EMOTIONAL RESPONSES TO COLOR ASSOCIATED WITH AN ADVERTISEMENT

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A Thesis

Submitted to the Graduate College of Bowling Green State University in partial fulfillment of the requirements for the degree of

MASTER OF EDUCATION

May 2008

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Color is a vital component in advertising and product branding. It can represent certain brands or products. Color can be appealing but it can also be offensive. Therefore, it is important to specifically know which color evokes which emotion or associations to not offend someone or discredit the product.

There are emotional and symbolic associations with different colors. It is important to understand these associations in order to properly select a color when creating a brand or advertisement. In addition, there are other factors with choosing a color, like competitors’ color choices and how the color relates to the product.

This descriptive study explored emotional responses to colors used in an advertisement. A survey was created asking respondents to view an advertisement with a dominant color hue and select an emotional (positive/negative) response associated with the specific color. The Visual Communication Technology 103 course at Bowling Green State University was used as a sample. The sample included various ages and ethnicities.

Results from the survey showed that gender does not affect the emotional response to color. However, results revealed that age and ethnicity does affect the emotional response to color and color preferences. In addition, color preference changed throughout the age groups and ethnicity filtered groups.
ACKNOWLEDGEMENTS

I would like to thank my committee chair, Dr. Terry Herman for all the guidance and support I received throughout this long study. It was truly a pleasure working with you. I would also like to thank Dr. Donna Trautman and Fred Connor for their work on my committee. This thesis could not have been accomplished without all their help. Everyone’s contributions greatly affected how wonderful the final product turned out, and for that I am grateful. I would also like to thank Kim Strickland who kept me on track with deadlines and budgets, as well as lending an ear when needed.
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CHAPTER I. INTRODUCTION

Context of the Problem

“Color affects every aspect of our lives every day” (Fehrman & Fehrman, 2004, p. 2). As consumers, color choices are made on a daily basis. For example, “colour is the most useful single criterion for judging the maturity of fruits, and hence the significance of colour as a measure of acceptability” (Chamberlin & Chamberlin, 1980, p. 112). “There will be little argument with the statement that colour is essential to advertising, and the main problem is to decide the right colour” (Danger, 1969, p. 185).

Fehrman and Fehrman (2004) wrote, “we buy products because color advertising appeals to us on a subliminal level” (p. 2). “People decide which colours will sell and people decide whether they will pass over a product because they do not like its colour” (Danger, 1969, p. 5). Fehrman and Fehrman (2004) also mentioned the difficulty of choosing a particular shade (p. 192). In fact, “color can challenge the established order of things, drawing fresh attention to an existing product by making it stand out from the crowd, but to do this the product must appeal to the consumer” (p. 192). Danger (1969) wrote that color appeals to the emotions (p. 5). “Advertising can help to select and reinforce certain values and needs inherent in the role of the product. It can operate within the limits of culture to create new expectations for the consumer” (White, 1972, p. 9).

Problem of the Study

The problem of this study was to investigate the emotional responses associated with color choices in an advertisement.
**Significance of the Study**

The study was significant for several reasons. First, color can represent certain brands or products. In fact, “color is such an important brand recognition factor that in a landmark 1995 decision, the Supreme Court deemed color such a potent brand identifier that a particular shade alone can serve as a legally defensible trademark” (Fehrman & Fehrman, 2004, p. 192).

Further, color can be appealing but it can also be offensive. Therefore, it is important to specifically know which color evokes which emotion or associations to not offend someone or discredit the product. Danger (1969) wrote, “the importance of psychology in relation to colour lies in the fact that colour has an effect on the emotions. Since it is an emotional medium, colour does not lend itself to mechanical considerations” (p. 28). Color choice of a brand or advertisement is an extremely important decision. “Everyone in the management team needs to give thought to colour, from the managing director downwards [sic]–and not only those concerned with sales” (Danger, 1969, p. 15).

**Research Questions**

The study explored four research questions:

1. Does color affect consumers’ emotional responses to a product (positive/non-positive)?
2. Does age have an influence on color preferred in an advertisement of a product?
3. Does gender have an influence on color preferred in an advertisement of a product?
4. Does culture have an influence on color preferred in an advertisement of a product?
Assumptions

All participants in this study answered survey questions honestly. Another assumption was that students who have visual impairments, like color blindness, will still be invited to participate in the study.

Limitations

The study was conducted in Ohio; therefore, there was a regional limitation to the study. Subjects in the study may not have the same responses as subjects in a different geographical region. Another limitation was that the research participants would have been college students at Bowling Green State University.

Delimitations

A delimitation to the study was the light source under which the survey will be taken. Since colors vary under different light sources, the surveys should be taken under consistent lighting. Since all the surveys cannot be taken under perfect viewing conditions, trying to keep each person’s viewing condition consistent should mitigate this limitation. The computer lab that was used is the Information Technology Services (ITS) lab, Room 247 in the College of Technology.

In addition to the light source, there was a delimitation regarding the computer monitors. Since each different type of monitor and brand of monitor emits a different amount of light, it was important to keep a consistency between the different monitors. This problem should have worked itself out by using the ITS lab. All of the monitors were Apple Cinema Displays of the same age and use time. Therefore, the monitors should have been similar enough to each other to present a consistent image to the participants for the completion of the study.
Definition of Terms

The following terms were operationally defined for the study.

Achromatic Colors  Black, white, and the grays; colors devoid of hue (Fehrman & Fehrman, 2004, p. 31). Also referred to as nonchromatic colors (Berlyne, 1960, p. 172).

Anger  A strong feeling of displeasure and usually of antagonism (Merriam-Webster, anger).

Aversion  A feeling of repugnance toward something with a desire to avoid or turn from it (Merriam-Webster, aversion).

Color  Synonymous with hue (Fehrman & Fehrman, 2004, p. 31).

Emotions  Strong, relatively uncontrollable feelings that affect our behavior (Hawkins, Best & Coney, 2004, p. 354).

Fear  to be afraid of: expect with alarm (Merriam-Webster, fear).

Happiness  a state of well-being and contentment (Merriam-Webster, happiness).

Hue  The attribute of a color by which it is distinguished from another color (Fehrman & Fehrman, 2004, p. 31).

Product Advertising  Media messages that promote goods or services. Product advertising also creates or develops a desire for consumers or businesses to buy goods or services, either now or at some future time (Wisner, 1996, p. 460).
<table>
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<th>Term</th>
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<td>Sad</td>
<td>affected with or expressive of grief or unhappiness</td>
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<td></td>
<td>(Merriam-Webster, sad).</td>
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<tr>
<td>Saturation</td>
<td>The vividness or intensity of a hue (Fehrman &amp; Fehrman, 2004, p. 32).</td>
</tr>
<tr>
<td>Shade</td>
<td>A color obtained by mixing a pure color with black</td>
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<td></td>
<td>(Fehrman &amp; Fehrman, 2004, p. 32).</td>
</tr>
<tr>
<td>Surprise</td>
<td>An attack made without warning</td>
</tr>
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<td></td>
<td>(Merriam-Webster, surprise).</td>
</tr>
<tr>
<td>Tint</td>
<td>A color obtained by mixing a pure color with white</td>
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<td>(Fehrman &amp; Fehrman, 2004, p. 32).</td>
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CHAPTER II. REVIEW OF LITERATURE

This section will explore the literature that relates to the topic. Topics covered are color, color symbolism and preferences, color and branding, advertising and emotions, cultural response to color, and case studies of previous research that was conducted.

Color

“Color is about conveying crucial information to your consumers (which may, in turn, relate to being pretty or aesthetically pleasing)” (Gobe, 2001, p. 77). However, Singh (2006) wrote, “Because color experiences vary from individual to individual, it is not possible to know how another person experiences color. One person’s experience of a shade of red can be perceived differently from another person,” (p. 783).

Since each person’s experience of color is different, it is important to know where color comes from, as well as its effect on individuals.

“The effect achieved is not specific for any one or several hues. Warm colors may calm one person and excite another. Cool colors may likewise be stimulating to one person and passive to another. Irradiation with red or green light may produce an elevation of blood pressure and a quickening of pulse rate. Or the opposite may take place, depending on the particular psychic makeup of the individually.”

(Birren, 1978, p. 47)

With the different experiences in regards to color, it is important to understand how color is seen in the world.

Color symbolism and preferences

It is remarkable to think that something as simple as a color preference could represent or give insight to a person’s personality. According to Birren (1950), “impulsive persons and
conservative ones naturally express different color preferences. The same colors are not compatible with all people” (p. 172). Therefore, it makes sense that “color preference is something of a clue to personality” (p. 171). Danger (1969) wrote, “closely allied to the psychological effects are the numerous associations which various colours have attracted to themselves,” (p. 28). Dupont (1990), wrote about the importance of understanding color symbolism in regards to advertising:

When you advertise in magazines and newspapers, it is important to know the symbolism of the principal colors. It is also important to understand the symbolics of pairs of color, since in their case the reader does not register each element separately but rather their overall impressions and sensations. (p. 202)

Some of the associations have been listed below.

Red.

According to Birren (1950), “Red is perhaps the most dominant and dynamic of colors” (p. 258). Red is used to represent love and anger (Fehrman & Fehrman, 2004, p. 66); therefore, it clearly represents a wide range of emotions. “Modified forms of red—rose, maroon, pink—are beautiful and expressive, universally appealing, and deeply emotional” (Birren, 1950, p. 258). Birren (1950) also wrote, “variations of red are preferred by extroverts; therefore, the color has a place in psychotherapy to bolster human moods and counteract melancholia” (p. 258). Mahnke (1996) has a similar impression of the color red. He wrote that “red is an arousing, exciting, and stimulating color with the positive associations of passion, strength, activity, and warmth” (p. 61). In addition to the positive associations, Mahnke (1996) mentioned several negative associations with the color red. “Negative impressions include aggressivity, rage, intensity,
fierceness, and blood” (p. 61). Fehrman and Fehrman (2004) associated the color red with “love and courage, lust, murder, rage, and joy” (p. 66).

The color red also has a negative physical association. According to Birren (1950), “It will act to raise blood pressure and pulse rate but may be followed by a reversal of these effects after a period of time” (p. 258). Also, “psychologically, red is exciting and increases restlessness and nervous tension” (p. 258). Birren (1950) also wrote, “brilliant red has its value in commanding human attention, although a high frequency of color blindness among men introduces limitations” (p. 258).

*Orange.*

“Orange appears to be either loved or hated” (Fehrman & Fehrman, 2004, p. 68). Birren (1950) wrote:

The color [orange] is mellow, less primitive than red, and it therefore has a more “livable” charm. It has high appetite appeal and is quite suitable for food service. Where it may be reflected upon human skin, it casts a cheerful and flattering glow. (p. 259)

Mahnke’s (1996) opinion of orange is similar to Birren’s. Mahnke (1996) wrote, “the positive associations and impressions with orange are jovial, lively, energetic, extroverted, and sociable” (p. 62). However, he has a different opinion when the saturation of orange is high. “When the color is highly saturated it associates with the terms intrusive and blustering” (p. 62).

Birren (1950) agreed with Mahnke in that orange is “not generally preferred in its pure form but highly pleasing in its tints (peach, salmon) and shades (brown)” (p. 259). In addition, Mahnke (1996) wrote, “brown is linked with comfort and security” (p. 62), and Fehrman (2004) also linked brown tones of orange with comfort and security (p. 68). Mahnke (1996) also stated
that brown is “motherly and dependable,” but comments on its appearance of sometimes looking drab (p. 62).

Yellow.

The color yellow seems to be associated with being a happy color. In fact, Mahnke (1996) described yellow as being “the happiest of all colors” (p. 62). Fehrman and Fehrman (2004) wrote, “yellow is usually considered a cheery, sunny color, yet it is also one of the least favorite colors chosen by people” (p. 69). According to Birren (1950), “the hue is sharply focused by the eye, cheerful and incandescent in appearance” (p. 259). Birren (1950) also wrote, “Yellow has been said to have a favorable effect upon human metabolism” (p. 259). Mahnke (1996) wrote a statement similar to Birren, “in its positive association and impression it is cheerful, high-spirited, and suggestive of the life-giving sun. It represents a bright future, hope, wisdom, and it is expansive—not earthbound” (p. 62).

Since yellow is a bright color, it is usually worn or used in certain situations. “Because of the high visibility of yellow, it serves many purposes in safety” (Birren, 1950, p. 259). Fehrman and Fehrman (2004) wrote, “yellow has the highest reflectivity of all colors and is the first to be noticed, making it often the choice for fire trucks” (p. 69).

Green.

According to Mahnke (1996), “most obvious associations we make with green are those of nature and vigorous growth” (p. 63). He also wrote that “green is the quintessential color of life” (p. 63). In addition, green can also symbolize the element of water (Lichtle, 2007, p. 39).

However, Mahnke (1996) also suggested an opposing association of green as being “the color of mold, decay, sickness, and death in humans,” and that it is often the color used to describe poison (p. 63). Fehrman (2004) wrote, “green is associated with supernatural
phenomena and eerie effects” (p. 71). Also, Birren (1950) wrote, “yellow-green is generally neutral from the biological standpoint” (p. 259). He also wrote, “greens and blue-greens, however, are pacific and tend to reduce nervous and muscular tension” (p. 259). Mahnke (1996) stated that a neutral green is calming (p. 63). However, he wrote that, “When it slips considerably toward yellow it becomes stimulating, lighter, and less serious. Toward blue it turns colder, more fastidious, and sensitive and as a light bluish green it becomes much more refreshing” (p. 63).

Birren (1950) mentioned an emotional relationship to the color green. “Psychologically, green represents a withdrawal from stimulus. It provides an ideal environment for sedentary tasks, concentration, and meditation” (p. 259). Also, Fehrman and Fehrman (2004) wrote, “green is equated with both security and jealousy as well as with the ‘green thumb’ of a good gardener” (p. 71). Birren (1950) also mentioned a possible use for the blue-green color. “Because blue-green is complementary to the tint of average human complexion, it provides a very flattering background” (pp. 259-260).

Blue.

“Blue is somewhat the peacemaker of color; not many people dislike it. It has a relaxing effect, and light blue seems retiring” (Mahnke, 1996, p. 63). Birren (1950) wrote that blue “is associated with dim light, is restful and sedate, and is an outstanding favorite throughout the world” (p. 260). Mahnke (1996) referred to the color as having positive associations such as calmness, security, comfort, sobriety and contemplation (p. 63). Fehrman and Fehrman (2004) mentioned that blue symbolized infinity and serenity (p. 71). Light blue has the ability to represent space (vertical dimension) (Lichtle, 2007, p. 39).
Mahnke (1996) also mentioned the negative aspect of the color blue. He wrote, “it may be frightening, depressing, and cold” (1996, p. 63). Fehrman and Fehrman (2004) mentioned several negative associations of blue, including depression, sadness, and isolation (p. 71). Birren (1950) also wrote, “because the color has a naturally low saturation it may be used in almost any form–light, dark, pure, grayish. Being visually primary, however, it tends to be bleak if applied in too large an area” (p. 260). However, Mahnke (1996) mentioned that “blue is a noble color representing dignity, poise, and reserve. It’s awarded to winners: the blue ribbon,” (p. 64).

White, Black, Gray.

Mahnke (1996) wrote, “white represents light, the celestial, spiritual, hope, holiness, and innocence” (p. 64). Birren (1950) stated, “white is the perfectly balanced color, clear and natural in this influence” (p. 260). Also, Fehrman and Fehrman (2004) wrote that some associations with white include coolness, moonlight, the medical profession, and cleanliness (p. 66). When white is compared to black, “white is goodness–black is evil; white is yes–black is no” (Mahnke, 1996, p. 64).

Birren (1950) wrote that “black is negative; gray is passive. All three are found to be emotionally neutral and fail to have much psychotherapeutic application except where negation may be the particular expression desired” (pp. 260-261). Also, Fehrman and Fehrman (2004) mentioned that the color black “represents the unknown, maximum darkness, the negation of color” (p. 65). In addition, black and white represent time and timelessness, respectively (Lichtle, 2007, p. 39). Fehrman and Fehrman (2004) mentioned that gray is “associated with technology, machines, aircraft, battleships, concrete, cement, and the urban environment” (p. 66). However, he also mentioned that gray seems “chilling and impersonal” (p. 66).

Color & Branding
“Successful communications must attract attention, communicate clearly, and ideally be memorable for optimum impact,” (Kaufman-Scarborough, 2001, p. 303). In addition, Grossman and Wisenblit (1999) wrote, “Consumers learn color preferences for particular products based on associations they have formulated through their experience,” (p. 78). The authors also discussed the importance of color as a form of associations regarding different brands. They wrote:

Color meanings can also be created by marketers by pairing color with images in advertising that represent the qualities of the brand. Using color as a cue can be a potentially strong association, particularly when it is unique to a particular brand. However, even when firms share a color, consumers may develop a different set of associations based on the product because color is context specific. (Grossman & Wisenblit, 1999, p. 86)

Some of the color associations in brands are very obvious. Ries and Ries (1998) wrote:

Normally the best color to select is the one that is most symbolic of the category.

John Deere is the leading brand of farm tractor. Does it surprise you that John Deere picked green, the color of grass, trees, and agriculture, as the brand’s signature color? (p. 137)

Ries and Ries (1998) also mentioned the importance of selecting a color that is completely opposite of your brand’s competitors (p.138). They wrote that when you ignore your competition, then you run the risk of the consumers confusing the brands (p. 138). The authors also discuss the importance of color consistency. “Color consistency over the long term can help a brand burn its way into the mind. Look at what yellow has done for Caterpillar, brown for United Parcel Service, red for Coca-Cola, and blue for IBM” (Ries & Ries, 1998, p. 141).
Gobe (2001) discussed the importance of color selection and how it affects the consumer. The author wrote:

Color trigger very specific responses in the central nervous system and the cerebral cortex. Once they affect the cerebral cortex, colors can activate thoughts, memories, and particular modes of perception. This arousal prompts an increase in consumers’ ability to process information. Properly chosen colors define your brand logo, products, window displays, and so on, and encourage better recall of your brand, as well as a more accurate understanding of what your brand represents. Poor color selection will confuse your message, confuse your customers and, in extreme situations, contribute to the failure of a brand. (pp. 77-78)

Ries and Ries (1998) also discuss the need to focus on the mood when establishing a brand identity. “When selecting a color for a brand or a logo, managers usually focus on the mood they want to establish rather than the unique identity they want to create,” (p. 137). A product example of a successful identity is Coca-Cola. “Cola is a reddish-brown liquid, so the logical color for a cola brand is red. Which is one reason why Coca-Cola has been using red for more than a hundred years” (Ries & Ries, 1998, p. 138). However, a product with unsuccessful color selection was Pepsi-Cola. “Pepsi-Cola made a poor choice. It picked red and blue as the brand’s colors. Red to symbolize cola and blue to differentiate the brand from Coca-Cola” (Ries & Ries, 1998, p. 138). It didn’t work and according to Ries and Ries (1998), “For years Pepsi has struggled with a less-than-ideal response to Coke’s color strategy,” (p. 138). The reason for Pepsi’s advertising struggle is the lack of differentiating color (p. 138). In addition to adjusting
for competitors, “Every Emotional Branding strategy must consider the effect colors (or their absence) will have on the brand” (Gobe, 2001, p. 77).

Advertising and emotions

“Advertisements frequently show characters experiencing life and emotions” (Sutherland & Sylvester, 2000, p. 80). In addition to that, “Just as advertising can associate a piece of information with a brand (e.g. safety and Volvos) so too can it associate an emotion with a brand (excitement and Mazda Miata MX5)” (Sutherland & Sylvester, 2000, p. 80). Color can also contribute to emotions in advertising. “Colour can have a profound effect on an individual’s moods and feelings, and designers exploit these to provide acceptable spaces in which we can live with minimal visual stress and optimal visual comfort,” (Hutchings, 2006, p. 87). In addition, Sutherland and Sylvester (2000) discussed the connection between brands and emotions:

“The connection of a brand with an emotion by means of characters experiencing life and that emotion increases the brand’s relevance for us. It connects the brand with an emotion that is already there inside us. It may be something that was previously inactive in our mind, or active but unassociated with the brand. The brand takes on these associations, and the more it does so the more it can function as a symbol—a symbol that expresses or stands in for that emotion and a symbol that tends to elicit that emotional response. Instead of being connected with a piece of information, a brand may thus be connected in our minds with emotion.”

(p. 81)

Ries and Ries (1998) explained the connection of brands, emotions and color by referencing Tiffany & Co. as an example:
“By standardizing on a single color and using it consistently over the years, you can build a powerful visual presence in a clutter-filled world. At Christmastime, every brand and store uses green and red to celebrate the holiday, from M&M’s to Macy’s. Yet Tiffany & Co. sticks to blue, and becomes even more noticeable under the tree as a result.” (p. 140)

They explained further, “Women hug their husbands as soon as they see the robin’s-egg blue box—without opening it they know it will be wonderful” (p. 140).

Another example of a color-related, emotional marketing campaign is (PRODUCT) RED.

“(RED) is a brand created to raise awareness and money for the Global Fund by teaming up with the world's most iconic brands to produce (PRODUCT) RED branded products,” (Product Red, FAQ, ¶ 1). (PRODUCT) RED, was created by U2 singer Bono and Bobby Shriver and was designed to engage business and consumer power in the fight against AIDS in Africa (Product Red, FAQ, ¶ 3). According to their website, the red color was chosen for a specific reason.

“(RED) is the color of emergency. 4,400 people dying every day and many others fighting for their lives is an emergency” (Product Red, FAQ, ¶ 5).

Also on (PRODUCT) RED’s website, since its launch in March 2006, the organization has contributed more than $60 million to the Global Fund (Product Red, Fact Sheet, ¶ 3). The organization claims their contribution is “more than 10 times the amount that businesses have contributed to the Global Fund since it was founded in 2002” (Product Red, Fact Sheet, ¶ 3).

“There is no question that color is the most emotional and subjective issue in package design” (Meyers & Lubliner, 1998, p. 15). However, Dupont (1990) wrote, “The feelings aroused in us by colors are so subtle that they really cannot be described precisely,” (p. 207). Here is an example of how important color is to package design. Two boxes of cereal are sitting
on a store shelf. They are identical in packaging except that the color of one box was printed with less saturation than the other box. The cereal is perfectly fine inside the boxes. Since printed items fade over time, the box gives the impression that it was on the shelf for a long time. Therefore, the consumer might assume that the cereal inside the box is stale and will choose the box printed with the higher saturation level.

“Nevertheless, color is probably the one package design component that defies generalization more than any other. This is because the proliferation of possible colors, color combinations, and color shades provide a virtually unlimited color palette” (Meyers & Lubliner, 1998, p. 17). Meyers-Levy and Peracchio (1995) wrote, “because color is likely to enhance the perceived attractiveness of these objects, consumers are likely to produce more favorable product attitudes when ads contain color rather than only black-and-white,” (p. 121).

Colors in packaging design are specifically planned at times to represent the specific product. “Colors, though less frequently utilized for brand identity, can spark instant brand recognition” (Meyers & Lubliner, 1998, p. 66). Mahnke (1996) wrote, “yellow is used in packaging and advertising to express activity and cheerfulness” (p. 62). He referenced the yellow Kodak film boxes and the Shell Company’s red and yellow logo. As for the Kodak boxes, Mahnke wrote that the yellow is used to “suggest golden sands and far-away places” (p. 62). As for the Shell logo, yellow is used to “signify the search for new horizons; red for the fuel to power vehicles” (Mahnke, 1996, p. 62). Mahnke (1996) also wrote, “in advertising dark blue is often employed to inspire confidence, trust; it suggests security and high quality” (p. 64). The computer company, IBM, uses dark blue in its brand logo. Confidence, trust, and security are clearly attributes that a consumer would want in their own computer or file server storage.

Danger (1969) wrote, “while color will certainly help brand awareness, it should not be
looked upon as an end in itself but rather as a means of attracting attention to a symbol or brand name, and of making the latter more easily recognizable,” (p. 59). Danger (1969) also wrote:

If management is to make the maximum use of colour as a positive factor in sales it needs to know what factors should be taken into account in choosing colours; what motivations are likely to affect the actions of the customer; what to do about colour trends; and what rules ought to be followed to make practical and profitable use of colour in their goods, in their packaging and in their promotion.

(p. 3)

In addition, Ketcham (1958) wrote, “color should be put to work where, used simply and appropriately, it will invite readership” (p. 165). Also, Danger (1969) wrote, “the creative use of color is called for if its function is to enhance appearance and make the product more acceptable to the majority of purchasers but a shade that fits in with the broad trends of preference will have more impact than an out-of-date shade,” (p. 6). Color can also detract from an ad. “As more colors and/or colored objects are added (e.g., in a full-color ad), however, the colors can become distracting and effectively create a visual war by drawing attention to many diffuse and often irrelevant items,” (Meyers-Levy & Peracchio, 1995, p. 121).

Danger (1969) listed the main functions of colour in advertising as:

(1) **Realism.** This is the first function of colour in advertising. It adds a necessary dimension to advertised products which cannot convey their appeal without it. (2) **Attention value.** Colour can be used to catch the eye and invite interest, however colourless the message may be. (3) **Psychology.** Colour can be used to express warmth, coolness, gaiety and many other moods because response to colour is a basic human emotion. It can also be used to suggest, or reflect, the seasons and
other similar topics. (4) Beauty. Colour for its own sake and the pleasure that it conveys. (pp. 185-186)

In addition to Danger’s main functions of color in advertising, Ketcham (1958) mentioned his “nine rules of color in advertising”:

(1) use logical and appropriate colors, (2) use attention-getting colors, (3) use legible colors, (4) use consistent colors, (5) use colors that satisfy current wants, (6) use logical color consideration in deciding on photography or artwork, (7) pretest your color reproduction, (8) check your colors carefully once you have them developed, and (9) don’t lose sight of color’s advertising advantages in publications other than magazines. (pp. 162-164)

Both lists should help guide the use of color in advertisements.

Cultural response to color

There are many factors that can affect a person’s response to color. Some of the factors include culture, heritage, gender, and geographical locations. Mahnke (1996) wrote, “color associations, symbolism, impressions, and mannerisms that are characteristic of specific cultures and groups, even down to regional levels, also play a role in how color is experienced and used” (p. 16). “Turquoise, for example, is the national color of Persia. Ancient Persians trusted it to ward off the evil eye by protecting themselves with turquoise charms. In Islam, green has religious significance; the cloak of the prophet was thought to be green, and so it is also a symbol of hope” (p. 16).

In addition to that, Peterson and Cullen (2000) wrote, “a single color can have very different meanings in different cultures. In Asia orange is a positive, spiritually enlightened, and life-affirming color, while in the US it is a sign of road hazards, traffic delays, and fast-food
restaurants” (p. 6). Mahnke (1996) also mentioned several other groups that have specific responses to a specific color:

Greeks find all colors to be equally refined, while Swedes consider saturated color to be more vulgar than unsaturated ones. The Japanese respond deeply to the gentle colors of water, sky, and wood; whereas Indian arts and crafts have a common theme of vivid color. (p. 16)

“In Egypt, green—the national color—must never be used commercially, especially not on throwaway packaging” (Meyers & Lubliner, 1998, p. 220). In addition, Dupont (1990) wrote:

Research has found that, for the most part, people from poorer and less cultured groups prefer bright colors, such as red and orange. Conversely, the higher the social and cultural level, the greater the preference for cold colors, nuances, and soft tints,” (p. 208).

Dupont (1990) also mentioned the relationship between color and age. “It should be noted that some color preferences change with age. Pure, bright colors appeal more readily to young people. Older people generally prefer softer tints or darker, less intense tones,” (p. 208).

**Gender response to color**

There has been minimal research conducted in regards to emotional appeal and gender responses to color other than the obvious associations of pink being considered a feminine color.

**Case Studies**

One case study, conducted by Lichtle (2007), studied the “effects of the three components of an ad’s colour (hue, saturation and lightness) on the emotions it evokes and on attitudes towards it” (p. 37). Lichtle analyzed the relationship of a dominant color in a print
advertisement to an individual’s emotional reaction to the ad (p. 38). Lichtle used red and blue
tonalities and varied the saturation and lightness levels (p. 46). Results included that “colour may
affect emotions evoked by the ad and attitude towards it” (Lichtle, 2007, p. 54). “Colour of an
advertisement does not affect all individuals identically; advertisers must therefore recognize that
some variables limit the effectiveness of an advertisement” (Lichtle, 2007, p. 54).

In another study, Kaya and Epps (2004) explored the relationship between colour and
emotion. The participants in the study were college students in the southeast region of the United
States. Participants were seated in front of a computer to view the specific colour on the computer
screen (¶ 11). The students were asked, “What emotional response do you associate with this
colour?” “How does this colour make you feel?” And ‘Why do you feel this way?’” (¶ 11). Only
one emotional response was allowed and the answers were recorded on an observation sheet (¶
11).

The study found that “80% of the responses to the principle hues, including red, yellow,
green, blue, and purple were positive, compared to only 29.2% for the achromatic colors,
including white, gray, and black” (Kaya & Epps, 2004, ¶ 13). The study also found that “17.8% of
the responses to the principle hues were negative, whereas 68.4% of the responses were
negative for the achromatic colors” (¶ 13).

Green was considered the most positive with 95.9% positive responses and yellow was
second with 93.9% positive responses (Kaya & Epps, 2004, ¶ 14). Students associated green
with nature and trees, which created feelings of relaxation and calmness (¶ 14). Yellow was
associated with feelings of “happiness and excitement because it was associated with the sun,
blooming flowers, and summer time” (¶ 14). The color blue received 79.6% positive responses
and was viewed as provoking feelings of relaxation and calmness. There were some negative
emotions associated with blue and those were “sadness, depression, and loneliness” (¶ 15). Red was viewed as being positive (feelings of love and romance) (¶ 15) and negative (fight, blood, Satan and evil)(¶15). Purple was viewed as having feelings of relaxation, calmness, happiness, sadness, tiredness, power, fear, boredom, excitement, and comfort (¶ 15). White was viewed as being associated with innocence, peace, hope, simplicity, and cleanliness (¶ 17). Black was mostly viewed negatively with associations to sadness, depression, fear, anger, and death (¶ 17). The color gray was the most negative (89.9% negative associations) and has associations of sadness, depression, boredom, confusion, anger, tiredness, and references bad weather (rainy, cloudy, foggy, etc.) (¶17).

Another study explored the relationship of colors and emotions across three different age groups. This study tested seven year olds, eleven year olds and adults. Terwogt and Hoeksma (2001) studied color associations and emotional preferences associated with a color. The groups viewed a color and then matched the color with an emotion (p. 8). Their results were that color and emotion preferences change with age, and at all ages; colors and emotions are consistently related to each other, (p. 14). In addition, blue was the preferred color for all age groups (p. 11). The color Yellow was preferred by the younger groups, but not by adults, and green become more preferred with age (p. 14).

Summary

Colors have emotion and symbolic associations. In addition to the associations, culture plays a big part in the color decision-making process. Also, “chromatic colors seem to be more arousing than nonchromatic colors, possibly because grays, browns, and blacks are more likely to be found in relatively unimportant, unvarying background objects” (Berlyne, 1960, p. 172). He also wrote, “among the chromatic colors, the emotional impact of the warm hues toward the
red end of the spectrum generally outweighs that of colder hues at the other end,” (p. 172).

Several case studies were conducted to test the relationship between emotions and symbolic associations to color. Lichtle (2007) used red and blue tonalities to test the emotional response to an ad (p. 38), while Kaya and Epps (2004) tested all the main hues. Kaya and Epps (2004) found that the color green was the most positive color, with yellow being the second most positive color (¶ 14).
CHAPTER II

This chapter includes an outline of the research procedure for this study. It includes the research design, sampling design and procedures, data collection instrumentation, the timeline for the study, and finally, the proposed budget for the study.

Restatement of the problem

The problem of this study was to investigate the emotional responses associated with color choices in an advertisement.

Research design

A descriptive research method of analysis was used. Mertler and Charles (2005) defined descriptive statistics as research that “depict people, situations, events, and conditions as they currently exist,” (p. 31).

Sampling design and procedures

Cluster sampling was used. Mertler and Charles (2005) defined cluster sampling as sampling that “involves the random selection of groups that already exist” (p. 143). The sample was taken from the Visual Communication Technology (VCT) 103 class at Bowling Green State University. The VCT 103 class consisted of approximately 240 students each semester. The class was grouped by lab sections of about 36 students per section. The students choose their lab section when registering for classes, therefore, the sample will not be individually chosen by the researcher. The sample consisted of various majors and class rankings (Freshman-Senior). The sample included both male and female, as well as various ages and ethnicity.

The dependent variable was the specific advertisement that the participants viewed. Everyone viewed an advertisement for the same product. This stayed constant throughout all of the testing. The independent variable was the color of the advertisements. The overall color of
the advertisement changed to see if a different emotional response was evoked by the specific color. Since previous research was conducted testing red versus blue (Lichtle, 2007, p. 46), this study will test the six colors: blue, green, orange, purple, red and yellow.

**Data collection instrument**

The instrument that was delivered was an electronic survey created by the researcher. The software that was used to create the survey was Survey Monkey, which can be found at [http://www.surveymonkey.com](http://www.surveymonkey.com). Survey Monkey was chosen since it allows images to be included in the survey. The survey was given in the Information Technology Services (ITS) lab, room 247 in the College of Technology. This classroom laboratory was used for several reasons. First, an object can appear differently under different lighting conditions. For example, under a fluorescent light, a white paper appears green. Under normal household lighting (tungsten lighting), the white paper appears red. Human eyes do not always see this difference, but it is very easy to see in photographs and video. Having everyone viewing the computer screens under the same lighting condition mitigated this issue.

Another reason the lab was used was to enable all of the sample audience to take the survey on the same type of computer monitor. Since computer monitors vary in their brightness, contrast, and color spectrum, having the same monitors used by the entire sample should have yielded more consistent results.

For the survey, the sample audience looked at an advertisement on the computer screen. The sample audience then answered questions pertaining to the research objectives. Pre-existing surveys was researched for the development of the research questions. A Likert-style scale was used when determining ad effectiveness of the different hues. The data was then recorded and analyzed by the researcher.
The process

The first step in creating the survey was to identify a print advertisement for the study. The ideal print advertisement needed to contain a product or service that did not already have a specific color associated with it, or be of a product that once sold it would have the ability to customize colors (cars, cell phones, etc.) In addition to these criteria, the product or service in the ad needed to be something that does not get sold or used because of specific style, design or brand preferences. An example of this was a pickup truck or a smart phone. These products were from a small niche market and therefore would already have multiple opinions associated with them. The ad that was selected was an ad for the Olympic Games (Figure 3.1). The ad was vague in the information and message being conveyed to the audience. In addition, a dominant color hue in the ad made it easy to customize the colors for the specific hues chosen for the survey.

Figure 3.1. Original advertisement.

The advertisement (Figure 3.1) was scanned into Adobe Photoshop and the color of the continents was adjusted in accordance to the specific Munsell color values selected for the survey. The Munsell color system was used since it is “considered the most precise,” (Lichtle, 2007, p. 45). In addition, multiple studies were conducted using this color system (Lichtle, 2007)
The Munsell color values were chosen from a previously published study from Kaya and Epps (2004, ¶24). Once the colors were adjusted, the files were placed into the survey. The emotions to be compared were chosen from a previous study as well (Terwogt and Hoeksma, 2001). The emotions to be tested were Anger, Aversion, Fear, Happiness, Sadness and Surprise. The study tested these emotions across several age groups, and therefore, these emotions seemed to be commonly understood.

The survey was created and given electronically using Survey Monkey. The survey was referenced by a web link that was posted to the announcements page on the VCT 103 Blackboard Communications Shell. All VCT 103 students have access to the VCT 103 course shell. However, each different lab section in the VCT 103 Course has its own blackboard shell that only they can see. For example, the Wednesday mornings’ lab has a different course shell than Wednesday afternoons’ lab. The VCT 103 lab instructors had to post the survey link right before the scheduled lab and the link was removed after the survey was given so that students would not be able to access the link outside of class.

**HSRB statement**

All the rules and regulations of Bowling Green State University’s Human Subject Review Board were followed regarding the study (See Appendix A).

**Timeline**

Thursday, July 12, 2007 – Received approval of thesis topic.


Wednesday, January 9, 2008 – Send proposal and survey to HSRB for approval.

Tuesday, January 22, 2008 – HSRB approval of thesis proposal.

February 11 – 14, 2008 – Conducted surveys.
February 15, 2008 – Analyze data and finished writing chapters 4 & 5.

Thursday, March 6, 2008 – Thesis defense.

_Budget_

Survey Monkey cost $19.95 per month. The account was needed for two months at a total cost of $39.90.
CHAPTER IV. FINDINGS

This chapter reviews the findings of the data from the study. This chapter has been divided into different segments grouped with regards to the survey: Response Rates, Demographic results, Blue Ad results, Green Ad results, Orange Ad results, Purple Ad results, Red Ad results, Yellow Ad results, Color preference results, Filtered Results by Gender, Filtered Results by Age Range & Filtered Results by Ethnicity.

Response Rates

The VCT 103 class had 223 students enrolled in the course. The course was divided into seven different lab sections. Of the enrolled students, 191 students were present in their respective lab section.

Figure 4.1. Survey Consent.

<table>
<thead>
<tr>
<th>1. Do you consent to participate in this survey?</th>
<th>n = 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>100.0%</td>
</tr>
<tr>
<td>No</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

As displayed in Figure 4.1, 160 students (out of 191) consented to participate in the survey.

Demographic results

The respondents were asked several questions regarding their demographic information. Questions include; Gender, Age Range, Ethnicity and Visual Imparity.
Gender.

Figure 4.2. Gender results.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>56.3%</td>
<td>89</td>
</tr>
<tr>
<td>Female</td>
<td>43.7%</td>
<td>69</td>
</tr>
</tbody>
</table>

Of the 158 respondents, 56.3% or 89 were male and 43.7% or 69 were female.

Age Range.

Figure 4.3. Age range results.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 20</td>
<td>74.1%</td>
<td>117</td>
</tr>
<tr>
<td>21 – 24</td>
<td>22.2%</td>
<td>35</td>
</tr>
<tr>
<td>over 25</td>
<td>3.8%</td>
<td>6</td>
</tr>
</tbody>
</table>

The age range of 18 to 20 accounted for the largest group at 74.1% or 117 respondents.
The second largest group was the 21 to 24 age range with a response of 22.2% or 35 respondents.
The over 25 age range had a 3.8% response percent or 6 respondents.
Ethnicity.

Figure 4.4. Ethnicity results.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian/White</td>
<td>83.2%</td>
<td>129</td>
</tr>
<tr>
<td>African American/Black</td>
<td>10.3%</td>
<td>16</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Asian American/Pacific Islander</td>
<td>1.9%</td>
<td>3</td>
</tr>
<tr>
<td>Hispanic or Latino; Mexican American</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Hispanic or Latino; Puerto Rican</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Other Hispanic or Latino</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Other Ethnic</td>
<td>0.6%</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 4.4 shows the response percent for the demographic breakdown of the sample. Caucasian/White accounted for 83.2% or 129 respondents. African American/Black represented 10.3% or 16 respondents. Asian American/Pacific Islander accounted for 1.9% or three respondents and Hispanic or Latino; Mexican American represented 1.3% or two respondents. Hispanic or Latino; Puerto Rican and Other Hispanic or Latino both have 1.3% or two respondents each. In addition, Other Ethnic represent 0.6% or one response.
**Visual imparities.**

*Figure 4.5.1. Visual imparities results.*

<table>
<thead>
<tr>
<th>5. Do you have a visual imparity affecting your ability to see colors properly?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>Response</td>
</tr>
<tr>
<td>1.9%</td>
</tr>
</tbody>
</table>

*Figure 4.5.2. Responses for visual imparity.*

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Response Date</th>
<th>If YES, Please explain.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>02/11/2008 23:06:00</td>
<td>Color Blind- Green and Red</td>
</tr>
<tr>
<td>2</td>
<td>02/14/2008 16:38:00</td>
<td>Slightly Color-blind</td>
</tr>
</tbody>
</table>

Respondents were asked if they have a visual imparity affecting their ability to see colors properly. The responses are shown in Figure 4.5.1 and Figure 4.5.2 asked the respondents who answered yes to a visual imparity to explain their imparity. Only two of the three respondents provided an explanation, and both responses were issues of color blindness.
Blue ad results

Figure 4.6. Blue Ad.

For this part of the survey, the research subjects were asked to view a dominant blue version of the ad (Figure 4.6) and then answered questions regarding what they viewed.

What is the dominant color in the ad?

Figure 4.7. Dominant color results.

<table>
<thead>
<tr>
<th>6. What is the dominant color in the ad?</th>
<th>n = 157</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Blue</td>
<td>98.1%</td>
</tr>
<tr>
<td>Green</td>
<td>0.0%</td>
</tr>
<tr>
<td>Orange</td>
<td>0.0%</td>
</tr>
<tr>
<td>Purple</td>
<td>0.0%</td>
</tr>
<tr>
<td>Red</td>
<td>0.0%</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

Of the 157 respondents who answered the question, 98.1% or 154 respondents identified the ad as being blue. Also, 1.9% or three respondents identified the dominant color as yellow.
Does the ad evoke a positive or negative emotion?

Figure 4.8. Positive/Negative results.

<table>
<thead>
<tr>
<th>Does the ad evoke a positive or negative emotion?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>78.8%</td>
<td>123</td>
</tr>
<tr>
<td>Negative</td>
<td>21.2%</td>
<td>33</td>
</tr>
</tbody>
</table>

The respondents replied with 78.8% or 123 responses for a positive emotion and 21.2% or 33 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

Figure 4.9. Emotion results.

<table>
<thead>
<tr>
<th>What emotion do you associate with the ad?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Aversion</td>
<td>21.3%</td>
<td>33</td>
</tr>
<tr>
<td>Fear</td>
<td>1.9%</td>
<td>3</td>
</tr>
<tr>
<td>Happiness</td>
<td>49.7%</td>
<td>77</td>
</tr>
<tr>
<td>Sadness</td>
<td>13.5%</td>
<td>21</td>
</tr>
<tr>
<td>Surprise</td>
<td>12.3%</td>
<td>19</td>
</tr>
</tbody>
</table>

The highest response rate was attributed to happiness at 49.7% or 77 respondents. The next highest response was Aversion with 21.3% or 33 respondents. Twenty-one respondents or 13.5% chose sadness while 12.3% or 19 respondents chose surprise. Also, the respondents reported 1.9% or three responses of Fear, while anger was the lowest response rate at 1.3% or two responses.
How intense is the emotion?

*Figure 4.10. Intensity results.*

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Intense</td>
<td>0.6%</td>
<td>1</td>
</tr>
<tr>
<td>Intense</td>
<td>8.9%</td>
<td>14</td>
</tr>
<tr>
<td>Somewhat</td>
<td>45.9%</td>
<td>72</td>
</tr>
<tr>
<td>Little intensity</td>
<td>28.0%</td>
<td>44</td>
</tr>
<tr>
<td>Very Little intensity</td>
<td>16.6%</td>
<td>26</td>
</tr>
</tbody>
</table>

The respondents felt that the emotion was Somewhat intense with a response rate of 45.9% or 72 respondents. At 28.0% or 44 respondents felt Little Intensity, while 16.6% or 26 respondents felt Very Little Intensity. Also, 8.9% or 14 respondents thought the emotion was Intense and only 0.6% or 1 respondent thought the emotion was Very Intense.

Is the color appropriate in the ad?

*Figure 4.11. Appropriateness results.*

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5.1%</td>
<td>8</td>
</tr>
<tr>
<td>Agree</td>
<td>32.5%</td>
<td>51</td>
</tr>
<tr>
<td>No opinion</td>
<td>34.4%</td>
<td>54</td>
</tr>
<tr>
<td>Disagree</td>
<td>26.1%</td>
<td>41</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1.9%</td>
<td>3</td>
</tr>
</tbody>
</table>

The respondents had no opinion regarding the color in the ad with a response rate of 34.4% or 54 respondents. At 32.5% or 51 respondents agreed with the color, while 26.1% or 41 respondents disagreed with the color. Also, 5.1% or eight respondents strongly agreed and 1.9% or three respondents strongly disagreed with the color.
Green ad results

Figure 4.12. Green Ad

What is the dominant color in the ad?

Figure 4.13. Dominant color.

<table>
<thead>
<tr>
<th>11. What is the dominant color in the ad?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>0.6%</td>
<td>1</td>
</tr>
<tr>
<td>Green</td>
<td>97.5%</td>
<td>154</td>
</tr>
<tr>
<td>Orange</td>
<td>0.6%</td>
<td>1</td>
</tr>
<tr>
<td>Purple</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Red</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.3%</td>
<td>2</td>
</tr>
</tbody>
</table>

Of the 158 respondents who answered the question, 97.5% or 154 respondents identified the ad as green. Also, 0.6% or one respondent identified the dominant color as blue, and 0.6% or one respondent thought the dominant color was orange, as well as, 1.3% or two respondents identified the dominant color as yellow.
Does the ad evoke a positive or negative emotion?

Figure 4.14. Positive/Negative results.

<table>
<thead>
<tr>
<th>12. Does the ad evoke a positive or negative emotion?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>88.6%</td>
<td>140</td>
</tr>
<tr>
<td>Negative</td>
<td>11.4%</td>
<td>18</td>
</tr>
</tbody>
</table>

The respondents replied with 88.6% or 140 responses for a positive emotion and 11.4% or 18 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

Figure 4.15. Emotion results.

<table>
<thead>
<tr>
<th>13. What emotion do you associate with the ad?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Aversion</td>
<td>17.5%</td>
<td>27</td>
</tr>
<tr>
<td>Fear</td>
<td>3.2%</td>
<td>5</td>
</tr>
<tr>
<td>Happiness</td>
<td>43.5%</td>
<td>67</td>
</tr>
<tr>
<td>Sadness</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>Surprise</td>
<td>33.1%</td>
<td>51</td>
</tr>
</tbody>
</table>

The highest response was attributed to Happiness at a rate of 43.5% or 67 responses. The next highest response was Surprise at 33.1% or 51 respondents. Twenty-seven respondents or 17.5% chose Aversion and five respondents or 3.2% chose Fear. Also, two respondents or 1.3% chose Anger and two respondents or 1.3% chose Sadness.
How intense is the emotion?

Figure 4.16. Intensity results.

<table>
<thead>
<tr>
<th>14. How intense is the emotion?</th>
<th>n = 158</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Very Intense</td>
<td>3.2%</td>
</tr>
<tr>
<td>Intense</td>
<td>19.0%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>46.8%</td>
</tr>
<tr>
<td>Little Intensity</td>
<td>20.9%</td>
</tr>
<tr>
<td>Very Little Intensity</td>
<td>10.1%</td>
</tr>
</tbody>
</table>

The respondents felt that the emotion was somewhat intense with a response rate of 46.8% or 74 respondents. At 20.9% or 33 respondents felt Little Intensity, while 19.0% or 30 respondents felt the emotion was Intense. Also, 10.1% or 16 respondents thought the emotion had Very Little Intensity and only 3.2% or five respondents thought the emotion was Very Intense.

Is the color appropriate in the ad?

Figure 4.17. Appropriateness results.

<table>
<thead>
<tr>
<th>15. The color is appropriate in the ad.</th>
<th>n = 158</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>5.7%</td>
</tr>
<tr>
<td>Agree</td>
<td>44.3%</td>
</tr>
<tr>
<td>No opinion</td>
<td>31.0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>15.2%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3.8%</td>
</tr>
</tbody>
</table>
The respondents agree with the color in the ad at a response rate of 44.3% or 70 respondents. At 31.0% or 49 respondents had no opinion with the color, while 15.2% or 24 respondents disagreed with the color. Also, 5.7% or nine respondents strongly agreed and 3.8% or six respondents strongly disagreed with the color.
Orange ad results

Figure 4.18. Orange Ad.

What is the dominant color in the ad?

Figure 4.19. Dominant color.

<table>
<thead>
<tr>
<th>16. What is the dominant color in the ad?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Green</td>
<td>0.6%</td>
<td>1</td>
</tr>
<tr>
<td>Orange</td>
<td>97.5%</td>
<td>153</td>
</tr>
<tr>
<td>Purple</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Red</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.9%</td>
<td>3</td>
</tr>
</tbody>
</table>

Of the 157 respondents who answered the question, 97.5% or 153 respondents identified the ad as being orange. Also, 1.9% or three respondents identified the dominant color as yellow. In addition, 0.6% or one respondent chose green.
Does the ad evoke a positive or negative emotion?

**Figure 4.20. Positive/Negative results.**

<table>
<thead>
<tr>
<th>17. Does the ad evoke a positive or negative emotion?</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Positive</td>
<td>58.7%</td>
</tr>
<tr>
<td>Negative</td>
<td>41.3%</td>
</tr>
</tbody>
</table>

The respondents replied with 58.7% or 91 responses for a positive emotion and 41.3% or 64 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

**Figure 4.21. Emotion results.**

<table>
<thead>
<tr>
<th>18. What emotion do you associate with the ad?</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Anger</td>
<td>9.0%</td>
</tr>
<tr>
<td>Aversion</td>
<td>20.6%</td>
</tr>
<tr>
<td>Fear</td>
<td>11.6%</td>
</tr>
<tr>
<td>Happiness</td>
<td>29.0%</td>
</tr>
<tr>
<td>Sadness</td>
<td>6.5%</td>
</tr>
<tr>
<td>Surprise</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

The highest response rate was attributed to happiness at 29.0% or 45 respondents. The next highest response was Surprise with 23.2% or 36 respondents. Thirty-two respondents or 20.6% chose Aversion and 11.6% or 18 respondents chose Fear. Also, 9.0% or 14 respondents chose Anger, while 6.5% or 10 respondents chose Sadness.
How intense is the emotion?

Figure 4.22. Intensity results.

<table>
<thead>
<tr>
<th>19. How intense is the emotion?</th>
<th>n = 157</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Very Intense</td>
<td>3.8%</td>
</tr>
<tr>
<td>Intense</td>
<td>21.0%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>42.0%</td>
</tr>
<tr>
<td>Little Intensity</td>
<td>20.4%</td>
</tr>
<tr>
<td>Very Little Intensity</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

The respondents felt that the emotion was Somewhat intense with a response rate of 42.0% or 66 respondents. At 21.0% or 33 respondents felt the emotion was Intense, while 20.4% or 32 respondents felt Little Intensity. Also, 12.7% or 20 respondents thought the emotion had Very Little Intensity and 3.8% or six respondents thought the emotion was Very Intense.

Is the color appropriate in the ad?

Figure 4.23. Appropriateness results.

<table>
<thead>
<tr>
<th>20. The color is appropriate in the ad.</th>
<th>n = 158</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>1.9%</td>
</tr>
<tr>
<td>Agree</td>
<td>19.6%</td>
</tr>
<tr>
<td>No opinion</td>
<td>27.8%</td>
</tr>
<tr>
<td>Disagree</td>
<td>37.3%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>13.3%</td>
</tr>
</tbody>
</table>

The respondents disagreed with the color in the ad at a response rate of 37.3% or 59 respondents. At 27.8% or 44 respondents had no opinion with the color, while 19.6% or 31 respondents agreed with the color. Also, 13.3% or 21 respondents strongly disagreed and 1.9% or three respondents strongly agreed with the color.
Purple ad results

Figure 4.24. Purple Ad.

What is the dominant color in the ad?

Figure 4.25. Dominant color.

<table>
<thead>
<tr>
<th>21. What is the dominant color in the ad?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Green</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Orange</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Purple</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>156</strong></td>
</tr>
<tr>
<td>Red</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Yellow</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

Of the 156 respondents who answered the question, 100% or 156 respondents identified the ad as being purple.
Does the ad evoke a positive or negative emotion?

Figure 4.26. Positive/Negative results.

The respondents replied with 66.2% or 102 responses for a positive emotion and 33.8% or 52 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

Figure 4.27. Emotion results.

The highest response rate was attributed to happiness at 34.9% or 53 respondents. The next highest response was Surprise with 20.4% or 31 respondents. Thirty respondents or 19.7% chose Aversion and 18.4% or 28 respondents chose Sadness. Also, 3.9% or six respondents chose Fear. while 2.6% or four respondents chose Anger.
**How intense is the emotion?**

*Figure 4.28. Intensity results.*

<table>
<thead>
<tr>
<th>24. How intense is the emotion?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Very Intense</td>
<td>4.5%</td>
</tr>
<tr>
<td>Intense</td>
<td>24.7%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>42.2%</td>
</tr>
<tr>
<td>Little Intensity</td>
<td>18.8%</td>
</tr>
<tr>
<td>Very Little Intensity</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

The respondents felt that the emotion was Somewhat intense with a response rate of 42.2% or 65 respondents. At 24.7% or 38 respondents felt the emotion was Intense, while 18.8% or 29 respondents felt Little Intensity. Also, 9.7% or 15 respondents thought the emotion had Very Little Intensity and only 4.5% or seven respondents thought the emotion was Very Intense.

**Is the color appropriate in the ad?**

*Figure 4.29. Appropriateness results.*

<table>
<thead>
<tr>
<th>25. The color is appropriate in the ad.</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>3.2%</td>
</tr>
<tr>
<td>Agree</td>
<td>24.0%</td>
</tr>
<tr>
<td>No opinion</td>
<td>35.1%</td>
</tr>
<tr>
<td>Disagree</td>
<td>33.1%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

The respondents had no opinion regarding the color in the ad with a response rate of 35.1% or 54 respondents. At 33.1% or 51 respondents disagreed with the color, while 24.0% or 37 respondents agreed with the color. Also, 4.5% or seven respondents strongly disagreed and 3.2% or five respondents strongly agreed with the color.
Red ad results

Figure 4.30. Red ad.

What is the dominant color in the ad?

Figure 4.31. Dominant color results.

<table>
<thead>
<tr>
<th>26. What is the dominant color in the ad?</th>
<th>n = 153</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Blue</td>
<td>0.0%</td>
</tr>
<tr>
<td>Green</td>
<td>0.0%</td>
</tr>
<tr>
<td>Orange</td>
<td>0.0%</td>
</tr>
<tr>
<td>Purple</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Red</strong></td>
<td><strong>100.0%</strong></td>
</tr>
<tr>
<td>Yellow</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Of the 153 respondents who answered the question, 100% or 153 respondents identified the ad as being Red.
Does the ad evoke a positive or negative emotion?

Figure 4.32. Positive/Negative results.

<table>
<thead>
<tr>
<th>27. Does the ad evoke a positive or negative emotion?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td>Positive</td>
<td>23.4%</td>
</tr>
<tr>
<td>Negative</td>
<td>76.6%</td>
</tr>
</tbody>
</table>

Out of 154 respondents, 23.4% or 36 responses were for a positive emotion and 76.6% or 118 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

Figure 4.33. Emotion results.

<table>
<thead>
<tr>
<th>28. What emotion do you associate with the ad?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td>Anger</td>
<td>52.6%</td>
</tr>
<tr>
<td>Aversion</td>
<td>7.1%</td>
</tr>
<tr>
<td>Fear</td>
<td>20.1%</td>
</tr>
<tr>
<td>Happiness</td>
<td>7.8%</td>
</tr>
<tr>
<td>Sadness</td>
<td>2.6%</td>
</tr>
<tr>
<td>Surprise</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

The highest response rate was Anger at 52.6% or 81 respondents. The next highest response was Fear with 20.1% or 31 respondents. Fifteen respondents or 9.7% chose Surprise and 7.8% or 12 respondents chose Happiness. Also, 11 responses or 7.1% chose Aversion, while 2.6% or four responses chose Sadness.
How intense is the emotion?

Figure 4.34. Intensity results.

The respondents felt that the emotion was Intense with a response rate of 36.8% or 57 respondents. At 27.1% or 42 respondents felt the emotion was Somewhat Intense, while 17.4% felt the emotion was Very Intense. Also, 10.3% or 16 respondents thought the emotion had Little Intensity and 8.4% or 13 respondents thought the emotion had Very Little Intensity.

Is the color appropriate in the ad?

Figure 4.35. Appropriateness results.

The respondents disagreed with the color in the ad with a response rate of 33.3% or 52 respondents. At 25.6% or 40 respondents had no opinion with the color, while 19.9% or 31 respondents strongly disagreed with the color. Also, 16.7% or 26 respondents agreed and 4.5% or seven respondents strongly agreed with the color.
Yellow ad results

Figure 4.35. Yellow Ad.

What is the dominant color in the ad?

Figure 4.36. Dominant color results.

<table>
<thead>
<tr>
<th>31. What is the dominant color in the ad?</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Blue</td>
<td>0.0%</td>
</tr>
<tr>
<td>Green</td>
<td>0.0%</td>
</tr>
<tr>
<td>Orange</td>
<td>0.0%</td>
</tr>
<tr>
<td>Purple</td>
<td>0.0%</td>
</tr>
<tr>
<td>Red</td>
<td>0.0%</td>
</tr>
<tr>
<td>Yellow</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Of the 155 respondents who answered the question, 100% or 155 respondents identified the ad as being yellow.
Does the ad evoke a positive or negative emotion?

**Figure 4.37. Positive/Negative results.**

<table>
<thead>
<tr>
<th>32. Does the ad evoke a positive or negative emotion?</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td>Positive</td>
<td>63.2%</td>
</tr>
<tr>
<td>Negative</td>
<td>36.8%</td>
</tr>
</tbody>
</table>

The respondents replied with 63.2% or 98 responses for a positive emotion and 36.8% or 57 respondents felt the ad evoked a negative emotion.

What emotion do you associate with the ad?

**Figure 4.38. Emotion results.**

<table>
<thead>
<tr>
<th>33. What emotion do you associate with the ad?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td>Anger</td>
<td>2.6%</td>
</tr>
<tr>
<td>Aversion</td>
<td>18.2%</td>
</tr>
<tr>
<td>Fear</td>
<td>2.6%</td>
</tr>
<tr>
<td>Happiness</td>
<td>36.4%</td>
</tr>
<tr>
<td>Sadness</td>
<td>8.4%</td>
</tr>
<tr>
<td>Surprise</td>
<td>31.8%</td>
</tr>
</tbody>
</table>

The highest response rate was Happiness at 36.4% or 56 respondents. The next highest response was Surprise with 31.8% or 49 respondents. Twenty-eight respondents or 18.2% chose Aversion and 8.4% or 13 respondents chose Sadness. Also, 2.6% or four respondents chose Anger and 2.6% or four respondents chose Fear.
How intense is the emotion?

Figure 4.39. Intensity results.

<table>
<thead>
<tr>
<th>How intense is the emotion?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Very Intense</td>
<td>5.8%</td>
</tr>
<tr>
<td>Intense</td>
<td>24.7%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>36.4%</td>
</tr>
<tr>
<td>Little Intensity</td>
<td>16.9%</td>
</tr>
<tr>
<td>Very Little Intensity</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

The respondents felt that the emotion was Somewhat intense with a response rate of 36.4% or 56 respondents. At 24.7% or 38 respondents felt the emotion was Intense, while 16.9% or 26 respondents felt Little Intensity. Also, 16.2% or 25 respondents thought the emotion had Very Little Intensity and 5.8% or nine respondents thought the emotion was Very Intense.

Is the color appropriate in the ad?

Figure 4.40. Appropriateness results.

<table>
<thead>
<tr>
<th>The color is appropriate in the ad.</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>3.2%</td>
</tr>
<tr>
<td>Agree</td>
<td>12.9%</td>
</tr>
<tr>
<td>No opinion</td>
<td>27.1%</td>
</tr>
<tr>
<td>Disagree</td>
<td>34.8%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

The respondents disagreed with the color in the ad at a response rate of 34.8% or 54 respondents. At 27.1% or 42 respondents have no opinion with the color, while 21.9% or 34 respondents strongly disagreed with the color. Also, 12.9% or 20 respondents agreed and 3.2% or five respondents strongly agreed with the color.
**Color preference ad results**

*Figure 4.41. All color-adjusted ads.*

*What color is the most appropriate for the ad?*

*Figure 4.42. Ad color preference.*

<table>
<thead>
<tr>
<th>35. What color is the most appropriate for the ad?</th>
<th>Response</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>31.6%</td>
<td>49</td>
</tr>
<tr>
<td>Green</td>
<td>45.2%</td>
<td>70</td>
</tr>
<tr>
<td>Orange</td>
<td>2.6%</td>
<td>4</td>
</tr>
<tr>
<td>Purple</td>
<td>7.1%</td>
<td>11</td>
</tr>
<tr>
<td>Red</td>
<td>10.3%</td>
<td>16</td>
</tr>
<tr>
<td>Yellow</td>
<td>3.2%</td>
<td>5</td>
</tr>
</tbody>
</table>

Green was considered the most appropriate at 45.2% or 70 responses. Forty-nine respondents or 31.6% chose Blue, 10.3% or 16 respondents chose Red, and 7.1% or 11
respondents chose Purple. Receiving 3.2% or five respondents was Yellow and 2.6% or four respondents chose Orange.

\textit{What emotion do you associate with the Olympic Games?}

\textit{Figure 4.43. Emotion results associated with the Olympic Games.}

<table>
<thead>
<tr>
<th>37. What emotion do you associate with the Olympic Games?</th>
<th>n = 154</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Angar</td>
<td>0.0%</td>
</tr>
<tr>
<td>Aversion</td>
<td>8.4%</td>
</tr>
<tr>
<td>Fear</td>
<td>0.0%</td>
</tr>
<tr>
<td>Happiness</td>
<td>85.1%</td>
</tr>
<tr>
<td>Sadness</td>
<td>0.0%</td>
</tr>
<tr>
<td>Surprise</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

A majority of the respondents associated Happiness with the Olympic Games at 85.1% or 131 responses. Also, 8.4% or 13 responses chose Aversion and 6.5% or 10 respondents chose Surprise.

\textit{How intense is the emotion?}

\textit{Figure 4.44. Intensity results.}

<table>
<thead>
<tr>
<th>38. How intense is the emotion?</th>
<th>n = 153</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Very Intense</td>
<td>14.4%</td>
</tr>
<tr>
<td>Intense</td>
<td>37.9%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>33.3%</td>
</tr>
<tr>
<td>Little Intensity</td>
<td>11.8%</td>
</tr>
<tr>
<td>Very Little Intensity</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
The respondents felt that the emotion was Intense with a response rate of 37.9% or 58 respondents. At 33.3% or 51 respondents felt the emotion was Somewhat intense, while 14.4% or 22 respondents felt Very Intense. Also, 11.8% or 18 respondents thought the emotion had Little Intensity and 2.6% or four respondents thought the emotion had Very Little Intensity.

 Does this ad encourage you to want to know more about the Olympic Games?

*Figure 4.45. Ad encouragement results.*

<table>
<thead>
<tr>
<th>39. Does this ad encourage you to want to know more information or watch the Olympic Games?</th>
<th>n = 156</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Percent</td>
</tr>
<tr>
<td>Yes</td>
<td>40.4%</td>
</tr>
<tr>
<td>No</td>
<td>59.6%</td>
</tr>
</tbody>
</table>

Of the respondents, 59.6 % or 93 respondents did not want to know more information or watch the Olympic Games, and 40.4% or 63 respondents chose yes.
Filtered results by gender

Figure 4.46. Filtered results by gender: Positive/Negative

![Filtered Results by Gender: Positive/Negative](image)

Figure 4.47. Filtered results by gender: Color appropriateness

![Filtered Results by Gender: Color Appropriateness](image)
Blue ad results.

The Male group reported that the blue ad was positive with 81.8% or 72 respondents. In addition, this group had no opinion with the appropriateness regarding the blue color with a result of 38.6% or 34 respondents.

The Female group reported that the blue ad was positive with 75.0% or 51 respondents. In addition, this group agreed with the appropriateness regarding the blue color with a result of 36.2% or 25 respondents. However, they also disagreed with 31.9% or 22 respondents.

Green ad results.

The Male group thought that green was positive at a rate of 89.9% (80 respondents) Also, this group agreed with the green color at 43.8% or 39 respondents.

The Female group thought that green was positive at a rate of 87.0% (60 respondents) Also, this group agreed with the green color at 44.9% or 31 respondents.

Orange ad results.

The Male group felt that the orange ad was positive with 60.7% (54 respondents). Also, this group felt no opinion with the orange color at 34.8% or 31 respondents.

The Female group felt that the orange ad was positive with 56.1% (37 respondents). Also, this group disagreed with the orange color at 50.7% or 35 respondents.

Purple ad results.

The Male group reported a positive emotion with the purple ad at a rate of 67.8% (59 respondents). Also, this group felt no opinion with the purple color at 41.4% or 36 respondents.

The Female group reported a positive emotion with the purple ad at a rate of 64.2% (43 respondents). Also, this group disagreed with the purple color at 35.8% or 24 respondents.
Red ad results.

The Male group reported a negative emotion with the red ad at a rate of 74.7% (65 respondents). Also, this group disagreed with the red color at 30.7% or 27 respondents. However, this group also had no opinion with the red color at 29.5% or 26 respondents.

The Female group reported a negative emotion with the red ad at a rate of 79.1% (53 respondents). Also, this group disagreed with the red color at 36.8% or 25 respondents. However, this group also strongly disagreed with the red color at 26.5% or 18 respondents.

Yellow ad results.

The Male group felt the yellow ad had a positive emotion at 60.2% or 53 respondents. Also, this group disagreed with the yellow color at 31.8% or 28 respondents. However, this group also had no opinion with the yellow color at 30.7% or 27 respondents.

The Female group felt the yellow ad had a positive emotion at 67.2% or 45 respondents. Also, this group disagreed with the yellow color at 38.8% or 26 respondents.

Color preference.

Figure 4.48. Filtered results by gender: Ad color preference
The Male group’s preferred color for the ad was green with 45.5% or 40 respondents. Blue was also a popular color with 34.1% or 30 respondents.

The Female group’s preferred color for the ad was green with 44.8% or 30 respondents. Blue was also a popular color with 28.4% or 19 respondents.

*Filtered results by age range*

*Figure 4.49. Filtered results by age range: Positive/negative*
Figure 4.50. Filtered results by age range 18–20: Ad appropriateness

Figure 4.51. Filtered results by age range 21–24: Ad appropriateness
Figure 4.51. Filtered results by age range 25 and older: Ad appropriateness

*Blue Ad Results.*

The 18 to 20 age group reported that the blue ad was positive with 79.3% or 92 respondents. In addition, this group agreed and had no opinion with the appropriateness regarding the blue color with a result of 35.0% or 41 respondents each.

The 21 to 24 age group reported that the blue ad was positive with 82.4% or 28 respondents. In addition, this group had no opinion with the appropriateness regarding the blue color with a result of 38.2% or 13 respondents.

The 25 and older age group reported that the blue ad was positive and negative with 50.0% or three respondents each. In addition, this group disagreed with the appropriateness regarding the blue color with a result of 66.7% or four respondents.
Green ad results.

The 18 to 20 age group thought that green was positive at a rate of 90.6% (106 respondents) Also, this group agreed with the green color at 46.2% or 54 respondents.

The 21 to 24 age group thought that green was positive at a rate of 85.7% (30 respondents) Also, this group agreed with the green color at 42.9% or 15 respondents.

The 25 and older age group thought that green was positive at a rate of 66.7% (four respondents) Also, this group had no opinion with the green color at 50.0% or three respondents.

Orange ad results.

The 18 to 20 age group felt that the orange ad was positive with 59.6% (68 respondents). Also, this group disagreed with the orange color at 36.8% or 43 respondents.

The 21 to 24 age group felt that the orange ad was positive with 57.1% (20 respondents). Also, this group had no opinion and disagreed with the orange color at 34.3% or 12 respondents each.

The 25 and older age group felt that the orange ad was positive and negative with 50.0% (three respondents) each. Also, this group disagreed with the orange color at 66.7% or 43 respondents.

Purple ad results.

The 18 to 20 age group reported a positive emotion with the purple ad at a rate of 64.6% (73 respondents). Also, this group felt no opinion with the purple color at 33.6% or 38 respondents. However this group also disagreed with the color at 30.1% or 34 respondents and the group also agreed with purple at 28.3% or 32 respondents.
The 21 to 24 age group reported a positive emotion with the purple ad at a rate of 68.6% (24 respondents). Also, this group felt no opinion and disagreed with the purple color at 40.0% or 14 respondents each.

The 25 and older age group reported a positive emotion with the purple ad at a rate of 83.3% (5 respondents). Also, this group disagreed with the color at 50.0% or three respondents.

*Red ad results.*

The 18 to 20 age group reported a negative emotion with the red ad at a rate of 75.2% (85 respondents). Also, this group disagreed with the red color at 32.2% or 37 respondents.

The 21 to 24 age group reported a negative emotion with the red ad at a rate of 80.0% (28 respondents). Also, this group disagreed with the red color at 42.9% or 15 respondents.

The 25 and older age group reported a negative emotion with the red ad at a rate of 83.3% (five respondents). Also, this group had no opinion with the red color at 50.0% or three respondents.

*Yellow ad results.*

The 18 to 20 age group associated a positive emotion with the yellow ad at a rate of 65.2% or 75 respondents. Also, this group disagreed with the yellow color at 38.3% or 44 respondents.

The 21 to 24 age group felt the yellow ad had a positive emotion at 58.8% or 20 respondents. Also, this group disagreed with the yellow color at 29.4% or ten respondents. In addition, this group also had no opinion and strongly disagreed with the yellow ad at 26.5% or nine respondents each.
The 25 and older age group felt the yellow ad had a positive and negative emotion at 50.0% or three respondents each. Also, this group strongly agreed, had no opinion and disagreed with the yellow color at 33.3% or two respondents each.

Figure 4.52. Filtered results by age range: Ad color preference

![Filtered Results by Age Range: Ad Color Preference](image)

Color preference.

The 18 to 20 age group’s preferred color for the ad was green with 46.5% or 53 respondents. Blue was also a popular color with 34.2% or 39 respondents.

The 21 to 24 age group’s preferred color for the ad was green with 42.9% or 15 respondents. Blue was also a popular color with 25.7% or nine respondents.

The 25 and older age group’s preferred color for the ad was green and red with 33.3% or two respondents each. Blue and yellow had 16.7% or one respondent each.
Filtered results by ethnicity

White/Caucasian.

Figure 4.53. Filtered results by White/Caucasian: Positive/Negative

![Filtered results by White/Caucasian: Positive/Negative](chart)

Table 4.1. Filtered by White Caucasian: Ad appropriateness

<table>
<thead>
<tr>
<th>White/Caucasian</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ad</td>
<td>6</td>
<td>46</td>
<td>44</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Green Ad</td>
<td>4</td>
<td>61</td>
<td>41</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>2</td>
<td>26</td>
<td>36</td>
<td>48</td>
<td>17</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>1</td>
<td>32</td>
<td>47</td>
<td>43</td>
<td>5</td>
</tr>
<tr>
<td>Red Ad</td>
<td>5</td>
<td>21</td>
<td>31</td>
<td>44</td>
<td>27</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>4</td>
<td>16</td>
<td>33</td>
<td>44</td>
<td>30</td>
</tr>
</tbody>
</table>
**Blue Ad Results.**

The White/Caucasian ethnic group reported that the blue ad was positive with a 81.1% or 103 respondents. In addition, this group agreed that the blue color is appropriate with a result of 35.9% or 46 respondents. This group also felt no opinion in regards to the appropriateness at 34.4% or 44 respondents.

**Green ad results.**

This ethnic group thought that green was positive at a rate of 88.4% (114 respondents) versus negative emotion at 11.6% (15 respondents). Also, this group felt that the color was appropriate in the ad at 47.3% or 61 respondents.

**Orange ad results.**

This ethnic group had a positive/negative ratio regarding the orange ad of 57.9% (73 respondents) to 42.1% (53 respondents). Also, this group felt that the color was not appropriate in the ad at 37.2% or 48 respondents.

**Purple ad results.**

The White Caucasian group reported a positive emotion with the purple ad at a rate of 66.7% (84 respondents). In addition, this group felt no opinion regarding the appropriateness of the purple in the ad at 36.7% or 47 respondents. However, 33.6% or 43 respondents disagreed with the appropriateness of the ad and 25% or 32 respondents agreed with the appropriateness with the purple ad.

**Red ad results.**

The White Caucasian group reported a negative emotion with the red ad at a rate of 77.0% (97 respondents) versus a positive emotion at 23.0% (29 respondents). In addition, this group disagreed with the appropriateness of the ad at 34.4% or 44 respondents.
Yellow ad results.

This ethnic group felt the yellow ad had a positive emotion at 61.4% or 78 respondents. However, this group disagreed with the appropriateness of the yellow ad at 34.6% or 44 respondents.

African American/Black.

Figure 4.54. Filtered results by African American/Black: Positive/Negative
Table 4.2. Filtered by African American/Black: Ad appropriateness

<table>
<thead>
<tr>
<th>African American/Black</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ad</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Green Ad</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Red Ad</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

Blue Ad Results.

The African American/Black ethnic group reported that the blue ad was positive with a 68.8% or 11 respondents. In addition, this group felt no opinion regarding the blue color with a result of 43.8% or seven respondents.

Green ad results.

This ethnic group thought that green was positive at a rate of 100% (16 respondents). Also, this group felt that the color was appropriate in the ad at 37.5% or six respondents.

Orange ad results.

This ethnic group felt that the orange ad was positive with 62.5% (ten respondents). Also, this group recorded no opinion regarding the appropriateness of the ad with 37.5% or six respondents.

Purple ad results.

The African American/Black ethnic group reported a positive emotion with the purple ad at a rate of 60.0% (nine respondents). In addition, this group felt no opinion regarding the
appropriateness of the purple in the ad and disagreed with the purple at a rate of 28.6% each or four respondents each.

*Red ad results.*

The African American/Black ethnic group reported a negative emotion with the red ad at a rate of 73.3.0% (11 respondents). In addition, this group had no opinion with the appropriateness of the ad at 33.3% or five respondents.

*Yellow ad results.*

This ethnic group felt the yellow ad had a positive emotion at 86.7% or 13 respondents. However, this group disagreed with the appropriateness of the yellow ad at 46.7% or seven respondents.

*American Indian/Alaskan Native.*

No one from this ethnic group participated in the survey.

*Asian American/Pacific Islander.*

*Figure 4.55. Filtered by Asian American/Pacific Islander: Positive/Negative*
Table 4.3. Filtered by Asian American/Pacific Islander: Ad appropriateness

<table>
<thead>
<tr>
<th>Asian American/Pacific Islander</th>
<th>n = 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Blue Ad</td>
<td>0</td>
</tr>
<tr>
<td>Green Ad</td>
<td>0</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>0</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>0</td>
</tr>
<tr>
<td>Red Ad</td>
<td>0</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>0</td>
</tr>
</tbody>
</table>

Blue Ad Results.

The Asian American/Pacific Islander ethnic group reported that the blue ad was positive with a 66.7% or two respondents. In addition, this group disagreed with the appropriateness regarding the blue color with a result of 66.7% or two respondents.

Green ad results.

This ethnic group thought that green was positive at a rate of 66.7% (two respondents). Also, this group agreed, felt no opinion and disagreed with the green color at 33.3% or one respondent each.
Orange ad results.

This ethnic group felt that the orange ad was positive with 100.0% (three respondents). Also, this group agreed, felt no opinion and disagreed with the orange color at 33.3% or one respondent each.

Purple ad results.

The Asian American/Pacific Islander ethnic group reported a positive emotion with the purple ad at a rate of 66.7% (two respondents). Also, this group agreed, felt no opinion and disagreed with the purple color at 33.3% or one respondent each.

Red ad results.

This ethnic group reported a negative emotion with the red ad at a rate of 66.7% (two respondents). Also, this group agreed, felt no opinion and disagreed with the red color at 33.3% or one respondent each.

Yellow ad results.

This ethnic group felt the yellow ad had a positive emotion at 100.0% or three respondents. Also, this group agreed, felt no opinion and disagreed with the yellow color at 33.3% or one respondent each.
**Hispanic or Latino; Mexican American.**

*Figure 4.56. Filtered by Hispanic or Latino: Mexican American: Positive/Negative*

*Table 4.4. Filtered by Hispanic or Latino: Mexican American: Ad appropriateness*

<table>
<thead>
<tr>
<th>Hispanic or Latino: Mexican American</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ad</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Green Ad</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Red Ad</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Blue Ad Results.

The Hispanic or Latino; Mexican American ethnic group had troubles distinguishing the blue in the ad. Of the two respondents, one respondent recorded blue as the dominant color and one respondent recorded yellow as the dominant color. This group reported that the blue ad was positive and negative with a 50.0% or one respondent each. In addition, this group disagreed with the appropriateness regarding the blue color with a result of 100.0% or two respondents.

Green ad results.

This ethnic group thought that green was positive and negative at a rate of 50.0% (one respondent) each. Also, this group agreed and disagreed with the green color at 50.0% or one respondent each.

Orange ad results.

This ethnic group felt that the orange ad was positive and negative with 50.0% (one respondent) each. Also, this group agreed and disagreed with the orange color at 50.0% or one respondent each.

Purple ad results.

The Hispanic or Latino; Mexican American ethnic group reported a positive emotion with the purple ad at a rate of 100.0% (two respondents). Also, this group felt no opinion and disagreed with the purple color at 50.0% or one respondent each.

Red ad results.

This ethnic group reported a negative emotion with the red ad at a rate of 100.0% (two respondents). Also, this group agreed and felt no opinion with the red color at 50.0% or one respondent each.
Yellow ad results.

This ethnic group felt the yellow ad had a negative emotion at 100.0% or two respondents. Also, this group felt no opinion and disagreed with the yellow color at 50.0% or one respondent each.

Hispanic or Latino; Puerto Rican.

Figure 4.57. Filtered by Hispanic or Latino: Puerto Rican: Positive/Negative
Table 4.5. Filtered by Hispanic or Latino: Puerto Rican: Ad appropriateness

<table>
<thead>
<tr>
<th>Hispanic or Latino: Puerto Rican</th>
<th>n = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Blue Ad</td>
<td>1</td>
</tr>
<tr>
<td>Green Ad</td>
<td>0</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>0</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>0</td>
</tr>
<tr>
<td>Red Ad</td>
<td>0</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>0</td>
</tr>
</tbody>
</table>

Blue Ad Results.

The Hispanic or Latino; Puerto Rican ethnic group reported that the blue ad was positive with a 100.0% or two respondents. In addition, this group strongly agreed and had no opinion with the appropriateness regarding the blue color with a result of 50% or one respondent each.

Green ad results.

This ethnic group thought that green was positive and negative at a rate of 50% or one respondent each. Also, this group felt no opinion and disagreed with the green color at 50% or one respondent each.

Orange ad results.

This ethnic group felt that the orange ad was negative with 100.0% (two respondents). Also, this group disagreed and strongly disagreed with the orange color at 50% or one respondent each.
**Purple ad results.**

Hispanic or Latino; Puerto Rican ethnic group reported a positive emotion with the purple ad at a rate of 100.0% (two respondents). Also, this group agreed and strongly disagreed with the purple color at 50.0% or one respondent each.

**Red ad results.**

This ethnic group reported a negative emotion with the red ad at a rate of 100.0% (two respondents). Also, this group felt no opinion and strongly disagreed with the red color at 100.0% or one respondent each.

**Yellow ad results.**

This ethnic group felt the yellow ad had a positive and negative emotion at 50.0% or one respondent each. Also, this group agreed and strongly disagreed with the yellow color at 50.0% or one respondent each.

**Other Hispanic or Latino.**

*Figure 4.58. Filtered by Other Hispanic or Latino: Positive/Negative*
Table 4.6. Filtered by Other Hispanic or Latino: Ad appropriateness

<table>
<thead>
<tr>
<th>Other Hispanic or Latino</th>
<th>n = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Blue Ad</td>
<td>0</td>
</tr>
<tr>
<td>Green Ad</td>
<td>1</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>1</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>1</td>
</tr>
<tr>
<td>Red Ad</td>
<td>0</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>0</td>
</tr>
</tbody>
</table>

Blue Ad Results.

The Other Hispanic or Latino ethnic group reported that the blue ad was positive and negative with a 50.0% or one respondent each. In addition, this group agreed and disagreed with the appropriateness regarding the blue color with a result of 50.0% or one respondent each.

Green ad results.

This ethnic group thought that green was positive at a rate of 100.0% (two respondents). Also, this group strongly agreed and agreed with the green color at 50.0% or one respondent each.

Orange ad results.

This ethnic group felt that the orange ad was positive with 100.0% (two respondents). Also, this group strongly agreed and disagreed with the orange color at 50% or one respondent each.
**Purple ad results.**

The Other Hispanic or Latino ethnic group reported a positive and negative emotion with the purple ad at a rate of 50.0% or one respondent each. Also, this group strongly agreed and strongly disagreed with the purple color at 50.0% or one respondent each.

**Red ad results.**

This ethnic group reported a positive and negative emotion with the red ad at a rate of 50.0% (two respondents). Also, this group disagreed and strongly disagreed with the red color at 50.0% or one respondent each.

**Yellow ad results.**

This ethnic group felt the yellow ad had a positive and negative emotion at 50.0% or one respondent each. Also, this group disagreed or strongly disagreed with the yellow color at 50.0% or one respondent each.

**Other Ethnic.**

*Figure 4.59. Filtered by Other Ethnic: Positive/Negative*

The Other Ethnic group only had one respondent participate in the survey.
Table 4.7. Filtered by Other Ethnic: Ad appropriateness

<table>
<thead>
<tr>
<th>Other Ethnic</th>
<th>n = 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Blue Ad</td>
<td>0</td>
</tr>
<tr>
<td>Green Ad</td>
<td>0</td>
</tr>
<tr>
<td>Orange Ad</td>
<td>0</td>
</tr>
<tr>
<td>Purple Ad</td>
<td>0</td>
</tr>
<tr>
<td>Red Ad</td>
<td>0</td>
</tr>
<tr>
<td>Yellow Ad</td>
<td>0</td>
</tr>
</tbody>
</table>

Blue Ad Results.

The Other Ethnic group reported that the blue ad was positive at 100% or one respondent. In addition, this group agreed with the appropriateness regarding the blue color with a result of 100.0% or one respondent.

Green ad results.

This ethnic group thought that green was positive at a rate of 100.0% (one respondent) Also, this group disagreed with the green color at 100% or one respondent.

Orange ad results.

This ethnic group felt that the orange ad was positive with 100.0% (one respondent). Also, this group disagreed with the orange color at 100.0% or one respondent.
Purple ad results.

The Other Ethnic group reported a negative emotion with the purple ad at a rate of 100.0% (one respondent). Also, this group disagreed with the purple color at 100.0% or one respondent each.

Red ad results.

This ethnic group reported a negative emotion with the red ad at a rate of 100.0% (one respondent). Also, this group disagreed with the red color at 100.0% or one respondent.

Yellow ad results.

This ethnic group felt the yellow ad had a negative emotion at 100.0% or one respondent. Also, this group strongly disagreed with the yellow color at 100.0% or one respondent.

Color preference.

Table 4.8. Filtered by Ethnicity: Ad color preference

<table>
<thead>
<tr>
<th>Filter by Ethnicity: Ad color preference</th>
<th>n = 155</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blue Ad</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>43</td>
</tr>
<tr>
<td>African American/Black</td>
<td>1</td>
</tr>
<tr>
<td>Asian American/Pacific Islander</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic or Latino: Mexican American</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic or Latino: Puerto Rican</td>
<td>1</td>
</tr>
<tr>
<td>Other Hispanic or Latino</td>
<td>1</td>
</tr>
<tr>
<td>Other Ethnic</td>
<td>1</td>
</tr>
</tbody>
</table>
This White/Caucasian group’s preferred color for the ad was green at 46.5% or 59 respondents. Blue had 33.9% or 43 respondents. The African American/Black group’s preferred color for the ad was green at 46.7% or seven respondents. The Asian American/Pacific Islander group’s preferred color for the ad was blue, purple and red at 33.3% or one respondent each. The Hispanic or Latino: Mexican American group’s preferred color for the ad was blue and green at 50.0% or one respondent each.

The Hispanic or Latino: Puerto Rican group’s preferred color for the ad was blue and green at 50.0% or one respondent each. The Other Hispanic or Latino group’s preferred color for the ad was blue and green at 50.0% or one respondent each. Also, the Other Ethnic group’s preferred color for the ad was blue at 100.0% or one respondent.

Summary

The data results from the research survey were summarized in this chapter. This chapter was divided into different sections: Demographic results, Blue Ad results, Green Ad results, Orange Ad results, Purple Ad results, Red Ad results, Yellow Ad results, Color preference results, Filtered Results by Gender, Filtered Results by Age Range and Filtered Results by Ethnicity.
CHAPTER V. SUMMARY, CONCLUSIONS & RECOMMENDATIONS

This chapter summarizes the results, makes conclusions and addresses recommendations for possible future research.

Summary

Research Questions.

The study explored four research questions:

1. Does color affect consumers’ emotional responses to a product (positive/non-positive)?
2. Does age have an influence on color preferred in an advertisement of a product?
3. Does gender have an influence on color preferred in an advertisement of a product?
4. Does culture have an influence on color preferred in an advertisement of a product?

Does color affect consumers’ emotional responses to a product (positive/non-positive)?

The results showed that the color of the ad does affect consumers’ emotional responses to a product (positive/non-positive). The color red was shown to be negative at 76.6% or 118 respondents (see Figure 4.32). Also, the color red was considered to represent anger with 52.6% or 81 respondents. Red also evoked fear according to 20.1% or 31 respondents.

Color did not influence the consumer in this study to want to know more information about the Olympics (see Figure 4.45). This conclusion differs with the previous research in Chapter II (Grossman & Wisenblit, 1999). Some reasons for the mixed results could be the ad itself. The ad was vague in appearance and in its message. This was necessary to conduct the study, however, the audience may have needed to see more of an emotional appeal to influence them on this product. Previous research from Sutherland and Sylvester (2000) supports the need for emotional appeal in advertisements. It was interesting to note that red was considered the most negative color throughout all groups, yet it was the dominant color in the original ad.
Does age have an influence on color preferred in an advertisement of a product?

The sample was segmented into three different age ranges: ages 18 to 20, ages 21 to 24 and ages 25 and older. These ranges were chosen for several reasons. First, the sample consisted of college students. Therefore, a majority of the sample would consist between the ages of 18 to 24. No one less than 18 years old would be able to participate in the survey without parental permission, so they were not included in the age ranges. Also, the 25 and older range was grouped together to eliminate multiple outliers for the different age groups. There were not enough older students to need to breakdown the age range even further.

As for the results, the ages 18 and 20 group and the ages 21 and 24 group had very similar results throughout the entire survey. However, the 25 and older group had different opinions on the ads and this coincides with research conducted by Dupont (1990). The 18 to 20 age group and the 21 to 24 age group felt that all the colors were positive except for the color red. In addition, these groups preferred the green color overall the colors.

The 25 and older group had mixed results over the positive/ negative aspects of blue, orange and yellow. This group felt positive about green and purple, and the group felt that red was negative. In addition, these groups preferred color was both green and red which is different from the other two age groups.

Does gender have an influence on color preferred in an advertisement of a product?

The results between the Male and Female group was consistent throughout the analysis. However, the two groups’ responses regarding the appropriateness of the use of the Orange Ad differed. The male group had no opinion while the female group indicated the Orange ad color was inappropriate. (see Figure 4.47).
Does culture have an influence on color preferred in an advertisement of a product?

Research was conducted by Dupont (1990) and concluded that ethnicity and culture affect consumers’ opinion of color. Results of this survey correlated with Dupont’s (1990) research. Several ethnic groups had similar results, however, color preferences and positive/negative results show that there were some differences between the different groups.

The White/Caucasian and African American/Black groups had similar results in all categories; every color was positive. Red and green were the preferred colors. The Asian American/Pacific Islander group had the same results as the previous two groups, except this group chose blue, purple and red as preferred colors. The Hispanic or Latino: Mexican American group had mixed (50/50) positive/negative opinions about the blue, green, and orange advertisements and felt that purple was positive and red and yellow were both negative. This group’s preferred colors were blue and green.

The Hispanic or Latino: Puerto Rican group associated blue and purple as positive emotions. This group felt mixed emotions about green and yellow and both orange and red advertisement colors evoked a negative emotional response. This group’s preferred colors were blue and green. The Other Hispanic or Latino group felt positive about green and orange. The remaining four colors all had mixed positive/negative results. This group’s preferred color was blue and green. The Other Ethnic group felt positive about blue, green and orange. This group felt negative about purple, red and yellow. This group’s preferred color was blue.

While the majority of preferred colors were blue and green, it is interesting to see all of the different positive and negative associations between the different groups. The preferred color could be a biased selection since the object of color is all of the continents, especially since both green and blue are colors of land and water.
Recommendations

A few problems and changes could be made regarding the survey process. First, Survey Monkey had to have cookies reset in the Internet browser Safari. Since the VCT 103 lab classes are held multiple times a day in the Tech 247 ITS lab, Survey Monkey recognized that someone had already taken a survey on the computer. Therefore, some students had problems with the link to the survey loading properly. The solution to this problem was to have the students reset Safari before clicking on the survey link. By resetting Safari, all the previous browsing history and cookies are deleted. Once Safari was reset, the survey loaded properly.

However, the browser cookies could have impacted the number of participants. Students may not have been familiar with deleting cookies or having to reset Safari. Even though they were walked through the process in the lab, there are times when it is difficult to see and hear demonstrations. In addition, the classroom is very large, and that could lead to the students being hesitant to ask for help with deleting the cookies.

Another issue with the survey was that a student had asked about the meaning of aversion. Since one student asked, there is a chance that other students may not have known the definition and they may have ignored the aversion response or guessed on it altogether. In addition, there seemed to be some confusion regarding what the dominant color was in the ad. A few respondents may have confused the background as being the dominant color. Several outliers were noted with individuals identifying the dominant color in the blue, green and orange ads. These ads were the first three rounds of the survey. The last three colors were accurately selected. Also, the two respondents who identified with having color blindness accurately selected all six dominant colors in the ad.
The choice of timing when the survey was given could also have impacted the survey sample. The survey was given at the very beginning of class. If students were late, they missed the opportunity to take the survey. Everyone had to take the survey at the same time during each lab class due to the need to have identical lighting conditions. If a student was late and missed the survey, he or she could not have a second chance to take it. Another issue with the survey timing was a quiz was planned that day. Quizzes are typically given at the beginning of class. However, it was decided that the survey would be given first in each lab and then the quiz would be given afterward. As a result, instead of taking the survey, several students were studying for the quiz or finishing their projects that were due after the quiz. Another concern was that the students rushed through the survey so they could study for the quiz. A recommendation for the future would be to give the survey on a non-quiz day. That was not an option for this study because quizzes are given almost every week in VCT 103. The survey could have been given after the quiz; however, if the student performed poorly on the quiz, then that emotion could have transferred to the survey and may have negatively impacted the results.

Finding an ad that was appropriate for the study was also a challenge. Too many products/services have preconceived color associations already. Also, there are too many products for which consumers would already have color preferences. Opinions are associated with expected characteristics a product should have. A recommendation would be to have a researcher created fictitious advertisement/product or a little-known foreign advertisement. A product would be more beneficial to test than a service. Also, the sequence in which the questions were asked should be randomized. This should prevent the respondents from self-filtering through the similar questions. In addition, it would be interesting to see a series of different products to be researched in order to see if color preferences and emotional associations
exist across the different products. The difficulty with this is that it would take a long time for
the respondents to survey each different product and each different color.

Conclusion

This chapter summarized the survey results, and addressed recommendations for possible
future research. It was interesting to see how color was interpreted among the different groups
during the study. Future research will need to see an increase in survey length with different ads
and products. More time will be needed to fully conduct an in depth study.
REFERENCES


APPENDIX A

HSRB APPROVAL FORM
January 24, 2008

TO: Melanie Alt
College of Technology: C&TE

FROM: Richard Rowlands
HSRB Administrator

RE: HSRB Project No.: H08T175GX2

TITLE: Color, Emotions, and Advertising

You have met the conditions for approval for your project involving human subjects. As of January 22, 2008, your project has been granted final approval by the Human Subjects Review Board (HSRB). This approval expires on January 13, 2009. You may proceed with subject recruitment and data collection.

The final approved version of the consent document(s) is attached. Consistent with federal OHRP guidance to IRBs, the consent document(s) bearing the HSRB approval/expiration date stamp is the only valid version and you must use copies of the date-stamped document(s) in obtaining consent from research subjects.

You are responsible to conduct the study as approved by the HSRB and to use only approved forms. If you seek to make any changes in your project activities or procedures (including increases in the number of participants), please send a request for modifications immediately to the HSRB via this office. Please notify me, in writing (fax: 372-6916 or email: hsr@bgnet.bgusa.edu) upon completion of your project.

Good luck with your work. Let me know if this office or the HSRB can be of assistance as your project proceeds.

Comments/Modifications:
1. Please add text equivalent to the HSRB approval/expiration date stamp to the “footer” area of the electronic cover page (see attached for specific text).
2. Please provide the URL of the online survey when it is available.

Dr. Terry Herman
Research Category: EXEMPT #2
APPENDIX B

ORIGINAL SURVEY FROM SURVEY MONKEY
Dear Participant,

My name is Melanie Alt and I am currently a second year master's student in the Career & Technology Education program here at Bowling Green State University. I would like to gather information to assist me in the completion of my thesis. My thesis is exploring the relationship between colors and emotions associated with colors used in advertising. This research will assist design agencies and advertisement firms as well as their clients in deciding the color choice of an advertisement.

Please consider participating in this short, 10 minute survey. Your name and answers will be kept strictly confidential and any data reported will be in a summary manner. If you agree to participate, you will answer a series of questions regarding a specific advertisement. This survey asks for your opinions and preferences, there are no right or wrong answers. All responses will be kept anonymous and in my possession. The files will be destroyed after the study is completed. Participation is voluntary and will in no way affect your grades or standing at the University. You may withdraw at any time.

Thank you for your consideration in participating in my study. If you have any questions or concerns about your participation in the study or your rights as a research participant, you may contact my project advisor or myself at the following contacts: Dr. Terry Herman, herman@bgsu.edu 419-372-7265 and Melanie Alt, altm@bgsu.edu. Also, you may contact the Chair, Human Subjects Review Board at BGSU at 419-372-7716 or via email at hsrb@bgsu.edu with questions or concerns about participant rights.

Sincerely,

Melanie Alt

Click yes to continue the survey or no to exit. By selecting yes, you are giving your consent to participate in this study. You must be at least 18 years old to continue with the survey. If you are under 18, please select no to exit the survey.

**1. Do you consent to participate in this survey?**

Yes

No
Color, Emotions & Advertising

Demographic Information

2. Gender
   - Male
   - Female

3. Age Range
   - 18 – 20
   - 21 – 24
   - Over 25

4. Ethnicity
   - Caucasian/White
   - African American/Black
   - American Indian/Alaska Native
   - Asian American/Pacific Islander
   - Hispanic or Latino; Mexican American
   - Hispanic or Latino; Puerto Rican
   - Other Hispanic or Latino
   - Other Ethnic

5. Do you have a visual impurity affecting your ability to see colors properly?
   - Yes
   - No

If YES, please explain.

For the following questions, please review the advertisement on the next screen and answer each set of questions regarding that advertisement. These questions are asking your opinion and your interpretation. Please answer the questions honestly.
6. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

7. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

8. What emotion do you associate with the ad?
- Anger
- Joy
- Fear
- Happiness
- Sadness
- Surprise

9. How intense is the emotion?
- Very Intense
- Intense
- Somewhat
- Little Intensity
- Very Little Intensity
Color, Emotions & Advertising

10. The color is appropriate in the ad.

- Strongly Agree
- Agree
- No opinion
- Disagree
- Strongly disagree
11. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

12. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

13. What emotion do you associate with the ad?
- Anger
- Aversion
- Fear
- Happiness
- Sadness
- Surprise

14. How intense is the emotion?
- Very intense
- Intense
- Somewhat
- Little intensity
- Very little intensity
15. The color is appropriate in the ad.

- [ ] Strongly Agree
- [ ] Agree
- [ ] No opinion
- [ ] Disagree
- [ ] Strongly disagree
Color, Emotions & Advertising

16. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

17. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

18. What emotion do you associate with the ad?
- Anger
- Appreciation
- Fear
- Happiness
- Sadness
- Surprise

19. How intense is the emotion?
- Very intense
- Intense
- Somewhat
- Little intensity
- Very little intensity
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. The color is appropriate in the ad.</td>
<td>□ Strongly Agree □ Agree □ No opinion □ Disagree □ Strongly disagree</td>
</tr>
</tbody>
</table>
21. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

22. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

23. What emotion do you associate with the ad?
- Anger
- Arousal
- Fear
- Happiness
- Sadness
- Surprise

24. How intense is the emotion?
- Very Intense
- Intense
- Somewhat
- Little Intensity
- Very Little Intensity
Color, Emotions & Advertising

25. The color is appropriate in the ad.

- [ ] Strongly Agree
- [ ] Agree
- [ ] No opinion
- [ ] Disagree
- [ ] Strongly disagree
26. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

27. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

28. What emotion do you associate with the ad?
- Anger
- Horror
- Fear
- Happiness
- Sadness
- Surprise

29. How intense is the emotion?
- Very Intense
- Intense
- Somewhat
- Little Intensity
- Very Little Intensity
Color, Emotions & Advertising

30. The color is appropriate in the ad.
   □ Strongly Agree
   □ Agree
   □ No opinion
   □ Disagree
   □ Strongly disagree
31. What is the dominant color in the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

32. Does the ad evoke a positive or negative emotion?
- Positive
- Negative

33. What emotion do you associate with the ad?
- Anger
- Amazement
- Fear
- Happiness
- Sadness
- Surprise

34. How intense is the emotion?
- Very intense
- Intense
- Somewhat
- Little intensity
- Very little intensity
35. The color is appropriate in the ad.

- [ ] Strongly Agree
- [ ] Agree
- [ ] No opinion
- [ ] Disagree
- [ ] Strongly disagree
36. What color is the most appropriate for the ad?
- Blue
- Green
- Orange
- Purple
- Red
- Yellow

37. What emotion do you associate with the Olympic Games?
- Anger
- Aversion
- Fear
- Happiness
- Sadness
- Surprise
Color, Emotions & Advertising

38. How intense is the emotion?
- Very Intense
- Intense
- Somewhat
- Little Intensity
- Very Little Intensity

39. Does this ad encourage you to want to know more information or watch the Olympic Games?
- Yes
- No
Color, Emotions & Advertising

Submit

By completing this survey and clicking the "submit" button you are indicating your consent to participate in the study.
Thank You.

Please remember to clear your browser's cache and page history after you submit the survey in order to protect your privacy.

Thank You.