-average symmetry design factors. Important to the present study, the natural design factor includes the underlying design elements: natural color scheme, organic typography, natural bottle color, images of nature, images of landscapes, images of plants, or images of wine. The elaborate design factor includes high label structure, many image
details, ornate typography, many label details, large quantity of text, many labels, high label elaboration, and angular label shape. The *symmetry* design factor includes label and bottle symmetry, common bottle silhouette and color, and common label material.

The present study uses these factors of nondescript package design to define minimalist package design. For this project, *minimalist package design* is defined as packaging with less text, minimal color scheme, simple typography, more symmetry, more white space, and lack of graphics. Therefore, minimalist package design is comparable to nondescript package design in its scarcity of outstanding design characteristics and therefore, should evoke similar responses from consumers. *Complex package design* is the opposite and is defined as packaging with more text, more use of color, variety of typography, less symmetry, less white space, and more graphics; including shapes, illustrations or imagery. Therefore, minimalist package designs have below-average natural and elaborate design factors, and above-average symmetry design factors. In contrast, complex package designs have above-average natural and elaborate design factors, and below-average symmetry design factors. Minimalist and complex packaging are, therefore, holistic package designs comprised of underlying design elements including typography, color, and graphics. Consistent with package design literature, holistic package designs aid in forming consumer perceptions of the product, that impact purchase decisions.

**Attitudes Toward Holistic Package Design**

Bloch (1995) found that despite the well-known significance of product design in marketing, there was a lack of understanding in how product design impacts consumers’ attitudes toward the product due to the lack of a conceptual framework. Drawing on consumer behavior research, Bloch developed a model of consumer responses to product form intended to provide a more systematic approach for future empirical design studies. In building the conceptual
framework, Bloch identified two types of psychological responses to product form that shape attitude. These include cognitive responses and affective responses, which may interact and occur simultaneously (Norman, 2002).

Bloch (1995) describes cognitive responses as product and brand-related beliefs as well as categorization. Research has shown packaging has the ability to convey impressions of quality, durability, dollar value, technical sophistication, ease of use, sex role appropriateness, and prestige (Bloch, 1995). It is important for brands to understand the way packaging elicits product and brand-related beliefs in an effort to design packaging to elicit the desired consumer response. For example, if a cosmetic product meant to be the cheaper option has a package design that elicits beliefs of prestige, consumers seeking a cheaper product may see the product as expensive and avoid it. Product design also influences how the product is categorized within and among product classes, as consumers attempt to understand products by comparing them to similar products (Bloch, 1995). For example, if a cosmetic product meant to be prestigious has a package design that resembles a cheaper product, consumers might categorize the product as cheap and low quality. Therefore, it is important to consider how packaging affects how consumers categorize products, to make sure the packaging allows the product to be categorized desirably.

Product design also creates affective responses from consumers (Bloch 1995; Veryzer & Hutchinson 1998). The word affect is used to describe emotions, moods, and feelings (Crilly, Moultrie, & Clarkson, 2004). Affective responses to product design are derived from the design and sensory properties of the product instead of the performance or functional attributes (Bloch, 1995). Positive affective responses to product form can range from simply liking the product to evoking an aesthetic response, or a “deeply felt experience that is enjoyed purely for its own sake
without regard for other more practical considerations” (Holbrook & Zirlin, 1985, p. 21).

Therefore, affective responses include perceptions of attractiveness (Orth, Campana, & Malkewitz, 2010) and lead to strong attention and involvement from the consumer (Reimann et al., 2010).

Empirical support for the view that holistic designs affect consumers’ attitudes toward the product also suggest two routes toward attitude formation. Orth, Campana, and Malkewitz (2010) examined how the holistic design factors, natural, harmony, and elaborate influence consumer price expectations mediated by perceptions of quality and attractiveness. Drawing on dual-process theories, the empirical study found that consumers form price expectations from two basic psychological routes. These include a central route, or cognitive route, and a peripheral route, or affective route, which work together when consumers associate visible features with diagnostic judgments. In other words, affective responses are formed from easily processed cues generally associated with the attractiveness of visual content (Kirmani & Shiv 1998), while cognitive responses require consumers to spend considerable effort to attend to argument merit and respond based on judgment, which generally involve perceptions of quality (Orth, Campana, & Malkewitz, 2010). The study defined quality as the “cognitive evaluation of a product’s intrinsic core benefit” (Orth, Campana, & Malkewitz, 2010, p. 25); and suggested that when the core benefit is not obvious, consumers use extrinsic cues, especially visual attributes including package design, to predict the quality of the product. However, their study emphasized that not all individuals process information in the same way, as some place a higher emphasis on cognition while others place a higher emphasis on affect, or emotion in their decision-making. A number of additional empirical studies have measured affective response via perceptions of attractiveness and cognitive response via perceptions of quality (Chang 2007; Eagly & Chaiken
1993; Petty & Cacioppo 1986). Therefore, the present study aims to compare consumers’ attitudes toward the holistic package designs of minimalist and complex through a cognitive evaluation of quality and an affective evaluation of attractiveness (Orth, Campana, & Malkewitz, 2010).

**Perceived Quality of Holistic Package Design**

Prior research aimed to measure which holistic designs form the highest perceptions of quality because quality is such an important factor in consumer purchase decisions. The study on package design by Orth and Malkewitz (2008) described earlier in this paper found that “nondescript” package designs were differentiated from the other four holistic designs by below-average natural and elaborate design factors, and above-average symmetry design factors. Therefore, the present study defined minimalist package design as packaging with less text, minimal color scheme, simple typography, more symmetry, more white space, and lack of graphics, in-line with “nondescript” package designs.

Following prior literature on natural, harmony, and elaborate design factors (Henderson & Cote 1998; Henderson, Giese, & Cote 2002), Orth, Campana, and Malkewitz (2010) believed packaging with these three design factors should evoke high levels of perceived quality and attractiveness from consumers. The study used wine packaging as stimuli and selected 60 different stimuli for comparison; 10 with the highest score on the natural factor and 10 with the lowest score, 10 with the highest score on harmony and 10 with the lowest score, and 10 with the highest score on elaborate and 10 with the lowest score for this factor. Participants 21 years or older were randomly presented 10 stimuli to measure their perceptions of quality, attractiveness, and expected price of the wine. As predicted, the results found that consumers attributed higher quality to the more natural, harmonious, and elaborate package designs, and therefore,
consumers had a higher price expectation for stimuli with these designs (Lichtenstein, Bloch, & Black, 1988). The study measured perceptions of quality using three measures on a seven-point semantic differential scale (high quality/low quality, good craftsmanship/bad craftsmanship, and reliable/not reliable).

Relevant to the present study, additional research has contributed natural and elaborate designs to consumer judgements of high quality (Crilly, Moultrie, & Clarkson 2004; Henderson et al. 2003; Orth & Malkewitz 2008). Orth and Malkewitz (2008) found that natural designs are perceived as higher quality through brand personality perceptions of competence and sincerity. Brand personality is “the set of human characteristics associated with a brand” (Aaker 1997, p. 347). Research has shown that leveraging brand personality significantly helps brands succeed as it differentiates a brand in a product category, serves as a central driver of consumer preference and usage, evokes emotions in consumers, and increases levels of trust and loyalty (Aaker 1997; Orth & Malkewitz 2008). Brand personality perceptions can be formed from any interaction the consumer has with the brand and is affected by product-related attributes, product category associations, brand name, symbol or logo, advertising style, price, and distribution channel (Aaker, 1997). In addition, consumers perceived products with elaborate packaging to be high quality (Orth & Malkewitz, 2008) as they look like more effort, technology, and attention were put into the design (Crilly, Moultrie, & Clarkson, 2004). The results from Orth and Malkewitz (2008) also found that “nondescript” package designs had the lowest score for the consumer response dimension “value for money.” This suggests minimalist package designs may elicit beliefs of being lower quality, less expensive, or less prestigious than complex package designs. Because product design also influences product categorization, all cosmetic products with
minimalist package design may be placed into this category of having less value for money from consumers.

Package design research suggests natural and elaborate design factors are significant predictors of consumer quality judgments (Orth, Campana, and Malkewitz 2010; Orth and Malkewitz 2008). In the present study, minimalist package design consists of below-average natural and below-average elaborate design factors, while complex package design consists of higher levels of natural and elaborate design factors. Therefore, this study hypothesizes:

Hypothesis 1: Cosmetic products with complex package designs are perceived as higher quality compared to cosmetic products with minimalist package designs.

Perceived Attractiveness of Holistic Package Design

Package design research has also aimed to understand which holistic designs create positive affective responses from consumers because it is such an important influence on consumer purchase decisions. As mentioned earlier, affective responses can range from simply liking the product, to thinking it is attractive, or evoking an aesthetic response from consumers. A number of empirical design studies have tested the affective response to a variety of higher-level design factors (Henderson & Cote 1998; Orth, Campana, & Malkewitz 2010).

Henderson and Cote (1998) believed that good logos should be recognizable, familiar, hold the same meaning across audiences, and evoke positive affective responses. Therefore, their study aimed to identify holistic logo designs comprised of underlying design characteristics that elicit the desirable responses. The study first identified a set of underlying design characteristics that appear most relevant to logos. These included: representative, organic, balance, symmetric, complexity, active, depth, repetition, proportion, and round. These lower-level characteristics were analyzed to identify three higher-level, holistic designs; natural, harmony, and elaborate.
Next, the three holistic designs were measured on response dimensions of recognition, meaning consensus, and affect. Relevant to the present study, the authors found that natural designs, which include characteristics of representative and organic, and elaborate designs, which include characteristics of complexity, active, and depth evoke the most positive affective response from consumers. They measured affect with five measures on a seven-point semantic differential scale (like/dislike, good/bad, high/low quality, distinctive/not distinctive, and interesting/uninteresting). The study suggested the results may be applied to a variety of stimuli, including package design.

In addition, Orth, Campana, and Malkewitz’s (2010) study on the influence of natural, harmony, and elaborate package designs on consumer price expectations measured affective response based on how attractive consumers believe the product to be. The study measured perceptions of attractiveness with three measures on a seven-point semantic differential scale (attractive/not attractive, beautiful/not beautiful, and desirable/not desirable). The results revealed that consumers find natural and elaborate package designs to be more attractive and therefore, hold a higher price expectation for stimuli with these designs.

Package design research suggests holistic package designs comprised of natural and elaborate design factors are associated with consumer judgements of attractiveness. In the present study, minimalist package design consists of below-average natural and elaborate design factors, while complex package design consists of higher levels of natural and elaborate design factors. Therefore, this study hypothesizes:

*Hypothesis 2: Cosmetic products with complex package designs are perceived as more attractive compared to cosmetic products with minimalist package designs.*

**Behavior Toward Holistic Package Design**
It is important to understand which holistic package designs are perceived as higher quality, a cognitive response, and more attractive, an affective response, because these two response dimensions impact consumers’ purchase intentions and how much they are willing to pay, which classify as behavioral responses (Crilly, Moultrie, & Clarkson, 2004). Behavioral responses include approach and avoidance responses (Bloch, 1995). The ultimate goal is to get consumers to purchase the product, therefore, approach responses are necessary for consumers to purchase the product and include activities such as extended viewing, listening to, or touching the product as well as further information seeking and a willingness to visit retailers selling the product (Bloch, 1995).

The theoretical frameworks on consumer response to product design established in Bloch (1995) and Crilly, Moultrie, and Clarkson (2004) reveal that positive cognitive and affective responses lead to more positive behavioral responses, including higher purchase intentions. In addition, perceived quality, a cognitive response, is a clear driver of purchase intention as revealed through theoretical and empirical research (Bloch 1995; Orth & Malkewitz 2008). Furthermore, extant package design research suggests when consumers are given a choice between two products, equal in price and function, consumers buy the product they consider more attractive (Bloch 1995). Research also suggests consumers are willing to pay more for products they perceive to be higher quality and more attractive (Bloch, Brunel, & Arnold 2003; Reimann et. al. 2010).

Reimann, Zaichkowsky, Neuhaus, Bender, and Weber (2010) performed a research study to understand the difference in consumer response to aesthetic package design compared to standardized package design. The aesthetic experimental condition presented participants 80 product packages, pre-selected according to important visual aspects of aesthetic package design;
including beauty, unity, and prototypicality (Orth & Malkewitz 2008; Veryzer & Hutchinson, 1998). In contrast, the standardized experimental condition presented participants 80 product packages, pre-selected based on their functionality and practical utility. The study performed three separate experiments to measure reaction time, activation of the reward system in the brain, and affective involvement for aesthetic and standardized packaging. In the affective involvement experiment, participants were randomly presented one of four different configurations: (1) aesthetic packaging with a well-known brand, (2) aesthetic packaging with an unknown brand, (3) standardized packaging with a well-known brand, and (4) standardized packaging with an unknown brand. In addition, the four combinations were randomly presented with a high or low price. The results from the experiment revealed participants chose aesthetic packaging with an unknown brand over standardized packaging with a well-known brand, even when presented with the higher price. Therefore, the results suggest more aesthetic, or attractive, products positively affect product choice and willingness to pay. The results also suggest aesthetics may play a more important role in purchase decisions than brand name.

Prior consumer behavior and package design literature provides evidence that perceptions of quality and attractiveness impact consumers’ purchase decisions and willingness to pay. In addition, there is empirical evidence that consumers choose products they perceive to be high quality and attractive, and that they may be willing to pay more for these products. Therefore, the present study hypothesizes:

*Hypothesis 3: Beauty consumers have higher purchase intentions for cosmetic products with complex package designs compared to cosmetic products with minimalist package designs.*

*Hypothesis 4: Beauty consumers are willing to pay more for cosmetic products with complex package designs compared to cosmetic products with minimalist package designs.*
Chapter 2: Method

Stimuli

Consumers rely more on packaging for unfamiliar brands than familiar brands (Underwood & Klein, 2002). In addition, consumer response research suggests using brands unfamiliar to participants to avoid bias in the results (Orth, Campana, & Malkewitz 2010; Orth & Malkewitz 2008) as perceptions can be formed from any interaction the consumer has with the brand including advertising style, price, and distribution channel (Aaker, 1997). Thus, this study did not use existing brands, meaning any responses had to be due to the package design rather than any prior experience with the product or brand. Stimulus materials for the experiment were designed by the researcher, who is a graphic designer with experience in package design. The research objectives demanded stimuli with clearly established holistic package designs, or minimalist package designs and complex package designs to compare consumer responses between the two. Minimalist package designs included packaging with less text, minimal color scheme, simple typography, more symmetry, more white space, and lack of graphics. Complex package designs included packaging with more text, more use of color, variety of typography, less symmetry, less white space, and more graphics.

The researcher designed stimuli from three cosmetic categories; skincare, haircare, and makeup to ensure the results were generalizable across all cosmetic products (Orth & Malkewitz, 2008). The packaging was designed using Adobe Creative Suite programs and placed into mockups to represent a finished cosmetic product, similar to what consumers would see online or in-store. Each product category consisted of two stimuli, a cosmetic product with minimalist package design and a cosmetic product with complex package design as defined by the researcher. In each product category, the brand name, product, bottle shape, overall color
scheme, and mockup were controlled while the design elements, including typography, graphics, amount of color, symmetry, and white space were manipulated. The study resulted in a total of six stimuli for the study. The images used for the experiment are provided in Appendix C.

Procedure

The study was conducted using Qualtrics, a web-based tool for creating and conducting online surveys (Qualtrics, 2020). The questions used for the experiment are provided in Appendix B. Participants recruited from Amazon’s Mechanical Turk (MTurk) population were required to complete pre-screen questions to assure the right participants were recruited for the study. At the start of the survey, participants reviewed the study guidelines and consented to the survey by clicking continue. In this study, participants were required to be 18 years or older, a current U.S. citizen, and identify as female. In line with recent Mintel reports, the sample was limited to females as this is the primary demographic of beauty consumers (Mintel 2018; Mintel 2019). In addition, they must have purchased at least one cosmetic product (skincare, haircare, makeup) within the last six months. Participants that didn’t meet these requirements were sent to the end of the survey and their data was removed prior to analysis.

Following the screening block, participants were asked three general questions about their cosmetic purchasing habits. Next, respondents were randomly assigned to one of two experimental groups in which they viewed three out of the six stimuli. Experimental group one viewed three minimalist cosmetic package designs, which can be found in Appendix C. Participants in this group first viewed minimalist cosmetic package design #1: skincare product, followed by a question to assess how much they would be willing to pay for the product. Next, they viewed minimalist cosmetic package design #2: haircare product, followed by the same question. Lastly, they viewed minimalist cosmetic package design #3: makeup product, with the
same question again. Alternatively, experimental group two viewed three complex cosmetic package designs, which can also be found in Appendix C. This group first observed complex cosmetic package design #1: skincare product, followed by the same question to assess how much they would be willing to pay for the product that was presented to experimental group one. They followed an identical procedure, next viewing complex design #2: haircare product and complex design #3: makeup product, followed by the same question.

Participants from both experimental groups then answered questions to assess their perceptions of quality, perceptions of attractiveness, and purchase intent toward the three products they viewed. The final step of the questionnaire included demographic questions. Participants that completed the survey were paid $0.25 for their time and effort, which went directly into their MTurk account.

The raw survey data was exported from Qualtrics into a .csv file. The data was then cleaned to prepare the file for data analysis by removing participants that didn’t finish the survey. The clean dataset was then imported into RStudio, an integrated development environment (IDE) for R, a statistical programming language (RStudio, 2020). Data analysis was conducted using the following R packages: “tidyverse,” “psych,” “effsize,” “lavaan,” “lavaanPlot,” “ggpubr,” “cowplot,” and “corrplot.” Means, standard deviations, and reliability coefficients (Cronbach’s alpha) were computed for each dependent variable. A correlation matrix describing the bivariate relationships between the four dependent variables was estimated. The four hypotheses were evaluated using a series of Welch independent samples t-tests. Finally, supplemental visual figures were created using RStudio.

Sample
Participants were recruited using Amazon’s Mechanical Turk. This method was preferred to extend the population beyond undergraduate college students and allowed the study to better represent beauty consumers. A total of 198 responses were collected, with 98 people in experimental group one (minimalist) and 100 people in experimental group two (complex). Following the study guidelines, 100% of participants were over the age of 18, a current U.S. citizen, identified as female, and purchased a cosmetic product (skincare, haircare, makeup) within the last six months. Demographic questions identified the largest age bracket of the sample between the age 35-44 (31.8%), with the second largest bracket being 25-34 (28.3%). The majority of respondents reported their race/ethnicity as Caucasian (72.2%). In addition, the largest income bracket was between $25,000 - $49,999 (28.8%). Table 1 provides a complete report of the sample’s demographic profile.

Table 1

Demographic breakdown for the sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>9.6%</td>
</tr>
<tr>
<td>25-34</td>
<td>28.3%</td>
</tr>
<tr>
<td>35-44</td>
<td>31.8%</td>
</tr>
<tr>
<td>45-54</td>
<td>14.1%</td>
</tr>
<tr>
<td>55-64</td>
<td>10.6%</td>
</tr>
<tr>
<td>65+</td>
<td>5.6%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>72.2%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>6.6%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>10.6%</td>
</tr>
<tr>
<td>Native American or American Indian</td>
<td>0.5%</td>
</tr>
<tr>
<td>Asian / Pacific Islander</td>
<td>8.1%</td>
</tr>
<tr>
<td>Other</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
### Table 1: Income Distribution

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $25,000</td>
<td>15.7%</td>
</tr>
<tr>
<td>$25,000 - $49,999</td>
<td>28.8%</td>
</tr>
<tr>
<td>$50,000 - $74,999</td>
<td>19.7%</td>
</tr>
<tr>
<td>$75,000 - $99,999</td>
<td>19.2%</td>
</tr>
<tr>
<td>$100,000 and over</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

*Note: Study participation was limited to those identifying as female*

The majority of participants said they spend $100-299 per year on cosmetics (49.5%). 66.7% of the sample typically purchases cosmetics products in store, while 33.3% typically purchase online. Expanding on this question, the most common places participants purchase cosmetic products are Walmart (21.21%), Drugstores (15.7%), and Ulta Beauty (14.14%).

### Measures

After viewing the three cosmetic products in their randomly assigned experimental condition, the study measured response to four key dependent variables including perceived quality, perceived attractiveness, purchase intent, and willingness to pay. The study measured each variable with three items to help reduce measurement error. Cronbach’s alpha coefficients were calculated to assess scale reliability and ensure internal consistency for each measured variable (UCLA, 2019). A Cronbach alpha value greater than .70 demonstrates internal consistency (UCLA, 2019).

The study measured perceptions of quality with three items to reduce measurement error. Using a 7-point semantic differential scale, participants were asked “*After viewing the three cosmetic products, please rate the products on the following: 1 = low quality, bad craftsmanship, not reliable, and 7 = high quality, good craftsmanship, reliable*” (Orth, Campana, & Malkewitz 2010; Teas & Agarwal 2000). Responses to the three items were
averaged to form a single measurement of perceived quality. From 198 responses, the overall mean was 5.38 and the standard deviation was 1.00. The Cronbach’s alpha coefficient was .88, which demonstrates that the scale is internally consistent.

The study also measured perceptions of attractiveness with three items to reduce measurement error. Using a 7-point semantic differential scale, participants were asked “After viewing the three cosmetic products, please rate the products on the following: 1 = not attractive, not beautiful, not desirable, and 7 = attractive, beautiful, and desirable” (Hirschman 1986; Orth, Campana, & Malkewitz 2010). The three responses were averaged to form a single measurement of perceived attractiveness. From 198 responses, the overall mean was 5.55 and the standard deviation was 1.22. The Cronbach’s alpha coefficient was .93, meaning the scale is internally consistent.

Using measures originally employed by Baker and Churchill (1977), participants’ purchase intent was assessed with three questions using a seven-point semantic differential scale (1 = no, definitely not, and 7 = yes, definitely). The questions included “Would you be likely to buy these products?”; “Would you buy these products if you happened to see them in a store?”; and “Would you actively seek out these products in a store in order to purchase them?” The three responses were averaged to form a single measurement of purchase intent. From 198 responses, the overall mean was 4.41 and the standard deviation was 1.45. The Cronbach’s alpha coefficient was .92, which demonstrates acceptable scale reliability.

The last measure assessed how much participants would be willing to pay for the cosmetic product using one multiple-choice question (Bloch, Brunel, & Arnold 2003; Jun, MacInnis, & Whan Park 2005). After viewing each cosmetic product, participants were asked to “Please specify the dollar amount you would be willing to pay for this cosmetic product?”
Participants were given the following options: 1 = Under $10, 2 = $10-$19, 3 = $30-$39, 4 = $40-$49, 5 = $50 or more. The three responses were treated as an additive index (i.e., the items were summed). The overall mean for the measure was 5.15 and the standard deviation was 1.90. The Cronbach’s alpha coefficient was .74, which demonstrates acceptable scale reliability.

Table 2

*Dependent variable means, standard deviations, and Cronbach alphas*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived Quality</strong></td>
<td>5.38</td>
<td>1.00</td>
<td>.88</td>
</tr>
<tr>
<td><strong>Perceived Attractiveness</strong></td>
<td>5.55</td>
<td>1.22</td>
<td>.93</td>
</tr>
<tr>
<td><strong>Purchase Intentions</strong></td>
<td>4.41</td>
<td>1.45</td>
<td>.92</td>
</tr>
<tr>
<td><strong>Willingness to Pay (Sum)</strong></td>
<td>5.15</td>
<td>1.90</td>
<td>.74</td>
</tr>
</tbody>
</table>

For the analysis, a correlation matrix was created in RStudio to understand the correlations between the four dependent variables. The correlation coefficients between each dependent variable are shown in Table 3.

Table 3

*Correlation coefficients between each dependent variable*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Quality</th>
<th>Perceived Attract.</th>
<th>Purchase Intent</th>
<th>Willing. Pay (Sum)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived Quality</strong></td>
<td>1.00</td>
<td>.69</td>
<td>.88</td>
<td>.18</td>
</tr>
<tr>
<td><strong>Perceived Attract.</strong></td>
<td>1.00</td>
<td>.57</td>
<td></td>
<td>.09</td>
</tr>
<tr>
<td><strong>Purchase Intent</strong></td>
<td></td>
<td></td>
<td>1.00</td>
<td>.26</td>
</tr>
<tr>
<td><strong>Willing. Pay (Sum)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>
Chapter 3: Results

Hypothesis 1 predicted that *cosmetic products with complex package designs are perceived as higher quality compared to cosmetic products with minimalist package designs*. However, a Welch independent samples t-test indicated that those who viewed the complex package designs ($M = 5.45$, $SD = 0.94$) were not statistically significantly more likely to indicate higher perceptions of quality than those that viewed the minimalist package designs ($M = 5.30$, $SD = 1.06$), $t = -1.06$, $df = 192.47$, $p > .29$; $d = -0.15$.

Hypothesis 2 predicted that *cosmetic products with complex package designs are perceived as more attractive compared to cosmetic products with minimalist package designs*. The results of a Welch independent samples t-test supported this hypothesis. Those who viewed the complex package designs ($M = 5.85$, $SD = 1.06$) were statistically significantly more likely to indicate higher perceptions of attractiveness compared to those that viewed the minimalist package designs ($M = 5.24$, $SD = 1.30$), $t = -3.58$, $df = 186.29$, $p < 0.001$; $d = -0.51$.

Hypothesis 3 predicted that *beauty consumers have higher purchase intentions for cosmetic products with complex package designs compared to cosmetic products with minimalist package designs*. However, the results of a Welch independent samples t-test indicated that those who viewed the complex package designs ($M = 4.56$, $SD = 1.35$) were not statistically significantly more likely to indicate higher purchase intentions than those that viewed the minimalist package designs ($M = 4.26$, $SD = 1.54$), $t = -1.48$, $df = 191.72$, $p > 0.14$; $d = -0.21$.

Hypothesis 4 predicted that *beauty consumers are willing to pay more for cosmetic products with complex package designs compared to cosmetic products with minimalist package designs*. However, a Welch independent samples t-test indicated that those who viewed the complex package designs ($M = 5.27$, $SD = 2.03$) were not statistically significantly more likely
to indicate a higher willingness to pay than those that viewed the minimalist package design (M = 5.03, SD = 1.76), $t = -0.89$, $df = 193.19$, $p > .38$; $d = -.13$.

**Figure 1**

*Visual depiction of group-level scores for the variables used in Hypotheses 1-4*
Chapter 4: Discussion

Theoretical and empirical evidence suggests that packaging’s visual attributes play a significant role in shaping consumer attitudes and behavior toward a product and brand (Bloch 1995; Orth, Campana, & Malkewitz 2010; Orth & Malkewitz 2008). Therefore, this study set out to better understand the influence of minimalist package design—a current trend in the cosmetic industry—on beauty consumers’ attitudes and behavior toward cosmetic products. More specifically, this study compares consumer responses to a set of cosmetic products with minimalist packaging and a set of cosmetic products with more complex packaging.

Bloch’s (1995) conceptual framework identified two types of psychological responses to product form that shape attitude. These include cognitive and affective responses, that may interact or occur simultaneously (Norman, 2002). This study followed methods to measure consumer response employed in a number of empirical design studies, which measured affective response via perceptions of attractiveness and cognitive response via perceptions of quality (Change 2007; Eagly & Chaiken 1993; Orth, Campana, & Malkewitz 2010; Petty & Cacioppo 1986). Therefore, the minimalist and complex experimental conditions measured beauty consumers’ attitudes via perceptions of product quality and attractiveness. Considering prior design research, this study predicted that beauty consumers would have higher perceptions of quality and attractiveness for the cosmetic products with the more complex packaging.

As discussed in the literature review, attitudes shape behavior (Bloch 1995; Crilly, Moultrie, & Clarkson 2004); therefore, positive cognitive and affective responses lead to more positive behavioral responses. Prior research on package design revealed perceptions of quality and attractiveness as clear drivers of purchase intentions (Bloch 1995; Orth & Malkewitz 2008), and found consumers are willing to pay more for products they perceive to be higher quality and
more attractive (Bloch, Brunel, & Arnold 2003; Reimann et. Al. 2010). Hence, this study also predicted that beauty consumers have higher purchase intentions and are willing to pay more for cosmetic products with complex package designs compared to cosmetic products with minimalist package designs.

The results suggested that the only significant relationship found in this study was in the case of hypothesis 2. Hypothesis 2 predicted that *cosmetic products with complex package designs are perceived as more attractive compared to cosmetic products with minimalist package designs*. This hypothesis was supported, meaning that those who viewed the complex cosmetic package designs were statistically significantly more likely to indicate higher perceptions of product attractiveness compared to those that viewed the minimalist cosmetic package designs. Therefore, complex package design is a significant predictor of positive perceptions of attractiveness for cosmetic products, which the literature suggests may lead to additional positive perceptions or behavior (Bloch 1995; Crilly, Moultrie, & Clarkson 2004). This result is consistent with design literature, that suggested a more complex or elaborate design, may lead to higher perceptions of attractiveness, an affective consumer response that aids in overall attitude formation toward the product (Henderson & Cote 1998; Orth, Campana, & Malkewitz 2010).

Previous studies found that when given a choice, consumers tend to buy the product they consider more attractive and are willing to pay more for these products (Bloch, Brunel, & Arnold 2003; Reimann et. al. 2010). In addition, Orth, Campana, and Malkewitz’s (2010) study supports findings that attractive packaging may represent a source of value to aesthetically conscious consumers and could lead them to accept higher prices. However, the results from this study did not support this claim. Hypotheses 1, 3, and 4 did not demonstrate complex package designs to
be significant predictors of higher quality perceptions, purchase intentions, and willingness to pay, despite its ability to evoke higher perceptions of attractiveness. This may be due to a variety of reasons, including categorization, a cognitive response to package design (Bloch, 1995). Consumers attempt to understand products by comparing them to similar products. Therefore, if any of the stimuli looked similar to a product the participant was familiar with, this could have carried bias into their judgement of the product. For example, if one of the stimuli resembled a cosmetic product that sells for under $10 or at a cheaper store, participants might categorize the product as cheap and low quality. In addition, expensive brands and products that sell at higher-end retail stores have introduced minimalist package design as the trend continues to grow in the cosmetic industry. Therefore, participants could associate this design aesthetic with perceptions of high quality, that in-turn impact their purchase intentions and how much they would be willing to pay for the product, despite their perceptions of attractiveness.

However, the correlation matrix provided as Table 3 shows that perceptions of attractiveness are positively correlated with perceptions of quality (.69), meaning as perceptions of attractiveness increase, perceptions of quality also increase. This is consistent with Henderson and Cote’s (1998) study on logo design that found attractive packaging represents value to consumers and therefore impacts their perception of the product. This positive attractiveness-quality link, or the “beautiful is good” stereotype, has been well established in the advertising domain (Kamins 1990; Parekh & Kanekar 1994), as well as social psychology (Kenealy, Frude, & Shaw 1991; Koernig & Page 2002). In addition, it is consistent with findings from Orth, Campana, and Malkewitz’s (2010) study on wine package design that supported the hypothesis that consumers associate higher quality with more attractive packaging. It also aligns with Peters-Texeira and Badries’ (2005) study on food packaging that found consumers would be
more likely to purchase a product that was packaged more attractively because they judged its quality to be higher.

In-line with Peters-Texeira and Badrie’s (2005), the correlation matrix (Table 3) also suggested positive correlations between perceptions of quality and purchase intent (.62), as well as between perceptions of attractiveness and purchase intent (.57). Therefore, as consumer perceptions of quality and attractiveness increase, so do their purchase intentions, further demonstrating the importance of attitude formation on consumer behavior. This is consistent with prior research on package design that recognized perceptions of quality and attractiveness as clear drivers of purchase intentions (Bloch 1995; Orth & Malkewitz 2008; Bloch, Brunel & Arnold 2003). On the other hand, the amount consumers are willing to pay was only correlated with purchase intent by .26, perceived quality by .18, and perceived attractiveness by .09.

Therefore, additional marketing including product-related attributes, product category associations, brand name, advertising style, and distribution channel, may be needed for a brand to hold a significant price premium over other options.

The most significant findings of this study suggest that more complex cosmetic package designs have the ability—albeit indirectly in some cases—to influence perceptions of quality and purchase intentions via consumer judgements of attractiveness. While three of the four hypotheses were not supported, these null hypotheses demonstrate the importance of categorization for consumer response to package design. It is important to make sure a product is eliciting the desired consumer responses to be successful. Therefore, it is important to take product category associations into consideration when designing packaging. If the product is meant to be prestigious, it should resemble other expensive brands on the market, and vice versa.
This research had some limitations that should be considered. First, the sample may not represent the entirety of beauty consumers, as the study was limited to 198 participants recruited from MTurk. This presents a research opportunity to conduct a similar study on a larger sample of beauty consumers. In addition, the study was limited to six stimuli, and participants only viewed three of these stimuli depending on their experimental condition. In actuality, consumers are faced with hundreds or thousands of options when they enter a retail store or shop online, overwhelming them with choice. There are also varying levels of minimalism and design complexity available in the cosmetic market. Therefore, a study to understand the ideal amount of design complexity would be beneficial to product designers. The study also suggests there are a plethora of perceptions that may impact purchase decisions, including product-related attributes, product category associations, brand name, advertising style, and distribution channel. A future study with more measures would be beneficial to understand the complexity of beauty consumers purchase decisions. It would be interesting to see how perceptions shift when consumers are given information on where the product is sold and how much it sells for. Lastly, further research opportunities also consist of expanding the study beyond the cosmetic industry.

Overall, this research study tested consumer response to two holistic cosmetic package designs to assess which was superior in its ability to evoke positive responses from consumers in an effort to understand how to design the ideal packaging for cosmetic products. This study presents important information to marketers and designers and extends upon package design literature. The results indicated beauty consumers find more complex package designs more attractive, which may have important implications in terms of quality perceptions and purchase decisions. While package design plays a significant role in shaping consumer response to products, these results further emphasizes the importance of additional marketing aspects that
influence attitudes and behavior toward products. In the future, the researcher would be interested in conducting an additional study to understand the most important factors for a brand to hold a price premium over others. Understanding the conditions under which consumers are willing to pay a price premium for a specific product, would provide value to brands in a competitive market, such as the beauty industry.
References


Biron, B. (2019, July 9). *Beauty has blown up to be a $532 billion industry – and analysts say that these 4 trends will make it even bigger.* Business Insider.


doi: 10.1207/s15327663jcp0701_02


doi: 10.1002/mar.1003


doi: 10.1145/543434.543435


Acknowledgments

I would like to thank my advisor, Professor Toby Hopp, Ph.D. for helping bring this project to life. Your continuous guidance and insight pushed my curiosity in the right direction and kept me motivated along the way. I sincerely appreciate the time you spent helping me conceptualize the research method for this study and teaching me valuable research analysis skills. I’m grateful for the knowledge I’ve learned from you and plan to use it to guide me through future research projects. I would also like to thank Professor and Associate Dean, Cindy White, Ph.D., for teaching the Honors Thesis Writing and Research Seminar in the fall. Your sincere guidance inside and outside of class made this project manageable and enjoyable from the start. I’m grateful to have learned the process of writing a research thesis from someone so knowledgeable. Lastly, I would like to thank Professor and Associate Chair, Burton St. John, Ph.D., and Instructor, Heather Adams, Ph.D., for agreeing to serve on my thesis committee.
Appendix A

IRB Letter of Approval

18-Feb-2020

Dear Rachel Matthews,

On 18-Feb-2020 the IRB reviewed the following protocol:

<table>
<thead>
<tr>
<th>Type of Submission:</th>
<th>Initial Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Category:</td>
<td>Exempt - Category 3 -</td>
</tr>
<tr>
<td>Risk Level:</td>
<td>Minimal</td>
</tr>
<tr>
<td>Title:</td>
<td>The Influence of Minimalist Package Design on Beauty Consumers’ Attitudes and Behavior Toward Cosmetic Products</td>
</tr>
<tr>
<td>Investigator:</td>
<td>Matthews, Rachel</td>
</tr>
<tr>
<td>Protocol #:</td>
<td>20-0051</td>
</tr>
<tr>
<td>Funding:</td>
<td>None</td>
</tr>
<tr>
<td>Documents Approved:</td>
<td>20-0051 Consent Form (18Feb20); 20-0051 Protocol (18Feb20); Recruitment Language: Questionnaire;</td>
</tr>
<tr>
<td>Documents Reviewed:</td>
<td>HRP-211: FORM - Initial Application v9;</td>
</tr>
</tbody>
</table>

The IRB confirmed the Exemption of this protocol on 18-Feb-2020.

You are required to use the IRB Approved versions of study documents to conduct your research. The IRB Approved documents can be found here: Approved Documents

In conducting this protocol you must follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

Douglas Grafel
IRB Admin Review Coordinator
Institutional Review Board

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within the University of Colorado Boulder’s IRB records.
Purpose of the Study

We invite you to take part in a research study because you indicated that you meet the following criteria:

You must be 18 years or older.
You must be a current U.S. citizen.
You must be a female.
You must have purchased at least one cosmetic product (skincare, haircare, makeup) within the last six months

The purpose of the study is to learn more about consumers’ attitudes and behavior toward cosmetic products and how different package designs may affect this.

We expect that you will be in this research study for 5 minutes. We expect about 250 people will be in this research study.

Explanation of Procedures

If you agree to participate in this study, you will answer a series of multiple-choice questions related to your cosmetic purchasing habits. You will then view three cosmetic products, including a skincare, haircare, and makeup product. You will then be asked to answer a series of questions on the cosmetic products you viewed. You will also be asked to provide your demographic information. This study is an experiment, meaning that you may view different cosmetic products that other study participants. The cosmetic products you view will be chosen by chance.

Voluntary Participation and Withdrawal

Whether or not you take part in this research is your choice. You can leave the research at any time and it will not be held against you. If you stop being in the research, already collected data may not be removed from the study database.

If you are a CU Boulder student or employee, taking part in this research is not part of your class work or duties. You can refuse to enroll, or withdraw after enrolling at any time, with no effect on your class standing, grades, or job at CU Boulder. You will not be offered or receive any special consideration if you take part in this research.

Potential Benefits
We cannot promise any benefits to you or others from your taking part in this research.

Confidentiality

Information obtained about you for this study will be kept confidential to the extent allowed by law. Research information that identifies you may be shared with the University of Colorado Boulder Institutional Review Board (IRB) and others who are responsible for ensuring compliance with laws and regulations related to research, including people on behalf of the Office for Human Research Protections. The information from this research may be published for scientific purposes; however, your identity will not be given out.

Payment for Participation

If you agree to take part in this research study, we will pay you $0.25 for your time and effort. Payments will be made from Amazon’s Mechanical Turk (MTurk) platform. Only those that complete the entire survey will be compensated. It is important to know that payment for participation is taxable income.

Questions

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at rachmatthews10@gmail.com

This research has been reviewed and approved by an IRB. You may talk to them at (303) 735-3702 or irbadmin@colorado.edu if: Your questions, concerns, or complaints are not being answered by the research team, you cannot reach the research team, you want to talk to someone besides the research team, you have questions about your rights as a research subject, or you want to get information or provide input about this research.

Signature

Consent will not be documented in writing as this study is online. If you agree to participate in the study, please click the continue button.
Are you over the age of 18?

- Yes
- No

Skip To: End of Survey If Are you over the age of 18? = No

Are you a current U.S. Citizen?

- Yes
- No

Skip To: End of Survey If Are you a current U.S. Citizen? = No

Do you identify as female?

- Yes
- No

Skip To: End of Survey If Do you identify as female? = No

Have you purchased a cosmetic product (skincare, haircare, makeup) within the last six months?

- Yes
- No

Skip To: End of Survey If Have you purchased a cosmetic product (skincare, haircare, makeup) within the last six months? = No

End of Block: Screening Block

Start of Block: Purchase Habits Block
How much do you estimate you spend per year on cosmetics (skincare, haircare, makeup)?

- $0-99
- $100-299
- $300-499
- $500+

Do you typically purchase cosmetic products in store or online?

- In store
- Online

Where do you most typically purchase cosmetic products (skincare, haircare, makeup)?

- Drugstore (CVS, Walgreens, Rite Aid, etc.)
- Target
- Walmart
- Sephora
- Ulta Beauty
- Department Store (Macy’s, Nordstrom, Bloomingdales, Saks, Neiman Marcus)
- Specific Brand Stores (Mac, Origins, Kiehl's, etc.)
- Online

End of Block: Purchase Habits Block

Start of Block: Experimental Group 1
Stimuli in Appendix C: participants in experimental group 1 viewed minimalist cosmetic package design #1: skincare product

Please specify the dollar amount you would be willing to pay for this face wash.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more

Stimuli in Appendix C: participants in experimental group 1 viewed minimalist cosmetic package design #2: haircare product

Please specify the dollar amount you would be willing to pay for one bottle of this shampoo or conditioner.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more
Stimuli in Appendix C: participants in experimental group 1 viewed minimalist cosmetic package design #3: makeup product

Please specify the dollar amount you would be willing to pay for this full-size mascara.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more

End of Block: Experimental Group 1

Start of Block: Experimental Group 2

Stimuli in Appendix C: participants in experimental group 2 viewed complex cosmetic package design #1: skincare product

Please specify the dollar amount you would be willing to pay for this face wash.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more
Stimuli in Appendix C: participants in experimental group 2 viewed complex cosmetic package design #2: haircare product

Please specify the dollar amount you would be willing to pay for one bottle of this shampoo or conditioner.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more

Stimuli in Appendix C: participants in experimental group 2 viewed complex cosmetic package design #3: makeup product

Please select the dollar amount you would be willing to pay for this full-size mascara.

- Under $10
- $10-$19
- $20-$29
- $30-$39
- $40-$49
- $50 or more

End of Block: Experimental Group 2
CONSUMER RESPONSE TO MINIMALIST PACKAGE DESIGN

Start of Block: Measures Block

After viewing the three cosmetic products, please rate the products on the following:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad Craftsmanship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Reliable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Craftsmanship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After viewing the three cosmetic products, please rate the products on the following:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Attractive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Beautiful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attractive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beautiful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Would you be likely to buy these products?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, definitely not</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, definitely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Would you buy these products if you happened to see them in a store?

<table>
<thead>
<tr>
<th>No, definitely not</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Yes, definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

Would you actively seek out these products in a store in order to purchase them?

<table>
<thead>
<tr>
<th>No, definitely not</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Yes, definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

End of Block: Measures Block

Start of Block: Design Acumen Block
Please rate the level you agree to the following statements:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy seeing displays of products that have superior designs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a pretty good idea of what makes one product look better than its competitors.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I see a product that has a really great design, I feel a strong urge to buy it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Block: Design Acumen Block

Start of Block: Covariates Block

Please specify your age.

- [ ] 18-24
- [ ] 25-34
- [ ] 35-44
- [ ] 45-54
- [ ] 55-64
- [ ] 65+
Please specify your race/ethnicity.

- Caucasian
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian / Pacific Islander
- Other

Please specify your approximate annual household income.

- Less than $25,000
- $25,000 - $49,999
- $50,000 - $74,999
- $75,000 - $99,999
- $100,000 and over

End of Block: Covariates Block

Start of Block: RandID #1

**RAND#1 Your STUDY ID is:**

Z2!?T9UDC1?

End of Block: RandID #1

Start of Block: RandID #2

**RAND#2 Your STUDY ID is:**
D2!6T9UDCXX

End of Block: RandID #2

Start of Block: RandID #3

**RAND#3 Your STUDY ID is:**

CYT9M@M8VP

End of Block: RandID #3
Appendix C

Stimuli

Figure 2

Minimalist cosmetic package design #1: skincare product used in experimental group 1
Figure 3

Minimalist cosmetic package design #2: haircare product used in experimental group 1
Figure 4

Minimalist cosmetic package design #3: makeup product used in experimental group 1
Figure 5

Complex cosmetic package design #1: skincare product used in experimental group 2
Figure 6

Complex cosmetic package design #2: haircare product used in experimental group 2
Figure 7

Complex cosmetic package design #3: makeup product used in experimental group 2