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Seeing Colors: The Impact of Color Priming on Brand Perception

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Seeing Colors: The Impact of Color Priming on Brand Perception

By

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This thesis is submitted in partial fulfillment of the requirements for Honors in the Discipline in Business and the Elizabethtown College Honors Program

May 1, 2020

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Abstract

Previous research has examined the role that color plays in various contexts. This research has primarily examined three aspects of color: hue (the primary reflected wavelength or the color itself), saturation (the dominance of hue in a color or the pureness of a color), and value (the brightness of the color). The current study seeks to apply the concept of priming to the study of the effects of color. Priming is defined as the psychological technique in which one stimulus influences a person's response to a subsequent stimulus. In this study, priming is utilized in the form of varying color saturation levels to alter attitudes, purchase intentions, and value perceptions of several brands. An experimental method was designed to test the difference between pretest and posttest responses from participants regarding their attitudes, purchase intentions, and value perceptions of these brands. This method involved a manipulation of color saturation to ascertain the role that priming plays in magnifying or reducing color effects. Ultimately, the results indicated partial support for the study's three hypotheses, demonstrating to a degree that increased saturation levels can influence brand attitude measures, likelihood to purchase measures, and perceived value measures.

Literature Review

Background

Color has primarily been studied based on its hue, value, and saturation, so when we speak of "color" it is important to remember the various components that belong to this larger concept. While older interpretations of color were much simpler, distinguishing between lightness and darkness, more modern interpretations consider the emotive aspects of color. In the context of marketing, color is used to differentiate brands, build brand recognition, and establish associations and connections with consumers. Priming, the other area of focus for the current research, has been studied from numerous perspectives within a variety of fields. Most commonly, priming has been applied in psychological research and has used words, visuals, and symbols as primes. This project seeks to apply the concept of priming to our understanding of how color, in all its forms, may influence behavior.

History of Color

Color has historically carried different meanings and interpretations based on a variety of cultural and social factors. For example, the Greeks distinguished between darkness (blacks) and light (whites), while those living in the medieval renaissance times used color to denote religious symbolism. Interpretations of color were also often dependent on how that specific culture or society interpreted the natural setting. For example, elements of nature were related to four colors: "scarlet (later red) with fire, white (later black) with earth, blue with air and purple (later white) with water" (Aslam, 2006, p. 16). Religious interpretation of these colors related blue to heaven, red to charity, purple to martyrdom, and white to purity. Older interpretations have been integrated into many present-day meanings of color. For example, Labrecque and Milne (2012) supported the association between purple and the brand personality trait of sophistication, while

purple, among other colors including gold, crimson, and scarlet "indicated power, authority, and opulence" in olden times (Aslam, 2006, p. 16).

In similar ways, color has also been studied for how it influences behaviors, attitudes, and emotions. For example, Galileo suggested that colors are "perceiver dependent, dispositional, laid in the minds of the observers and were not really a property of the object," which began the debate on the psychological effects of color, as well as its relation with emotions (Aslam, 2006, p. 17). In more modern times, Pantin-Sohier (2009) pointed out the associations that can be made between colors and emotions, specifically in the context of marketing to consumers. Not only does a color "give the brand identification and a visual distinction," but it "also provides emotions and associations capable of reinforcing the symbolism and the benefits produced" (Pantin-Sohier, 2009, p. 56). Tokutake et al. (2019) categorized colors according to the personality traits or adjectives they represent in a marketing context. In this study, Tokutake et al. (2019) explored whether product packaging color had an effect on product perception. The 180 adjectives typically used on a color image scale were expanded using a thesaurus to include 3,204 adjectives, such as active, dynamic, innovative, refreshing, and quiet. Ultimately, each color corresponded to a range of adjectives, anywhere from two to 24 adjectives.

While many studies explore the role that color plays in perception by showing respondents specific colors, other studies have taken a different approach. Clarke and Costall (2008) instead asked participants to visualize each color without a presence of physical color swatches or samples. Instead of restricting participants to a set list of adjectives, they described their associations to the colors using an open-ended format of questioning. This more imaginative approach to research shed light on the intricate ways color associations are formed. In some cases, "color's emotive aspects were traditional, cultural, or stereotypical," but in other

cases the reported associations of a color were based on individual experiences (Clarke & Costall, 2008, p. 409). For example, pink and blue have been commonly associated with femininity and masculinity, respectively, because this fits the traditional gender roles our society has established for these colors. Based on personal experiences though, the same blue can be associated with much more than masculinity. For some participants, blue was seen as a "sad" and "heavy colour when rich," while others saw blue as a freeing color that reminded them of the sea and sky (Clarke & Costall, 2008, p. 407). Even within these descriptions exists the possibility for positive and negative associations to develop. One person may enjoy visiting the beach and swimming in the blue water, while another may fear what lies beneath the same blue water. This same blue stimulus, just as any colored stimulus, can be experienced in very different ways, and these experiences eventually establish strong associations in our minds.

Color Terminology

Isaac Newton created the color wheel that has remained a standard in color theory. Red, blue and green are the three primary colors along the spectrum, and their interaction creates a collection of colors. Red, orange, yellow, green, blue, and purple are considered simple colors, while other colors such as taupe and sea green are considered sophisticated colors. Over the years, philosophers contemplated the appearance and perception of different colors. Each of the colors on the color wheel represent the varying wavelengths of light perceived along the color spectrum, ranging from longer wavelengths (reds) to shorter wavelengths (violets). Color components such as hue, value, and saturation have long been studied to determine their relevance in different fields. In the literature, value has also been referred to as lightness or brightness, and saturation has been referred to as chroma.

Hue

Hue refers to the color itself, which is distinguished from others by the various wavelengths of light we perceive. While longer wavelengths represent reds and oranges, shorter wavelengths represent blues and violets. Previous research has studied several hues, some more often than others, including red, yellow, blue, purple, black, and white. A review of this previous research illustrates that no single color can be deemed solely positive or negative based on its hue, with conflicting results seen for every color that has been studied. This is likely because people are able to form their own associations between colors and personal experiences, both good and bad. Red, for example, has been associated with positive emotions of love (Jonauskaite et al., 2020; Kaya & Epps, 2004; Clarke & Costall, 2008) and excitement (Hanada, 2017; Singla & Aggarwal, 2016; Labrecque & Milne, 2012; Amsteus et al., 2015) but has also been associated with negative emotions of anger (Jonauskaite et al., 2020; Clarke & Costall, 2008; Hanada, 2017) and hate (Jonauskaite et al., 2020). Yellow has commonly been related to feelings of joy (Wexner, 1954; Dael et al., 2016; Jonauskaite et al., 2020) and happiness (Clarke & Costall, 2008; Hemphill, 1996; Hanada, 2017; Labrecque & Milne, 2012), but has also been described as an anxious and annoying color (Manav, 2007). Blue has elicited positive feelings of comfort (Wexner, 1954; Clarke & Costall, 2008; Hanada, 2017) and reliability (Labrecque & Milne, 2012; Tamba et al., 2013; Aslam, 2006; Yu et al., 2018), but also sadness (Clarke & Costall, 2008) and fear (Dael et al., 2016). Purple, found to be a soothing (Ko, 2011) and sophisticated (Labrecque & Milne, 2012) color, has also been viewed as a passive color in other cases (Clarke & Costall, 2008). Black has frequently been related to power (Labrecque & Milne, 2012; Aslam, 2006; Wexner, 1954) and elegance, particularly in a fashion context (Labrecque & Milne, 2012), but has also been related to sadness (Wexner, 1954; Jonauskaite et al., 2020; Hanada, 2017;

Annamary, 2016) and evil (Clarke & Costall, 2008). White is more commonly associated with purity (Labrecque & Milne, 2012; Aslam, 2006; Clarke & Costall, 2008) and peace (Labrecque & Milne, 2012; Clarke & Costall, 2008), but has also formed a negative association with death in Asian cultures (Aslam, 2006). Since the colors mentioned in the literature were associated with both positive and negative emotions, no single hue could be used in this study as a "positive" or "negative" color.

Value (Lightness or Brightness)

Value refers to the brightness of a color, or the amount of light it reflects. Labrecque and Milne (2012) described a color's value as its "lightness or darkness relative to a scale that ranges from black (low) to white (high)" (p. 712). A high value blue, for example, will appear as a pastel that contains a greater proportion of white, while a low value blue will appear darker and contain a greater proportion of black. Lambert (2004) specified the tinting and shading process involved in creating high and low value colors where tinting a color adds white to it and shading a color adds black. A negative relationship between value and arousal, and a positive relationship between value and calmness has been identified (Lichtlé, 2007; Labrecque & Milne, 2012; Wilms & Oberfeld, 2018). An association between higher value and positive emotion has also been seen in certain cases (Clarke & Costall, 2008; Manav, 2007; Dael et al., 2016).

Saturation (Chroma)

Saturation refers to the dominance of hue in a color, or how pure the color appears. Labrecque and Milne (2012) measured a color's saturation "on a scale from low (appearing gray and washed out) to high (appearing vivid)" (p. 717). In contrast to the negative relationship between value and arousal, research has revealed that saturation has a positive effect on arousal (Labrecque & Milne, 2012; Wilms & Oberfeld, 2018). Dael et al. (2016) studied the association

between color saturation and facial/bodily expressions. Participants were shown videos of either

positive (joyful) or negative (fearful) bodily expressions and were then asked to assign a color

that most appropriately represented each video. Dael et al. (2016) found that "participants

selected brighter and more saturated colours for joy expressions than for fear expressions" (para.

1). Takahashi and Kawabata (2017) also found an association between positive emotional

responses and brighter, more saturated colors after collecting research data from college students.

A relationship between increased color saturation levels and positive emotions is seen repeatedly

throughout the literature. Findings indicate a much more consistent relationship for saturation

and emotion than they do for hue and emotion.

Color in Marketing

It is increasingly difficult for brands to stand out in today's marketplace as product

offerings expand and the media environment continues to clutter, and as such, elements that

could provide marketers with a competitive advantage with respect to branding are playing more

prominent roles. Romaniuk and Nenycz-Thiel (2014) define distinctiveness as "a function of the

strength and uniqueness of the elements that form a brand's identity" which can include logos,

colors, or taglines, essentially "anything that triggers the brand name in consumer memory" (p.

313). Color can be a useful tool to help brands differentiate from each other. Coca-Cola red and

Pepsi blue are iconic examples of the power colors hold when they are built into a brand.

Belonging to the same product category, Coca-Cola and Pepsi decided to differentiate their

brands based on color and other non-taste attributes, with taste playing only a secondary role.

With respect to the use of color in branding, some scholars have pushed back against the

idea that color should be used as a differentiator. Labrecque and Milne (2013), for example,

presented an idea that contradicts the strategy firms like Coca-Cola and Pepsi use to differentiate.

Instead of creating uniqueness through color, Labrecque and Milne (2013) proposed that "some value could be forfeited by straying too far from established product category associations," such as a well-established color for a product category (p. 165). To test this proposal, Labrecque and Milne (2013) examined the color norms within various product categories to see if differentiation within a category seemed to help or hurt a brand. Overall, Labrecque and Milne (2013) found that color differentiation can provide benefits in certain product categories but can also threaten a brand's success in other product categories. Labrecque and Milne (2013) noted that "adhering to color norms may be beneficial for product categories containing a dominant market leader, especially high-involvement categories" (p. 165). In this study, Labrecque and Milne (2013) also collected data on the colors used in logos and found that 50 percent of fast-food logos primarily included the color red. Singh (2006) provided a likely explanation for this prevalence of red in the fast-food sector, identifying red as a color that "stimulates appetite because of its effect on our metabolism" (p. 785). Aslam (2006) similarly noted the association between the color red and pizza restaurants. Singh (2006) described the prevalence of yellow in the fast-food industry as well, as it uses an arousing and exciting color to "gain customers' attention, increase their appetite, and encourage them to eat" (p. 785). Aslam (2006) identified product categories most strongly associated with the color green, which include "health foods, vegetable entrees, toys and financial services" (p. 23). The green Whole Foods logo, for example, serves as a shorthand for communication to consumers that their products belong to the health foods sector. Labrecque and Milne (2013) found data to support the trust and stability that is commonly tied to the color blue, as 76.9 percent of financial firms incorporate blue into their logo to emulate these reliable characteristics through color. Aslam (2006) found a strong product category association between the color pink and products such as cosmetics and Barbie dolls which are typically trying to

appeal to the same gender in the market. In the context of fashion, "black expresses status, elegance, richness, and dignity" (Labrecque & Milne, 2012, p. 714), so it is not a surprise to see 71.4 percent of apparel companies incorporating black into their logos instead of other colors (Labrecque & Milne, 2013).

Color can be used as a marketing tool in other ways too. Oftentimes we see the color red used to mark clearance items because red has been shown to increase heart rate and therefore create a sense of urgency in consumers (Hanada, 2017; Jonauskaite et al., 2020; Bagchi & Cheema, 2013; Clarke & Costall, 2008; Labrecque & Milne, 2012). In addition to feelings of urgency, color can evoke feelings of relaxation, especially when it is incorporated into the lighting and ambiance of a store. The retailer Rituals, for example, utilizes darker lighting to promote important aspects of the brand to consumers, including its products that help customers relax and take a step away from the bright lights of their busy days.

There are several arguments regarding the rationale for color choices consumers make when purchasing products. Yu et al. (2018) postulated that color preference is less important than product perceptions of functionality and performance. Factors that will take precedence over personal preference specifically included color performance, color functionality, and color culture, denoted as "primary factors." Yu et al. (2018) described color performance in a context "where the consumer might infer that a product works better when it is one colour rather than another" (para. 8). A few examples of this theory were given, including the differences in perceived efficacy of mouthwash and dishwashing liquid based on its color or lightness/darkness. Yu et al. (2018) relates color functionality to "whether a colour is appropriate for the function of a product" (para. 8). An example of proper color functionality would be a consumer choosing a red toaster oven over a blue one. In this case, the red color of the toaster

matches its function of adding heat to food. In contrast, the cold blue color of a toaster would not

align with the heating function of the product. Finally, Yu et al. (2018) relates color culture to

"where it is culturally important that a product is a particular colour" (para. 8). Participants

generally made their hypothetical purchase decisions according to these primary factors.

Individual color preferences only took priority over color performance, functionality, and culture

when these factors were absent from the consumer's initial interaction with the product (Yu et

al., 2018).

Popa et al. (2013) pointed out another well-known tendency of consumers during the

buying process known as impulse shopping. Popa et al. (2013) found that impulse shoppers

respond more favorably to colors including red, orange, black, and blue, while those shopping

from a planned budget respond well to pink and turquoise. As Gentry and Myers (2016) noted,

60% of a product's first impression comes from its color, so it is an important marketing tool to

consider when designing a product package.

Priming

Priming is a technique more commonly used in psychology, and is defined as the process

by which exposure to one stimulus influences one's response to a subsequent stimulus. In 2005,

McNamara described priming as "an improvement in performance in a perceptual or cognitive

task," but later studies found that this change in performance can also be neutral or result in

worsened performance (Minton et al., 2016, para. 8). Within priming, a prime or stimulus is used

to influence subsequent responses. Priming can either be considered in a conceptual sense or a

perceptual sense. While conceptual priming focuses on the meaning of a stimulus, perceptual

priming focuses on its form. In the context of consumer behavior, both conceptual and perceptual

priming can explain brand choice. For example, Lee (2002) found that conceptual priming

prompted consumers to make "a memory-based choice" from their prior experiences and associations with the brand, while perceptual priming caused consumers to make " a stimulus-based choice" that was more dependant on the physical characteristics of the product or the promotion of the brand (para. 26). As a psychological technique, priming has been studied using a variety of stimuli which have most commonly taken the form of words and visuals/symbols.

Words

Zemack-Rugar et al. (2007) studied priming by utilizing emotional adjectives in two different contexts. In the first experiment, participants were primed with emotional adjectives expressing either guilt or sadness. Zemack-Rugar et al. (2007) found that those primed with guilty emotional words displayed lower levels of indulgence than those primed with sad emotional words. In a second experiment, participants were primed in the same fashion, but were then measured based on their willingness to help. Participants primed with emotionally guilty adjectives showed more willingness to help than participants primed with emotionally sad adjectives (Zemack-Rugar et al., 2007). Labroo et al. (2008) applied this type of priming with words to consumer behavior. Labroo et al. (2008) found that participants were more likely to purchase the target wine bottle that advertised a frog on the label if they had been briefly exposed to the word "frog." Laran et al. (2011) primed consumers with low and high quality brand names. Laran et al. (2011) discovered that consumers were more inclined to purchase low-value products if they had been primed with low-quality brand names like Walmart than if they had been primed with high-quality brand names like Nordstrom. Galli and Gorn (2011) tested the priming effects of the words "black" and "white" alongside either black product target words, like "cola," or white product target words, like "soymilk." They found that product reactions and

brand attitudes were more positive when the stimulus was in agreement with the target product

(ex: "black" and "cola") (Galli & Gorn, 2011).

Visuals/Symbols

Although words are useful to use alongside priming, Spruyt et al. (2002) noted that

pictures and visual primes produce more significant priming effects. Stafford et al. (1995)

showed participants an image of a car salesman to activate the "pushy salesmen stereotype" in

their minds and found that participants displayed lower attitudes to an unrelated salesman after

having been primed with the negative stereotype (para. 20). Fitzsimons et al. (2008) studied the

effects of psychological priming with brand logos and found that consumers behaved more

creatively after seeing the Apple logo, compared to consumers who had seen the IBM logo.

McFerran et al. (2010) tested the influence of priming on consumption behavior using various

body type images. Participants from this study were either primed with an image of an obese

body type or a thin body type, after which their consumption levels were measured. McFerran et

al. (2010) found that the obese body type prime prompted participants to lower their

consumption levels, while the thin body type prime caused increased consumption across the

board. Matthes and Naderer (2015) obtained similar results in their study, as participants'

consumption increased after repeated visual exposure to snack food products. Raska and Nichols

(2012) used another form of visual priming to influence consumption behavior. Participants

exposed to love-related symbols displayed healthier eating behaviors than participants who did

not receive this prime (Raska & Nichols, 2012). Guéguen (2013) used love-related symbols in a

different context and found that a jar with a heart symbol on the front received more monetary

donations than a jar with a square or circle on the front when placed next to a bakery cash

register.

Other Forms

Smith and Branscombe (1987) studied priming in the context of consumer personality characteristics. Participants were primed with the trait of hostility using a word unscrambling task, but ended up demonstrating less hostile behavior than participants who had been primed with a sentence unscrambling/trait matching task. Papies and Hamstra (2010) studied the effects of goal priming in the context of consumer behavior and found that participants consumed fewer food samples after they had been primed with a healthy recipe poster in a store to remind them of their health goals. Loizou and Karageorghis (2014) explored consumer behavior in another context, specifically relating to sports performance. Participants were exposed to one of four priming conditions: music, music and video, music with video and emotional primers, and no music or video (control group). After exposure to one of these four stimuli, participants engaged in anaerobic exercises to see if differences existed among primers. Loizou and Karageorghis (2014) found that the combination of music, video, and motivational primers had the greatest impact on participants' pre-exercise affect and their subsequent anaerobic performance.

Hypotheses and Research Questions

Priming has been demonstrated to unknowingly influence attitudes, emotions, and motivations, and as such is a useful tool for marketers. At the same time, color, in all its components, has been demonstrated to have profound effects on the marketing mix, but has been primarily studied for the role it plays as part of the brand image or as an attribute of a product or its packaging. There has been limited research exploring the connection of these two concepts - priming and color - and how color itself could be used as a priming stimulus. This study seeks to explore this by utilizing color as a priming vehicle to ascertain how it may influence a variety of measurable attitudinal and perception variables.

H1: Individuals primed with higher levels of saturation will perceive a higher dollar value for products compared to individuals primed with lower levels of saturation.

Previous research studying the impact of color palettes on painting prices found that paintings with a higher diversity of colors carried a premium over equivalent pieces of artwork painted in a more monochromatic style (Stepanova, 2019). Among the more diverse colors were blues, teals, oranges, and yellows, which inherently seem more saturated and vivid than the monochromatic colors of brown and gray. An econometric analysis also revealed these blue-teal and orange colors to be associated with higher prices for the paintings (Stepanova, 2019). Other research looked at the influence of color saturation on product evaluation and the willingness to pay. Participants were presented with a hypothetical scenario to choose a carry-on bag that was either "large enough to fit plenty of your belongings" or "small enough to fit easily into an overhead storage compartment" (Hagtvedt & Brasel, 2017, p. 401). Previous experiments included in this study determined a relationship between saturation level and perceived object size, with objects being perceived larger as their color saturation levels were increased. Hagtvedt and Brasel (2017) found that when the goal was a larger carry-on bag, participants chose the more highly saturated bag and were willing to pay considerably more for this "larger" bag. In reality, the carry-on bags being compared were identical in size, shape, hue, and value, and only varied according to their saturation level. This study hypothesizes that participants will perceive a higher dollar value for the same products after being primed with increased levels of saturation.

H2: Individuals primed with higher levels of saturation will be more likely to purchase brands compared to individuals primed with lower levels of saturation.

Hagtvedt and Brasel (2017) performed single-object and paired-object exposures to study participants where objects varied only in their saturation levels. Shape, size, hue, and value of objects were the same. In the case of single-object exposures, the amount of time participants spent fixated on the object (instead of on the background) was greater for high saturation objects compared to low saturation objects (Hagtvedt & Brasel, 2017). In the case of paired-object exposures, participants attended to the more highly saturated object first 60.3 percent of the time (Hagtvedt & Brasel, 2017). Additionally, for paired-object exposures, the high saturation object accounted for significantly more fixation time among participants (2.25 seconds) compared to overall fixation time recorded for the low saturation object (1.63 seconds) (Hagtvedt & Brasel, 2017). Previous research has also demonstrated an association between higher levels of saturation and higher levels of arousal in individuals (Labrecque & Milne, 2012; Wilms & Oberfeld, 2018). This study hypothesizes that participants will be more likely to purchase brands after being primed with increased levels of saturation that have a tendency to capture one's attention, increase one's fixation, and increase one's arousal.

H3: Individuals primed with higher levels of saturation will possess more positive brand attitudes than individuals primed with lower levels of saturation.

Finally, previous research has pointed to participants choosing more saturated colors to represent joyful expressions and positive emotions (Kaya & Epps, 2004; Dael et al., 2016; Takahashi & Kawabata, 2017). This study hypothesizes that participants will develop more positive brand attitudes after being primed with increasing levels of saturation, which have been shown to elicit more positive emotions.

In addition to an exploration of the above hypotheses, this study also seeks to uncover the role that a number of other variables may play in moderating effects. Prior research into both

priming and color demonstrated outcomes that could be moderated by a variety of factors, ranging from participants' gender to their optimal stimulation level (OSL). Respondent gender has been found to act as a moderator for certain product perceptions (Van Tilburg et al., 2015), but has also been found to not moderate study results (Semin & Palma, 2014). Optimal stimulation level, another variable whose moderating effects have been explored, is defined as the ideal level of arousal that individuals will attempt to meet and maintain. Although Lichtlé (2007) found that OSL was not a moderating variable for the relationship between color lightness and pleasure, OSL did act as a moderating variable for the relationship between color saturation, hue, and pleasure.

Various selling mechanisms (auctions and negotiations) have also been studied as moderators, specifically regarding their effects on the relationship between color and consumer behavior. Bagchi and Cheema (2013) found red to induce aggression, but the intensity and direction of this aggression was moderated by the selling mechanism that was utilized. When the selling mechanism took the form of an auction, exposure to the color red increased bid jumps; however, when the selling mechanism took the form of a negotiation, exposure to the color red decreased offer amounts (Bagchi & Cheema, 2013).

Personality traits of respondents have been found to influence color perception, as Lichtlé (2007) notes the general trend for extroverts to prefer warm colors (red, orange, yellow) and introverts to prefer cool colors (green, blue, purple). This tendency for colors to cluster around similar personality types signals potential for traits of extraversion and/or introversion to act as moderating variables. Additionally, certain colors have been found to elicit optimistic and extroverted feelings which may translate into moderating effects for the relationship between participants' personality traits and their reactions to the color prime.

Given the role that other variables play in moderating effects, the following research questions are also explored.

RQ1: Does priming with different color saturation levels lead to different brand attitude, likelihood to purchase, and/or price perception measures for males versus females?

RQ2: Does priming with different color saturation levels lead to different brand attitude, likelihood to purchase, and/or price perception measures for optimists versus pessimists?

RQ3: Does priming with different color saturation levels lead to different brand attitude, likelihood to purchase, and/or price perception measures for introverts versus extroverts?

Methodology

In order to test the above hypotheses and research questions, an experimental approach was employed. A survey was designed to test the effects of priming with three different levels of color saturation (0%, 50%, and 100%). Appendix #1 contains these three color saturation levels. The current study used various saturation levels of the color red, as it, like all other colors, elicited both positive emotions (love, excitement) and negative emotions (anger, hate). The survey was electronically distributed as a PDF file via email to a sample of students from a small liberal arts college in central Pennsylvania. This sample of students was divided into three distinct groups in order to test the impact saturation level has on perceived value, likelihood to purchase, and brand attitude. These three groups were the following:

Group 1: Primed with 0% saturation level of the color red (control group)

Group 2: Primed with 50% saturation level of the color red

Group 3: Primed with 100% saturation level of the color red

The survey contained four distinct parts and 22 questions in total. The structure of survey questions varied to include open-ended, multiple choice, and scale formats. Participants began by

answering eight demographic and psychographic questions for Part One of the survey.

Demographic variables included age and gender, while psychographic variables included scales

measuring respondents on introversion vs. extroversion and optimism vs. pessimism. Participants

from all three groups then completed Part Two, answering five brand-related questions. These

brand-related questions in Part Two prompted participants to respond on a "Strongly

Disagree/Strongly Agree" five-point scale to statements such as "I like Nike" and "I like Under

Armour." This section then prompted participants to respond on a "Very Unlikely/Very Likely"

five-point scale to the statement "How likely is it for you to purchase the following brands?" Part

Two also included an open-ended response format, asking participants to type the expected cost

of several products and services (Nike women's sweatshirt, Under Armour men's sweatshirt).

Part Three served as the prime, where page color varied between groups depending on the group

they were assigned to, representing 0%, 50%, and 100% saturation. This section included two

visual perception tasks with a question following each task. Lastly, in Part Four, participants

answered seven brand-related questions. Part Two (the pretest) and Part Four (the posttest)

shared some similar questions in order to control for differences across groups. Appendix #2

contains each survey.

Results and Discussion

The survey was distributed to 500 individuals, with a total of 49 responses, for a response

rate of approximately 10%. This sample included 18 participants in the 0% saturation control

group, 15 in the 50% saturation group, and 16 in the 100% saturation group. A sample of this

size presents challenges with respect to inferential statistical analysis. As such, while inferential

statistics were utilized to ascertain statistical significance, a variety of descriptive statistics were

also used to explore whether and where differences and/or relationships could be found in order

to speak to the potential for significance if such results held with a larger sample.

Hypothesis 1

       The first hypothesis expected that participants primed with higher saturation levels would

display an increase in perceived dollar value of both Under Armour and Nike brands. Expected

product cost scores were recorded within the pretest and posttest, and a cost difference variable

was created. An ANOVA was used to compare the cost difference variable across the three

participant groups (0% saturation/control group, 50% saturation, and 100% saturation). When

looking at the difference between groups with respect to their perceived cost of an Under

Armour men's sweatshirt and Nike women's sweatshirt, only results from Nike were

approaching statistical significance at the 95% level between groups ($F = 2.68$, $p = .079$).

Additionally, the Nike cost posttest scores were statistically significant at the 95% level between

groups ($F = 5.061$, $p = .01$) to show some support for H1. Under Armour did not show

statistically significant results for either variable (posttest cost or cost difference).

       In order to identify where the difference between groups was coming from for Nike, a

post hoc analysis was conducted. The cost difference variable was not approaching statistical

significance between any of the groups; however, the post hoc analysis revealed that there was a

statistically significant difference within Nike's posttest cost variable between the control and

100% saturation groups ($p = .009$) at the 95% level to partially support H1.

       To further explore the meaning behind these mixed results, descriptive statistical

measures were reviewed to better understand the relationship between saturation level and cost

estimates. Looking at the raw estimated costs of both sports brands' products, mean posttest cost

values supported H1, as an increase in cost estimates followed an increase in saturation level. An

Under Armour men's sweatshirt, for example, showed an increase in average perceived cost

from $40.56 to $45.27 to $47.13 when moving from the control group to the 50% saturation

group to the 100% saturation group. Similarly, a Nike women's sweatshirt showed an increase in

average perceived cost from $39.17 to $45.13 to $48.38 when moving from the control group to

the 50% saturation group to the 100% saturation group. Within control groups, Nike and Under

Armour saw an increase in perceived cost by a mean of only $0.28 and $1.00, respectively. As

saturation level increased to 50% and 100%, Nike showed an increase in perceived cost by a

mean of $0.47 and $3.00, respectively, while Under Armour showed an increase in perceived

cost by a mean of $1.80 and $3.31.

Hypothesis 2

The second hypothesis predicted that participants primed with higher saturation levels

would display an increased likelihood to purchase both Under Armour and Nike brands.

Likelihood to purchase scores were recorded with both pretest and posttest variables, and a

likelihood to purchase difference variable was created. An ANOVA was conducted in order to

compare the likelihood to purchase difference variable across the three participant groups (0%

saturation/control group, 50% saturation, and 100% saturation). When looking at the difference

between the three groups with respect to their likelihood to purchase scores, the Under Armour

brand showed a statistically significant difference at the 95% level between groups (F = 4.556, p

= .016) and Nike was approaching statistical significance between groups (F = 3.01, p = .059).

In order to identify where the difference between groups exists, a post hoc analysis was

utilized. The post hoc analysis for Under Armour revealed a statistically significant difference

between the control and 50% saturation groups (p = .022), which supports H2. The likelihood to

purchase difference variable for Under Armour was approaching statistical significance at the

95% level between the control and 100% saturation groups (p = .078), but was not between the

50% and 100% saturation groups. With respect to Nike, there was no statistical significance

between the control and 50% saturation groups or between the 50% and 100% saturation groups;

however, the likelihood to purchase difference variable could be approaching statistical

significance at the 95% level between the control and 100% saturation groups (p = .094).

While the likelihood to purchase variable showed some statistical significance, additional

insight was derived from looking at descriptive statistics. The likelihood to purchase scale ranged

from 1 (very unlikely) to 5 (very likely). When looking at the posttest likelihood to purchase

measure across groups (control, 50%, and 100%), Under Armour had mean scores of 3.22, 3.47,

and 3.56, and Nike had mean scores of 3.33, 3.47, and 3.69, respectively. This increase in

average likelihood to purchase scores as saturation levels were increased supports H2.

Likelihood to purchase difference variables were also examined to ascertain the

movement of participants within each group. With respect to the Under Armour brand, the

control group showed 17/18 ($\cong$94%) participants with no change between their pretest and

posttest responses and 1/18 ($\cong$6%) with a decreased likelihood to purchase, the 50% saturation

group showed 10/15 ($\cong$67%) participants with no change and 5/15 ($\cong$33%) with an increased

likelihood to purchase, and the 100% saturation group showed 11/16 ($\cong$69%) participants with

no change and 5/16 ($\cong$31%) with an increased likelihood to purchase. Turning to the Nike brand,

the control group showed 16/18 ($\cong$89%) participants with no change between their pretest and

posttest responses and 2/18 ($\cong$11%) with a decreased likelihood to purchase, the 50% saturation

group showed 7/15 ($\cong$47%) participants with no change, 6/15 (40%) with an increased

likelihood to purchase and 2/15 ($\cong$13%) with a decreased likelihood to purchase, and the 100%

saturation group had 9/16 ($\cong$56%) participants with no change, 6/16 ($\cong$38%) with an increased

likelihood to purchase and 1/16 ($\cong 6\%$) with a decreased likelihood to purchase. These results

partially support H2, as likelihood to purchase increased from the 0% to 50% saturation levels,

but did not from the 50% to 100% saturation levels.

Hypothesis 3

The third hypothesis postulated that participants primed with higher saturation levels

would display a more positive attitude toward both the Under Armour and Nike brands. A four-

question attitude scale was utilized to measure overall brand attitude. Other variables that can

speak to brand attitude were included in the analysis, with some utilizing pretest and posttest

measures (brand liking, word), and others measuring post the manipulation of the independent

variable (brand attitude).

Brand liking was measured along a five-point scale ranging from 1 (strongly disagree) to

5 (strongly agree), where participants responded to the phrase "I like Nike" or "I like Under

Armour." A set of like Nike difference and like Under Armour difference variables were then

created from pretest and posttest responses. After running an ANOVA, a statistically significant

difference was found between groups at the 95% level for both Nike ($F = 8.419$, $p = .001$) and

Under Armour ($F = 7.258$, $p = .002$). The ANOVA also showed like Nike posttest ($p = .076$) and

like Under Armour posttest ($p = .078$) scores approaching statistical significance at the 95%

level.

A post hoc analysis revealed a statistically significant difference between the control and

50% saturation groups ($p = .004$) and between the control and 100% saturation groups ($p = .002$)

at the 95% level for the like Nike difference variable. A statistically significant difference was

also shown between the control and 50% saturation groups ($p = .005$) and between the control

and 100% saturation groups ($p = .007$) at the 95% level for the like Under Armour difference

variable. The like Nike and like Under Armour difference variables were not, however, statistically significant between the 50% and 100% saturation groups.

With respect to descriptive statistics, both like Nike and like Under Armour posttest scores increased as saturation levels were increased from 0% in the control group, to 50%, and to 100%, with mean scores of 3.17, 3.73, and 3.81 for Nike, and mean scores of 3.39, 4, and 4 for Under Armour. These findings partially support H3, but the influence of saturation seems to diminish, as results show a larger initial change when saturation moves from 0% to 50% than when it moves from 50% to 100%.

An ANOVA was utilized to analyze overall attitude measures across participant groups. When looking at the difference between the three groups with respect to overall brand attitude scores, there was a statistically significant difference for Under Armour posttest responses ($F = 5.940$, $p = .005$) to support H3, and Nike posttest responses were approaching statistical significance at the 95% level ($F = 3.097$, $p = .055$). A post hoc analysis revealed that Nike attitude results were statistically significant at the 95% level between the control and 100% groups ($p = .05$), but were not between the control and 50% or 50% and 100% groups. Similarly, Under Armour attitude results were statistically significant at the 95% level between the control and 100% groups ($p = .005$) and were approaching statistical significance between the control and 50% groups ($p = .064$), but were not between the 50% and 100% groups.

Several descriptive statistics were also utilized to better understand the relationship between color saturation level and overall attitude. Within the control group, 11/18 ($\cong 61\%$) and 12/18 ($\cong 67\%$) participants recorded attitude scores above 3 (neutral) for Under Armour and Nike, respectively. Within the 50% saturation group, 14/15 ($\cong 93\%$) and 10/15 ($\cong 67\%$) participants recorded attitude scores above 3 for Under Armour and Nike, respectively. Within

the 100% saturation group, 16/16 (100%) and 15/16 ($\cong$94%) recorded attitude scores of 3 or

greater for Under Armour and Nike, respectively. These results show an increase in positive

attitude scores (above 3) as color saturation levels were increased, which supports H3.

Finally, an ANOVA was utilized to compare word positivity/negativity across the three

groups. Participants recorded a word for each brand in the pretest and the posttest, from which a

word difference variable was created. ANOVA results showed a statistically significant

difference between groups at the 95% level for the word Nike difference variable (F = 3.615, p =

.035), but not for the word Under Armour difference, word Nike posttest, or word Under Armour

posttest variables. A post hoc analysis revealed the word Nike difference variable to be

approaching statistical significance at the 95% level between control and 50% groups (p = .07)

and between control and 100% groups (p = .084), but not between the 50% and 100% groups.

Looking at word difference scores from the pretest to the posttest, Under Armour and

Nike displayed similar movement in responses from negative to more positive words as

saturation levels were increased. For example, the Nike control group had 0/17 participants show

positive change, while the 50% group had 4/15 ($\cong$26%) show positive change and the 100%

group had 4/16 (25%) also show positive change from the pretest to the posttest. Under Armour

results were very similar, with 1/17 ($\cong$5%) participants showing positive change in the control

group, 2/15 ($\cong$13%) showing positive change in the 50% group, and 3/16 ($\cong$19%) showing

positive change in the 100% group. The majority of the remaining participants showed no or

negative change in all of these conditions.

Research Questions

In addition to the goal of understanding the role that saturation plays in influencing

consumer attitudes, purchase intentions, and value perceptions, a secondary goal of this study

was to explore whether other factors might have a moderating effect on the independent variable

of saturation. To explore this, an analysis of descriptive statistics for subgroups was utilized.

With respect to gender, results were mixed. This could be due to sampling issues - due to

the smaller sample size, subgroup analysis proved even more challenging - or it could speak to

the fact that gender may not play a moderating role or may only play a limited moderating role.

Specifically, when looking at brand liking difference variables (post minus pre), means were

higher in the 50% saturation level vs. the control level, and still higher in the 100% saturation

level vs. the 50% saturation level for men but not for women, where both the 50% and 100%

levels were higher than the control but where 50% was the highest among them all. When

looking at overall attitude scores, means did increase across both Under Armour and Nike

measurements when moving from the control to the 50% level to the 100% level, with one

exception, where the Nike attitude score for men decreased between the control and 50%

saturation level. However, with the sample size for these subgroups in the single digits and a

much larger standard deviation for men in the 50% saturation level vs. the control group, it

appears that one outlier could account for this result. Finally, cost difference measures (post

minus pre) showed mixed results. While cost estimates increased for both males and females in

both the 50% and 100% saturation groups vs. the control group, it does not appear that gender

plays a role, although again, the subgroup sample size presents challenges. Overall, results are

mixed. It appears that in some variables there could be differences across genders, while for

other variables those differences do not exist.

Looking at pessimism and optimism, there were also mixed results. While pessimists

showed an increase in cost estimates as saturation levels increased, the results for optimists

showed a decrease in perceived cost when moving from the 0% to 50% saturation levels and an

increase in perceived cost when moving from the 50% to 100% saturation levels. The 100%

saturation level reflected the highest cost difference values across the optimist and pessimist

groupings, with the mixed results possibly accounted for by an outlier. Both pessimists and

optimists did however show improved overall attitude scores across brands as saturation levels

increased, with mean attitude scores higher in the 50% saturation level vs. the control level, and

still higher in the 100% saturation level vs. the 50% saturation level. Results were again mixed

for the brand liking difference variable. Means were higher in the 50% saturation level compared

to the control level for both pessimists and optimists, but liking for both brands did not continue

to increase when moving from 50% saturation to 100% saturation. Optimists did however appear

to respond with more positive words than pessimists for both brands, as the mean values for

word difference variables were higher among optimists at all saturation levels. Ultimately, results

are mixed, with certain variables appearing to differ across these psychographic groupings

(optimist vs. pessimist) and others not showing these differences.

Finally, with respect to introversion and extraversion, findings were also mixed. When

looking at brand liking difference variables (post minus pre), mean scores were higher at the

50% level vs. the control level for both introverts and extroverts; however, mean scores showed

conflicting results depending on the brand when they were compared at the 50% and 100%

saturation levels. Shifting focus to the overall brand attitude variable, mean scores were higher at

the 50% level vs. the control level, and still higher at the 100% level vs. the 50% level for

extroverts. These results differed from those of introverts, whose mean scores were higher at the

100% level vs. the 50% level for Nike and lower at the 100% level vs. the 50% level for Under

Armour. Cost difference mean scores in the extraversion condition were lower at the 50% level

vs. the control level, but were higher at the 100% level vs. both the 50% and control levels,

perhaps speaking to a higher saturation preference among extroverts who favor or require that

level of stimulation. Those in the introversion condition showed higher cost difference mean

scores at the 50% level vs. the control level, but results were mixed when moving from 50% to

100% saturation. With respect to word difference variables, introverts demonstrated somewhat

delayed results, with higher mean scores not appearing until the 100% level for Nike specifically.

Under Armour showed higher mean scores for word difference at the 50% level vs. the control

level, but showed a decrease at the 100% level compared to the 50% level. Extroverts on the

other hand had higher mean scores for this variable at the 50% level compared to the control

level, and even higher at the 100% level compared to the 50% level. Overall, results varied, with

certain variables suggesting a difference between these psychographic groups (introverts vs.

extroverts) and other variables not showing anything to suggest a difference.

Limitations and Future Research

This study faced several limitations that would be helpful to address in future research.

The survey had originally been designed for participants to complete in-person and on paper,

which would have allowed for greater control over the test environment and lower variability in

screen size/brightness/tint. However, due to unforeseen circumstances, the survey was

distributed via email for participants to complete online. The survey had originally been designed

for participants to complete in-person and on paper, which would have allowed for greater

control over the test environment and lower variability in screen size/brightness/tint. With

participants completing the survey online, brightness of the screen, tint of the screen (for

example, if it was in

night mode), or size of the screen (for example, if the survey was completed on a phone

rather than a computer or tablet) could not be controlled. In addition, although participants received instructions to take the survey without returning to previous pages or questions, this could not be ensured through this approach. A similar study could be completed using paper surveys administered in-person in an effort to reduce variations that accompany the online experimental format. An in-person study could also be utilized to test these variables using different formats (for example, video vs. paper) and priming mechanisms (for example, a manipulation of ambient lighting colors).

Another limitation of this study was its sample size. The online method of distribution resulted in a lower response rate and, therefore, a smaller final sample size. Future studies could look to include a larger sample that extends beyond the small liberal arts college population. In addition, the application of this study to more diverse populations could provide more insight into how or if the impact of priming through color is moderated by age, ethnicity, race, and other such variables.

This study was also limited by a lack of control as to the length of time respondents engaged with the prime. If participants completed all survey sections as they were intended to be done, the exposure to the color-saturated pages was still fairly low, and this was likely exacerbated if participants quickly scrolled past the prime to complete the posttest. Future research could look to manipulate the exposure time of primes to examine how the length of a prime could influence consumers.

Additionally, since this study focused on one color and just on saturation, the role that various other colors may play, as well as all the components of these colors, could prove valuable for future research. Future studies could explore these various factors to ascertain

similarities and differences between colors, as well as how hue, value, and saturation play similar or contradictory roles.

      With respect to the research questions explored in this study, while the results were mixed, the data points to the possibility of variables that could play a moderating role. Further exploration of the variables studied here, as well as an exploration of additional variables that could play a moderating (or mediating) role should be pursued. In addition, expanding the sample, both size and scope, could help shed light on whether the variables studied here, or others, are important factors to understand subgroup differences.

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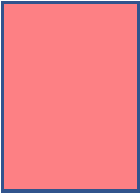Management, Economic Engineering in Agriculture & Rural Development, 13(1), 419–

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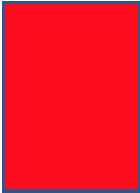
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Appendix #1

0% saturation   50% saturation   100% saturation

You are invited to participate in a study designed to gather information for an honors research project. You are not required to participate and there will be no consequences if you choose not to. If you do agree to participate, there is no risk involved. You will not be asked for your name or any personally identifiable information, nor will you be asked for information that would identify others. All responses are confidential. You may terminate your participation in this study at any time without any consequences. If you have any questions, please contact Catherine Hughes at hughesc1@etown.edu, or Dr. Bryan Greenberg at greenbergb@etown.edu

This survey is designed to be completed on a computer or a tablet. As a reminder, please complete this survey using a PDF reader.

Please fill in your answers in the designated spaces and/or check one of the designated boxes per question. Once you complete this survey, please save and return it to etownbusinessdept@etown.edu

Thank you for your time and willingness to participate.

Please continue through the survey without returning to previous pages

Part 1

1. What is your age? Please type the number of years in numerical format.

_____ years

2. What is your gender?

__ Male   __ Female   __ Other

3. While growing up, were you surrounded more by men, women, or both equally?

__ Men   __ Women   __ Both equally

4. Thinking about your experience growing up, do you feel you've been more influenced by men or women, regardless of the number of each you were surrounded by?

Much more influenced by women	Somewhat more influenced by women	Equally influenced by women and men	Somewhat more influenced by men	Much more influenced by men
__	__	__	__	__

5. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I generally make light of my problems	__	__	__	__	__
It seems the cards of life are stacked against me	__	__	__	__	__
Every cloud has a silver lining	__	__	__	__	__
I generally see the glass as half-empty	__	__	__	__	__

6. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In general, I feel energized after spending time with others	▭	▭	▭	▭	▭
I prefer to socialize one on one rather than in a large group	▭	▭	▭	▭	▭
I enjoy being the center of attention	▭	▭	▭	▭	▭
I mostly listen to people in conversations, sharing my own opinions sparingly	▭	▭	▭	▭	▭

7. Would you consider yourself an introvert or an extrovert?

▭ Introvert   ▭ Extrovert

8. Would you consider yourself a pessimist or an optimist?

▭ Pessimist   ▭ Optimist

Part 2

You will now be asked a series of questions about several brands.

1. Brand names influence my choices when purchasing a product.

▭ Strongly   ▭ Disagree   ▭ Neutral   ▭ Agree   ▭ Strongly
   Disagree   Agree

2. For each of the following brands, rate your agreement with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Patagonia	▭	▭	▭	▭	▭
I like Nike	▭	▭	▭	▭	▭
I like Coca-Cola	▭	▭	▭	▭	▭
I like Lyft	▭	▭	▭	▭	▭
I like Under Armour	▭	▭	▭	▭	▭
I like Dunkin' Donuts	▭	▭	▭	▭	▭
I like Hulu	▭	▭	▭	▭	▭

3. How much would you expect the following items to cost? Please type in the dollar amount.

A box of Kellogg's Special K Cereal	$
Under Armour men's sweatshirt	$
Six pack of Coca-Cola	$
Fifteen-minute Uber ride	$
Nike women's sweatshirt	$
Medium (grande) cup of Starbucks coffee	$
A notebook from Target	$

4. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Tide	▭	▭	▭	▭	▭
Adidas	▭	▭	▭	▭	▭
Pepsi	▭	▭	▭	▭	▭
Under Armour	▭	▭	▭	▭	▭
McDonald's	▭	▭	▭	▭	▭
Nike	▭	▭	▭	▭	▭
Ulta	▭	▭	▭	▭	▭

5. What is the first word that comes to mind when you think of the following brands?

Sony

Coca-Cola

Nike

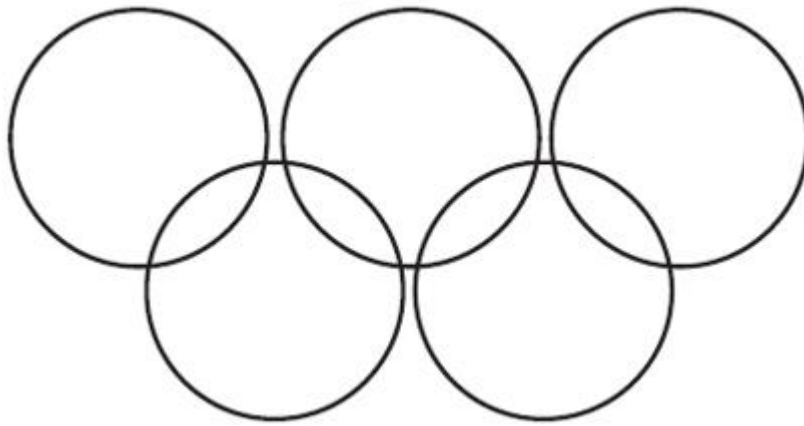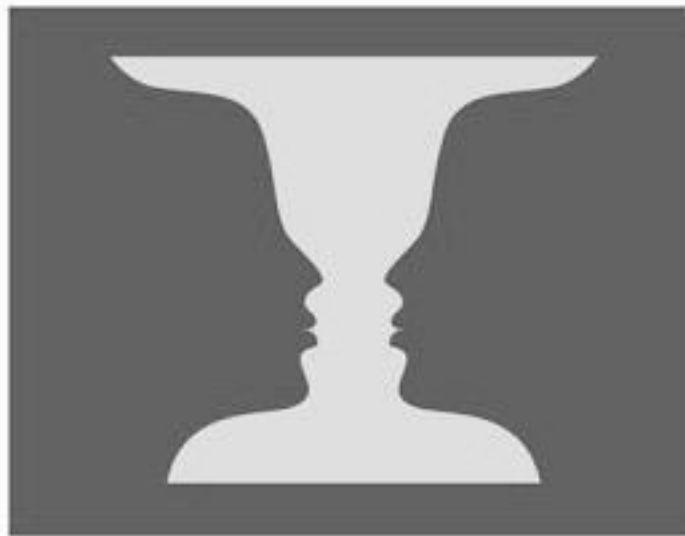Reebok

Chipotle

Under Armour

Columbia

Part 3

Please do not return to previous questions once you have reached this page in the survey.

You will now be asked to complete a simple visual task designed to measure perception. On the following page, you will find two pictures.

Please carefully examine each picture and then type in your responses.

How many shapes do you see in the picture above?

What object or objects do you see in the picture above?

Please do not return to previous questions once you have reached this page in the survey.

You will now be asked a series of questions about specific brands.

Please read each question carefully and provide the response that most accurately represents how you feel.

Part 4

1. Please rate your attitude toward the Under Armour brand based on the following dimensions.

▬	▬	▬	▬	▬
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

▬	▬	▬	▬	▬
Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive

▬	▬	▬	▬	▬
Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality

▬	▬	▬	▬	▬
Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money

2. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lululemon products are reasonably priced	▬	▬	▬	▬	▬
Under Armour products are reasonably priced	▬	▬	▬	▬	▬
Best Buy products are reasonably priced	▬	▬	▬	▬	▬
Nike products are reasonably priced	▬	▬	▬	▬	▬

3. How much would you expect the following items to cost? Please type in the dollar amount.

A whopper at Burger King $

Under Armour men's sweatshirt $

Nike women's sweatshirt $

A bottle of Dove shampoo $

4. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Under Armour	▬	▬	▬	▬	▬
I like Macy's	▬	▬	▬	▬	▬
I like Nike	▬	▬	▬	▬	▬
I like Burger King	▬	▬	▬	▬	▬

5. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Panera Bread	▬	▬	▬	▬	▬
Nike	▬	▬	▬	▬	▬
Amazon	▬	▬	▬	▬	▬
Under Armour	▬	▬	▬	▬	▬

6. Please rate your attitude toward the Nike brand based on the following dimensions.

Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive
—	—	—	—	—

Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive
—	—	—	—	—

Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality
—	—	—	—	—

Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money
—	—	—	—	—

7. What is the first word that comes to mind when you think of the brands below?

Under Armour

Nike

Colgate

Hershey's

PLEASE READ.

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Thank you for your time!

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Thank you for your time and willingness to participate.

Please continue through the survey without returning to previous pages

Part 1

1. What is your age? Please type the number of years in numerical format.

_____ years

2. What is your gender?

▭ Male   ▭ Female   ▭ Other

3. While growing up, were you surrounded more by men, women, or both equally?

▭ Men   ▭ Women   ▭ Both equally

4. Thinking about your experience growing up, do you feel you've been more influenced by men or women, regardless of the number of each you were surrounded by?

▭	▭	▭	▭	▭
Much more influenced by women	Somewhat more influenced by women	Equally influenced by women and men	Somewhat more influenced by men	Much more influenced by men

5. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I generally make light of my problems	▭	▭	▭	▭	▭
It seems the cards of life are stacked against me	▭	▭	▭	▭	▭
Every cloud has a silver lining	▭	▭	▭	▭	▭
I generally see the glass as half-empty	▭	▭	▭	▭	▭

6. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In general, I feel energized after spending time with others	▬	▬	▬	▬	▬
I prefer to socialize one on one rather than in a large group	▬	▬	▬	▬	▬
I enjoy being the center of attention	▬	▬	▬	▬	▬
I mostly listen to people in conversations, sharing my own opinions sparingly	▬	▬	▬	▬	▬

7. Would you consider yourself an introvert or an extrovert?

▬ Introvert   ▬ Extrovert

8. Would you consider yourself a pessimist or an optimist?

▬ Pessimist   ▬ Optimist

Part 2

You will now be asked a series of questions about several brands.

1. Brand names influence my choices when purchasing a product.

| ▬ Strongly | ▬ Disagree | ▬ Neutral | ▬ Agree | ▬ Strongly |
| Disagree | | | | Agree |

2. For each of the following brands, rate your agreement with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Patagonia	▬	▬	▬	▬	▬
I like Nike	▬	▬	▬	▬	▬
I like Coca-Cola	▬	▬	▬	▬	▬
I like Lyft	▬	▬	▬	▬	▬
I like Under Armour	▬	▬	▬	▬	▬
I like Dunkin' Donuts	▬	▬	▬	▬	▬
I like Hulu	▬	▬	▬	▬	▬

3. How much would you expect the following items to cost? Please type in the dollar amount.

A box of Kellogg's Special K Cereal	$
Under Armour men's sweatshirt	$
Six pack of Coca-Cola	$
Fifteen-minute Uber ride	$
Nike women's sweatshirt	$
Medium (grande) cup of Starbucks coffee	$
A notebook from Target	$

4. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Tide	▬	▬	▬	▬	▬
Adidas	▬	▬	▬	▬	▬
Pepsi	▬	▬	▬	▬	▬
Under Armour	▬	▬	▬	▬	▬
McDonald's	▬	▬	▬	▬	▬
Nike	▬	▬	▬	▬	▬
Ulta	▬	▬	▬	▬	▬

5. What is the first word that comes to mind when you think of the following brands?

Sony

Apple

Nike

Reebok

Chipotle

Under Armour

Columbia

Part 3

Please do not return to previous questions once you have reached this page in the survey.

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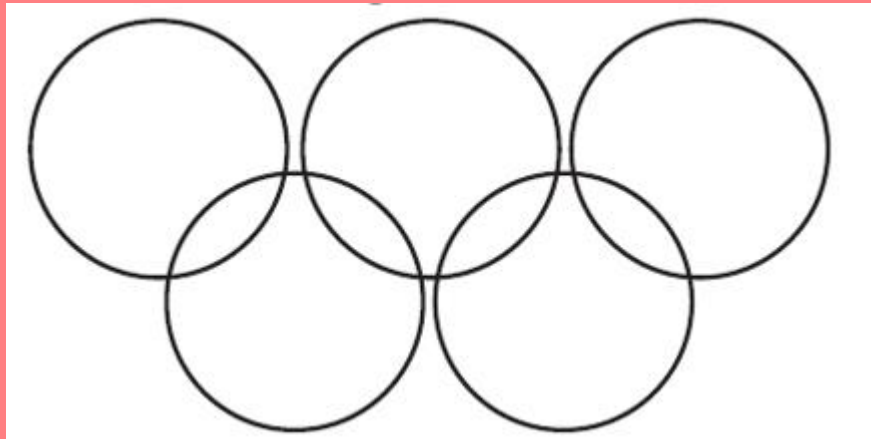
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You will now be asked a series of questions about specific brands.

Please read each question carefully and provide the response that most accurately represents how you feel.

Part 4

1. Please rate your attitude toward the Under Armour brand based on the following dimensions.

▬	▬	▬	▬	▬
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

▬	▬	▬	▬	▬
Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive

▬	▬	▬	▬	▬
Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality

▬	▬	▬	▬	▬
Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money

2. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lululemon products are reasonably priced	▬	▬	▬	▬	▬
Under Armour products are reasonably priced	▬	▬	▬	▬	▬
Best Buy products are reasonably priced	▬	▬	▬	▬	▬
Nike products are reasonably priced	▬	▬	▬	▬	▬

3. How much would you expect the following items to cost? Please type in the dollar amount.

A whopper at Burger King $

Under Armour men's sweatshirt $

Nike women's sweatshirt $

A bottle of Dove shampoo $

4. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Under Armour	▬	▬	▬	▬	▬
I like Macy's	▬	▬	▬	▬	▬
I like Nike	▬	▬	▬	▬	▬
I like Burger King	▬	▬	▬	▬	▬

5. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Panera Bread	▬	▬	▬	▬	▬
Nike	▬	▬	▬	▬	▬
Amazon	▬	▬	▬	▬	▬
Under Armour	▬	▬	▬	▬	▬

6. Please rate your attitude toward the Nike brand based on the following dimensions.

—	—	—	—	—
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

—	—	—	—	—
Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive

—	—	—	—	—
Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality

—	—	—	—	—
Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money

7. What is the first word that comes to mind when you think of the brands below?

Under Armour

Nike

Colgate

Hershey's

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Part 1

1. What is your age? Please type the number of years in numerical format.

_____ years

2. What is your gender?

— Male   — Female   — Other

3. While growing up, were you surrounded more by men, women, or both equally?

— Men   — Women   — Both equally

4. Thinking about your experience growing up, do you feel you've been more influenced by men or women, regardless of the number of each you were surrounded by?

—	—	—	—	—
Much more influenced by women	Somewhat more influenced by women	Equally influenced by women and men	Somewhat more influenced by men	Much more influenced by men

5. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I generally make light of my problems	—	—	—	—	—
It seems the cards of life are stacked against me	—	—	—	—	—
Every cloud has a silver lining	—	—	—	—	—
I generally see the glass as half-empty	—	—	—	—	—

6. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In general, I feel energized after spending time with others	▬	▬	▬	▬	▬
I prefer to socialize one on one rather than in a large group	▬	▬	▬	▬	▬
I enjoy being the center of attention	▬	▬	▬	▬	▬
I mostly listen to people in conversations, sharing my own opinions sparingly	▬	▬	▬	▬	▬

7. Would you consider yourself an introvert or an extrovert?

▬ Introvert   ▬ Extrovert

8. Would you consider yourself a pessimist or an optimist?

▬ Pessimist   ▬ Optimist

Part 2

You will now be asked a series of questions about several brands.

1. Brand names influence my choices when purchasing a product.

— Strongly   — Disagree   — Neutral   — Agree   — Strongly
   Disagree   Agree

2. For each of the following brands, rate your agreement with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Patagonia	—	—	—	—	—
I like Nike	—	—	—	—	—
I like Coca-Cola	—	—	—	—	—
I like Lyft	—	—	—	—	—
I like Under Armour	—	—	—	—	—
I like Dunkin' Donuts	—	—	—	—	—
I like Hulu	—	—	—	—	—

3. How much would you expect the following items to cost? Please type in the dollar amount.

A box of Kellogg's Special K Cereal	$
Under Armour men's sweatshirt	$
Six pack of Coca-Cola	$
Fifteen-minute Uber ride	$
Nike women's sweatshirt	$
Medium (grande) cup of Starbucks coffee	$
A notebook from Target	$

4. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Tide	▬	▬	▬	▬	▬
Adidas	▬	▬	▬	▬	▬
Pepsi	▬	▬	▬	▬	▬
Under Armour	▬	▬	▬	▬	▬
McDonald's	▬	▬	▬	▬	▬
Nike	▬	▬	▬	▬	▬
Ulta	▬	▬	▬	▬	▬

5. What is the first word that comes to mind when you think of the following brands?

Sony

Coca-Cola

Nike

Reebok

Chipotle

Under Armour

Columbia

Part 3

Please do not return to previous questions once you have reached this page in the survey.

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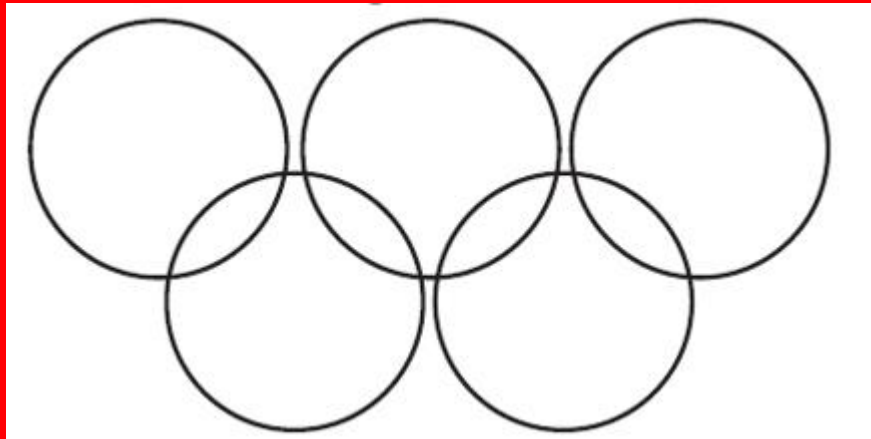
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You will now be asked a series of questions about specific brands.

Please read each question carefully and provide the response that most accurately represents how you feel.

Part 4

1. Please rate your attitude toward the Under Armour brand based on the following dimensions.

Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive
—	—	—	—	—

Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive
—	—	—	—	—

Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality
—	—	—	—	—

Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money
—	—	—	—	—

2. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lululemon products are reasonably priced	—	—	—	—	—
Under Armour products are reasonably priced	—	—	—	—	—
Best Buy products are reasonably priced	—	—	—	—	—
Nike products are reasonably priced	—	—	—	—	—

3. How much would you expect the following items to cost? Please type in the dollar amount.

A whopper at Burger King $

Under Armour men's sweatshirt $

Nike women's sweatshirt $

A bottle of Dove shampoo $

4. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like Under Armour	▬	▬	▬	▬	▬
I like Macy's	▬	▬	▬	▬	▬
I like Nike	▬	▬	▬	▬	▬
I like Burger King	▬	▬	▬	▬	▬

5. How likely is it for you to purchase the following brands?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Panera Bread	▬	▬	▬	▬	▬
Nike	▬	▬	▬	▬	▬
Amazon	▬	▬	▬	▬	▬
Under Armour	▬	▬	▬	▬	▬

6. Please rate your attitude toward the Nike brand based on the following dimensions.

—	—	—	—	—
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

—	—	—	—	—
Very Unattractive	Somewhat Unattractive	Neutral	Somewhat Attractive	Very Attractive

—	—	—	—	—
Very Low Quality	Somewhat Low Quality	Neutral	Somewhat High Quality	Very High Quality

—	—	—	—	—
Very Bad Value for Money	Somewhat Bad Value for Money	Neutral	Somewhat Good Value for Money	Very Good Value for Money

7. What is the first word that comes to mind when you think of the brands below?

Under Armour

Nike

Colgate

Hershey's

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